Annual Report

2002-03

Maharashtra Pollution Control Board

Abbreviations:

Board = Maharashtra Pollution Control Board

SPCB = State Pollution Control Board

CPCB = Central Pollution Control Board

MoEF = Ministry of Environment & Forests

Water Act = Water (Prevention and Control of Pollution) Act, 1974

Air Act = Air (Prevention and Control of Pollution) Act, 1981

EP Act = Environment Protection Act, 1986

MSW Rules = Municipal Solid Wastes (Management & Handling) Rules, 2000

BMW Rules = Bio-Medical Wastes (Management & Handling) Rules, 1998

HW Rules = Hazardous Wastes (Management & Handling) Rules, 1999

MSW = Municipal Solid Wastes

BMW = Bio-Medical Wastes

HW = Hazardous Wastes

CETP = Common Effluent Treatment Plant

STP = Sewage Treatment Plant

Contents

1. INTRODUCTION

The Maharashtra Pollution Control Board (MPCB) was first constituted on 7 September 1970 under a state legislation, 'The Maharashtra (Prevention of Water Pollution) Act, 1969,' and later under the central legislation, 'The Water (Prevention & Control of Pollution) Act, 1974' ('Water Act'). The MPCB also functions as the statutory Board under the Air (Prevention and Control of Pollution) Act, 1981 ('Air Act'). The Board is reconstituted, from time to time, as per law.

As elaborated in the Water Act, and the Air Act, the main functions of the Board are to promote cleanliness of streams and wells in different areas of the state through prevention, control, and abatement of water pollution and to improve the quality of air and to prevent, control and abate air pollution in the state.

The Board plays an important role in curbing pollution and protecting the environment of the state. By launching its website, all scientific and technical information is made available to the public at large. This is also helpful for environmental policy makers, students, and academicians. To curb air and water pollution, various measures have been undertaken by the Board, for example, implementation of a river policy to keep the industry and waters of rivers at a safe distance from each other; shifting of stone crushers away from habitation; implementing a central action plan for polluting industries; and holding awareness programmes at various levels in the state, etc.

Functions of the State Pollution Control Boards

The main functions of the State Pollution Control Boards (SPCBs) are as follows:

1. To plan state-wise comprehensive programmes for prevention, control and abatement of water and air pollution.
2. To advise the State Government on matters concerning prevention, control and abatement of water and air pollution.
3. To lay down, modify or annul standards for sewage and trade effluents and for the quality of receiving waters (not being water in an interstate stream) and to classify the waters of the state.
4. To develop economical and reliable methods for treatment of sewage and trade effluent

in order to facilitate their utilization for agriculture or their disposal on land.

5. To advise the State Government in respect of location of any industry which is likely to cause water and/or air pollution.
6. To lay down, in consultation with, and having regard to the standards set by the Central Pollution Control Board (CPCB), standards for emission of air pollutants into the atmosphere from different sources, except ships and aircraft.
7. To inspect sewage or trade effluent works and plants installed for the treatment of sewage and trade effluent.
8. To grant, suspend or cancel authorizations for collection, reception, treatment, transport, storage and disposal of hazardous wastes and to allow for import of these wastes for processing and re-use as raw materials.
9. To perform such other functions as may, from time to time, be entrusted by the CPCB or the State Government to the Board.
10. To establish or recognize a laboratory or laboratories to enable the Board to perform its functions under the Water Act, and the Air Act, efficiently.
11. To lay down standards for treatment of sewage and trade effluents to be discharged into a particular stream.
12. To make, vary or revoke any order for the prevention, control or abatement of discharge of waste into streams or wells.
13. To encourage, conduct and participate in investigations and research on water pollution problems.
14. To collaborate with the CPCB in organizing the training of persons engaged or to be engaged in programmes relating to the prevention, control and abatement of water and air pollution and to organize mass education programmes on these issues.

2. CONSTITUTION OF THE BOARD

The Government of Maharashtra in exercise of the powers conferred under section 4 of the Water Act, reconstituted the Board vide notifications dated 16 June 2000 and 14 March 2001.

According to the above notifications, during the year under report, the Board comprised of a part-time Chairman, four officials representing the interests of the State Government, two officials representing companies/corporations owned and controlled by the State Government, two members representing the interests of local bodies, and one member representing the interests of industries, trade, fisheries, etc., all of whom were nominated by the State Government.

A full time Member Secretary was appointed to execute the decisions taken by the Board.

The list of members representing the Board as on 31.03.2003 is enclosed as *Annexure I.*

CHANGES

Two additional members representing the interests of local bodies were appointed in the reporting year.

3. MEETINGS OF THE BOARD

Four meetings of the Board were held during the year 2002-03:

Number	Date	Place
133rd Meeting	20.04.2002	Mantralaya (Mumbai)
134th Meeting	11.07.2002	Mantralaya (Mumbai)
135th Meeting	22.10.2002	Mantralaya (Mumbai)
136th Meeting	10.01.2003	Mantralaya (Mumbai)

The major decisions taken in the above mentioned meetings are as follows:

- To issue perpetual NOC for D.G. sets with power generating capacity of 1 MW and above, and fees to be charged as applicable to industries based on capital investment.
- To form a cell/division for implementation and follow-up action in respect of various Rules framed under the Environment (Protection) Act, 1986, ('EP Act') and schemes proposed by CPCB other than Water Act or Air Act .
- To approve Annual Reports for the years 1998-99 and 1999-2000.
- To purchase immoveable property at 'Kalyan' admeasuring 3760 sq.ft. built up area (approx.) on the ground floor and 3912 sq.ft built up area (approx.) on the first floor at the rate of Rs.1700/- per sq.ft. and basement admeasuring 474 sq.ft. built up area at the rate of Rs.1400/- per sq.ft.
- To purchase spare parts and consumables for mobile ambient air quality monitoring vans, including imported and indigenous items, at a cost of US$ 80,304/- and Rs.17,445/- respectively.
- Not to sanction withdrawal of prosecution filed by the Board against the Kolhapur Municipal Corporation, Kolhapur on the grounds of inadequate S.T.P. installation.
- To create a Public Relations Officer's post within the establishment of the Board.
- To shift the sub-regional office, Solapur, from its present premises at Satara, to Solapur

4. COMMITTEES CONSTITUTED BY THE BOARD

In exercise of the powers conferred on it under Section 9 of the Water Act, and Section 11 of the Air Act, the Board at its 124th meeting held on 8.6.1999 decided to constitute committees for various purposes, to carry out the Board's functions more efficiently and effectively.

During the year under report, the following committees were constituted to conduct specific work.

Consent appraisal committee (CAC)

The CAC has been constituted to verify, decide and clear consent applications in certain categories. The CAC may call meetings with industry personnel to discuss various pollution aspects, problems of industry and suggest suitable remedies for control of pollution. In some cases, launching of prosecution under appropriate sections is also resorted to. Sometimes CAC members also visit the industry to inspect the measures taken by the industry for pollution control and decide to grant or refuse consent.

During the reporting year, the CAC comprised the following members.

1)	Shri Mushtaq Antulay	Chairman
2)	Shri Suresh Deshmukh	Member
3)	Shri Hemant Takle	Member
4)	Shri Vijay Kurtadkar	Member
5)	Shri Salim Patel	Member
6)	Shri Rajeshwar Neture,	Member
7)	Dy. Secretary (Technical) Environment Department, Govt. of Maharashtra	Member
8)	Technical Advisor, (MIDC)	Member
9)	Member Secretary	Member Secretary

Recruitment committee for appointment of the officers in 'A' grade by nomination

In exercise of the powers conferred by the Board, a Recruitment Committee was constituted for appointment by nomination of the officers in 'A' Grade (in the pay scale of Rs.7450–11500 to 12000–16500). The composition of the reconstituted Committee is as under:

1)	Chairman, MPCB	Chairman
2)	Shri Suresh Deshmukh	Member
3)	Shri Hemant Takle	Member
4)	Shri Vijay Kurtadkar	Member
5)	Shri Salim Patel	Member
6)	Officer from Social Welfare Dept. or any other Govt. dept, who is not below the rank of Deputy Secretary to represent reserve category	Member
7)	Jr. Secretary/Director/Deputy Secretary Environment Dept. Govt. of Maharashtra.	Member
8)	Member Secretary	Member Convener

Recruitment committee for appointment of officers in 'B' grade and employees in 'C' and 'D' grade by nomination

The composition of the Committee is as under-

1)	Member Secretary	Chairman
2)	Shri Suresh Deshmukh	Member
3)	Shri Hemant Takle	Member
4)	Shri Vijay Kurtadkar	Member
5)	Shri Salim Patel	Member
6)	Seniormost officer of the Board from the respective branch.	Member
7)	Officer from Social Welfare Dept./ Officer from reserve category.	Member
8)	Administrative Officer	Member

Departmental promotion committee for officers/employees in 'B', 'C' & 'D' grade

The reconstituted Committee comprised the following members-

1)	Member Secretary	Chairman
2)	Seniormost officer of respective branch of the Board.	Member
3)	Officer from Social Welfare Dept./Officer representing reserve category	Member
4)	Senior officer of the Board from reserve category	Member
5)	Deputy Secretary, (Technical) Environment Dept. Govt. of Maharashtra	Member
6)	Member Secretary	Member
7)	Law Officer (HQ) of the Board	Member Convener

Committee for execution of furnishings for Boards' offices and laboratories

The composition of the Committee is as under

1)	Chairman, MPCB	Chairman
2)	Shri Suresh Deshmukh	Member
3)	Shri Hemant Takle	Member
4)	Shri Vijay Kurtadkar	Member
5)	Shri Salim Patel	Member
6)	Administrative Officer	Member Convener

Research Advisory Committee (RAC)

The Board at its 135th meeting held on 22.10.2002 decided to constitute a Research Advisory Committee (RAC) under Section 9 (1) of the Water Act, 1974, to guide and monitor the research activities of the Board. The RAC was constituted comprising the following members:

1)	Water Pollution Abatement Engineer	Chairman
2)	Air Pollution Abatement Engineer	Member
3)	(Prof. S.B.Chaphekar, Ex Head, Env.Dept., Pune University) Expert-Scientist/Engineer (Air/Water)	Member
4)	Prof.Sham Asolekar IIT, Mumbai Scientist/Engineer (BMW/HW/MSW)	Member
5)	Representative of CPCB (Dr. S. D. Makhijani, Additional Director-Lab., CPCB)	Member
6)	Principal Scientific Officer (Dr. A.R.Supate), Board	Convener

The Chairman of the Board may nominate an expert/additional member as and when required.

The terms of reference of the RAC are as follows:

1) To recommend and specify priority research and development (R & D) proposals to be undertaken by laboratories and field offices out of the cess funds of the Board.
2) To examine and approve R & D projects within the scope specified under Section 17 of the Water Act, and Section 9 of the Environment (Protection) Rules, 1986 or Section 12 of the EP Act, including budget, manpower, scope, etc. and recommend an implementation strategy.
3) To suggest, approve and/recommend specific research projects with external financial aid (e.g. CPCB, MoEF, etc.)
4) To examine and recommend sampling and analysis methods, procedures etc.
5) To examine and recommend budget provisions for the activities and development of laboratories to conduct R & D projects.
6) To propose and organize in-house training programmes for the staff of the Board.

The laboratory committee

The Board in exercise of the powers conferred under Section 9 of the Water Act, and under Section 11 of the Air Act, decided to constitute a Laboratory Committee (LC) under the chairmanship of Chairman of the Board to strengthen the Board's laboratories. The composition of the LC is as under:

1)	Chairman, MPCB	Chairman
2)	Secretary Env. Dept., Govt. of Maharashtra,	Member
3)	Principal Secretary Public Health Dept., Govt. of Maharashtra	Member
4)	Chief Executive Officer MIDC, Mumbai	Member
5)	Shri Suresh Deshmukh	Member
6)	Shri Vijay Kudtarkar	Member
7)	Shri Saleem Patel	Member
8)	Head of the Dept. (Environment) Institute of Science, Mumbai	Member
9)	Head of the Dept. of Chemical/Environment Engg. Division UDCT, Mumbai	Member
10)	Member Secretary	Member
11)	Principal Scientific Officer of the Board	Member-Convener

The terms of reference of the laboratory committee are as follows:

1) To examine proposals for new laboratories and sections within existing laboratories of the Board and to recommend them for approval of the Board
2) To examine proposals for laboratory development, manpower, instruments, equipment, etc., and recommend budget provisions for laboratory activities and laboratory development
3) To examine and approve analysis norms, sampling charges, analytical procedures, etc.
4) To review functioning of laboratories at least twice a year and recommend improvements, if any
5) To recommend proposals for specific projects undertaken by laboratories and field offices of the Board
6) To examine and approve project proposals within the scope specified under Section 17 of the Water Act, and Section 9 of the Environment (Projection) Rules, 1986 or Section 12 of the EP Act including budget manpower, scope etc and to recommend an implementation strategy.

7) To evaluate tenders (technical and financial) pertaining to laboratory development, including procurement of instruments and equipments for reasonableness, rates etc. (exceeding financial limits of the Member Secretary and/or Chairman) and recommend them for Board's approval (except for repairs to laboratory equipment and vehicles).

5. MONITORING NETWORK FOR WATER AND AIR QUALITY

Some of the major functions of the Board are to plan for the prevention, control or abatement of pollution of streams, wells and air in the state and to execute these plans. The Board is also mandated to classify the waters of the state. Certain stations have been set up to observe the level of pollution in the river waters, sea waters and in ambient air, and regular monitoring is carried out through them. As water is polluted due to discharges of industrial effluent and sewage waste from local bodies, regular sampling of sewage and solid waste is also conducted by the Board.

Air pollution is caused due to industrial emissions, vehicular exhaust and burning of solid wastes. Stations have been established to monitor the level of air pollutants present in the air. The monitoring activities are carried out by HVS and mobile vans.

To assess water quality, 38 stations have been set up under the MINARS and GEMS projects. The Board monitors water quality through these stations as per norms fixed by the CPCB. To assess air quality, 26 stations have been set up under the NAAQM project. These are manned by local educational institutions, local authorities and the Board. The monitoring in five stations (three at Chandrapur and two at Dombivali and Ambernath) is carried out by the Board only. For these projects, funds are made available from the CPCB and the WHO. The frequency of monitoring at the stations under the MINARS project is now reduced. Earlier, monitoring was carried out monthly at all the stations, but now monitoring is only conducted quarterly at 14 stations.

River waters in the state are classified on the basis of their best designated use as A-I, A-II, A-III and A-IV classes. The water monitoring is conducted as per CPCB norms. Water quality is judged through physical, chemical and biological tests conducted at the central laboratory, which is well equipped with sophisticated equipment and by the laboratories established at the regional level. The number of samples analysed in these laboratories of the Board during 2002-03 are presented below. The samples collected and analysed in 2002-03 under the MINARS and GEMS project are 285 and 60 respectively.

Monitoring stations under MINARS project
(Monitoring of Indian National Aquatic Resource Sampling)

Sr.No.	River Basin / Creek	No. of Monitoring Stations
1	Kalu river	1
2	Ulhas river	2
3	Godavari river	6
4	Patalganga river	2
5	Kundalika river	1
6	Krishna river	3
7	Bhima river	5
8	Wardha river	2
9	Tapi river	3
10	Girna river	2
11	Panchganga river	1
12	Bhatsa river	1
13	Nira river	1
14	Bassein creek	1
15	Thane creek	1
16	Mahim Creek	1
	TOTAL	**33**

Monitoring stations under GEMS
(Global Environmental Monitoring System) project

Sr.No.	River Basin	No. of Monitoring Stations
1	Wainganga river	1
2	Godavari river	1
3	Bhima river	1
4	Krishna river	2
	TOTAL	**5**

Monitoring of industrial pollution

Industries are monitored frequently to know the status of pollution control in industries. Norms have been fixed for inspections and sample collection. The inspection of industries include checking compliance of consent conditions, collection of untreated/treated samples, law evidence samples, hazardous waste samples for analysis and to observe the concentration of pollutants in the sample. Stack emissions are also monitored. It is also checked whether the industry has installed adequate treatment plant or not and whether the plant is in operation or not. The arrangement for reuse, recycle of treated effluent/waste is also checked. The industries covered under cess are also monitored for water consumption in industries.

The number of industries monitored and the collection of samples is presented in the following table:

Sr. No.	Region	No of visits for grant of Consent Renewal to Industries	No of visits for checking Compliance Conditions	No of Trade Effluent Samples (JVS)		No of Law Evidence Samples		No of Hazardous Waste Samples
				Un-Treated	Treated	Un-Treated	Treated	
1	Mumbai	279	1049	30	1027	-	1	174
2	Navi Mumbai	725	1437	56	1355	-	-	350
3	Kalyan	352	1188	25	893	1	7	296
4	Raigad	327	1501	22	1119	1	6	332
5	Thane	456	1274	22	1239	33	3	99
6	Pune	1042	2378	274	1857	1	8	296
7	Kolhapur	494	1060	315	818	5	15	33
8	Nagpur	679	942	651	716	28	1	378
9	Amravati	384	418	37	298	-	-	25
10	Aurangabad	451	811	259	967	-	9	42
11	Nashik	728	1240	350	1210	-	-	93
	TOTAL	**5920**	**13289**	**2041**	**11499**	**39**	**50**	**2118**

Note :- Joint Vigilance Samples

The Board on its own has taken various steps to monitor water quality and air quality. Besides the projects funded by the CPCB and the WHO, the Board has monitored water quality of rivers, wells, lakes, sea and creek through 197 stations and ambient air quality through 84 stations covering industrial, residential commercial and sensitive zones in the state. In respect of noise pollution, noise levels were recorded in festivals in some of the regions. Noise levels were monitored at 48 locations.

The number of locations monitored for water quality, ambient air quality and noise levels are shown below:

Water quality monitoring stations

Region	River	Sea / Creek	Ground Water	Lake / Surface
Thane	1	17	22	6
Kalyan	4	-	-	-
Pune	16	-	9	1
Nashik	23	-	-	2
Kolhapur	7	1	3	-
Amravati	18	-	-	-
Mumbai	-	12	-	1
Navi Mumbai	1	1	-	-
Raigad	16	4	-	-
Nagpur	16	-	-	-
Aurangabad	16	-	-	-
TOTAL	**118**	**35**	**34**	**10**

In Mumbai city, the ambient air quality is monitored by the Board at two locations i.e., at Sion and Mulund, which are traffic junctions. The other nine stations are monitored by the

Monitoring of ambient air quality and noise levels

Region	No. of Stations monitored for Ambient Air Quality.	No. of Stations monitored for Noise Levels.
Amravati	6	-
Mumbai	6	6
Navi Mumbai	4	-
Raigad	15	-
Nagpur	6	6
Thane	3	-
Kalyan	6	7
Pune	10	29
Nashik	13	-
Kolhapur	6	-
Aurangabad	9	-
TOTAL	**84**	**48**

Municipal Corporation of Greater Mumbai. The parameters monitored at these stations are SO_2, NOx, SPM, RSPM and CO.

Source monitoring

In order to assess industrial emissions, stack monitoring is carried out. The samples collected are analysed in the laboratories of the Board. The stack samples are analysed mainly to determine air pollutants like SO_2, fluoride, ammonia, chloride, sulphides NOx, metals and particulate matters, etc. These parameters are generally stated in consent order issued by the Board under the Air Act. Large and medium industries are instructed to measure and submit stack analysis reports regularly to the Board. Their reports also help the Board to examine the fuel pattern adopted by the industries. The number of samples analysed in laboratories of the Board are given in the following table:

Sr. No.	Laboratory Name	Ambient Air Samples	Stack Samples
1	Central Lab (Air)	385	6
2	Chiplun	88	40
3	Pune	221	145
4	Thane	247	285
5	Nashik	269	27
6	Aurangabad	632	111
7	Nagpur	706	172
	TOTAL	**2548**	**1411**

National ambient air quality monitoring (NAAQM)

The CPCB has sponsored this project to assess ambient air quality throughout India. In every state, certain stations have been erected. In Maharashtra, there are 26 monitoring stations sanctioned by the CPCB. These stations are regularly manned by various agencies including educational/research institutions, local bodies, and regulatory bodies. In Mumbai, the National Environmental Engineering Research Institute (NEERI) mans three stations. In Pune, Nagpur, Nashik, Solapur and Aurangabad, monitoring work is allotted to university departments and local educational institutes. The stations in Dombivali, Ambernath and Chandrapur are managed by the Board whereas Thane Municipal Corporation mans two monitoring stations in Thane.

Sr. No.	Name of the City	No. of Stations	Operating Agency
1	Aurangabad	3	Marathwada University, Aurangabad
2	Nagpur	3	Vishweshwaraya College of Engineering, Nagpur
3	Pune	5	Pune University, Pune
4	Nashik	3	K.T.H.M. College, Nashik
5	Chandrapur	3	Board
6	Solapur	2	Walchand Institute of Technology Solapur
7	Thane	2	Thane Municipal Corporation
8	Mumbai	3	NEERI
9	Dombivali, Ambarnath Area	2	Board
	TOTAL	**26**	

6. Present status of environment, problems and control measures

Management of municipal solid waste

Due to rapid urbanization, the cities in the state are facing various problems of pollution like water pollution, air pollution, noise pollution, disposal of municipal solid wastes (hereinafter, MSW), bio-medical wastes (BMW), etc. As provided under the Water Act, EP Act and the Rules made thereunder, action is being taken to control such pollution. In Maharashtra State, there are 19 municipal corporations, 224 municipal councils and seven cantonment boards. The total population living in municipal corporations is 3,96,94,215 and the total population living in municipal councils is 1,26,76,226.

Except Navi Mumbai Municipal Corporation, no other municipal corporation has adequate treatment facility to treat domestic effluent. There are nine corporations discharging their domestic effluent into rivers, whereas five corporations discharge their domestic effluent into creeks and the remaining corporations discharge their waste water into nearby nallas and on open land. The percentage of effluent generated is 63% of the total water consumed by these corporations. The effluent generated from these 19 corporations is 46,04,380 M^3/d.

As far as disposal of MSW is concerned, eight corporations have adopted composting methods for garbage but this is not adequate. The other corporations do not have any treatment or disposal facility for MSW. In most of the corporations, MSW is utilized for land filling. Every day about 12,343 MT of MSW is generated from these corporations.

Out of 224 municipal councils, no municipal council is having adequate treatment and disposal facility for domestic wastewater. The situation of MSW is more or less the same in these councils. Out of 231 local bodies, including cantonment boards, only 56 have partial treatment arrangements for domestic effluent while 175 local bodies do not have such facilities. The total effluent generated from these local bodies is 7,89,027 M^3/d. The number of local bodies having no facilities for treatment and disposal of MSW is 198. Only 33 local bodies have partial treatment and disposal arrangements for MSW. The rate of MSW generated from these councils is approximately 5609 MT/d.

Under the Municipal Solid Wastes (Management & Handling) Rules, 2000 (MSW Rules) authorizations were issued to 24 local bodies/agencies. Under section 33A of the Water Act, proposed directions were issued to 204 local bodies including municipal corporations and

councils. Prosecutions have been launched against seven municipal bodies. The cases are pending in the court of law. The status in respect of sewage and MSW of municipal corporations and municipal councils is shown in the following two tables:

Municipal corporations

Sr. No.	Region	No. of Corpo-rations	Total Population	Qty. of Water Consumption M3/D	Qty. of Effluent Generated M3/D	Qty. of Solid Waste Generated MT/D	No. of Corporations having partial treatment & disposal arrangements for	
							Sewage Waste	Solid Waste
1	Aurangabad	2	1,356,156	148,500	107,800	160	1	1
2	Nagpur	1	2,600,000	370,000	300,000	800	1	-
3	Amravati	2	950,000	107,000	76,600	383	1	-
4	Thane	3	13,619,003	361,600	243,000	1,367	2	1
5	Kalyan	2	1,672,943	338,000	270,400	810	2	1
6	Mumbai	1	11,914,398	4,510,000	2,568,000	6,408	1	1
7	Kolhapur	2	920,740	159,000	105,000	320	2	2
8	Nashik	2	1,096,000	139,475	111,580	375	1	-
9	Pune	3	4,814,975	970,000	686,000	1,320	3	2
10	Navi Mumbai	1	750,000	170,000	136,000	400	1	1
	TOTAL	**19**	**39,694,215**	**7,273,575**	**4,604,380**	**12,343**	**15**	**8**

Municipal councils (including cantonment boards)

Sr. No.	Region	No. of Local Bodies	Total Population	Water Consumption M3/D	Effluent Generated M3/D	Qty. of Solid Waste Generated MT/D	No. of Corporations having partial treatment & disposal arrangements for	
							Sewage Waste	Solid Waste
1	Aurangabad	52	3,260,443	96,306	73,785	2767	1	-
2	Nagpur	30	1,601,344	126,023,80	98,360	505	23	3
3	Amravati	38	1,468,623	12,998,50	84,234,00	839	10	21
4	Thane	7	1,145,739	51,750	34,250	266	-	-
5	Kalyan	2	297,000	48,000	16,000	118	2	-
6	Mumbai	10	284,744	55,405	49,982	74	-	1
7	Kolhapur	20	768,687	402,050	76,527	194	11	6
8	Nashik	40	2,377,637	220,635	161,955	593	2	2
9	Pune	31	1,454,234	215,910	188,834	238	7	-
10	Navi Mumbai	1	17,775	3,100	2,100	15	-	-
	TOTAL	**231**	**12,676,226**	**1,232,178**	**789,027**	**5,609**	**56**	**33**

River water quality

Due to maximum abstraction of the river waters for various purposes like bathing, navigation, fishing, irrigation, etc. the flow in the rivers has become inadequate even in the monsoon season. Soil erosion, municipal sewage discharges and illegal dumping of MSW along river banks are the main sources of river water pollution.

It is one of the functions of the Board to maintain and improve the water quality of all water sources in the state. In Maharashtra, 19 river basins have already been declared as 'Water Pollution Prevention Areas.' For efficient and sustainable water quality management, the Board is regularly pursuing industries as well as local bodies to treat their effluent before discharging them into rivers. The Godavari and Krishna rivers have been identified for clean up under the National River Action Plan. A policy to keep a safe distance between the industry and the rivers in order to avoid probable discharge of industrial effluent into their waters is being implemented since the year 2000. The river waters are classified according to the best designated use of water. The river waters from source to the first storage dam, for example, are classified as A-I class of water, where water is to be kept in its purest state.

The river water quality depends on the extent of pollution as well as river flow. The rivers in the state are mainly monsoon fed. There is extremely low flow in the river after the monsoon. A dilution capacity ten times over is required to dilute the effect of pollutants but is not available even after the monsoon commences. The domestic wastewater from the cities, towns and villages, located on the banks of rivers is finding its way into the rivers without treatment/ sufficient treatment. The water quality near Nashik, Bhusawal, Pune, Pimpri Chinchwad, Sangli, Karad, Kolhapur, and Ichalkaranji is therefore not good during low river flow period. The parameters such as BOD and coliform indicate pollution due to domestic waste.

The water quality observed under the MINARS and GEMS in the reporting year was more or less within the standards. The stations at Bund Garden and Withalwadi on the Bhima river, Ramkund, Gangapur dam and Nanded on Godavari river showed degraded water quality.

The results of river water quality observed through monitoring stations manned by the Board reveal that the deterioration of water is mainly caused due to organic pollution at certain stations mentioned in the following table:

Sr. No.	River	Monitoring Station	B.O.D. (mg/l)			C.O.D. (mg/l)			D.O. (mg/l)		
			Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	Nag	a) Asoli bridge b) Bhandewadi	52 80	145 130	98 105	170 200	231 340	200 270	0.7 -	4.7 -	2.7 -
2.	Mula-Mutha	D/s Theur	9	130	56	24	284	119	2.8	6.3	4.6
3.	Pawana	a) Pimprigaon b) Kasar wadi	8.9 14	110 105	41 61	20 40	260 320	103 154	- -	- -	3.7 2
4	Mula	Sangvi	6	118	47	20	308	125	-	-	2.1
5	PawanaMula	Dapodi	7.6	95	44	20	288	125	-	-	2.7
6	Pedhi	Bhatkuli	2.7	18	8.8	-	-	-	-	-	3.6
7	Patalganga	Kharpade	4	19	12	14	86	44	2.9	6.5	4.2
8	Balganga	Highway bridge	7	18	12	24	104	57	2.1	6	4.1
9	Kundlika	Areye Khurd	3	800	113	16	7643	249	-	-	3.6
10	Sukna	Chikalthana	14	210	134	49	604	392	6.4	6.9	6.6
11	Godavari	Nanded	7	64	50	21	221	65	3.6	8	5.6

Godavari river

Godavari, the biggest river in Maharashtra, originating at Nashik, flows also through Aurangabad and Nanded districts. Due to discharge of effluents from paper mills, sugar factories, distilleries, chemical industries and pharmaceuticals industries established along the riverside and from local bodies, the river water is polluted.

Efforts are being taken by most of the industries to control and minimize water pollution by way of recycling, reuse of wastewater, etc. However, there is poor response from local bodies for providing treatment and disposal facilities for domestic effluent. Maharashtra Jeevan Pradhikaran has undertaken the Godavari River Clean Up Action Plan at Nashik, Nanded and Paithan. Improving sanitation, diverting sewage and construction of sewage treatment plants (STPs) are in progress at these places.

The water quality has been judged from the stations established under the MINARS and GEMS projects and the stations established by the Board during 2002-03.

The stations at Ramkund and Gangapur dam in Nashik are supposed to have A-I class of water. However from the results it is observed that, though DO levels are within limits, BOD and COD levels are very high and are exceeding limits. At almost all stations, BOD levels have exceeded limits and are found to be very high at Shahagad, U/s Nanded, D/s Nanded and Someshwar. The stations at Anadvali, Chikali Nalla also show high concentrations of COD. In short, the river is polluted due to chemical contamination. The DO levels are observed to be quite satisfactory at U/s Paithan and Shahagad in Aurangabad Region.

GODAVARI RIVER: MONITORING POINTS (ANALYTICAL DATA)

Sr. No.	Sampling Station	PH			Values of Parameters (in mg/l)									Total coliform Mpn/100ml		
					C.O.D.			B.O.D.			D.O.					
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	U/s Gangapur Dam	7	8.5	7.8	16	32	20.4	4	9	5.9	5.3	7	6.3	170	350	218
2	Ramkunda	7.2	8	7.5	16	56	25.2	3	35	8.6	3.2	7.5	5.5	120	350	201
3	D/s of Nashik	7	8	7.5	20	52	29.6	2	36	8.5	3.5	7	5.6	110	350	220
4	Dhalegaon	7.3	8.8	8	16	88	25.1	3	56	10	0.7	7.2	5.9	120	350	199
5	Dhangar takli (Nanded)	7.3	8.8	8.1	16	96	34	2.8	78	13	4.4	7.7	6.2	95	275	172
6	Raher	7	8.8	8	5.6	64	23.3	3	27	7.1	3.1	7.2	5.9	120	225	180
7	Kaigaon Toka	5	8	7.3	25	3040	382	8	120	28	3.2	7.2	5.4	-	-	-
8	Jaikwadi Dam	7.3	8.7	7.6	16	56	24.4	3	20	7.2	4.6	7	5.6	170	350	222
9	U/s Godavari river at Paithan	7.1	8.3	7.5	8	42.4	24.9	3.5	13	8.2	4.6	86	19	-	-	-
10	D/s of Paithan	7.2	8.5	7.8	6	32	18.6	3	33	11	4.8	7.2	6.2	-	-	-
11	Wadwali Village	7.3	8.9	7.9	8	34	22.5	4	12.5	8.1	5.4	7.1	6.2	-	-	-
12	Shahagad	7	8.6	7.7	2	92	42.2	5	29	12	5.3	5.8	-	-	-	

KRISHNA RIVER AND PANCHGANGA RIVER: MONITORING POINTS (ANALYTICAL DATA) (2002-03)

Sr. No.	Sampling Station	PH			Values of Parameters (in mg/l)									Total coliform Mpn/100ml		
					C.O.D.			B.O.D.			D.O.					
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	Krishna Sangam Karad, Dist. Satara (Krishna River)	7.1	8.5	7.8	16	32	23.5	4	8.5	6	4.2	7.2	6.3	70	170	128
2	Dhom Dam, Satara (Krishna River)	7	8.1	7.4	16	32	11.2	3	9	5.4	5	7.2	6.1	70	350	189
3	Maighat Sangli (Krishna River)	7	8.6	7.8	20	32	26.6	4	9	6.3	4.3	1.2	6	95	350	183
4	Rajapur (Krishna River)	7	8.5	7.7	16	28	20.4	2.8	8	5.2	5.4	7	6.4	110	225	183
5	Kurundwad (Krishna River)	7	8.4	7.7	16	170	37.5	3	9	5.6	5.3	7	6.4	16	350	224
6	At Ichalkaranji (Panchganga River)	6.9	7.7	7.2	24	30.6	23.3	7.8	10	8.6	3.2	6.2	4.7	250	350	292
7	At Shirolk K.T. (Panchganga River)	7	7.8	7.4	16	27	382	5	15	7.2	1.4	7.1	5.7	-	-	-
8	Mauli	7.7	7.8	7.7	20	30	24.4	7	15	11	5.6	6.3	5.9	-	-	-
9	Krishna-Vena Confluence	7.5	7.8	7.7	20	26	24.9	7.2	12	9.1	6.2	6.8	6.5	-	-	-

Krishna river

The major source of pollution is discharge from local bodies. Implementation of action plan is in progress. Ministry of Environment and Forests (MoEF) recently sanctioned Rs.3.87 crores for Karad city for a drainage system and sewage treatment and disposal arrangement. Wai town is also covered under this plan. The Common Effluent Treatment Plant (CETP) at MIDC Kupwad and Miraj is under progress. Under NRAP, sewage treatment and disposal facilities for Sangli city with total control over the discharge of Sheri Nalla is being developed.

The water quality of Krishna river was judged from nine stations including three MINARS and two GEMS stations. It is observed from the results that the stations monitored under MINARS and GEMS have satisfactory water quality level. However, the stations monitored by the Board on its own program have shown degraded water quality. The rise in BOD concentration at Mahuli in Satara, at Krishna-Vena confluence and U/s and D/s of Maighat in Sangli is an indication of organic pollution. Higher concentration of COD at Kurundwad, Sangli and Krishna-Vena confluence also supports the fact that chemical contamination is the source of river water pollution.

Status of rivers flowing through coastal region

Patalganga river

a. In the A-II zone of Patalganga river, industries are prohibited from discharging their treated effluent into the river. However, Khopoli municipal council which is located in the A-II zone is a major source of river water pollution since it discharges domestic effluent to the tune of 11 MLD (max.) into the river without any treatment. Similarly, the fish development pond at Khopoli also discharges untreated effluent into the river. Beside this, the accidental discharge of effluent into the Patalganga river by industries located in the A-II class zone can also be a source of river water pollution.
b. In the saline water zone, the treated industrial effluents generated from the industries located in MIDC Patalganga and Rasayani are discharged at one point, near Kharpada bridge. Since the pollutant does not get dispersed properly at this point, the pollution of river water occurs to some extent.
c. M/s. Tata Power Company releases tail race water into the Patalganga river, which varies from day to day. Whenever discharge of such water drops, it causes enrichment of pollutants in the river. The gravity channels through which the water from various dams at Lonavala pass are not cleaned periodically, resulting in the turbid nature of water.
d. Unauthorized disposal of hazardous waste on the bank of river is also a source of river water pollution.

e. Frequent accidents of tankers carrying chemical/oil, etc., at Bhorghat, upstream of Khopoli, may also cause river water pollution.

The river flows through the chemical industrial belt of the state. The water quality of the river has been monitored through six stations. Of these, two stations are under the MINARS project and four are under the Board's programme. It is observed that, except at Kharpade (the saline zone of river), the other stations were showing satisfactory water quality levels.

Kundalika river

Treated industrial effluent of Roha MIDC is discharged into the saline zone of the river at Aray-Khurd village. However, MSW is discharged into the river through open gutters. Accidental effluent discharge also occurs sometimes.

The river shows slight rise in the BOD concentrations. This may be due to discharge of effluent from MIDC Dhatav, and this is the main cause of river water pollution, since COD concentrations are very high at these stations.

Savitri river

a. Mahad MIDC is set up on the banks of the river, the effluent of which is discharged into the saline zone of the river through a pipeline. Sometimes, however, episodes of accidental discharge together with the sewage of Mahad city also enters the saline zone of the river through open gutters, causing pollution.

Measures taken to improve water quality of the river and minimize water pollution

a. Industries are not permitted to discharge treated effluents in the A-II class zone of Patalganga river. Instead, they have been asked to utilize treated effluents on land for gardening, irrigation and for recycling in process/operation. A vigil is maintained for the compliance of these instructions.
b. Khopoli Municipal Council has been asked to speed up the work of its sewage treatment plant (STP). The Board has already prosecuted Khopoli Municipal Council for non-provision of an STP. This matter has now been discussed at the level of the state ministry.
c. The CETP at Patalganga has been constructed and will be commissioned by the first week of June 2003. This will facilitate improvement of the quality of the effluent discharged.
d. The Board has already issued directions to MIDC, HOC and HIL to extend the length of the pipeline so as to have proper dispersion of pollutants in the river water.

e. The municipal authority has been requested to take suitable action against those who wash their vehicles in the riverbeds.

Air quality status

Due to urbanization, industrialization and ever increasing vehicular population, the problem of air pollution has increased in most cities. Chemical, fertilizer, and pesticide industries cause air pollution due to process emissions and burning of fuel in boilers. Other sources of air pollution include thermal power plants, sugar industries using bagasse as fuel, steel industries and rolling mills using coal, LDO and FO as fuel. Dust emissions from stone crushing activities, as well as from coal mines and operation of DG sets also add to air pollution. Ambient air quality standards have been notified by the MoEF to safeguard the public from the most common and damaging of pollutants, like sulphur-dioxide, nitrogen oxide, carbon monoxide, lead, suspended particulate matter and ground level ozone.

Nowadays, major air pollution is due to vehicles only, which emit pollutants like CO and CO_2.

In Mumbai city, industrial, commercial and traffic junctions are monitored for air pollution levels. The air quality monitoring is conducted by the Board, NEERI, certain companies and by Mumbai Municipal Corporation. The data is collected from 26 different stations established in the city. It is found that at Jawahar Nagar and Vashi Naka in Chembur, and at Sion traffic junction, the pollution levels were very high, indicating worst air quality. However, other stations monitored by NEERI, M/s RCF, M/s BPCL and M/s IPCL show good air quality. Comparative results of ambient air quality monitored at Sion and Mulund for the last three years reveal that the levels of SO_2 and NOx are drastically reduced but the PM10 levels exceeded the limits as in the past years. The concentration of CO was slightly reduced, but nevertheless exceeded the limits. At Mulund, it was within limits during 2001-02.

Mumbai Municipal Corporation has monitored the ambient air quality at nine locations. At all locations, SO_2 levels were found within limits. However NOx levels exceeded the limits at Khar, Maravali, Mahim, Andheri and Wadala. The RSPM levels also far exceeded the limits at Mahim, Andheri and Wadala, whereas SPM levels were found within limits at Worli and Borivali. In brief, the air quality was extremely poor at Khar, Andheri, Maravali and Wadala during 2002-03.

In Navi Mumbai, ambient air quality was monitored from five stations, one of which was manned by the Uran Thermal Power Station. The observations indicate that, except at Turbhe, the air quality was good at other locations. The pollution level at Turbhe indicated worst air quality.

In Raigad, Thane and Kalyan regions, the ambient air quality was found well within limits at all monitored stations, covering industrial, commercial and residential zones. This was determined by air quality observed at monitoring stations. For Pune region, ambient air quality was judged from 13 stations, out of which five stations are operated under the NAAQM project. The cities covered under this monitoring project were Pune, Solapur, Satara and Pimpri-Chinchwad. At Wakdewadi and Fursungi overbridge (the commercial locations in Pune), the pollution level indicated the degraded air quality. The stations under NAAQM operated by the University of Pune for the past three years showed that all parameters are within limits at Bhosari, but at Nalstop and Swargate much variation in NOx and SPM levels was observed and the levels exceeded the limits. In Solapur city, the levels of pollutants observed from 1997 to 2003 indicate that there is not much change in SO_2 and NOx levels but the SPM levels have doubled during last three years.

The ambient air quality in Kolhapur and Nashik region was found to be within the standards. The stations monitored under NAAQM project and the stations monitored by the thermal power stations showed good air quality. The air quality in Aurangabad region was monitored through the stations established by the Board and the thermal power station. Maximum air quality deterioration was observed in Aurangabad city at the stations monitored by the Board. However, the air quality in and around the thermal power station at Parli was found to be satisfactory. The ambient air quality in Nagpur region was monitored through the stations established by the Board and the thermal power stations at Chandrapur and Khaparkheda. There are also three stations sanctioned under the NAAQM project in Chandrapur, which are monitored by the Board. The results obtained show that the problem of air pollution is under control and the overall air quality is good. However, Amravati, the region adjacent to Nagpur, shows deterioration in air quality at selected residential and commercial locations.

Monitoring stations where pollution levels were high during 2002-03

Sr. No.	Region	Monitoring Station	SPM (ug/cu.m)	RSPM (ug/cu.m)
1	Mumbai	a) Jawaharnagar Chembur	-	142
		b) Vashinaka Chembur	-	251
		c) Sion-Traffic Junction	-	198
		d) Khar	272.9	-
		e) Maravali	428.6	-
		f) Mahim	-	228
		g) Andheri	-	307.1
		h) Wadala	-	206.4
2	Navi Mumbai	Turbhe	260.5	-
3	Pune	a) Jog-Bldg. Wakdewadi	445.3	-
		b) Fursungi bridge	304.8	-
		c) Nal Stop, Pune	370.8	-
		d) Swargate	331.1	-
		e) Ashok Chowk, Solapur	407.6	-
		f) Saat Rasta, Solapur	411	-
4	Aurangabad	a) Baba petrol pump	-	458
		b) Lokmat Nagar	-	284
		c) Samarth Nagar	-	170
		d) Gulmandi	-	569
		e) Kranti Chowk	-	602
		f) MIDC Waluj	490	340
5	Amravati	a) Regional Office Bldg.	313	-
		b) Kotwali Police Station	721	-

NAAQM (2002-03)

Under this project, the analytical data has been collected from the institutions operating the stations in their respective areas. Ambient air quality data has been compiled for 16 stations during the year. This covers six major areas: Thane, Mumbai, Pune, Nashik, Solapur, Nagpur and Chandrapur. The ambient air quality observed through the stations monitored under this project in the reporting year and in the previous year is given in the following table:

- As compared to the year 2001-02 there has been reduction in concentration of SO_2 in Thane, Nagpur and commercial locations in Nashik during the year 2002-03.
- NOx levels are found to be reduced in Nagpur and Pune during the year 2002-03 as compared to 2001-02.
- Except Thane, Pune and one commercial location in Nagpur, there has been reduction in SPM levels during the year 2002-03 as compared to 2001-02.

AMBIENT AIR QUALITY STATUS UNDER NAAQM PROJECT FOR THE YEAR 2002-03

				SO_2			NOx			SPM	
Sr. No.	**Region**	**Class**	**2001-2002**	**2002-2003**	**% Increase or Decrease**	**2001-2002**	**2002-2003**	**% Increase or Decrease**	**2001-2002**	**2002-2003**	**% Increase or Decrease**
		R	19.2	12.6	-34.38	16.7	16.6	-0.60	51.9*	-	-
1	**Thane**	C	20.9	14.4	-31.10	18.6	18.6	0.00	53.4*	-	-
		I	22.4	19	-15.18	17.4	24.5	40.80	116.3	149.4	28.46
2		I	21.6	27	25.00	17.7	22.1	24.86	169.1	138.5	-18.10
	Nashik	R	16.7	47.2	182.63	13.8	18	30.43	127.1	125.2	-1.49
		C	29.8	28.8	-3.36	21.8	23.6	8.26	173.9	167	-3.97
		R	11.1	10.2	-8.11	20.6	18.7	-9.22	286.6	249.8	-12.84
3	**Nagpur**	I	9.5	9.3	-2.11	16.8	16.7	-0.60	264.8	261.6	-1.21
		C	10.1	9.4	-6.93	17.1	16.6	-2.92	243.5	258.7	6.24
		I	19.5	20	2.56	46.4	46.9	1.08	407.8	407.6	-0.05
4	**Solapur**	R	19.7	19.7	0.00	46.8	46.5	-0.64	420.4	411	-2.24
		C	9.63	7.3	-24.20	17.51	15.5	-11.48	230.24	183.7	-20.21
5	**Mumbai**	C	11.3	9.1	-19.47	22.61	16.2	-28.35	208.64	206.3	-1.12
		C	13.2	7.2	-45.45	19.81	14.3	-27.81	230.21	197.7	-14.12
		C	45.27	49.53	9.41	94.8	67.99	-28.28	276	331.16	19.99
6	**Pune**	R	44.36	52.32	17.94	101.7	70.63	-30.55	273.7	370.77	35.47
		I	36.5	37.83	3.64	48.4	46.34	-4.26	61	81.94	34.33

" * " : Values with Parameter RSPM
" - " : Indicates reduction into concentration of pollutant
All parameters are in ug/m^3

Steps taken to minimise air pollution

- All major air polluting industries have air pollution control equipment to limit the emissions from various sources.
- Most of the industries have taken steps to provide air pollution control systems to minimize air pollution, except stone crushers. Action is being taken against these.
- Tree plantation is done at various industrial units and proposed to be done on large scale.
- Maximum industries have provided stacks to their fuel burning equipment. Scrubbers are provided to control process emissions. Some of the steel industries have air pollution control equipment.
- M.S. hoods with M.S. chimney have been adopted by lime kilns. Coal mines have undertaken tree plantation and provided water sprinkling systems.
- Most of the taxies have converted to CNG fuel use. Unleaded petrol and diesel are made available at all petrol pumps. There are some industries using CNG for boilers.
- There is improvement in quality of fuel i.e. reduction of sulphur content, use of alternative fuels, improvement in the design and standards of new vehicles and enforcement of standards at tail pipe emissions.
- Notices are being served on defaulting units.

Sea water quality

Maharashtra State has a coastline admeasuring 720 kms, spread along its western part.

Industrial effluent, domestic effluent, oil spillage and sinking of ships at times are the main sources of sea water pollution. Sewage coming from municipal corporations' outlets and treated effluent from CETPs in Navi Mumbai also add to it. There are some tidal inlets like Thane creek, Backbay, Bassein creek, Versova creek, Mahim creek and Ulhas creek through which certain pollutants also enter into the seawater.

Marine outfall work has been undertaken by MCGM to improve seawater quality.

Under the MINARS project and the Board's programme, sea water quality is regularly checked. Septic tanks are provided by most of the industries for discharge of domestic effluent. Sewer system is provided by MCGM.

The nalla meeting the Ulhas river at Century Rayon is being diverted to D/s of NRC bund. A case has been filed against the Ulhasnagar Municipal Corporation for not providing adequate STP facilities. Prosecution proposals against municipal bodies causing pollution are under consideration of the Board.

To avoid accidental discharge from the pipeline carrying effluent from MIDC Lote to the creek, HDPE pipeline has been installed. Discharge of effluent from MIDC Kherdi is totally banned by the Board.

The coastal water quality observed during the year 2002-03 is given in following table:

No	Sampling Station	pH			BOD (mg/l)			COD (mg/l)			DO (mg/l)			S.S. (mg/l)		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	Mahim Creek	6.8	7.1	-	28	60	38.6	144	376	38.6	-	-	-	28	60	39
2	Elephanta Caves	7	7.8	-	32	36	34	204	364	284	-	-	-	32	36	34
3	Madh Beach	7.3	7.8	7.5	9.4	46	25	136	372	230	2.2	5.7	3.2	9.4	46	25
4	Manori Beach	7.4	7.9	7.61	9.6	40	26	168	304	244	2.2	5.1	3.4	9.6	40	26
5	Worli Sea Face	67	7.7	-	8.5	29	13.5	96	680	235	-	-	-	8.5	29	13
6	Near Gate-way of India	6.6	7.8	-	10	39	16.2	120	448	200	-	-	-	10	39	16
7	Near Nariman Point	6.7	7.8	-	10	29	14.4	80	352	217	-	-	-	10	29	14
8	Dadar Chowpaty	6.7	7.7	-	9	50	23.5	80	792	259	-	-	-	9	50	23
9	Near Malabar Hill	5.6	7.8	-	28	975	224	164	1728	505	-	-	-	28	975	224
10	Near Haji Ali Bridge	6.8	7.7	-	16	41	28	180	432	282	-	-	-	16	41	28
11	Vashi Bridge (Thane Creek)	6.4	8	7.33	18	50	33.3	112	292	220	1.3	6.1	2.7	18	50	33

Industrial pollution status

Maharashtra State ranks top in industrialization in India. The cause of rapid industrialization is Mumbai, the capital city of business and an international market, having all infrastructure.

Industrial estates have been developed by the Maharashtra Industrial Development Corporation and by the co-operative sectors. According to the Directorate of Industries, there are 3671 large and medium industries, and about 1,70,000 small scale industries in the state. The Board has classified the industries, on the basis of pollution levels, as red, orange and green. The industries under these categories, as on March 2003, number 49,927. The quantity of total effluent generated from these industries is 28 lakhs M^3/D, out of which 90% is being treated. Around 9841 industries are responsible for air pollution and 4393 industries are generating hazardous wastes. Under the Hazardous Waste (Management & Handling) Rules, 1999 (HW Rules), authorization letters were issued to 3489 industries of which 1416 industries have adequate treatment and disposal facilities for hazardous wastes.

Under the Central Action Plan prepared for major polluting industries, the Board has identified 738 industries responsible for pollution, under 18 categories. According to the plan, these are regularly monitored for observing status of pollution. 647 industries are now complying with the standards. Legal action has been initiated against nine industries which are not complying with the standards. 82 industries are presently closed.

Most of the large and medium scale industries have taken up necessary measures to control pollution by various means like adopting cleaner technologies, reuse or recycle of hazardous wastes. Due to space and money constraints etc., small scale industries find it very difficult to have individual treatment and disposal facilities for their hazardous waste. A single small scale unit may not have much pollution load, but a cluster of such units may have considerable pollution load. To tackle this problem, CETPs have been installed in some industrial clusters in the state. Major chemical industrial areas have been covered under this scheme. To promote such schemes a comfortable financial structure has been adopted, which includes subsidies from the Central Government as well as State Government and soft loans from financial institutions like IDBI, ICICI, etc. As on March 2003, there were six CETPs covering 3400 units with effluent quantity of 25000 M^3/D in operation. At seven other places, CETPs are at development stage and at three places, e.g., Thane, Belapur (additional), Tarapur (additional), and MIDC Sangli (Krishna valley), CETPs are proposed. New CETPs are also established in Kurkumbh and Ambernath (additional) by MIDC.

Implementation of Bio-Medical Waste (Management & Handling) Rules 1998 (BMW Rules)

The MoEF has notified the BMW Rules through a notification dated 20 July, 1998. The Member Secretary of the SPCB is the prescribed authority for the purpose of implementation of these Rules.

As provided under sub rule 7 of the amended BMW Rules, 2000 notified by MoEF on 2.6.2000, the Board is fully empowered to implement these Rules in Maharashtra State.

While noting the salient features of the Rules, the Board had observed that in the event the Board is required to implement the provisions of these Rules, it would require additional manpower and other infrastructural facilities, since a very large number of hospitals, nursing homes, clinics, pathological laboratories, veterinary hospitals, animal houses, blood banks are covered. The Board has to carry out numerous functions including grant of authorization to a large number of generators of BMW. The Board will also have to monitor the compliance of conditions of authorization, besides carrying out its duties, such as scrutiny of annual reports and records to be maintained by the occupier and follow-up on accident reporting.

As per schedule 5 of the Rules notified on 6 March 2000, hospitals having a bed strength of 50 and above, and all such commercial institutions in the state were required to obtain

authorization from the Board before 31 December 2001. For effective and speedy implementation of the Rules, the Board has taken various steps as follows:

1) Advertisements regarding hospitals/medical institutions having to obtain authorization from the Board were published through media, newspapers, etc.
2) Instead of charging fees for three years, authorization is being granted for one year only.
3) Powers have been delegated to regional officers to grant authorization to hospitals having a bed strength below 50
4) The Indian Medical Association in the state has been instructed to inform the hospitals working in their jurisdiction to obtain authorization from the Board.
5) Municipal Commissioners, chief officers of municipal councils were informed to instruct all health units within their jurisdiction to obtain authorization under the BMW Rules.
6) Officers of the Public Health Department were also informed about the authorization under BMW Rules.
7) As provided under rule 14 of the BMW (amended) Rules 2000, every municipal authority/ body is required to provide a place for treatment and disposal of BMW. The Board is doing continuous follow up with the local bodies in this regard.
8) Regional officers have been authorized to grant permission for land filling of BMW in towns having population of less than 5 lakh.
9) Workshops and seminars were conducted to make the people concerned aware of this issue and to have safe disposal of such waste.

As on March 2003, the Board received 1142 applications and authorizations were granted to 775 units.

Implementation of Hazardous Waste (Management & Handling) Rules 1989 (HW Rules)

The HW Rules put responsibility on the SPCBs to decide on grant of authorization for activities such as collection, treatment, storage and disposal of a unit's hazardous waste. To facilitate identification of units for the purpose of granting of authorization, the Board has carried out inventorisation of hazardous wastes which have been categorized into 18 categories mentioned in the Schedule to the Rules. As per the inventorisation, there are 3953 units generating a total of around 2 million tonnes of hazardous wastes per annum.

The Board has granted authorizations to units and specified appropriate conditions for storage, treatment and disposal.

The important provision in the Rules is relating to 'Inventory of Disposal Sites'. The State Government or a person authorized by it has to undertake a continuing programme to identify such sites. The Government of Maharashtra has nominated the Maharashtra Industrial Development Corporation (MIDC) as the nodal agency for hazardous waste management facilities. So far eight sites have been identified by MIDC and these are being examined. They will be finalized in the light of EIA and Public Hearing reports. MoUs have been signed for establishing common hazardous waste collection, treatment and disposal facilities at Thane Belapur and Taloja. Work has commenced at Taloja.

The MoEF, through its notification No.594 (E) dated 6 January 2000 has amended the HW Rules, 1989. The criterion for identification of hazardous wastes has been changed and therefore fresh inventorisation will have to be undertaken.

A common hazardous waste treatment and disposal facility is being developed at Taloja, which is receiving 1400 tonnes of waste for treatment from 25 companies.

The Board has decided to extend financial assistance to the project at 5% of total project cost; necessary consent in this regard is also issued. The project is being developed to handle hazardous waste quantities as shown below:

- Landfill 1,20,000 MT/Y
- Incineration 20,000 MT/Y
- Bio-Medical Waste 1,500 MT/Y

Implementation of Municipal Solid Waste (Management & Handling) Rules 2000 (MSW Rules)

The Government of India has notified the MSW Rules on 25 September 2000. For effective implementation of these Rules, the State Government had organized a workshop at Nashik on 15 and 16 September, 2001. The detailed guidelines issued by the CPCB were circulated to all commissioners of municipal corporations. All municipal councils have also been informed through regional and sub-regional offices of the Board about the implementation of these Rules. According to these Rules, every municipal body is required to provide arrangements for the storage, treatment, transport and disposal of MSW. Presently the rag-pickers are lifting the garbage from small and big towns to earn their wages. About 10% of garbage is being lifted by these rag-pickers and sold to waste processing industries. A writ petition was filed in the Supreme Court regarding the allotment of work of lifting garbage generated from houses, shops, markets etc., to rag-pickers.

A committee for Class-1 cities has been appointed by the Hon'ble Supreme Court to study the problems of MSW, its management and to recommend improvements in the present system.

The recommendations of the committee (Burman Committee) have been circulated through the Water Supply and Sanitation Department of the State Government.

In Maharashtra State, MSW generated is 12,343 MT/Day and 5604 MT/day in municipal corporation and municipal council areas respectively. As provided under the MSW Rules, during the year authorizations have been granted by the Board to nine local bodies which include one private agency working for Akola Municipal Corporation. Composting and land filling is being used for disposal of 1500 MT/D MSW by these local bodies.

In Aurangabad and Nashik, MSW is used for manufacturing fertilizers. Pune, Sangli and Kolhapur Municipal Corporations have completed the study of such projects and work is in progress.

Ambernath Municipal Council in Thane and Malegaon Municipal Corporation have forwarded their proposals for vermicomposting.

Authorizations granted under the Municipal Solid Wastes (Management and Handling) Rules, 2000

Sr. No	Name of Local Body	Processing Technology	Quantity of MSW MT/Day
1	Pune Municipal Corporation, Pune	Composting and using microbial culture	750
2	Sawantwadi Municipal Council, Sawantwadi	Composting and land-filling	20
3	Bhudan Organic Manures Pvt.Ltd Amanatpur, Dist., Akola (For Akola Municipal Corporation)	Organic manure by composting, Land filling – 30 MT Recycle – 10 MT	90
4	Ambernath, Municipal Council, Ambernath, Dist., Thane	By vermi composting By sanitary land-filling	66.5 28.5
5	Navi Mumbai Municipal Corporation, Site – I Navi Mumbai Municipal Corporation, Site – II	Bio-methanisation sludge for compost manure Bio-methanisation and secured land-filling	200 200
6	Nashik Municipal Corporation, (for renewal)	Composting	300
7	Vengurla Municipal Council, Dist., Sindhudurg	Composting	6
8	Deolali Pravra Municipal Council, Pravra Dist., Nagar	Composting	500 kg/Day
9	Ahmednagar Municipal Council, Dist., (Nagar)	Composting and vermi composting, land-filling	38

Environmental problems and control measures

Due to increase in urban population, number of industries, vehicular population, etc the cities are facing various pollution problems like ground water pollution, soil pollution and pollution of water sources, arising mainly from improper and unscientific dumping of MSW, as the space available for dumping is becoming inadequate. In mega cities, BMW is also generated in significant quantities but is not managed properly.

The Board has already prosecuted some of the municipal corporations for non-provision of STPs. Awareness campaigns have been conducted so that MSW Rules and BMW Rules are strictly followed. Proposed directions have been issued to 210 municipal bodies in the state U/s 33A of the Water Act, 1974. Development projects of Common Waste Treatment and Disposal facilities are being encouraged. For some projects, a small subsidy is also extended by the Board. Sites are being identified for safe disposal of solid wastes.

For disposal of hazardous wastes, Mumbai Waste Management Ltd. has developed a CHWTSDF at Taloja MIDC. In some places, water is getting contaminated due to improper pipelines carrying treated effluent. These pipelines are being extended up to deep sea level to ensure proper dispersion. In consultation with the NIO concerned authorities are being persuaded to undertake this task.

Vehicles contribute to more air pollution in the cities. This is due to use of impure fuel, poor maintenance of the vehicle, substandard quality of engines, etc.

In the wake of increasing vehicular pollution, a non-government organization filed a writ in the Mumbai High Court. The Hon'ble High Court formed a committee, which made 101 recommendations for control of vehicular pollution. The major recommendations include supply of lead free petrol, low sulphur content diesel, establishment of CNG outlets, making P.U.C. mandatory, etc.

While delivering its order in another writ petition, the Hon'ble Supreme Court declared a list of highly polluted cities in India, in which Pune and Solapur have been included. Accordingly, action plans have been prepared for both these cities.

The main features of the action plan prepared for Pune city are as follows:

1. Phasing out of PMT buses.
2. Ban on plying of six seater rickshaws on the main roads.
3. Replacement of two wheelers from two stroke with four stroke engines
4. Ban on registration of two stroke vehicles.
5. Clean fuel promotion.
6. Retrofitting of L.P.G. kits.

As a follow up, PMT has replaced 100 buses with Bharat Stage II vehicles in 2002-03 and proposed to replace another 100 buses during 2003-04.

The Pune Municipal Corporation has already banned the plying of six seater rickshaws from January 2003. However, the transport association is agitating against this decision.

- The Transport Authority stopped issuing licenses to new two wheelers with two stroke engines.
- Since April 2002, only petrol autorickshaws are permitted.
- In Pune, L.P.G. has been made available from November 2002.
- Four dispensing units have been started.
- 40 agencies have been engaged for retrofitting L.P.G. kits.

Environmental degradation and pollution problems in Chandrapur District

To deal with pollution problems and environmental degradation, a meeting was held on 07.06.2002 under the chairmanship of the Collector of Chandrapur. In this meeting, discussions on various issues like industrial pollution, vehicular pollution, municipal waste and bio-medical waste were held and certain decisions were taken. The details of these are reproduced here below.

Sr. No.	Name of Industry	Issues	Status of Decision taken on 07/06/2002
1	Western Coal Fields Ltd.	i) Lowering of ground water table due to W.C.L. mines	To carry out comprehensive study about lowering of ground water table due to all coal mines in Chandrapur Dist. W.C.L. Authority shall contact C.G.W.B. Nagpur. The work to be completed on priority basis.
		ii) Damage to crops due to dust generated from mining activities	W.C.L. confirmed that work of crop survey carried out by NEERI Nagpur is completed. W.C.L. also stated that they will arrange for a workshop before publishing the report. Collector directed W.C.L. to submit of Report at the earliest.
		iii) Effects of dust, generated due to mining activities, on health	Collector directed W.C.L. to carry out a comprehensive and exhaustive survey to cover the other villages in Chandrapur, Ballarpur, Wani, and Majri areas on urgent basis. The list of villages is already approved.
		iv) Reuse of mine discharge for Irrigation etc.	As W.C.L. is unable to carry out work of checking dam the work is to be carried out by State Govt.
		v) Road development	P.W.D. reported that tender process is completed and work will be starting soon.
		vi) Transfer of O.D.B. to Forest Development Corporation.	Collector directed W.C.L. that they should protect the plantation by themselves
	Western Coal Fields Ltd.	vii) Pollution in W.C.L. Ghughus open cast mines • Ballarpur and Majri areas	The coal mines in the above areas shall provide adequate air pollution control arrangements in the mines so that nearby residents do not suffer due to pollution. Vehicles carrying coal should be covered with tarpaulins. Overloading is to be avoided. W.C.L. Majri reported that they have provided additional water sprinklers at railway side in Majri open cast mine.
		viii) Effect of Blasting	W.C.L. to carry out controlled blasting in all areas.

2.	Ballarpur Industries Ltd. Ballarpur	i) Public awareness regarding the use of treated effluent	BILT Ballarpur reported that construction of K.T. Weir (temporary 2 no.) is completed. The treated effluent can be used for irrigation purposes during dry seasons. Collector directed the authority to expedite the process for completion of formalities regarding provision of permanent K.T. Weir structure at earliest.
		ii) Smell nuisance	BILT Ballarpur reported that company has installed blow vapors condensation system for reduction of smell and shall submit the report of consultant at the earliest.
3.	Chandrapur Super Thermal Power Station (C.S.T.P.S.)	i) Use of ash in coal mines and for other uses	C.S.T.P.S. shall make the nearby industries, fly ash brick manufacturers and PWD, aware regarding utilization of ash to the maximum extent possible including in road construction. C.S.T.P.S. should generously help these units.
		ii) Air pollution control	Augmentation plan for upgradation of air pollution control system for unit 1, 2, 3, 4, is submitted. Work to start soon.
		iii) Ash slurry leakage	C.S.T.P.S. reported that to prevent the leakages of ash slurry, pipeline is laid to minimise leakage. Joint survey by Board/M.S.E.B./M.C. to be carried out at pumping site of Erai river to provide collection and neutralization pit for seepages of acidic effluent from reject coal stock yard.
4.	Gaurav Paper Mill	Seepages of effluent and Effluent Treatment Plant	Company has provided clarifier and effluent is recycled in the process. Treated effluent is used for irrigation purpose.
5	Lloyds Metals and Engineers Ltd.	Air pollution control system	The Board directed the company to provide closed shed as there is continuous fugitive emission. Collector also directed the company to provide adequate air pollution control system.
6.	Cement Plant	Air pollution control and social developments	All the cement plants are to run air pollution control arrangements more effectively and also to hold environmental awareness camps. M/s A.C.C. Ghughus to improve the air pollution control system of various sources.
7.	Maharashtra Electrosmelt Ltd.	i) Air pollution from the stack	Maharashtra Electrosmelt Ltd. stated that Cogeneration Captive Power Plant has been put into operation. Upgradation is required for air pollution control arrangement at sinter plant and other units.
		ii) Discharge of effluent outside.	Maharashtra Electrosmelt Ltd. stated that the scheme for recycling of treated effluent will be completed within one and half months and company will achieve zero discharge.

Other important points

1	**Coal depot**	The Joint Committee consisting of Nagar Parishad, the Board, Mining Officer and W.C.L. decided to conduct a preliminary survey of illegal coal depots, which are located on the outskirts of the city. Nagar Parishad and W.C.L. are requested to provide the list of such illegal depots.
2	**Vehicular pollution**	R.T.O. Chandrapur should undertake a special drive to reduce the vehicular pollution on roads and implement PUC strictly. R.T.O. shall hold camps at W.C.L. and factory premises on PUC of heavy vehicles.
3.	**Tree plantation**	All the industrial units in the district to undertake massive tree plantation drives in the premises as well as along the roads and submit the reports regularly. Chandrapur District's social forestry status is required to be verified.
4.	**Bio-medical waste & municipal solid waste**	The Collector directed Chief Officers of all the municipal councils in Chandrapur District to speedily implement provisions made under BMW and MSW Rules. They were also directed to identify dumping sites for MSW and to take approval from Town Planning Dept.
5.	**Road divider**	The PWD is to provide road divider from Kundan Plaza to Padoli so that congestion of traffic shall not take place. PWD to follow up the matter.

7. ENVIRONMENTAL TRAINING

It is one of the functions of the State Pollution Control Board to plan and organize training in various aspects of prevention, abatement and control of pollution. Training is necessary for proper and effective implementation of the pollution control norms.

For effective management of environment, creating awareness among the people and training the officers working in the Board and officials concerned with planning, funding and executing is necessary. Training is also required for effective operation and maintenance of industrial effluent treatment plants by industries and sewage treatment plants operated by municipal bodies. Now-a-days, under the Rules framed under the Environment (Protection) Act, 1986, e.g., BMW Rules 1998, MSW Rules 2000 and HW Rules 1989/2000, adequate treatment and safe disposal is essential, for which special training is necessary for the operator of the waste disposal system. Training is also needed to upgrade the knowledge and capability of officials already working in the Board and related fields.

The Board deputes its staff for training to acquire proper knowledge in the related fields to equip them fully to discharge their duties efficiently. While deputing staff to any course, the nature of work and duties performed by the respective staff/officer and the need felt by the Board is considered.

The training course/workshops/seminars attended by the staff and officers of the Board are summarized in the following table and enclosed as Annexure 4.

During the reporting year, the officers and staff of the Board attended courses on the following major subjects:

- Hazardous waste management
- Environmental problems and solutions
- Meteorology and air pollution
- Solid waste management
- Environmental law enforcement
- Noise pollution
- Environment management and case studies of implemented projects

8. ENVIRONMENTAL AWARENESS AND PUBLIC PARTICIPATION

World Environment Day celebration

On 5 June 2002, the Maharashtra State Pollution Control Board, in association with the Maharashtra Nature Park, celebrated 'World Environment Day' to create awareness among the people about various environmental issues and increased pollution levels in metro cities of the state. The function was held at Mahim Nature Park, Dharavi in Mumbai and was graced by Shri Rajeshji Tope, Hon'ble Minister of State for Environment. Shri Mushtaq Antulay, Hon'ble Chairman of the Board presided over the function while Dr. Munshilal Gautam, Member Secretary of the Board, welcomed the audience. The theme of the day was 'Give Earth a Chance.'

Shri Debi Goenka, senior environmentalist and representative of an NGO in Mumbai, delivered a lecture on environmental problems in Mumbai, and the action needed to solve these pollution problems of the city.

Dr. Sharad Chaphekar, a botanist, delivered a talk on restoring waste lands. He said that the earth left to itself may not mange to return to a healthy environment since the degradation has already taken place to a point of no return. Therefore it is necessary that a balanced scientific approach be adopted to help the earth to utilize its chance for securing a sustainable environment. Such help can be given in the form of protecting the residual healthy environment and restoring the degraded environment, as each ecosystem has its problems and possible remedial measures.

Dr. Hrishikesh Samant, a professor of geology, spoke on the environmental impact of the several uses of lands in Mumbai and anticipated changes in the future.

Shri Avinash Kubal, Manager, Mahim Nature Park, provided details of how the Nature Park was developed from a dumping ground and what kind of plants could be grown on such land. A documentary film on the Nature Park was also shown to the audience.

On the occasion, a small booklet, 'Prakruti' – which set out to provide information on the environment and on the working of the Board – as well as posters with the message of environment protection and on the theme of the year were released at the hands of Shri Rajeshji Tope.

Officials from government and semi government offices, students, representatives of industries, and NGOs were present on the occasion.

International Day for the Preservation of the Ozone Layer

The International Day for the Preservation of the Ozone Layer was celebrated on 16th September 2002 in the committee room of the Indian Merchants Chamber. The Environment Department, Government of Maharashtra and the Board jointly organized the function. Shri Gajanan Warade, Director, Environment Department, informed the gathering that industries using ozone depleting substances are now shifting towards non-O.D.S. technologies and by 2010 India will achieve the target of reduction in use of O.D.S. as decided in the Montreal Protocol. For signatory countries involved in the Montreal Protocol, it is mandatory to shift to non- O.D.S. technologies.

An appeal was made by Shri Gajanan Warade, that, as per the notification of the central government, the distributors, manufacturers and users of O.D.S. are required to register their names with the MoEF.

Shri Mushtaq Antulay, Chairman of the Board, provided the information that to encourage industrial units to phase out O.D.S. a multilateral fund of US$82 million dollars was being made available.

On the occasion, guest speakers, Dr. Shyam Asolekar from IIT Mumbai, Dr. Rakesh Kumar from NEERI, Dr. P.K. Mukherji, Small Industrial Service Institute, Mumbai, Dr. Badrinarayan from M/s Sandoz Ltd and concerned representatives of industries were present.

Participation of the Board in INDIA CHEM–2002

MPCB set up a stall of 36 sq. meters at INDIA-CHEM 2002. The exhibition was held during 18–21 September 2002 at Pragati Maidan, New Delhi. The Board's stall was inaugurated by Shri Vishwas Dhumal, Principal Secretary (Industries), Government of Maharashtra. On this occasion, Shri Bhagwan Sahai, the Development Commissioner, was also present.

More than 300 entrepreneurs visited the stall and expressed appreciation that despite being a regulatory authority the Board had put up a stall to promote industrial development in a sustainable environment in the State of Maharashtra. They also expressed admiration for the various steps taken by the Board, including the smooth, transparent and effective implementation of various environmental legislations, particularly combined consent forms, consent of longer duration, MPCB website, etc. Shri Dhindsa, Hon'ble Minister for Chemicals and Fertilizers, Government of India and Shri Patangrao Kadam, Hon'ble Minister for Industries, Government of Maharashtra, also visited the stall and lauded the various initiatives taken the Board.

9. PROSECUTIONS LAUNCHED AND CONVICTIONS SECURED

The Board carries out surprise checks on industrial units through its regional and sub-regional offices. This includes even night vigilance, on occasion.

The Board has so far filed 424 criminal cases under the provisions of the Water Act and 147 cases under the provisions of the Air Act in various courts of law. It is seen that a fairly long period elapses between booking offenders and the final disposal of their cases. Naturally, in the intervening period, there is no effective control on containing the pollution from the unit concerned.

The Board therefore thought it fit to resort to invoking the provisions of section 33A of the Water Act and Section 31A of the Air Act, and thus to compel polluters to undertake the modernization or additions to existing pollution control facilities, so that the unit could achieve the standards laid down under the provisions of the EP Act and Rules for effective reduction in pollution load, in a time-bound manner. The Board has also introduced a scheme for securing bank guarantees from a number of defaulting industries, in those cases where it was felt that only an undertaking might not suffice for ensuring compliance with the time-bound programme.

Status of Prosecutions Launched

The break-up of prosecutions launched and convictions secured upto March 2003 under various sections of the Acts are as under:

a) Under Section 43/44 of the Water (Prevention & Control of Pollution) Act, 1974.

   (1) No. of cases filed 284

   (2) Convictions secured 54

b) Under Section 33 of the Water (Prevention & Control of Pollution) Act, 1974

   (1) No. of applications filed 140

   (2) Convictions secured 83

c) Under Section 21 r.w. 39 of the Air (Prevention & Control of Pollution) Act, 1981

   (1) No. of cases filed 144

   (2) Convictions secured 114

d) Under Section 22A of the Air (Prevention & Control of Pollution) Act, 1981

(1) No. of cases filed 3

(2) Convictions Secured 1

Details of proposed directions/directions of closure issued / under Section 33A of Water (Prevention & Control of Pollution) Act, 1974 & under Section 31A of Air (Prevention & Control of Pollution) Act, 1981 from 2002-2003

Sr. No.	Region	No. of proposed directions issued u/s 33A of Water Act, 1974 & u/s 31A of Air Act, 1981	No. of directions of closure Issued u/s 33A of Water Act,1974 & u/s 31A of the Air Act, 1981
1	Mumbai	1	-
2	Navi Mumbai	73	7
3	Thane	22	14
4	Nashik	7	2
5	Pune	87	10
6	Kolhapur	42	7
7	Raigad	9	4
8	Aurangabad	53	3
9	Nagpur	10	3
10	Amravati	9	-
11	Kalyan	68	8
	TOTAL	**381**	**58**

Important High Court orders

Maharashtra State Electricity Board v/s Maharashtra Pollution Control Board

Bhusawal Thermal Power Station (BTPS) had filed its returns for the period 1 April to June 1984 and from July to September 1984 without considering the recirculation factor and it subsequently submitted a corrigendum for water consumption figures after considering the recirculation. Its contentions were that the water consumption figures in the earlier returns were not commensurate with the water management practice at their plant. Its submission was that the water is withdrawn from the cooling pond, constructed at their cost in the river bed and that the bulk of it is released back into the pond. Therefore, the main dispute was whether there was recirculation, recycle and reuse of water by virtue of impoundment into the cooling pond and regarding grant of rebate as per the provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977, as BTPS met the consent condition for effluent standards i.e. requirements u/s 7 and the rules thereunder. However, the assessing authority had rejected their contentions. Therefore, BTPS had filed an appeal as provided u/s 13 of the Water (Prevention & Control of Pollution) Cess Act, 1977. But the Appellate Authority had also not considered their submissions and rejected the appeal. The Appellate Authority did not agree with the points raised by MSEB and BTPS, that there is an 'impoundment' created in the river bed and this serves as a system for recycling of water.

Aggrieved by the order disallowing the appeal, BTPS had filed a Writ Petition No.2963/88 before the High Court of Judicature at Mumbai. The said petition was pending from 1988 to February 2000. After hearing both the sides and taking into consideration the complicated technical and scientific nature of the matter, the Hon'ble High Court sought the views of both BTPS and the Board to refer the matter for arbitration and with the approval of both parties, after giving choice for selection of names, appointment of arbitrator and the presiding arbitrator, the matter was referred to the Arbitration Tribunal. The main basis for appeal was the erroneous submission of returns by BTPS on the basis of water pumped and the reservation of water by the Irrigation Department and the permission granted for recirculation arrangement by the Irrigation Department as well as the Central Water Commission and grant of rebate as per the provisions of the Cess Act. Their submission was that they should be charged on the basis of revised submission.

The Arbitration Tribunal came to the conclusion that the dispute is essentially of complicated scientific, technical nature and its solution lies in a rational approach for qualification of flows, their categorization and on quality assessment of discharges. Therefore, the arbitrators decided to verify the site conditions for themselves and inspected the water intake arrangements at river, inlet channel flow, bypass arrangement from inlet channel to outlet channel, once through system of unit, pump house on inlet channel, confluence of outlet channel within concrete dam, river flow, etc., as well as Hatnoor dam, from where water is released to the pond upstream of impoundment. The arbitrators observed specifically during their visit to the site that the river Tapi, just downstream of Hatnoor dam, was practically dry in the month of November and at the same time, the pond created due to the construction of the concrete dam was full of water. After enquiry with the Maharashtra Engineering Research Institute, which had measured the incoming water and also the water coming out from the outlet channel at the confluence with the river/pond, it was found that out of the total water pumped from inlet, 70% of the same was returned to the river /pond. Therefore, the Arbitration Tribunal came to the conclusion that 30% of the water from inlet is used for various purposes i.e. category I, II and III in the schedule and 70% of the same was returned to the river/pond.

The arbitrators studied in detail the judgment given by the Hon'ble Supreme Court in Delhi Electric Supply Undertaking v/s Central Pollution Control Board, where it was held that the water pumped from the Yamuna river should be considered for calculation of cess amount. However, the arbitrators distinguished the present case and came to the conclusion that an impoundment in the form of a pond by construction of a concrete dam had been created in this case. The pond acts as a recirculation pond and the quantity lost i.e., actually consumed for domestic use, industrial consumption (Category-2 and 3) is only replenished by release of water from the Hatnoor dam as stated above. Thus, at BTPS, the water is released in the pond and is again lifted from the pump house at inlet. The existence of the pond in the river

bed has to be considered as a pond created for the purpose of re-circulation. It is specifically observed that there is no ambiguity in the minds of the arbitrators that this is a unique situation and a unique case which cannot be compared with the situation existing at Delhi Electric Supply Undertaking. The arbitrators assumed a figure of 10% as losses in evaporation and absorption in storage tank. Therefore, out of the quantities of water pumped from inlet, 40% of the quantities were chargeable for water cess, as per the arbitrators. Considering inconsistencies in the consent conditions, the arbitrators considered that rebate should be granted for industrial cooling (Category-I) but since for Category-II BTPS has not claimed rebate, the arbitrators considered that it should not be allowed. The arbitrators thus came to a practical solution on the unique situation existing at BTPS.

M/s. Mangalam Laboratories Pvt. Ltd. v/s Maharashtra Pollution Control Board

M/s. Mangalam Drugs & Organics Ltd. v/s Maharashtra Pollution Control Board

The Board had received complaints from the Lok Sangharsha Samiti, Sangamner, alleging that M/s Mangalam Drugs & Organics Ltd. and M/s Mangalam Laboratories Pvt. Ltd. situated at Sangamner Sahakari Audyogik Vasahat Ltd have caused serious ground water pollution and air pollution in and around their factories. The Board initially investigated the matter through its regional office, Nashik and the sub regional office, Ahmednagar and issued proposed directions in the month of December 1999 against both the units as to why those units should not be closed down.

The complaints from the local residents continued even after issuance of the proposed directions. The sub-regional office of the Board at Ahmednagar had further communicated non-compliance with the consent conditions. The Lok Sangharsha Samiti started an agitation and insisted on immediate closure of both the units. Considering the seriousness of the issue, the Board decided to investigate the matter. The field investigation was done from 26.4.2000 to 28.4.2000, which includes inspection of nearby wells shown by the villagers and collection of water samples for analysis. Similarly, ambient air monitoring was carried out at three different locations. It was noticed that from the topography, there is a steep gradient towards south and the major complaints were about the wells in that direction only. While collecting the water samples, it was observed that the taste of well water was bitter and salty. Most of the wells were having either yellowish or reddish colour water. The physical observations were conforming to the say of villagers that the well water in that area was no longer fit for drinking purposes.

The survey was continued in and around adjoining industries on 24.04.2000. It was specifically noticed that the majority of industries in the Audyogic Wasahat are small scale and engineering-based with no effluent generation. Except Magalam Industries, no other units have pollution potential. It was observed that M/s Mangalam Laboratories Pvt. Ltd. had not tightened properly the reactor flanges, resulting in slight gaseous emissions from those points.

Its crystallizer vent was open to the atmosphere without any emission control device. The scrubbed liquid was drawn to the ETP through an underground chamber which was not properly floored, giving scope to percolation of untreated effluent. M/s Mangalam Drugs & Industries Ltd., was taking its effluent to the common ETP. Though both the units have provided a joint ETP and carried out some modification in the plant by providing solar evaporation pits, the effluent was not taken to the solar evaporation pits regularly. It was observed that it was a general practice of these units to discharge effluent outside the premises.

The units of Sangamner Bhag SSK Ltd., and around its area were visited. The well water was observed to be reddish in colour, and was used for irrigation purposes only. Drinking water was being supplied by SSK Ltd. It was observed that the sugar unit had provided a primary and secondary effluent treatment plant, but except for the oil skimmer, none of the ETP units were in operation. The distillery unit had provided a bio-gas plant, bio-well, power generation plant, lagoons and solar ponds as well as surface composting. The bio-gas plant was not in operation, thereby spent wash was taken to lagoons directly for composting/ evaporation. For the paper unit, though primary and secondary ETP was provided, black liquid was directly discharged into the lagoons. Overall, the picture was that there was gross negligence in the operation and maintenance of pollution control devices.

The Board therefore issued directions of closure to both the units of M/s Mangalam Industries on 19.04.2000 for not providing adequate pollution control devices and also on account of unsatisfactory operation and maintenance of existing pollution control devices. However, M/s Mangalam Industries challenged those directions via a Writ Petition No.1039/00. The Hon'ble High Court of Judicature at Mumbai set aside the closure orders issued on 19.04.2000 and directed the Board to give a fresh hearing and thereafter pass appropriate orders in accordance with law. The Board extended the personal hearing in the presence of the Lok Sangharsha Samiti along with units of M/s.Sangamner Bhag SSK Ltd. on 27.6.2001. It was decided in the personal hearing that a detailed survey is to be carried out through an expert agency to ascertain the damage caused to the underground water and soil due to discharge of M/s.Mangalam Industries and M/s.Sanghammer Bhag SSK Ltd. units. Dr. Munshi Lal Gautam, Member Secretary and Shri Mushtaq Antulay, Chairman of the Board then took a practical decision to appoint M/s. IIT Powai, an expert institution in the field, to investigate the matter in detail after their visit to the site. The IIT Powai carried out a survey and reported that the well water in the nearby vicinity was found to be contaminated with high chloride and TDS due to discharges from M/s Mangalam Industries. The surana pipe well water had traces of mono chloro acitic acid, which indicated that there is heavy percolation from M/s Mangalam Industries which is contaminating the ground water. Similarly, taking into consideration inadequate arrangements for treatment, the pulp and paper units caused pollution in the surrounding area. Therefore, the Board had issued directions to both the Mangalam units to close down their activities and

to the pulp and paper mill unit of M/s Sangamner Bhag SSK Ltd. to stop the pulping section.

Aggrieved by the order of closure, M/s Mangalam Industries again approached the Hon'ble High Court of Judicature at Mumbai, by way of filing of Writ Petition Nos.1328/29/02 and obtained a stay of the order of closure.

In the meantime, there was an increase in the complaints of pollution and the Lok Sangharsha Samiti also joined the above petition with a prayer to vacate the stay. In the meantime, workers' representative from M/s Mangalam Industries also joined as intervener and prayed that Mangalam Industries should not be closed down, as it had complied with all the norms. It was also pointed out by the well known advocate, Shri. M.C. Mehta, that the pollution from other units like the distillery and paper of M/s Sangamner Bhag SSK Ltd is also a major problem to be dealt with. The Hon'ble High Court therefore appointed M/s Chaddha Committee to investigate the matter and file a report. The Board engaged the services of Shri C.J. Sawant, Sr. Counsel, to bring to the notice of the Court the Board's point of view. The High Court came to the conclusion that till the compliance reported by Mangalam Industries is verified by IIT Powai, on whose report the Board has taken action, Mangalam Industries must close down its manufacturing activities. Similarly, distillery activity discharging effluent into the nearby locality was also in dire need to be stopped till further orders.

Thereafter, IIT Powai re-inspected the site of Mangalam Industries and after verifying the compliance with its recommendations, submitted a report to the High Court. The Hon'ble High Court after being satisfied about the steps taken by Mangalam Industries, allowed it to restart its manufacturing activities subject to the report of M/s Chaddha. Similarly, the distillery of M/s.Sangamner Bhag SSK Ltd., was allowed to continue distillery operations and improvement in the pollution control devices without causing any pollution. The above case is an example of the compliance secured by the court through regulatory authorities and reports of an expert committee.

Maharashtra Pollution Control Board V/s M/s. Palghar Rolling Mills Pvt Ltd.

Maharashtra Pollution Control Board through Shri K.H. Mehta, the then regional officer of the Board at Mumbai had filed R.C.C. No.546 of 1984 before the Chief Judicial Magistrate (CJM), Thane, against the Palghar Rolling Mills Pvt. Ltd., for not providing adequate and suitable arrangements for the treatment of industrial effluents generated in the process, so as to satisfy the standards prescribed in the consent conditions and thereby discharging polluted waste water outside the factory premises, thereby causing water pollution.

One complaint was received from the Panchayat Samiti, Thane, in respect of pollution caused by the unit. The complaint was investigated by officers of the Board through collecting

vigilance samples on various occasions and the results of analysis were communicated to the unit from time to time with instructions to improve the treatment and disposal facilities, so as to bring the discharge in line with the parameters in the consent standards. The officers of the Board had also pointed out non-compliance of adequate treatment and disposal facilities. The Chairman of the Board, on the basis of investigation of the complaint, had issued prohibitory order u/s 32 (1) (C) of the Water Act against the unit on 20.7.85 and directed it to make necessary arrangements to bring the quality of effluent within standards within 30 days.

The unit did not comply with the prohibitory order. The officer of the Board, on the basis of the results of samples collected u/s 21 of the Water Act, as per report of analysis dated 29.9.83 had submitted prosecution proposal before the Board and pointed out the exceeding parameters of pH, suspended solids, iron and nickel. Based on highly acidic and polluted as well as toxic parameters, the Board had sanctioned the prosecution as required under the Water Act, prior to the amendment of 1988.

On conducting the above case before the CJM., Thane, by recording necessary evidence, conviction was secured of accused No.2 Shri R.M.Agarwal on 1.3.2001 for contravention of the provisions u/s 25 of the Water Act and punishable u/s 44 of the said Act and he was sentenced to suffer simple imprisonment for six months and to pay a fine of Rs.25000 in default.

Aggrieved by the order of conviction, the accused preferred an appeal before IV Additional District & Sessions Judge, Thane, bearing Criminal Appeal No.14/01. The appeal was allowed on 5.12.2001, on the basis of hearing of the arguments of Shri Palnitkar, advocate for the appellant, and with the observation that the representative of the Board remained absent even after intimation in advance by the appellant with a letter dated 29.11.2001, through 'Under Certificate of Post'. However, the Board approached the Hon'ble High Court of Judicature at Mumbai by filing Criminal Revision Application No. 121/02 through Shri. A. D. Kango, advocate, on the ground that the original accused had not at all served the notice of appeal and the appeal had come to be decided without giving any opportunity to the Board to advance any arguments. The learned counsel for the respondent-company conceded that the Board was not served with the notice of the appeal through court but was informed about the appeal. The Hon'ble High Court observed that it is pertinent to note that the impugned order allowing appeal came to be passed on the very day when the Board had received notice of appeal through the accused at 4.40 p.m. on 5.12.2001. Therefore, the order could not be sustained. The Criminal Revision Application filed by the Board was therefore allowed and the order passed by the Additional District & Sessions Judge, Thane allowing appeal No.14/01 was quashed and set aside. The matter was remanded to the Additional sessions Judge, Thane on 10.07.02 for deciding the same on merits, after hearing both the parties.

Thereafter, the Additional District & Sessions Judge, Thane, extended an opportunity to both sides to advance arguments. Both the sides filed written submissions and also advanced oral arguments in support of their respective contentions. The main contention of the appellant was that the sample is not properly collected. The consents are renewed in spite of the alleged non-compliance. The Board has not accorded proper sanction. The Chairman has accorded sanction without bringing on record delegation of powers by the Board. The evidence on record is not sufficient to draw inference that the offence against the appellant can be sustained. The Asst. Law Officer of the Board, relying upon written submissions, stated that the oral as well as documentary evidence indicate non compliance on the part of the accused. The sample was collected u/s 21 of the Water Act, by following due procedure and the Board had pointed out the non-compliances to the appellant from time to time.

In cross examination, the complainant admitted that the name of the officer who collected the sample u/s 21 of the Water Act was not mentioned in the complaint and there is no reference about the visit to M/s.Palghar Rolling Mills. Prior to issuance of prohibitory order u/s 32 (1) (C) of the said Act, sample u/s 21 of the Water Act was collected, but after expiry of 30 days granted by the Chairman in his prohibitory order, no sample u/s 21 was collected. The sanction is also not proper. Nowhere it is mentioned from which place the sample is collected. The consent is renewed from time to time after collection of samples u/s 21 of the Act. Therefore, the Board has not applied its mind properly and no case is made out for conviction. The District & Sessions Judge, Thane came to the conclusion that the Board has renewed consent from time to time. The court therefore quashed and set aside the judgement and order passed by CJM, -Thane and the accused appellant were acquitted and entitled for the refund of fine.

After going through the above judgment and order, it was observed that the cases of the Board are to be properly built up with consistent action on the part of the Board about the non-compliance of the companies. For example, in the present case, after collection of sample u/s 21 of the said Act, in the year, 1983, the proper course was that the Board could have refused renewal of consent. After issuance of prohibitory order, to confirm the non-compliance, the officer of the Board could have collected one more sample u/s 21 of the said Act by following the mandatory provisions and only after communication of such results as per Section 22 of the said Act by bringing on record non-compliance of the prohibitory order, prosecution should have been filed.

Actions taken by the Board against municipal corporations and councils in Maharashtra State

The CPCB had issued directions under Section 18 (1) (b) of the Water Act to the various councils and other civic bodies that had not complied with the provisions of the Water Act in compliance of the order passed by the Hon'ble Supreme Court.

It was observed that almost all the local bodies have not provided adequate treatment and disposal facilities for treatment of their sewage as well as for proper collection, transportation and disposal system of their solid waste and also not obtained consents from the Board.

In view of this, the Board has filed prosecutions against seven local bodies. Similar action is proposed to be initiated against other defaulters, including major polluting municipal councils also under MSW Rules. Till March 2003, twenty-five authorizations have been issued.

Details of prosecutions filed against defaulting municipal corporations/councils under Section 43, 44 r.w. 25 & 26 of the Water Act, 1974
Proposed directions issued to municipal corporations/councils/local bodies under section 33A of the Water Act, 1974 from 1.04.1995 to 31.03.2003

Sr. No.	Name of the Municipal Corporation & Council	Name of the Court	Date of Filling	Status
1	Bhusawal Municipal Council At Post & Tal : Bhusawal	J.M.F.C.-Bhusawal 32/1992	7.03.1992	Pending
2	Kolhapur Municipal Corporation, Kolhapur	C.J.M- Kolhapur C.C.No.3028/1999	4.11.1999	Pending
3	Pimpri-Chinchwad Municipal Corporation, Pimpri	J.M.F.C.-Shivajinagar 144/2000	9.05.2000	Pending
4	Pune Municipal Corporation, Pune	J.M.F.C.-Shivajinagar 187/2000	9.5.2000	Pending
5	Khopoli Municipal Corporation, Khopoli, Raigad	Kholapur Court 68/2000	26.07.2000	Pending
6	Ulhasnagar Municipal Corporation, Dist. Thane	C.J.M.-Thane 618/200	15.12.2000	Pending

Sr. No.	Region	No. of Municipal Corporations/ Councils / Local Bodies
1	Mumbai	1
2	Raigad	10
3	Nagpur	19
4	Amravati	10
5	Navi Mumbai	2
6	Kalyan	3
7	Thane	8
8	Pune	34
9	Nashik	42
10	Aurangabad	52
11	Kolhapur	23

10. Finance and Accounts

(Report is being submitted separately)

11 IMPORTANT MATTERS DEALT WITH BY THE BOARD

Pune Action Plan

The Hon'ble Supreme Court of India in its order dated 9 May, 2002 directed the preparation of a scheme with regard to improvement of air environment, with special reference to vehicular pollution in cities other than Delhi, which are equally or more polluted. In this regard, inter ministerial discussions were held in New Delhi, as also in the conference of State Environment Secretaries and Chairpersons of Pollution Control Boards/Committees.

Pune city was one of the four cities, which needed further studies to be done in order to prepare an action plan in conformity with the requirements of the Hon'ble Supreme Court's directions.

The State Environment Department, Home (Transport), Public Sector oil companies, Municipal Commissioner, Pune, and the Board held mutual discussions. Member Secretary of the Board was the convener of this working group and accordingly a plan was drawn up which was submitted to the MoEF, Government of India. By its letter dated 05.09.2002, the MoEF asked the State Government and the Board to revise the plan taking into consideration the industrial pollution in Pune city and surrounding areas including Pimpri-Chinchwad Municipal Corporation (PCMC). Since PCMC is quite close to Pune city, inter city air pollution is bound to affect the atmosphere of both the cities. Hence, the pollution load of both vehicular and industrial area of PCMC had also to be included in the revised draft. The measures taken by the Transport Department, Pune have also been taken into account while finalizing this plan.

The ambient air quality of Pune city is affected due to vast vehicular traffic, which is well known to Pune Municipal Corporation and the Board, as measures/efforts were undertaken in the past to deal with this problem. Around 6800 vehicles are introduced on Pune roads per month. This high number when related to slow traffic speed (between 15 km/hr to 35 km/hr) further aggravates the situation by acceleration and de-acceleration. The direct consequence is air pollution in the city.

The key traffic and transportation problems can broadly be identified as under:

(i) A disproportionate rise in the number of vehicles, more particularly of two wheelers;

(ii) Growth of informal forms of mass transport;

(iii) A severely impaired PCMC and Pune Municipal Transport department;

(iv) Heterogeneous traffic conditions with limited road capacities making segregation of traffic impossible;

(v) Absence of a ring road despite radial expansion of the city;

(vi) Insufficient road capacities in the congested area;

(vii) Crowded intersections leading to air and noise pollution;

(viii) Various encumbrances on roads such as encroachments, unauthorized constructions, particularly of religious nature, etc.

(ix) Limitations of Development Project (DP) roads to cater to the transport needs, since vast stretches of developable lands in the DP do not have any plans for road networking;

(x) Absence of parking facilities at important locations leading to street parking;

(xi) Inadequacy of foot paths, their diversions to other use and jaywalking, leading to obstruction of vehicular traffic.

For the improvement of vehicular pollution control, time and road restrictions, improvement in PUC system and compulsory I and M practices for on-road vehicles are already being implemented as quoted below:

i) RTO has banned six seater rickshaws within the PMC area, which is challenged in High Court, Mumbai. The hearing at the admission stage is over and decision is expected soon.

ii) Six seaters with overloaded carrying capacity, stage carriage chassis and heavy polluters are declared as unfit to operate, hence no addition of new or old six seaters is to be permitted.

iii) Only petrol driven rickshaws are permitted within the PMC area.

iv) No diesel rickshaw is permitted as a replacement vehicle to the existing one.

v) No new rickshaw permits are granted from 26.11.1997.

vi) All intent letters, rickshaw permits have been cancelled from 29.04.1999.

vii) Vehicles are checked regularly for PUC certificates and if found exceeding the limit, the registration is suspended till satisfactory repairs are carried out and penal compounding fees are recovered. Renewal certificate is granted after observing satisfactory performance.

viii) Two wheelers will change from two stroke to four stroke. No new two wheelers with two stroke will be allowed.

Continuous efforts are being made for installation and improvement of pollution control systems to minimize the industrial pollution load.

The slum dwellers have also increased in number and the domestic fuel used by them is a cause of air pollution, which needs more attention and measures for improvement including offering acceptable fuel option.

ACTION PLAN INITIATED

Sr. No.	Particulars	Action
1.	Phasing out of PMT Buses	As per Table-I
2.	Six Seaters	Already banned by RTA in January 2003. However the Transport Association is allowing them to ply on the read.
3.	Replacement of two wheelers from two stroke to four stroke	No new two wheelers with two stroke is licensed.
4.	Registration of two stroke vehicles	Banned from April 2002. Only petrol auto rickshaws are permitted as a replacement.
5.	Clean fuel availability	In Pune, LPG has been made available from 25th November 2002. Three dispensing unit has already been started and one will be starting from November 2003.
6.	Retrofitting of LPG kits	68 agencies are engaged.

Table-I
PHASING OUT AND REPLACEMENT OF PMT and PCMT BUSES
Total PMT Buses: 800 Nos.

Sr. No.	Year of Manufacture	No. of Buses	Ages as on December 02	Time frame action	
				Phase Out	Replacement
1	1984	2	18	-	100 buses have been replaced in 2002-2003 out of 114 Nos.
2	1986	41	16	-	-do-
3	1987	71	15	-	-do-
	TOTAL	**114**			
4	1988	29	14	2003	100 buses will be replaced.
5	1989	44	13	2004	-do-
	TOTAL	**73**			
6	1990	53	12	2005	83 Buses in 2004-05
7	1991	30	11	2006	-do-
	TOTAL	**83**			
8	1992	111	10	2007	111 buses in 2005-06
9	1993	54	9	2008	After 2006, remaining buses shall be replaced every year.
10	1994	78	8	2009	-do-
11	1995	101	7	2010	-do-
12	1997	50	5	2012	-do-
13	2000	136	2	2013	-do-

Note : a) 100 buses of Bharat Stage-II are already purchased.
b) 38 buses have been taken out of the road.
c) 5 buses are used as wireless vans and old wireless vans are scrapped.

Total PCMT BUSES: 187 Nos

Sr. No.	Year of Manufacture	No. of Buses	Ages as on December 02	Time frame action	
				Phase Out	Replacement
1	1994	187	81/2	2009	16 Nos. of buses will be phased out in March 2004 25 Nos. of buses to be purchased, Action is in progress.

Zoning atlas for siting of industries (based on environmental considerations)

Siting of industrial estates plays a vital role in sustainable development of the industries and protection and conservation of the natural resources in the surrounding environment. In the year 1995, MoEF introduced a programme known as 'Zoning Atlas for Siting of Industries] (ZASI) with financial assistance of World Bank through CPCB and technical assistance of GTZ, Germany.

Objectives

The objectives of preparing the ZASI:

- To zone and classify the environment in a district.
- To identify locations for siting of industries.
- To identify industries suitable to the identified sites.

Present status:

In the first phase, MoEF identified Maharashtra as one of the states for implementation of the programme and entrusted the responsibility of a pilot study for the coastal district of Ratnagiri to the Board. ZASI of Ratnagiri is completed and recommendations are finalized by CPCB for implementation.

In the second phase, the Board has taken up the ZASI of Pune and Aurangabad districts. To execute the project, the Board has created a separate zoning atlas cell and deputed two full-time scientists from the Board's available staff to the project. Some staff were also appointed on contract basis by the Board to carry out ZASI of Pune and Aurangabad districts. ZASI of Pune and Aurangabad is already completed and the first draft report is submitted to CPCB for approval. The Board has received equipment worth Rs.24.25 lakhs during last one year.

Considering the progress made by the Board during the past one and half year, MoEF decided to continue financial and technical assistance for the project during the Tenth Five Year Plan (2002-03 to 2006-07). Under this project, the Board has submitted an action plan for which approval from CPCB/MoEF is awaited.

Table 1: Action Plan of MPCB for 2003-04 to 2006-07 under zoning atlas for siting of industries (ZASI)

Year	Activity			
	ZASI Districts	**Urb-EMP**	**IEP**	**EMP**
2003-04	1 Nashik 2 Solapur 3 Raigad	1Kalyan-Dombivli	1 Any one industrial estate in Western Region	-
2004-05	4 Ahmednagar 5 Kolhapur 6 Amravati 7 Sangli 8 Satara	2 Nashik 3 Kolhapur	2 Any one Industrial estate in Mahathwada Region	1 Aurangabad (Tourism)
2005-06	9 Jalgaon 10 Beed 11 Wardha 12 Chandrapur 13 Nagpur	4 Pune 5 Nagpur	3 Any one Industrial estate in Vidarbha Region	1 Mining (Chandrapur)
2006-07	14 Latur 15 Jalna	6 Solapur	4 Any one Industrial estate in Konkan Region	1 Sindudurg Malvan (Fragile Area)

ZASI: Zoning atlas for siting of industries
Urb-EMP: Environmental management plan for urban area
IEP: Industrial estate planning
EMP: Environmental management plan

Co-ordination meets with Central Pollution Control Board, Delhi

A co-ordination meet of the Chairman, Member Secretary and regional officers of Board with officials of the CPCB was held on 15 July 2002 to discuss and review the following issues:

1. Regular air quality monitoring in Mumbai and other major cities in Maharashtra by the Board. It is necessary to initiate proper air quality monitoring specially in cities where the air pollution is significant. Also toxic pollutants are to be monitored (e.g. benzene, polyaromatic hydrocarbons).
2. Under the World Bank project, two continuous air quality monitoring stations were given to Board about two years back. According to Dr. J.M. Dave's report, utilization of these stations is 7 to 9% only.
3. The State Board is to provide air quality data for Mumbai to Aaj Tak T.V channel as data of other metropolitan cities like Chennai, Delhi, Kolkata are regularly given to the channel;
4. There are about 160 industrial estates in Mumbai. Out of these about 80 industrial estates are highly polluting, as many chemical industries are located in these areas. Inventory of the polluting industries is to be prepared on priority and standards as prescribed under the Air Act/Water Act /EP Act are to be enforced on priority especially for chemical industries and industries generating hazardous waste.

5. It has been reported that large quantities of hazardous wastes are indiscriminately thrown without treatment by many industries in Maharashtra. Therefore action is required on priority on these issues.
6. To evaluate performance of CETPs in the state. As per CPCB's recent survey, the CETP at Tarapur is not functioning properly. Urgent action is required to be taken by the Board on this issue.
7. Action Plan has to be prepared for control of pollution in the following highly polluted industrial areas on priority:

Thane, Belapur	Thane
Tarapur	Chiplun
Patalganga	Aurangabad
Mahad	Kolhapur-Ichalkaranji
Lote Parshuram	Nagpur
Kalyan	Chembur
Roha	Pune-Pimpri Chinchwad
TTC area	

8. To initiate action against industries which, as per CPCB records, are not complying with the standards and have inadequate treatment facilities: There is large scale ground water contamination reported from Maharashtra especially in areas where distilleries and paper and pulp industries are located. Urgent action is required to control pollution from distilleries and paper and pulp industries as per CPCB guidelines.
9. Review of BMW management programmes is critical as incinerators installed at Pune and other places are not meeting the standards as prescribed under the EP Act.
10. Critical evaluation is required for municipal sewage disposal in Mumbai. For this project, the World Bank has given financial assistance.
11. To initiate clean up action of Sukhna river by Aurangabad Municipal Corporation (problem relates to disposal of sewage and solid wastes).
12. To discuss Maharashtra Government's view on implementation of zoning policy based on environmental considerations.
13. Implementation of River Action Plan for Krishna and Godavari. Towns like Kolhapur on the bank of the Panchganga river to be included on priority.
14. To discuss water quality monitoring along with the problems associated with disposal of industrial effluent, sewage and solid wastes.

15. To review the status of sewage treatment facilities planned for Versova, Malad, Ghatkopar and Bhandup. Management of municipal solid waste is one of the major problems. In future, landfill sites are not available. Proper operation of existing landfill sites at Deonar, Mulund, Malad and Gorai.
16. Pursuant to a court case, a Committee was constituted under the Chairmanship of Transport Commissioner for recommending measures for prevention and control of pollution in Mumbai city. The Committee has submitted its report in April 2001 to the court. In all, 101 recommendations have been made, which cover all aspects of vehicular pollution. The recommendations include improvement of engines produced by vehicle manufacturers, quality of fuel, measures for traffic management, maintenance of vehicles, etc. It has also laid down a time-frame for scrapping or converting to clean fuel of all the vehicles in the city of Mumbai. Use of alternative clean fuel like CNG is to be increased. Presently, 22 outlets are in operation in Mumbai, through which 50,000 kgs of gas are supplied to the vehicles.
17. Status regarding the proposal of the Board for setting up of automatic air quality monitoring station at a cost of Rs.10.5 crores (50% share of the Board, 25% share of the local body and 25% share of Ministry of Urban Development) approved by Dept. of Environment.
18. Municipal Corporation of Greater Mumbai (MCGM) in consultation with association of hospitals has finalized arrangements for entering into an agreement with member hospitals for transporting and treating bio-medical waste at facilities being installed at GTB hospital. More than 22 hospitals have conveyed their acceptance to join the facility. Important hospitals that conveyed acceptance include Bombay Hospital, Breach Candy, Jaslok, P.D. Hinduja, Lilavati, Nanavati etc. Review present position and performance of this facility.

ANNEXURE - 1

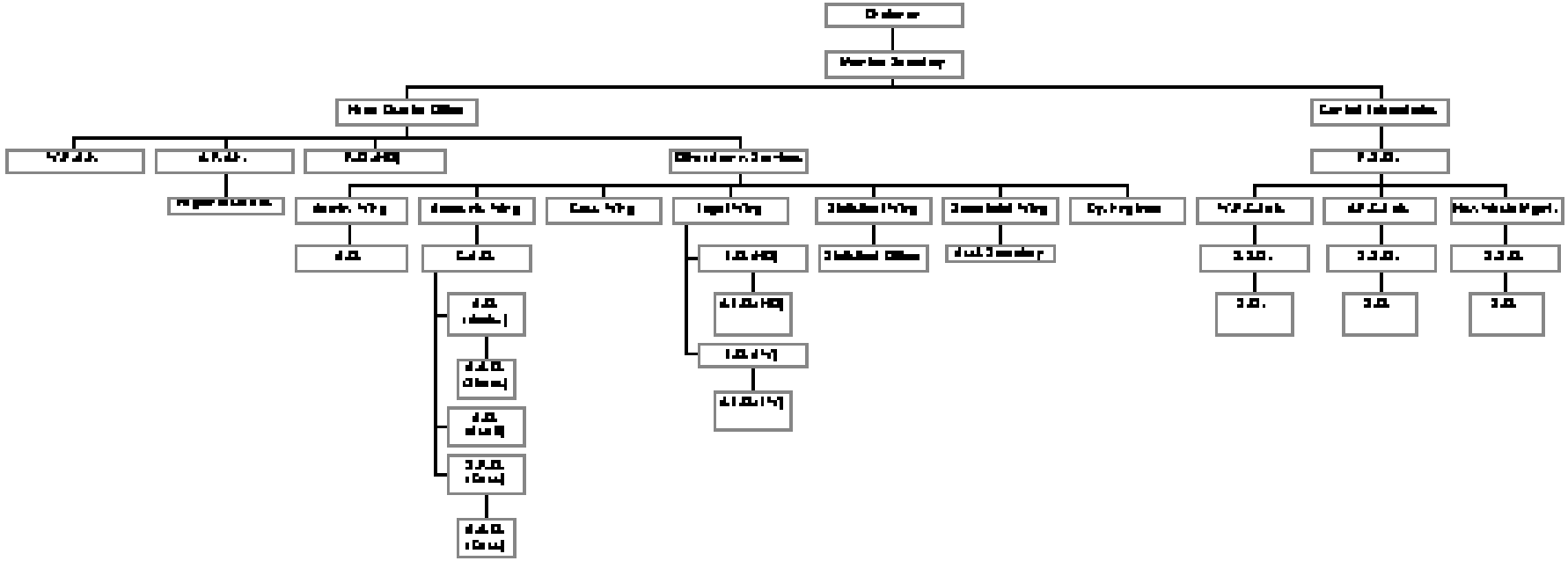
Members of the Board

1	Mushtaq Antulay	Chairman
2	Principal Secretary, Environment Department, Government of Maharashtra	Member
3	The Secretary, Public Health Department, Government of Maharashtra	Member
4	Principal Secretary, Urban Development Department, Government of Maharashtra	Member
5	The Secretary, Home (Transport) Department, Government of Maharashtra	Member
6	Shri. Suresh Deshmukh	Member (w.e.f. 14.03.2001)
7	Shri Vijay Kurtadkar	Member (w.e.f. 14.03.2001)
8	Shri Hemant Takle	Member (w.e.f.14.03.2001)
9	Shri Saleem Patel	Member (w.e.f. 17.05.2002)
10	Shri Rajeshwar Neture	Member (w.e.f. 11.03.2003)
11	The Chief Executive Officer, Maharashtra Industrial Development Corporation	Member
12	Managing Director S.I.C.O.M.	Member
13	Dr. Munshilal Gautam, Member-Secretary	Member-Secretary

ANNEXURE - 2

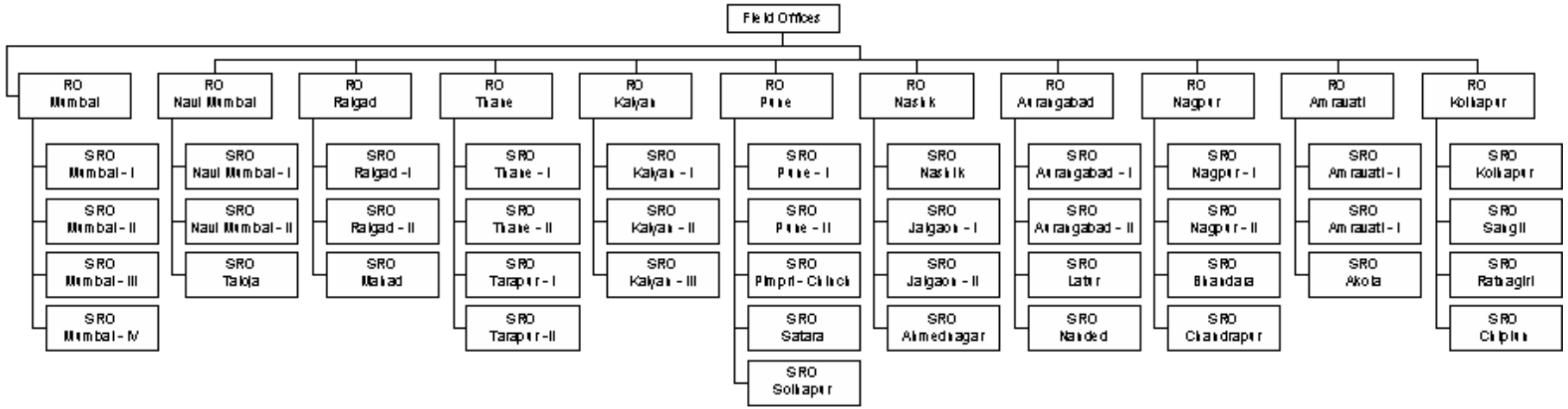
Maharashtra Pollution Control Board

Organisational Chart



MAHARASHTRA POLLUTION CONTROL BOARD

Field Offices Chart



ANNEXURE-3

STAFF STRENGTH AS ON 31.03.2003

Sr .No.	CADRE	Sanctioned	Filled In	Vacant	Dissolve
I	**TECHNICAL**				
1.	Water Pollution Abatement Engineer	1	1	-	-
2.	Air Pollution Abatement Engineer	1	1	-	-
3.	Regional Officer	13	10	3	-
4	Statistical Officer	1	1	-	-
5	Sub-Regional Officer	51	51	-	-
6	Deputy Engineer	1	1	-	-
7	Field Officer	98	89	9	-
8	Draughtsman	1	1	-	-
9	Statistical Asstt.	1	1	-	-
10	Field Inspector	8	6	2	-
11	Asstt. Draughtsman	3	2	-	1
12	Field Assistant	57	47	-	10
13	Tracer	9	7	-	2
14	Electrician	2	2	-	-
15	Instrument Fitter	1	-	1	-
16	Sub Overseer	2	-	-	2
	TOTAL	**250**	**220**	**15**	**15**
II	**LEGAL**				
1.	Law Officer	2	2	-	-
2.	Assistant Law Officer	2	2	-	-
3.	Legal Assistant	4	4	-	-
	TOTAL	**8**	**8**	**-**	**-**
III	**SCIENTIFIC**				
1.	Principal Scientific Officer	1	-	1	-
2.	Senior Scientific Officer	3	3	-	-
3.	Scientific Officer	9	7	2	-
4.	Junior Scientific Officer	26	23	3	-
5.	Junior Scientific Assistant	26	35	1	-
6.	Laboratory Assistant	7	7	-	-
	TOTAL	**72**	**75**	**7**	**-**
IV	**ACCOUNTS & ADMIMSTRATION**				
1.	Chief Accounts Officer	1	1	-	-
2.	Accounts Officer	2	2	-	-
3.	Assistant Accounts Officer	2	1	1	-
4.	Administrative Officer	1	1	-	-
5	Assistant Secretary	1	1	-	-
6	Senior Steno	5	4	1	-
7	Head Accountant	20	17	3	-
8	Junior. Steno	26	23	3	-
9	First Clerks	17	12	5	-
10	Senior Clerk	50	50	-	-
11	Junior Clerks/Store Clerks/ Cashier	63	56	7	-
12	Daftari	2	2	-	-
13	Drivers	54	49	5	-
14	Roneo Operator	1	1	-	-
15	Naik	2	2	-	-
16	Chowkidar	20	20	-	-
17	Peons	108	106	2	-
18	Sweeper	3	3	-	-
	TOTAL	**378**	**351**	**27**	**-**

ABSTRACT					
		Sanctioned	**Filled In**	**Vacant**	**Dissolve**
I	Technical	250	220	15	15
II	Legal	8	8	0	-
III	Scientific	82	75	7	-
IV	Accounts & Administration	378	351	27	-
	TOTAL	718	654	49	15
	Member Secretary	1	1	-	-
	Chairman	1	1	-	-
	GRAND TOTAL	**720**	**656**	**49**	**15**

ANNEXURE - 4

SEMINARS / WORKSHOPS & TRAINING COURSES ATTENDED BY THE BOARD STAFF / OFFICERS (2002-03)

Sr.No.	Name of Designation	Training Programme	Place	Period
1.	Mr. K.V.Gawankar, JSO	Operation Maintenance of Mass Spectrometer	USA Shelton	24.06.2002 to 27.06.2002
2	Mr. D.B. Patil, SRO	Hazardous Waste Management	Nykoping Sweden	19.08.2002 to 19.09.2002
3	Mr. S.R.Said S.O.	Water Pollution Assessment, Monitoring and Control	ESCL Hyderabad	10.12.2002 to 12.12.2002
4 5 6 7	Mr. S.C.Kolur, Project Scientist, Central Lab Mr. S.S.Anekar, Data Entry Operator Dr. A.R.Supate, SSO, I/C. Z.A. Mr. A.N.Kamble, Project Scientist	Training Schedule for Introduction of Arc View	New Delhi	21.11.2002 to 22.11.2002
8	Mr. N.G. Nihul, SRO, Nagpur	Training Programme on Noise Pollution	Kolkata	4.12.2002 to 5.12.2002
9	Mr. D.M.Choukhande, SRO, HQ	Seminar on 'JAPANESE EXPERIENCES IN ENVIRONMENTAL PROBLEMS AND SOLUTIONS'	Mumbai	13.12.2002 to 14.12.2002
10	Mrs Saujanya S. Patil, FO, Aurangabad	Solid Waste Management Current Status and Strategies for the future	Bangalore University	12.12.2002 to 14.12.2002
11	Shri A.F. Deshmane, FO	Training Programme on Meteorology and Air Pollution	Delhi	29.04.2002 to 30.05.2002
12 13	Shri B.S.Fule, SO Shri V.M.Motghare, SRO	Issues related to Ambient Air Quality Monitoring Influents and Analysers	New Delhi	April 2002 ***
14	Shri S.S.Saidh, SO	Air Quality Monitoring Modeling and Management	****	*****
15 16 17	Shri A.B.Durgule, FO Shri S.R.Bhosle, FO Shri A.V.Patil, FO	All India Convention on Modern Trends in Pollution Prevention & Control	*****	******
18 19	Kum Smita Gayakwad Legal Assistant Smt Vaishali Sadhle, Legal Assistant	Training Programme for the Enforcement of Environmental Law conducted by National Law School of India University	Banglore	08.07.2002 to 13.07.2002

Sr.No.	Name of Designation	Training Programme	Place	Period
20 21 22 23 24 25 26 27 28 29	Shri R.M.Kulkarni, RO Shri B.D.Kude, RO Shri B.D.Vadde, SRO Shri G.N.Mohite, SRO Shri R. Bandappa, SRO Shri S.R.Bande, JSO Shri S.N.Misal, JSO Shri V.G.Mudlgi, JSO Shri Chetan Sawant, JSO Smt. Sudha Pore, JSO	Joint Seminar on Air Pollution Control Techniques	Dadar	26.06.2002
30	Shri D.T.Devale, LO(LW)	Environmental Law Enforcement for the Pollution Control Boards	Delhi	25.06.2002 to 27.06.2002
31 32 33 34 35	Shri Ajay Deshpande, RO Shri Sandipan Reddy, FO Shri D.M.Sonawane, SA Shri Rajiv Khade, FA Shri Suhas Gogate FA	INDIACEM 2002-an International Exhibition & Conference	New Delhi	18.09.2002 to 21.09.2002
36	Shri N.G.Nihul, SRO	Noise Pollution	Nagpur	04.12.2002 to 05.12.2002
37	Dr. A.R. Supate, SSO, I/c/ PSO, I/c Z.A.	Overseas training programme on 'Environmental Management and Case Studies of Implemented Projects"	Germany	19.05.2003 to 20.06.2003
38 39	Mr. S.C.Kollur, Project Scientist Mr. S.S.Anekar, Data Entry Operator	Introduction to Arc View	NIIT, New Delhi	2 days
40 41	Dr. A.R.Supate, Project Coordinator Mr. A.N. Kamble, Project Scientist	Introduction to Arc Info	NIIT, New Delhi	5days
42	Mr. A.N.Kamble, Project Scientist	Portal Technology / Web Management -I	CPCB, New Delhi	2 days
43	Mr. S.S.Anekar, Data Entry Operator	Portal Technology /Web Management - II	CPCB, New Delhi	2 days
44	Dr. A.R. Supate, Project Coordinator	Environment Management & Case Studies of Implemented Projects	New Delhi & Germany	6 Weeks

ANNEXURE - 5

Consents/Authorization granted during 2002-03

Region	Consents Granted To Establish	Consents Granted To Operate	Consents Granted for 15 yrs.	Simplified Consents Granted
Navi Mumbai	217	516	98	-
Nashik	427	770	13	-
Nagpur	228	524	53	-
Amravati	262	482	4	10
Kalyan	144	433	14	5
Mumbai	33	506	2	38
Kolhapur	318	713	4	-
Thane	73	619	57	12
Raigad	60	215	33	3
Pune	508	955	2	-
Aurangabad	186	579	35	113
TOTAL	**2456**	**6312**	**315**	**181**