

Paryavaran Kavach

Guidance Manual on Environment Compliances in Maharashtra

June 2014

NOTE : Information included in the manual is intended for providing guidance to industries. We encourage the industries to (a) visit MPCB's website (www.mpcb.gov.in) and MoEF's website (www.envfor.nic.in) for the latest and updated State and Central level environmental regulations and (b) seek assistance from environmental professionals wherever deemed necessary.

DISCLAIMER :

In spite of best care and caution, various types of errors & omissions, inclusive of, in statement of law and in tracing and eliminating overruled versions etc. and in procurement of various Amendments and their incorporation in Acts, Rules, Regulations and Orders, etc. and in similarly in pronouncement of various Notifications and various State Amendments etc., and in correct reproduction of Acts, Rules, Regulations, Orders, Notifications and State Amendments etc. and in proof reading creep in 'for which the readers and patrons will please bear with us and any discrepancies noticed may kindly be brought to our knowledge, so that it is taken care of in next edition'. It is notified that the publication is published with clear understanding that authors / editors / printers and publishers are not responsible for any damage or loss accruing to anybody there from and for the result of any action taken on the basis of this particular publication nor for any errors or omissions etc. to any person.

PREFACE

There have been a large number of amendments in the environmental laws and new environmental rules and regulations in last two decades in India. This has become a challenge for industry and regulator both to keep themselves updated and follow the latest environmental rules. Large industry and regulator have been able to handle this challenge as they have professionals working for them. However this has not been the case with medium and small scale industry. It is difficult to comprehend the environmental rules fully and it may lead to poor compliance to the environmental laws.

The Sustainability Committee of Bombay Chamber of Commerce and Industry decided to take up the challenge of preparing the “Paryavaran Kavach”- Guidance Manual on Environment Compliance. The Chamber approached Maharashtra Pollution Control Board (MPCB) requesting for partnership in preparation of the Manual and it was graciously accepted by MPCB. The team from MPCB and industry members of the Chamber together put in efforts to bring out the Manual.

We are sure that the Manual -“Paryavaran Kavach” will be useful to our members as a resource and reference material for environment compliance with the authorities.

June 2014



Neera Saggi
President



FOREWORD

Environmental Law and Regulations is essential tool for governance and management of environment. The Central and State Governments have enacted many specific Laws and Regulations on Environment including water, air, noise, MSW, BMW, Plastics, Batteries, E-Waste etc. Further, there are amendments in these environmental laws and regulations from time to time.

The Compliance towards environment norms requires very deep understanding of subject and is quite information intensive. It is indeed difficult for Entrepreneur to keep pace with latest laws and regulations. This manual compiles existing Environmental Laws and Regulations and highlights specific statutory requirements for obtaining permissions from Regulatory Bodies. This manual also contains listing of various disposal facilities in the state for immediate reference of user industries.

I hope this manual will help user industries to comprehend the Environmental Laws and Regulations. It will also be useful as a guidance manual for their day to day needs in respect of compliance towards Environmental norms.

This manual has been jointly prepared by Maharashtra Pollution Control Board (MPCB), Bombay Chamber of Commerce and Industry (BCCI), Mumbai and Industry representatives jointly. This is a unique endeavor where Regulatory body and user industries association have joined hands to prepare this manual from user industry point of view. Such endeavors are need of the day to bridge the trust deficit between environmental regulatory bodies and the users industries and to promote healthy relationship based on trust and confidence between them.

I appreciate the efforts taken in this endeavor by *Mrs. Usha Maheshwari*, Joint Director, BCCI, *Shri. Nikhil Raval*, HSE Director, Sanofi India Ltd., *Dr. Rajan Sharma*, Head Corporate EHS, Glenmark Pharmaceuticals, *Shri. Mangesh Brahme*, Head, EHS, Godfrey Philips India Ltd.; team members from BCCI and *Shri. P.K. Mirashe*, Assistant Secretary (Technical), *Shri. D.T. Devle*, Sr. Law Officer, *Shri. Nandkumar Gurav*, Sub-Regional Officer, *Shri. Amar Durgule*, Sub-Regional Officer; team members from MPCB

May 2014

Rajeev Kumar Mital, IAS
Member Secretary

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CHAPTER - I

Introduction and Background

There have been a large number of amendments in the environmental laws and new environmental rules and regulations in last two decades in India. This has become a challenge for industry and regulator both to keep themselves updated and follow the latest environmental rules. Large industry and regulator have been able to handle this challenge effectively as they have competent professionals working for them. However this has not been the case with medium and small scale industry it is difficult to comprehend the environmental rules fully and it may lead to poor compliance to the environmental laws.

Background for Manual

The concern related to inadequacy of reports/returns received from medium and small scale industry by Maharashtra Pollution Control Board (MPCB) was raised during a Round Table Conference on Sustainable Industrial Waste Management held in April 2012. The conference was organized by Bombay Chamber of Commerce & Industry (BCCI) and had invited senior officers from Ministry of Environment & Forest (MoEF), CPCB and MPCB. In the absence of adequate, proper and authentic data, they expressed their difficulty in preparing policies to support industries.

Expectations from Industry

The regulator's minimum expectation from industry is to comply with all applicable laws at any point of time. A clear gap in capability of medium and small scale industries to have awareness about applicable environmental legal requirements was identified during the conference.

Aim / Objective

- To develop simple and comprehensive manual on applicable environmental regulations in the state of Maharashtra.
- To develop capability and strengthen the awareness on applicable Environmental Acts and Rules in the State of Maharashtra.
- To improve upon the timeliness & quality of reports / returns submitted by the industry to statutory bodies.
- To enhance environmental compliance in the state of Maharashtra.

Bombay Chamber of Commerce & Industry contacted Maharashtra Pollution Control Board (MPCB) requesting for collaboration, followed by the meeting with Mr. Rajeev Mital, Member Secretary, MPCB along with his team members which resulted into the nomination of two officers for developing the Manual on Environment Compliances by the industry. The six member team of experts from the industry, MPCB and Bombay Chamber has provided their inputs in bringing out the Manual.

CHAPTER - II

Applicable Laws

Ministry of Environment and Forest (MOEF) and Maharashtra Pollution Control Board (MPCB)

Sr. No.	Title
1.	Environmental (Protection) Rules - Environmental Clearance 1994. (replaced by EIA notification 2006)
2.	Environmental management systems - Specification, with guidance for use.
3.	The Bio Medical Wastes (Management & Handling) Rules, 1998 and amended rules.
4.	Manufacture, Storage and Import of Hazardous Chemicals Rules / Amendment Rules, 1994.
5.	Municipal Solid Waste (MSW) (Management & Handling) Rules, 2000
6.	The Air (Prevention and Control of Pollution) Act, 1981 (as amended from time to time)
7.	The Air (Prevention and Control of Pollution) Rules 1982 / 1983.
8.	The Batteries (Management & Handling) Rules, 2001
9.	The Chemical accidents Emergency Planning Preparedness and Response) Rules, 1996.
10.	The Environment (Protection) Act, 1986.
11.	The Environment (Protection) Rules, 1986 (as amended from time to time)
12.	The Hazardous Wastes (Management and Handling) Rules, 1989) / Amended Rules 2008.
13.	The Noise Pollution (Regulation & Control) Rules, 2000. (Amended in 2010)
14.	The Ozone Depleting Substance (Regulation & Control) Rules, 2000.
15.	The Public Liability Insurance Act, 1991.
16.	The Public Liability Insurance Rules, 1991.
17.	The water (Prevention and Control of Pollution) Act, 1974.
18.	The water (Prevention and Control of Pollution) Cess Act, 1975.
19.	The water (Prevention and Control of Pollution) Cess Act, 1978.
20.	The water (Prevention and Control of Pollution) Rules, 1975.
21.	The Plastics Manufacture, Sale and usage Rules, 1999 [Plastic waste (M & H) Rules, 2011]
22.	The e-Wastes Management and Handling Rules, 2011
23.	Flyash utilization Notification 1999.
24.	National Ambient Air Quality Standards.
25.	Officers and Authorities Authorised to Cognizance Offences and to implement various provision of Environment Protection Rules 1986. (Entry & Inspection Collection of Sample etc).

Brief on Environmental Laws

1. **Water (Prevention & Control of Pollution) Act 1974 and Air (Prevention & Control of Pollution) Act 1981**

- a) **Apply for the consent to establish and consent to operate under both Acts and obtain consent** - while applying for Consent to Establish, it is ensured that whenever river regulation zone policy's is applicable, it's location should comply with RRZ policy. RRZ policy 2009 proscribes distance criteria from the HFL of the river on the basis of river classification, as per best designated uses specked there in. For ex. A-1 class of river water- designated uses mainly drinking water and there fore upto 3 km no development zone has been prescribed and no industrial activities allowed to establish or expanded. Similarly, there are number of notifications are issued by the state and central Governments, laying down distance /Locational criteria for location of industries or expansion in the environmental sensitive areas like MMR policy' Mahabaleshwar, Pachgani and Matheran areas, Dahanu, Murud Janjira and CRZ areas, where in restriction on land provisions imposed on the location of various activities are to fall owed up strictly, otherwise, after establishment of prohibited activities, statutory permissions will not be granted and necessary actions will be initiated against the violators.
- b) To obtain EC for the activities, which are covered under scheduled of industries and activities requiring EC before taking effective steps for establishment of such activities. Where such prior environment clearance not obtain, MoEF, Gov. of India has issued office memorandums for initiating actions against violators, who have taken effective steps without-obtaining prior EC and it is now provided that till credible action of filing of prosecution is initiated, not to grant EC and stop effective steps of establishment till EC is obtain.
- c) **To necessary information including various returns-** Under combine consent, conditions are imposed with regard to submission of mandatory information including various returns about waste managements, such as hazardous waste returns , compliance of flash disposals, accident reporting etc.

The responsibility have been imposed on the occupier of the industries, who has got control over the affairs of the company or who is in possession of the promises of the company or hazardous substance. Therefore it becomes necessary to declaring an occupier of the company/firm while making application for consent. Both the Water and Air Acts further provides that not only occupier, but also the persons who are directly in charge of and responsible for the conductor business of company as well as the company itself shall be liable for any offence committed by the company. There fore in the matter of Shiraz Fertilizer (oleum gas leakage case), Hon'ble Supreme Court of India held that not only manager or any of the person in charge of responsible, but allot, Managing Director and CMD are also more responsible for the damage to the Environment. The consented strict liability has been made applicable on the management with directions to give undertaking that for any future gas leakage, it will pay the compensation. In one of the recent MPCB prosecution, since the names of responsible Directors of the managements not given by the company and. On their web site, whole board of directors shown non executives directors, Hon. Chief Judicial Magistrate has allowed MPCB to make all non executive directors shown on web site as accused and issue the process against them. Therefore, it become ness array to spell out the responsibilities not only of employees for day to day affairs, but also directors on be half managements.

2. **Water (Prevention & Control of Pollution) Cess Act, 1977-** In order to make proper use of water, being scarcity of natural resources and for making available SPCB's a source of revenue for in curing expenditure on its establishments and for the purpose of pollution prevention activities, Cess is imposed on almost all the water consuming activities. To kinds of rates are prescribed a) normal rate for those who comply with the environmental standards and higher rates for those who are not comply with the environmental standards. Rebate of 25 percentage is entitled to those, who comply with three conditions, namely, all the consent conditions, all the

environmental standards and water consumption quantity specified under the acts and consent. However, at present not a single activity is complying with all these three conditions and therefore not eligible for rebate.

3. **Environment (protection) Act 1986** - Environment (Protection) Act, 1986 has covered a no. of sources of environmental pollution and tries to regulate all the aspects of the environment by imposing various obligations on the various activities taking into consideration the and pollution potential of such activities as under.
- (a) **Hazardous Waste generating activities** - Such activities are specifically regulated with more stringent provisions under HW Rule 2008. For eg. Reprocesses should obtain necessary registration from the SPCB after adopting environmental sound management and practices for such reprocessing. Unauthorized reprocess have been banned to reprocess HW. Similarly conditions imposed I the authorisation by the Board for ensuring environmental sound disposal for hazardous waste. Various notifications issued under E(P) Rules 1986.
 - b) **Bio-Medical Waste (Management & Handling) Rule 1998** - It is obligatory on the part of industries generating BMW to become a member of common Biomedical waste treatment and disposal facility in the nerd by area, under whose jurisdiction the industry Is situated. In case of discarded medicines due to heavy rains, MPCB had to direct concerned pharmaceutical units/ R and D unit to fend their discarded medicines to the common hazardous waste treatment and disposal facility, as near by CBMWTSDF had not adequate incineration capacity at that time.
 - c) **Fly Ash Utilization Notification, 1999** - Wherever fly ash is generated, concerned industries, more particularly coal based power plant, to disposed off it by following the provisions in this notifications. 100 present utilization is to be achieved as per time frame prescribed in the said notification
 - d) **Municipal Solid Waste (Management and Handling) 2000** - Though MSW is treated as non Hazardous, most of the times, hazardous material like BMW, HW, Battery waste and E waste etc. being disposed off by the units with MSW. In such cases it becomes necessary for MPCB to direct them To segregate such HW from MSW and disposed it off to shape rate facility available for such waste disposal. Wherever, such segregation was not possible, whole MSW was treated HW and such units was directed to disposed off it to common CHWTSDF. Similarly MSW Rules make it mandatory to segregate biodegradable and non bipod readable MSW for further disposal to processing plant and secured land field site respectively, so as to reduced beard on secured landfill site and to ensured scientific disposal there off. Hence, industries generation MSW to comply with MSW Rules.
 - e) **Plastic Waste (Management and Handling) Rules, 2011 with Maharashtra Recycled Plastic Carry Bags (Manufacture and Usage) Rule, 2006** - The industries generation plastic waste should comply with both the Rules. It should ensured that the plastic waste is properly collected and disposed off to reprocessing facility. In Maharashtra, plastic carry bags having thickness more than 50 micron are allowed to manufactured and used, otherwise the violators are responsible for offences.
 - f) **The Batteries (Management & Handling) Rules, 2001** - As per this Rules all lead acid batteries are to be collected back and reprocessed. Therefore every user of lead acid batteries should sent it for further reprocessing after it's used and keep proper records their off. The manufacturer of lead acid batteries are under obligation to provide collection centres and to reprocess 90 percent of the batteries in the reprocessing facilities. Lead is treated as hazardous materials and not be disposed of with another waste in to the environment.

- g) **E-Waste (Management & Handling) Rules 2011** - From May 2012, separate regulation for E waste Management has been made applicable. E waste generated from electronic and electric equipment are to be collected separately and life cycle approach has been made applicable to such waste for the first time in India.

Producers of electrical and electronic equipment or even importer are responsible for adopting life cycle approach through extended responsibility to collect it back and responsible for end disposal of such E waste. Therefore not only manufacturer, but also retailer and bulk user shall be responsible to adopt life cycles approach. Users are responsible for keeping proper record of such equipments and disposal there off to E waste facility. Thus, multidisciplinary role is to be performed by each industry in waste management.

Corporate Responsibility for Environment Protection - CREP

Industrial development is an important constituent in our pursuits for economic growth, employment generation and betterment in the quality of life. On the other hand, industrial activities, without proper precautionary measures for environmental protection are known to cause pollution and associated problems. Hence, it is necessary to comply with the regulatory norms for prevention and control of pollution. Alongside, it is also imperative to go beyond compliance through adoption of clean technologies and improvement in management practices. Commitment and voluntary initiatives of industry for responsible care of the environment will help in building a partnership for pollution control. This is the very purpose of this Charter, published in March 2013 for about 17 industrial sectors namely :

“Aluminium, Cement, Chlor - Alkali, Copper, Distillery, Dyes & dye intermediate, Fertilizer, integrated Iron & Steel, Oil Refineries, Pesticides, Petrochemicals, Pharmaceuticals, Pulp & Paper, Sugar, Tannery, Thermal Power Plants, Zinc Industry”.

The action points enlisted in the charter are addressed to corporate bodies as well as regulatory agencies. Thus, the charter is a commitment for partnership and participatory action of the concerned stakeholders. The charter is also a road map for progressive improvement in environment management system. Thus, it is not necessarily limited to compliance of end-of-the-pipe effluent and emission standards. In a number of industrial sectors, the targets set in the charter are ahead of effluent and emission standards.

Compliance of section 135 of the Companies Act 2013 Corporate Social Responsibility

In India under Companies Act, 2013, any company having a net worth of rupees 500 crore or more or a turnover of rupees 1,000 crore or more or a net profit of rupees 5 crore or more should mandatorily spend 2% of their net profits per fiscal on CSR activities. The rules have come into effect from 1 April 2014. The Companies Act, 2013 was enacted on 29 August 2013 on accord of Hon'ble President's assent, and has the potential to be a historic milestone as it aims to improve corporate governance, simplify regulations, enhance the interests of minority investors, and for the first time legislates the role of whistle-blowers. The new law replaces the nearly 60-year-old Companies Act, 1956. The 2013 Act provides an opportunity to catch up and make our corporate regulations more contemporary, as also potentially to make our corporate regulatory framework a model to emulate for other economies with similar characteristics.

CHAPTER - III

Statutory Permission / Consent requirement from MPCB

Sr. No.	Statutory requirement	Date of Submission / Obtaining the permission
1	<p>Consent to Establish –</p> <p>Under Section 25 of Water (P & C P) Act, 1974 and Under Section 21 of Air (P & C P) Act, 1981, no person shall without previous consent of the Board</p> <p>(a) Establish or take any steps to establish any industry, operation or process or any treatment and disposal system or an extension or addition thereto which is likely to discharge sewage or trade effluent into the stream or well or sewer or land or</p> <p>(b) Bring into use any new or altered outlets for discharge of sewage.</p>	<p>Industry or entrepreneur shall submit the application for grant of consent to Establish in a prescribed format along with requisite fees and essential documents. The application form alongwith details of fees and documents required is available on MPCB's website (www.mpcb.gov.in). Industry shall submit the application before taking any effective steps towards the implementation of the proposed project.</p> <p><i>*Note:</i> Before selecting the site for establishment of the project, the entrepreneur must verify the site location considering the RRZ locational policy notified by Govt. of Maharashtra which is available on MPCB website and in this normal Chapter V</p>
2	<p>1st Consent to Operate</p> <p>Under Section 26 of the Water (P & C P) Act, 1974 and Under Section 21 of the Air (P & C P) Act, 1981, it is obligatory on any person who are discharging any effluent into a stream and air pollutants shall obtain consent to operate from the State Pollution Control Board.</p>	<p>After complete establishment of unit alongwith requisite pollution equipments, complied with consent to Establish conditions and before commencing any manufacturing activity.</p>
3	<p>Renewal of Consent</p>	<p>State Pollution Control Board is granting consent to the industry for a period of one year, two years or three years for Red, Orange & Green category of industries respectively. The categorization of industries made by Central Pollution Control Board is available on MPCB's website and in this manual. It is obligatory on every industry to get the application renewed before expiry of consent. The industry has to submit the application before 60 days of the expiry of earlier consent.</p>

Sr. No.	Statutory requirement	Date of Submission / Obtaining the permission
4	Environmental Clearance – Ministry of Environment & Forest Govt. of India has notified Environment Impact Assessment 2006. As per this notification some of the projects or activities requires prior environment clearance either from Ministry of Environment, Govt. of India or from State Govt. The list of the projects or activities requiring prior environment clearance is scheduled in this notification. The said notification is available on the website of CPCB as well as Ministry of Environment of Forest, Govt. of India.	The listed projects in EIA Notification 2006 before taking any effective steps towards the implementation of the project.
6	Authorisation under Rule 5 of the Hazardous Waste (Management, Handling & Transboundary) Rules 2008.	Every hazardous waste generating industry shall obtain the authorization under the said rules.
7	Registration under Rule 8 of the Hazardous Waste (Management, Handling & Transboundary) Rules 2008.	It is mandatory to obtain registration under the said Rule to every person who desires of recycling or re-processing the hazardous waste specified in Schedule-IV of the said Rule.
8	Authorisation under Rule 8 of the Bio-Medical Waste (Management & Handling) Rule, 1998 (As amended)	Every occupier of the institution generating, collecting, receiving, storing, transporting, treating, disposing and/or handling bio-medical waste except such occupier of clinics, dispensaries, pathological laboratories, blood banks providing treatment/service to less than 1000 patients/month should make an application in Form-I for grant of authorization.
9	Rule 9 of the Plastic Waste (Management & Handling) Rules, 2011	It is mandatory to obtain registration certificate from the concerned pollution control board for manufacturing of carry bags or recycle plastic bags or multilayered plastics.
10	Rule 5 & 8 of Batteries (Management & Handling) Rules, 2001	It is mandatory to obtain registration by the importer and each recycler from Ministry of Environment & Forest or an agency designated by it.
11	Rule 9 of the E-Waste (Management & Handling) Rules, 2011	<p>1. Every producer of electrical and electronic equipment listed in Schedule-I, collection centre, dismantler and recycler of e-waste shall obtain authorization from the State Pollution Control Board.</p> <p>2. Every dismantler or recycler of e-waste make an application, within a period of three months starting from the date of commencement of these rules in Form-4 in triplicate to the State Pollution Control Board.</p>

Statutory submissions / filing returns by the Industries

Sr. No.	Statutory requirement	Date of Submission
1.	Cess Returns – As per the Water (P & C P) Cess Act, 1977 every industry shall file the cess returns in prescribed Form-I. This Cess Act is applicable to the industries which are having the trade effluent quantity more than 10m ³ /day and the industries which are generating hazardous waste irrespective of effluent quantity.	Every monthly or quarterly.
2.	Environmental Statement – As per the Environmental Protection Rules, 1986, it is obligatory on every industry to submit the environmental statement in the prescribed format.	Before 30 th September of every year.
3.	Manifest – As per the Rule 21 of the Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008, it is obligatory on the hazardous waste generating industry to follow the manifest system for transportation, treatment and disposal of hazardous waste.	As and when hazardous waste disposed. It is mandatory on the hazardous waste generating industries to dispose the hazardous waste within 90 days as per the rules.
4.	Form No. 4 – Annual Hazardous Waste Return - As per Rule 22 of the Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008, it is obligatory on the hazardous waste generating industry shall submit the annual returns for the hazardous waste generation, treatment and disposal in the prescribed Form 4.	On or before 30 th June of every year
5.	As per Sub-Rule 5 of 9, it is obligatory on every authorized person under these rules shall maintain the records of e-waste handled by them in Form 2 and prepare and submit to the State Pollution Control Board, and Annual Return containing the details specified in Form 3	On or before 30 th June of every year
6.	As per Rule 4 of the Batteries (Management & Handling) Rules, 2001, it is the responsibility of the manufacturer, importer, assembler and re-coordinator to file a half-yearly return of their sales and by back to the State Board in Form I	by 30 th June and 30 th December of every year.

CHAPTER - IV

Fees For Combined Consent For One Term Under Water and Air Acts

The Fees have been revised vide Govt. of Maharashtra , GR dt 25/08/2011 and are as under :

Capital Investment of industry (including land, building, machinery without depreciation)	Consent to Establish	Consent to Operate
More than Rs. 100 Crores	0.02% of Capital Investment	0.02% of Capital Investment
More than 75Crs to 100Crs.	Rs. 1,25,000/-	Rs. 1,25,000/-
More than 50 Crs to 75 Crs	Rs. 1,00,000/-	Rs. 1,00,000/-
More than 25 Crs to 50 Crs	Rs. 75,000/-	Rs. 75,000/-
More than 10 Crs to 25 Crs	Rs. 50,000/-	Rs. 50,000/-
More than 5 Crs to 10 Crs	Rs. 25,000/-	Rs. 25,000/-
More than 1 Crs to 5 Crs	Rs. 15,000/-	Rs. 15,000/-
More than 60 Lakhs to 1Cr	Rs. 5,000/-	Rs. 5,000/-
More than 10 Lakhs to 60 Lakhs	Rs. 1,500/-	Rs. 1,500/-
Below Rs. 10 Lakhs	Rs. 500/-	Rs. 500/-

B) Urban Local Bodies (Under water Act):

1	Municipal Corporation	Rs. 1,00,000/-
2	Municipal Council Class-A	Rs. 50,000/-
3	Municipal Council Class-B	Rs. 5,000/-
4	Municipal Council Class-c	Rs. 2,000/-

The mining projects will pay Rs.0.40 per tone of Mineral per annum in addition to the payment as per capital cost of the mining project as Consent fee”.

The entrepreneurs need to pay the consent fees to the Board as per the statement given above. These fees are payable in form of Demand Draft at any Nationalised bank at respective Sub-Regional office or Regional office or at head quarter along with the completed prescribed form. The term of consent for Red, Orange and Green category of Industry is one, two and three years respectively. The industries can also obtain the consent for extended period up to 5 terms by paying proportionate fees. MPCB also introduced auto renewal cement process to expedite consenstn issuing process.

CHAPTER - V

Restrictions for Citing of new Industries in Maharashtra

A) Restriction For Locating Industries in Mumbai Metropolitan Region

Mumbai Metropolitan Region, Government of Maharashtra, Industries, Energy and Labour Department, vide Government Resolution No. ILP/1098/4789/IND-2 dated 7/11/1998 have notified the modification of Industrial Location Policy in Mumbai Metropolitan Region. Accordingly for the purpose of the revised industrial location policy, the Mumbai Metropolitan Region has been divided into the following zones : -

Zone I :- consisting of Greater Mumbai and areas of Thane Municipal Corporation and Mira-Bhayander Municipal Council.

Zone II :- consisting area of Kalyan and Navi Mumbai Municipal Corporations; Ulhasnagar, Ambernath, Kulgaon-Badlapur Municipal councils; Bhivandi and Uran sub-regions as described in Schedule III and Vasai-Virar sub-region as per Notification No. TPS 1287/2753/CR-228-81/UD-12, dated 14th May, 1990. (Schedule IV)

Zone III :- consisting of the remaining areas of the Mumbai Metropolitan Region, excluding the areas covered under Zones I and II above.

Industries Established on or before Decemeber 31, 1991

Item	Zone I	Zone II
1. New unit, substitute unit for one that has closed down or relocation of unit from elsewhere.	(a) will be allowed freely for schedule I industry.	(a) Other than units of Schedule II industries will be freely allowed.
	(b) Will be allowed for Schedule I-A Industries in Thane Municipal Corporation area and Mira-Bhayander Municipal Council area subject to conditions mentioned in Para 7 of this GR.	(b) Schedule II industries will be allowed only in MIDC area. In other areas, they may be allowed only after approval of Committee mentioned under para 9 of this GR.
	(c) will not be allowed for others.	(c) In Uran sub-region a defined in Schedule III no new/substitute unit will be allowed.
2. Expansion, modernisation or diversification of an existing unit.	(a) will be allowed for Schedule I industries.	(a) Expansion etc. Other than Schedule II industries will be allowed.
	(b) will be allowed for Schedule IA industries in Thane Municipal Corporation Area and Mira-Bhayander Municipal Council Area, subject to the conditions in para 7 of this GR.	(b) Expansion etc. of schedule II industrial will be allowed only in MIDC areas. In other areas, it may be allowed only after approval of committee mentioned under Para 9 of this G.R.
	(c) Will be allowed for Schedule II industries provided the overall source pollution decreases and does not require additional power and additional built up area for manufacturing purpose.	
	(d) Not covered under Schedule I, IA and II will be allowed upto permissible FSI, provided additional power is limited to 25 percent of authorised connected load on 4.5.93.	

3. Proposed industrial estate construction on an open plot.	(a) will be allowed for housing schedule I industries only.	(a) Construction will be allowed for housing other than Schedule II industry.
	(b) Will be allowed for schedule IA industries in Thane Municipal Corporation Area and Mira Bhayander Municipal Council Area subject to condition in Para 7 of this GR.	(b) In MIDC areas, construction will be allowed even for housing schedule II industry.
	(c) Will not be allowed for housing other than (a) and (b) above.	
4. Expansion of approved industrial estates (having final NOC)/division of gala of structure.	(a) Will be allowed to house only Schedule I industries and Schedule IA industries in Thane Municipal Corporation Area and Mira-Bhayander Municipal Council Area subject to condition in Para 7 of this G.R.	(a) will be allowed for housing other than Schedule II industry.
		(b) In MIDC areas, expansion/division will be allowed even for housing Schedule II industry.

SCHEDULE - I

Non-Polluting, High Tech of High value added Industries

- I. Electronics-
 Manufacture of consumer and entertainment electronics,
 Manufacture of computer and peripherals
 Manufacture of electronic control, measuring, recording instruments.
 Manufacture of electronic telecommunication and broadcasting equipment,
 Manufacture of electronic components and accessories.
 Computer data procession, software and production,
 Manufacture electronic medical equipment.
2. White Goods -
 Domestic refrigerator, freezer, washing machine, dish washer, microwave oven, air conditioner, reprographic equipment, laser equipment etc.
3. Plastic Products -
 All products form moulded, extruded, thermoset process.
 Manufacture of acrylic sheets and acrylic products.
 Manufacture of re-inforced / laminated sheets.
 Manufacture of mono filaments products.
4. Watches and Clocks of all kinds.
5. Gems and Jewellery -
 Jewellery of all types including costume jewellery,
 Manufacture of gold and silver articles,
 Diamond cutting and polishing.
6. Textile Products (Excluding dyeing and processing of cloth),
7. Food, Good Products and non-alcohollc beverages.

8. Paper products, printing and Publishing (Excluding manufacture of paper)
Manufacture of paperboard products,
Printing, publishing and allied activities.
9. Leather and fur products (excluding tanning curing and Processing of hides)
10. Wood Products (excluding manufacture of plywood, blockwood and saw milling)
11. Pharmaceutical Formulations (313).
12. Vehicle Repairing and Battery Charging Services.
13. Repairs of road construction machinery owned by the unit.
14. Manufacturing of corrugated boxes from purchased papers.

SCHEULDE - IA
Engineering Industries Etc.
(The figure in bracket refer to national Industrial Classification).

1. Industrial Springs (343.6)
2. Fabrications (340)
3. Electronic Motors (360.4)
4. Utencils manufacturing (346)
5. Steel Metal Press parts (344)
6. Electronic Coil Winding (360.8)
7. Special purpose Machinery (359)
8. Moulding of Rubber Parts (302.9)
9. Automobile Parts Manufacturing (374.8)
10. Engineering Job work and Machinery of Parts (345)
11. Mixing of Chemicals with Zero Effluent Discharge.

SCHEDULE - II
List of Industries (Polluting and Hazardous)

1. Manufacture and refining of sugar (206)
2. Manufacture of hydrogenated oils, vanaspati ghee and edible oils (210, 211)
3. Distilling, rectifying and blending of spirits (220)
4. Manufacture of pulp, paper and paper board including newsprint (280)
5. Tanning, curing and finishing of leather of furshins (290, 294).
6. Manufacture of petroleum and coal products (304 to 307).
7. Manufacture of chemical and chemical products (except pharmaceutical products) (310 to 319 except 313)
8. Manufacture of cement (3241)
9. Basic metals and alloys industries (330 to 339)
10. Thermal power plants.
11. Asbestos and asbestos products.

SCHEULE - III

1. Bhiwandi Sub-Region

Bhivandi-Nizampur Municipal Council and the following villages

Sr. No.	Name of village	Sr. No.	Name of Village
1	2	1	2
1.	Alimdhar	30.	Mankoli
2.	Aniur	31.	Nimbavoli
3.	Bharodi	32.	Ovali
4.	Bhinar	33.	Pimpalas
5.	Danode	34.	Pimpalgaon
6.	Davyale	35.	Pimpalghar
7.	Dhamagaon	36.	Pirnoalnar
8.	Dive	37.	Purne
9.	Dive (Aniur)	38.	Rahanal
10.	Dunye	39.	Ranjandi
11.	Eikunde	40.	Sainagar
12.	Gorsai	41.	Sarang
13.	Gove	42.	Saravali
14.	Gundavali	43.	Savandhe
15.	Vadghar	44.	Shelar
16.	Junavdurki	45.	Shivnagar
17.	Kalher	46.	Sonale
18.	Kalwar	47.	Sontaka
19.	Kambe	48.	Surai
20.	Kasheli	49.	Tembavali
21.	Kashivali	50.	Vadpe
22.	Katai	51.	Vadunavghar
23.	Kawad KH.	52.	Vafaie
24.	Kevani	53.	Vaghivali
25.	Khoni	54.	Val
26.	Kiravali	55.	Valshid
27.	Kolivali	56.	Vehele
28.	Kon	57.	Yavai
29.	Kopar		

2. Uran Sub-Region

Uran Municipal Council area and the following village :

Sr. No.	Name of village	Sr. No.	Name of Village
1	2	1	2
1.	Borioakhadi	3.	mhatwali
2.	Kegoaon		

SCHEULE - IV

Areas covered under Vasai-Virar Sub-Region forming part of Mumbai Metropolitan Region

Sr. No.	Name of village Being the area comprised in the villages and municipal limits mentioned below	Sr. No.	Name of Village Being the area comprised in the villages and municipal limits mentioned below
1	2	1	2
1.	Achole	34.	Mandavi
2.	Agashi	35.	Manikpur
3.	Bapne	36.	Merdes
4.	Barampur	37.	More
5.	Bhulgaon-Budruk	38.	Mulgaon
6.	Dhuigaon-Khurd	39.	Naigaon
7.	Bilalpada	40.	Nale
8.	Boling	41.	Nabghar
9.	Chandansar	42.	Nawale
10.	Chandip	43.	Nilemore
11.	Chikhal-Dongari	44.	Nirmal
12.	Chincholi	45.	Pelhar
13.	Cjulne	46.	Rajivali
14.	Dahisar	47.	Rajodi
15.	Deodal	48.	Saloli
16.	Dhaniv	49.	Sandor
17.	Diwanman	50.	Samel
18.	Gas	51.	Sassunavghar
19.	Gas-Kopri	52.	Sativali
20.	Girij	53.	Shirgaon
21.	Gokhivare	54.	Shirsad
22.	Juchandra	55.	Sopara
23.	Kaman	56.	Tulinj
24.	Kaner	57.	Umele
25.	Karadi	58.	Umelman
26.	Karmale	59.	Umbrale
27.	Kashid-Kopar	60.	Vadavali
28.	Kaular-Budruk	61.	Vagholi
29.	Kaular Khurd	62.	Vasai Municipal Area
30.	Kiravali	63.	Vathar
31.	Kolhi	64.	Virar Municipal Area
32.	Kofrod	65.	Waliv
33.	Kodhimbe		

B) Location Criteria For Stone Crushers :

M.P.C. Board in its 123rd meeting of the Board held on 30/3/99 has laid down the criteria for siting of stone crusher which is as under :-

1. The stone crusher will be located at minimum 500 meters from the nearest human habitation (Minimum 1000 souls).
2. The minimum distance of the stone crusher from State Highway/National Highway shall be 500 meters.

C) Restrictions in Bapu Kutir Area :

Restrictions have been placed on establishment of industries etc within a radius of 10 km from the Bapu Kutir vide Ministry of Environment and Forest, Government of India letter No. J-11011/21/93-IA.II(I) dated 23rd Feb. 1994. In the Bapu Kutir Area establishment or expansion of only non-obnoxious, no-hazardous and non polluting industries at an approved site such as an industrial estate, falling under the green categories is permitted subject to following conditions.

1. Effluents and emissions should comply with the standards prescribed by the State Pollution Control Board.
2. Use of fuel in the manufacturing or any subsidiary process should not be allowed.
3. Fugitive emissions should not exist.

D) Restrictions in Dahanu Taluka

Ministry of Environment and Forests, Government of India, vide notification dated 20/6/91 declared Dahanu Taluka as an ecologically fragile area and have imposed restrictions on setting up of industries. Industries have been classified under three categories i.e. Green, Orange, Red for the purpose of permitting/restricting such industrial activities in Dahanu Taluka. Only industries in the Green Category are allowed to establish in approved industrial areas subject to following.

1. Only those industries that are non-obnoxious and non-hazardous will be permitted.
(Obnoxious and hazardous industries include those using inflammable, explosive, corrosive or toxic substances.)
2. Only those industries that do not discharge industrial effluents of a polluting nature will be permitted.
3. Only those industries that do not use coal in their manufacturing process will be permitted.
4. Only those industries that do not emit fugitive emissions of a diffused nature will be permitted.

E) Costal Regulation Zone

Ministry of Environment and forest vide its notification No. S.O. 114(E) has notified the declaration of coastal stretches as Coastal Regulation Zone (CRZ) and imposed restrictions in industries, operations and processes in the CRZ under the provisions of Environmental Protection Act, 1986. Hence, all new industries operation or expansion thereof needs to obtain permission of Govt. of India and/or Govt. of Maharashtra, as the case may be, before applying to MPCB.

For more information visit <http://envfor.nic.in>

F) Criteria for setting of industries with reference to classification of River Zones

Summarized criteria (For More details please refer the Notification 2009):

Class	Category				
	NDZ	Green	Orange	Red	Any type of Industry
A-I	- 3 Kms	- From 3 Kms 8 Kms (5 Kms)	- From 3 Kms 8 Kms (5 Kms)	- Beyond 8 Kms.	- Beyond 8 Kms. With requisite pollution control device.
A-II	- Upto ½ Kms	- From 1/2 Kms to 1 Kms (500 Mtrs)	- From 1 Kms to 2 Kms (1 Kms) green also)	- Beyond 2 Kms.	- Beyond 2 Kms. With requisite pollution control device.
A-III	- Upto ½ Kms.	- Between 1/2 Kms to 1 Kms (500 Mtrs)	- Between 1/2 Kms to 1 Kms (500 Mtrs)	- Beyond 1 Kms.	- Beyond 1 Kms. With requisite pollution control device.
A-IV	- Upto ½ Kms.	- Between 1/2 Kms to 1 Kms	- Between 1/2 Kms to 1 Kms (500 Mtrs)	- Beyond 1 Kms.	- Beyond 1 Kms. With requisite pollution control device.
MIDC with CEPT & Disposal Facility	- Upto ½ Kms.	- Form 500 Mtr to 750 Mtr. (250 Mtr)	- From 500 Mtr to 750 Mtr. (250 Mtr)	- Beyond 750 Mtrs.	- Beyond 750 mtrs. With requisite pollution control device.

LIST OF PROJECTS OR ACTIVITIES REQUIRING PRIOR TO ENVIRONMENTAL CLEARANCE:

SCHEDULE

(As per the Notification 14th September 2009 and Amendment on 1st December 2009)

Project or Activity		Category with threshold limit		Conditions if any
		A	B	
1		Mining, extraction of natural resources and power generation (for a specified production capacity)		
(1)	(2)	(3)	(4)	(5)
1(a)	(i) Mining of minerals (ii) Slurry pipelines (coal lignite and other ores) passing through national parks / sanctuaries / coral reefs, ecologically sensitive areas.	<50 ha. of mining lease area in respect of Non coal mine lease. >150 ha of mining lease area in respect of coal mine lease. Asbestos mining irrespective of mining area. All projects	<50 ha 5> ha .of mining lease area in respect of Non coal mine lease. <150 ha 5> ha of mining lease area in respect of coal mine lease.	General Condition shall apply Note "Mineral prospecting is exempted."
1(b)	Offshore and onshore oil and gas exploration, development & production	All projects		Note Exploration Surveys (not involving drilling) are exempted provided the concession areas have got previous clearance for physical survey
1(c)	River Valley projects	(i) >50 MW hydroelectric power generation; (ii) >10,000 ha. of culturable command area	(i) >50 MW 25MW hydroelectric power generation; (ii) < 10,000 ha. of culturable command area	General Condition shall apply Note Irrigation projects not involving submergence or inter-state domain shall be appraised by SEIAA as category ' B' Projects";

1(d)	Thermal Power Plants	<p>>500 MW (coal/lignite/naphtha & gas based);</p> <p>>50 MW (Pet coke diesel and all other fuels including refinery residual oil waste except biomass);</p> <p>>20 MW (based on biomass or non hazardous municipal solid waste as fuel).</p>	<p>< 500 MW (coal/lignite/naphtha & gas based);</p> <p><50 MW >5 MW (Pet coke, diesel and all other fuels including refinery residual oil waste except biomass);</p> <p>< 20 MW > 15MW (based on biomass or non hazardous municipal solid waste as fuel).</p>	<p>"General Condition shall apply.</p> <p>Note:</p> <p>(i) Power plants up to 15MW, based on biomass and using auxiliary fuel such as coal / lignite / petroleum products upto 15% are exempt.</p> <p>(ii) Power plants up to 15MW, based on hazardous municipal waste and auxiliary fuel such as coal / lignite / petroleum products up to 15% are exempt.</p> <p>(iii) Power plants using waste heat boiler without any auxiliary fuel are exempt.</p>
1(e)	Nuclear power projects and processing of nuclear fuel	All projects -		
2	Primary Processing			
2(a)	Coal washeries	>1 million ton/ annum throughput of coal	<1million ton/ annum throughput of coal	<p>General Condition shall apply</p> <p>(If located within mining area the proposal shall be appraised together with the mining proposal)</p>
2 (b)	Mineral beneficiation	>0.1 million ton/ annum mineral throughput	< 0.1million ton/ annum mineral throughput	<p>General Condition shall apply</p> <p>(Mining proposal with Mineral beneficiation shall be appraised together for grant of clearance)</p>
3)	Materials Production			
3(a)	Metallurgical Industries (ferrous & non ferrous)	<p>a) Primary metallurgical industry</p> <p>All projects</p> <p>b) Sponge iron manufacturing > 200TPD</p> <p>c) Secondary metallurgical processing industry</p>	<p>Sponge iron manufacturing < 200TPD</p> <p>Secondary metallurgical processing industry</p>	<p>General Condition shall apply</p> <p>Note:</p> <p>(i) The recycling industrial units registered under the HSM Rules, are exempted.</p>

		All toxic and heavy metal producing units >20,000 tonnes/annum-	<p>i.) All toxic and heavy metal producing units <20,000 tonnes/annum</p> <p>ii.) All other non-toxic secondary metallurgical processing industries >5000 tonnes/annum</p>	<p>(ii) In case of secondary metallurgical processing industrial units, those projects involving operation of furnaces only such as induction and electric arc furnace, submerged arc furnace, and cupola with capacity more than 30,000 tonnes per annum (TPA) would require environmental clearance.</p> <p>(iii) Plant/units than power plants (given against entry no. 1(d) of the schedule), based on municipal solid waste (non-hazardous) are exempted.</p>
3(b)	Cement plants	>1.0 million tonnes/ annum production capacity	<1.0 million tonnes/ annum production capacity. All Stand alone grinding units	General Condition shall apply.
4	Materials Processing			
4(a)	Petroleum refining industry	All projects	—	—
4(b)	Coke oven plants	>2,50,000 tonnes/ annum-	<2,50,000 & >25,000 tonnes/annum	"General Condition shall apply".
4(c)	Asbestos milling and asbestos based products	All projects	—	—
4(d)	Chlor-alkali industry	>300 TPD production capacity or a unit located out side the notified industrial area/ estate	<p>"(i) All projects irrespective of the size, if it is located in a notified industrial area/ estate.</p> <p>(ii) < 300 tonnes per day (TPD) and located outside a N o t i f i e d Industrial Area / Estate.</p>	<p>General as well as Specific Condition shall apply.</p> <p>No new Mercury Cell based plants will be permitted and existing units converting to membrane cell technology are exempted from this Notification.</p>
4(e)	Soda as Industry	All projects	—	—

4(f)	Leather / skin / hide processing industry	New projects outside the industrial area or expansion of existing units out side the industrial area	All new or expansion of projects located within a notified industrial area / estate	“General as well as Specific Condition shall apply.
5	Manufacturing/Fabrication			
5(a)	Chemical fertilizers	“All projects except Single Super Phosphate”.	“Single Super Phosphate.”	—
5(b)	P e s t i c i d e s industry and pesticide specific intermediates (e x c l u d i n g formulations)	All units producing technical grade pesticides	—	—
5(c)	Petro-chemical c o m p l e x e s (industries based on processing of p e t r o l e u m fractions & natural gas and / or reforming to aromatics)	All projects	—	—
5(d)	Manmade fibres manufacturing	Rayon	Others	General Condition shall apply
5(e)	Petrochemical based processing (processes other than cracking & reformation and not covered under the complexes)	Located out side thenotified industrial area/ estate-	Located in a notified industrial area / estate	“General as well as Specific Conditions shall apply.”
5(f)	Synthetic organic c h e m i c a l s industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; s y n t h e t i c rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	Located out side t h e n o t i f i e d industrial area/ estate	Located in a notified industrial area / estate	“General and Specific Condition shall apply.”

5(g)	Distilleries	(i) All Molasses based distilleries (ii) All Cane juice/non-molasses based distilleries >30 KLD	All Cane juice / non-molasses based distilleries – <30 KLD	General Condition shall apply
5(h)	Integrated paint industry	—	All projects	General Condition shall apply
5(i)	Pulp & paper industry excluding manufacturing of paper from waste paper and manufacture of paper from ready pulp without bleaching	Pulp manufacturing and Pulp & Paper manufacturing industry	Paper manufacturing industry without pulp manufacturing	General Condition shall apply
5(j)	Sugar Industry	—	>5000 tcd cane crushing capacity	General Condition shall apply
5(k)	As per the Notification 1st December 2009 “ Item 5 (k) and the entries relating thereto shall be omitted;			
6	Service Sectors			
6(a)	Oil & gas transportation pipe line (crude and refinery / petrochemical products), passing through national parks / sanctuaries / coral reefs / ecologically sensitive areas including LNG Terminal	All projects	—	—
6(b)	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of schedule 2 & 3 of MSIHC Rules 1989 amended 2000)	—	All projects	General Condition shall apply

7	Physical Infrastructure including Environmental Services			
7(a)	Air ports	“All projects including airstrips, which are for commercial use.”	—	“Note : Air strips, which do not involve bunkering / refueling facility and or Air Traffic Control, are exempted.”
7(b)	All ship breaking yards including ship breaking units	All projects	—	—
7(c)	Industrial estates / parks / complexes / areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes.	If at least one industry in the proposed industrial estate falls under the Category A, entire industrial area shall be treated as Category A, irrespective of the area. Industrial estates with area greater than 500 ha. and housing at least one Category B industry.	Industrial estates housing at least one Category B industry and area <500 ha. Industrial estates of area >500 ha. and not housing any industry belonging to Category A or B.	“General as well as Specific condition shall apply Note : 1. Industrial Estate of area below 500 ha. and not housing any industry of category ‘A’ or ‘B’ does not require clearance. 2. If the area is less than 500 ha. but contains building and construction projects >20,000 sq. mtr. and or development area more than 50 ha it will be treated as activity listed at serial no. 8 (a) or 8 (b) in the Schedule, as the case may be.”
7(d)	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	All integrated facilities having incineration & land fill or incineration alone	All facilities having land fill only	General Condition shall apply
7(e)	Ports, Harbours, Break Waters, dredging	>5 million TPA of cargo handling capacity (excluding fishing harbours)	< 5 million TPA of cargo handling capacity and / or ports / harbours >10,000 TPA of fish handling capacity	General Condition shall apply Note: 1. Capital dredging inside and outside the ports or harbors and channels are included; 2. Maintenance dredging is exempt provided it formed part of the original proposal for which Environment Management Plan (EMP) was prepared and environmental clearance obtained.

7(f)	Highways	i) New National High ways; and ii) Expansion of National High ways greater than 30KM, involving additional right of way greater than 20m involving land acquisition and passing through more than one State.	i) All State Highway projects; and ii) State Highway expansion projects in hilly terrain (above 1,000 m AMSL) and or ecologically sensitive areas.	General Condition shall apply. Note: Highways include expressways.
7(g)	Aerial ropeways	(i) All projects located at altitude of 1,000 mtr. And above. (ii) All projects located in notified ecologically sensitive areas.	All projects except those covered in column (3).	General Condition shall apply
7(h)	Common Effluent Treatment Plants (CETPs)	—	All projects	General Condition shall apply
7(i)	Common Municipal Solid Waste Management Facility (CMSWMF)	—	All projects	General Condition shall apply
8	Building /Construction projects/Area Development projects andTownships			
8(a)	Building and Construction projects	—	>20000 sq. mtrs and < 1,50,000 sq.mtrs. of built-up area#	#(built up area for covered construction; in the case of facilities open to the sky, it will be the activity area)
8(b)	Townships and Area Development projects.	—	Covering an area >50 ha and or built up area >1,50,000 sq .mtrs ++	++All projects under Item 8 (b) shall be appraised as Category B1

Note:-**General Condition (GC) :**

Any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Eco-sensitive areas as notified under section 3 of the Environment (Protection) Act, 1986, such as Mahabaleshwar Panchgani, Matheran, Pachmarhi, Dahanu, Doon Valley, and (iv) inter-State boundaries and international boundaries.

Provided that the requirement regarding distance of 10 Km of the inter state boundaries can be reduced or completely done away with by an agreement between the respective state or U.Ts sharing the common boundary in case the activity does not fall within 10 Kilometers of the areas mentioned at item (i), (ii) and (iii) above.

Specific Condition (SC):

If any Industrial Estate / Complex / Export processing Zones / Special Economic Zones / Biotech Parks / Leather Complex with homogeneous type of industries such as Items 4(d), 4(f), 5(e), 5(f), or those Industrial estates with pre-defined set of activities (not necessarily homogeneous, obtains prior environmental clearance, individual industries including proposed industrial housing within such estates / complexes will not be required to take prior environmental clearance, so long as the Terms and Conditions for the industrial estate / complex are complied with (such estates / complexes must have a clearly identified management with the legal responsibility of ensuring adherence to the Terms and Conditions of prior environmental clearance, who may be held responsible for violation of the same throughout the life of the complex / estate).

Chapter - VI

Technologies for improving compliance

A. INTRODUCTION

Technology plays an important roles in ensuring compliance. Emission and effluent discharge standards could be achieved when appropriate, safe and commercially viable technology is present to treat solid, liquid and gaseous waste generated from industries.

This sections below list well accepted and economically feasible technologies in handling gaseous emissions and liquid effluents. Please note the fundamental idea is to make the industries aware of the availability of these control technologies, and not to promote any specific one. Please refer to standard environmental engineering textbooks, manufacturer's booklets and/ or the internet for more details on these technologies, capital and operational cost options.

Sections have been listed as per pollutants, like Particulates, Sulphur Dioxide (SO_2) and Nitrogen Oxides (NO_x), all criteria air pollutants; and pH, Total Dissolved Solids (TDS), Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD), principle water pollutants. These pollutants were selected because (a) these are present in emission/ effluent from most major types of industries, and (b) Indian environmental emission/discharge standards tend to focus (and impose) strongly on these pollutants. The objective is to make industries aware of the possible sources of these pollutants, their generic characteristics and possible control methods.

B. AIR EMISSION CONTROL :

1. Particulates :

i. Source & Characteristics

Particulates are generated form most combustion, air circulation, excavation, mechanical and / or manual grinding, and vehicular movement. The presence of the particulates is almost ubiquitous. The size and chemical composition of the particulates vary widely and may include both organic and inorganic matters.

There is no effective half-life of particulates in air suspension. That indicates with favourable wind speed, particulates could remain afloat indefinitely. Also, particulates could adsorb reactive gases (like SO_2 , NO_x) on its surface.

Small particulates (especially with ones with aerodynamic diameter of $10\text{ }\mu\text{m}$ or less, called the PM_{10}) could reach the lowest section of human lung and cause reduction of lung function, choking and other respiratory illness.

ii. Control

Particulates could be controlled by various means.

Most simple being water sprinkling. Periodic water sprinkling on dusty areas may significantly reduce air re-suspension of particulates. Sprinkling is widely practiced in road construction projects, coal handling plants and batching plants.

In industries where coarse dust generation/suspension is a major concern (like saw mills), cyclones separators could be used. These effectively use rotational effects and gravity are used to separate mixtures of solids and fluids. The method can also be used to separate fine droplets of liquid from a gaseous stream. For larger particulates, cyclone have been found quite effective. However its efficiency generally varies with the mean particle size. 89

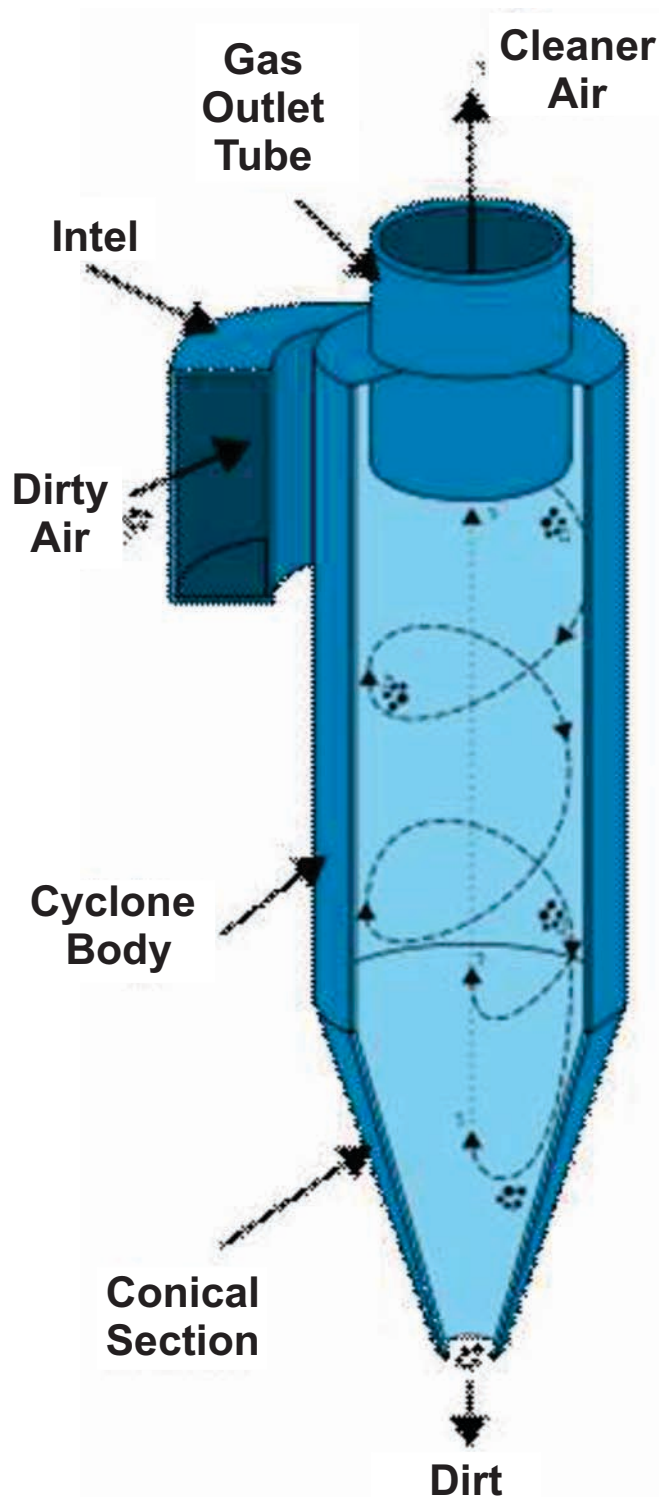


Figure 1 Internal section of a Cyclone separator

Cyclones can generally remove any particles greater than 50 microns from a dusty gas stream; a more efficient cyclone can also remove particles smaller than 50 microns. US Environmental Protection Agency (US EPA) has reported an efficiency of cyclones up to 90% in removing coarse particulates from gas stream ¹.

For larger industries, having many fugitive sources of particulate pollution (like coal yard of power plants, or cement plants) *Bag Filters* could be used. Bag filters employ fabric filters through which particulate laden flue gas streams are passed. As a result the particulates accumulate on the fabric, and clean flue gas is released into atmosphere. Bag filter consists of numerous vertical bags of 120 to 400 mm diameter and 2 to 10 m long. They are suspended with open ends attached to a manifold. The hopper at the bottom serves as a collector for the dust. The gas entering through the inlet duct strikes a baffle plate, which causes the larger particles to fall due to gravity. The carrier gas then flows to the tubes and then outward through the fabric leaving the particulate matter as a cake on the bag surface.

The accumulation of dust increases the air resistance of the filter media and therefore filter bags have to be periodically cleaned. They are cleaned by rapping, shaking or vibration or by pulse jet or reverse jet air flow, causing the filter cake to be loosened and to fall in the hopper.

However, bag filter should be carefully chosen, since the efficiency and even the longevity of the bags are affected by (a) temperature of flue gas, (b) operating pressure and (c) concentration of particulates.

Efficacy of Bag filter have been found to be very high (95% - 99.9%) in a CPCB Study in thermal power plants (CPCB, 2007²).

¹ Source: http://www.epa.sa.gov.au/xstd_files/Air/Guideline/guide_cyclones.pdf

² Central Pollution Control Board. PROBES/105/2007: "Assessment of Requirement of Bag Filter vis-à-vis Electrostatic Precipitators in Thermal Power Plants".

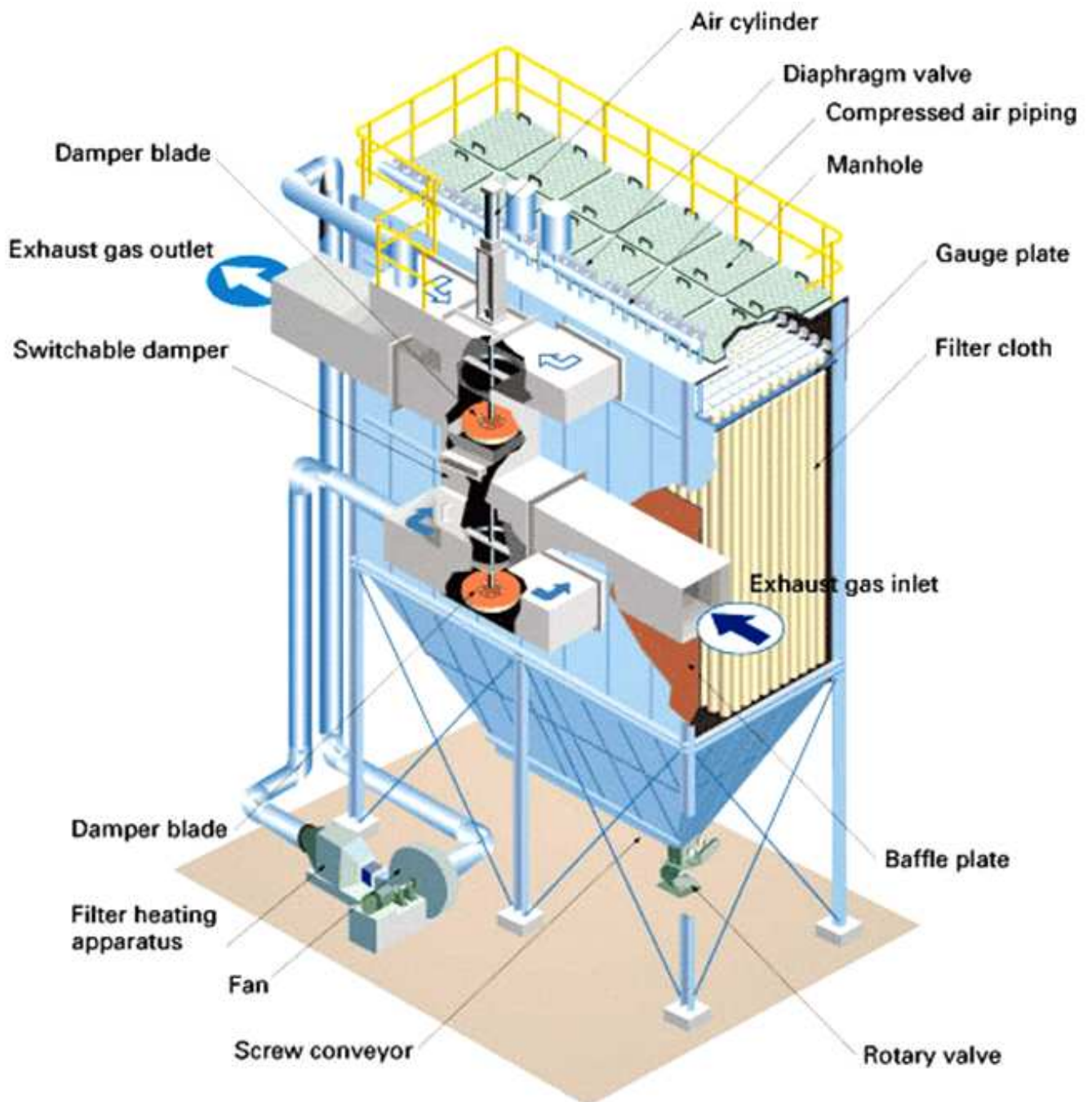


Figure 2 Various components of a Bag Filter



Figure 3 New Bag Filters

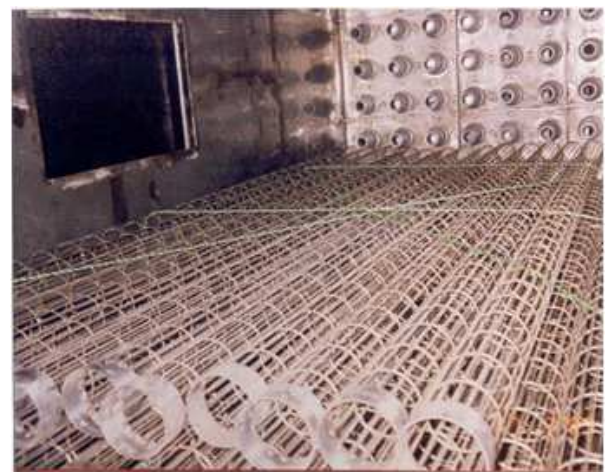


Figure 4 Packing of bags inside housing

Electrostatics Precipitator (ESP) is a large scale solution for particulates. In an ESP, dust laden flue gas is subjected to high voltage current field; as a result gas is ionized and particulates are collected on charges electrodes. When enough dust has accumulated, the collector electrodes are shaken to dislodge the dust, causing it to fall with the force of gravity to hoppers below. The dust is then removed by a conveyor system for disposal or recycling. Precipitators typically collect 99.9% or more of the dust from the gas stream.

Out of the two electrodes, one is the discharging electrode and the other a collecting electrode. A potential difference of 40-60 kV is applied between the two electrodes. Thus, ESP is highly electricity intensive and could be economically used in certain industries only (for e.g. in thermal power plants).

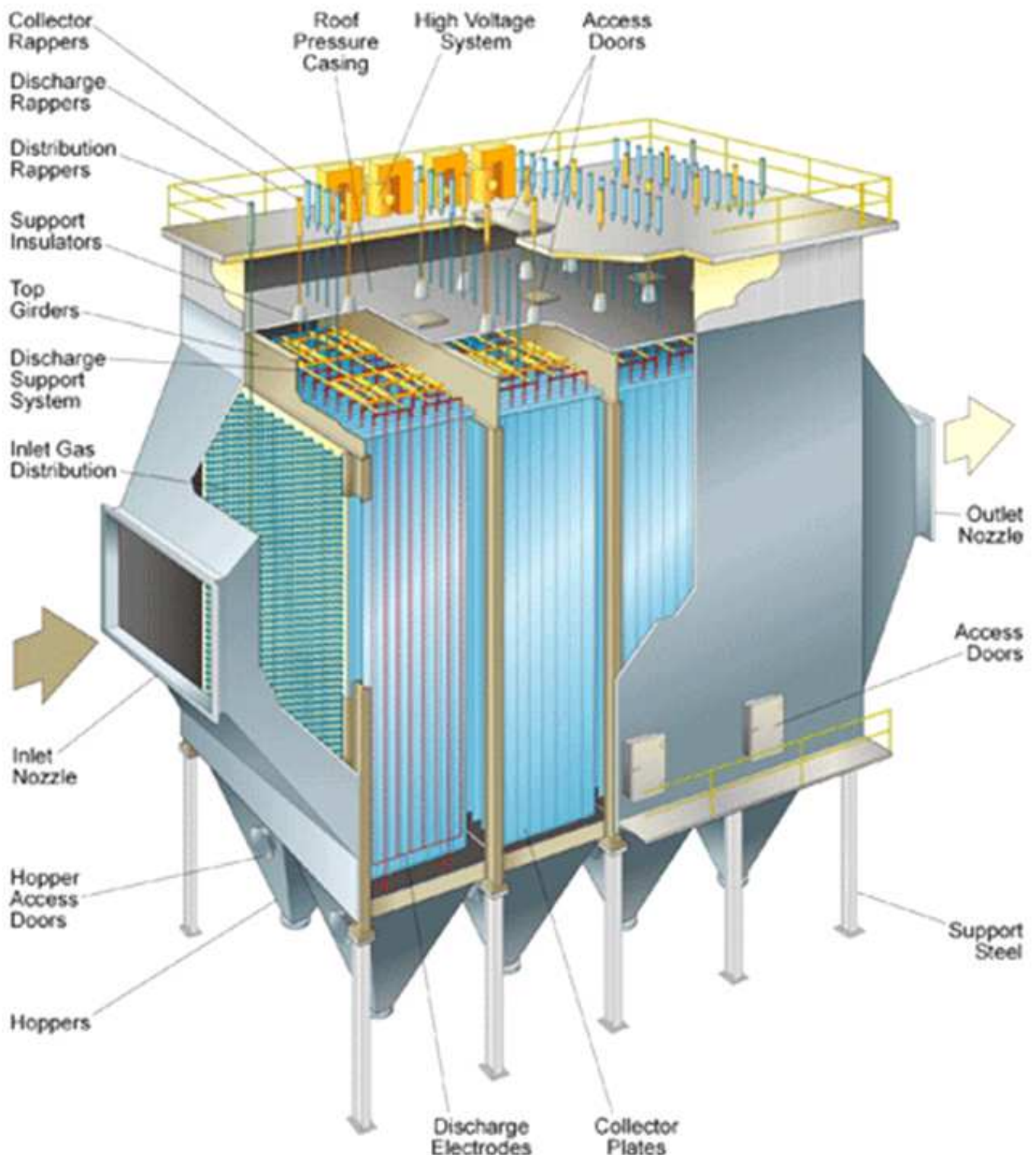


Figure 5 Section of Electrostatic Precipitator (ESP)

2. Sulphur Dioxide (SO₂)

i. Sources and Characteristics

SO₂ is emitted as a result to combustion of sulphur (in fuel). One gram of elemental sulphur in fuel given rise to two units of SO₂ during combustion. SO₂ has a characteristics pungent smell. It is a highly reactive gas. In atmosphere, SO₂ could produce sulphuric acid (H₂SO₄) in the presence of water vapour and oxygen, and lead to acid rain.

SO₂ is generated primarily from coal fired power plants, sulphuric acid production, primary ore processing (as baking of copper ores containing copper pyrites) etc. Naturally SO₂ could be generated from volcanic activities.

High levels of SO₂ could irritate and cause significant damage to the mucous membrane of the lungs, cause eye and nose irritation. High levels of SO₂ is also known to damage crops, esp. susceptible species.

ii. Control

SO₂ could be controlled primarily through changes in fuel composition. Fuel with low sulphur content will produce less amount of SO₂. However this may be cost and technology intensive at times.

In cases where high SO₂ is generated but fuel substitution is not possible, packed scrubbers could be used. Packed-bed scrubbers consist of a chamber containing layers of variously-shaped packing material that provide a large surface area for liquid-particle contact. The packing is held in place by wire mesh retainers and supported by a plate near the bottom of the scrubber. In the packed scrubbers, alkaline solutions (NaOH/ KOH solutions, slaked lime solutions or Ca(OH)₂, or NaCO₃ solutions) are used to convert SO₂ to corresponding sulphate salts. The alkaline liquid is evenly introduced above the packing and flows down through the bed. The liquid coats the packing and establishes a thin film. SO₂ is absorbed in the liquid. In vertical designs (packed towers), the gas stream flows up the chamber (counter current to the liquid). Some packed beds are designed horizontally for gas flow across the packing (crosscurrent) (US EPA, 1998).

In larger coal based power plants Flue Gas Desulphurization (FGD) is used, (which is an elevated design of packed towers) in which either seawater or lime (CaCO₃) solution is used to convert SO₂ in corresponding sulphate salt.

FGDs have high capital as well as operating cost. A report indicates that capital cost of wet type FGDs could be calculated using an equation $y = 2628.7 x^{-0.3}$. Here y is capital cost FGD in 2008 US\$ and x is production capacity. Operating cost of FGDs (in terms of cost of per ton SO₂ removal) ranges from US\$250 and US\$600/ton¹ (2008 US\$).

In lime based FGDs gypsum (CaSO₄·10 H₂O) is generated as a by-product, which need to dispose off with cement manufacturers.

3. Nitrogen Oxides (NO_x)

i. Sources and Characteristics

Nitrogen oxides denotes a combination of gases resulting from the union of Nitrogen and Oxygen. This primarily composed of N-O₂ (nitrogen dioxides) and NO (nitric oxides) etc.

Oxygen and nitrogen do not react at ambient temperatures. But at high temperatures, they undergo an endothermic reaction producing various oxides of nitrogen. So NO_x is formed in internal combustion engines or cars or industrial boiler. Naturally, NO_x could be formed during lighting flashes.

¹ See <http://www.publicpower.org/files/PDFs/UARGSCR_FGDFinal.pdf>

Exposure to very high levels of NO_x could lead to asphyxiation, in a lower level it could cause bronchitis and damage to bronchioles (of lungs). NO_x in atmosphere could potentially lead to formation of nitric acid mist (HNO_3) in presence of water vapour. Also, NO_x along with Ozone (O_3) has been proven to generate a secondary pollutant called PAN (Peroxy Acetyl Nitrate), that causes photochemical smog.

ii. Control

Since NO_x production is dependent on temperature, low combustion temperature would ensure lesser NO_x generation. Also staged or tapered aeration during combustion could reduce NO_x formation. However, this would mean changes in existing boiler/engine combustion technology and thus, may be prohibitively costly.

Alternately, NO_x could be controlled using retrofitting existing boilers with *low NO_x burners*. Low NO_x burners are designed to control fuel and air mixing at each burner in order to create larger and more branched flames. Peak flame temperature is thereby reduced, and results in less NO_x formation. The improved flame structure also reduces the amount of oxygen available in the hottest part of the flame thus improving burner efficiency. Combustion, reduction and burnout are achieved in three stages within a conventional low NO_x burner. In the initial stage, combustion occurs in a fuel rich, oxygen deficient zone where the NO_x are formed. A reducing atmosphere follows where hydrocarbons are formed which react with the already formed NO_x . In the third stage internal air staging completes the combustion but may result in additional NO_x formation. This however can be minimised by completing the combustion in an air lean environment.

Selective Catalytic Reduction (SCR) is another end-of-pipe technology for NO_x reduction. In this, NO_x laden flue gas is channelized through a catalyst (which could be metal impregnated ceramic, or precious materials). Ammonia or urea is used in the process. This reduces NO_x to N_2 (gas) and H_2O (vapour). However, SCR systems are sensitive to contamination and choking.

A Black & Veatch study (2005) indicate that the SCR could have an effectiveness of up to 80% and cost of each ton NO_x reduction varies between 1350 \$/ton – 1876 \$/ton² (2005 US\$).

C. EFFLUENT TREATMENT FOR INDUSTRIES

4. Introduction

Waste water is generated from most of the industries, barring very few. In legal terms, as in Water (Prevention and Control of Pollution) Act, 1974, industrial waste water is termed as “Trade Effluent”. Industrial waste water varies in parameter and strength, and thus a generic treatment plan may not be a successful. Also in some industries, wastewater varies by season, for e.g. in Sugar industries. Thus, a clear long term measurement of waste water quality parameters, including its seasonal variations is necessary before adopting a specific treatment plan.

On the other hand, waste water generated from residential units is called sewage. Sewage quality is less variable in contrast to industrial effluent.

The following section will focus on the treatment of industrial effluent.

6. Generic plan of effluent treatment

Although since effluent quality will vary widely, treatment scheme can't be the same. However an attempt is made here to introduce the basic components of effluent treatment.

iv. Primary treatment:

Primary treatment is usually the first stage of wastewater treatment. It is designed to remove gross, suspended and floating solids as well as oil and grease from raw effluent.

¹See www.nescaum.org/documents/bart-resource-guide/12_cibo_industrial_air_pollution_control_equipment_cost_representations.pdf/view

In some cases it may be necessary to neutralize the pH of waste water before treatment.

In some cases (vegetable oil manufacturing/processing, dairy, food processing industries) oil and grease removal may be necessary. Oil and grease having lesser density than effluent, float on it, and could be schemed out by a mechanical schemer arm.

Primary treatment usually includes (a) mechanical screening of effluent to trap solid objects, (b) Grit removal by gravity to remove settleable solids. In most cases, chemicals like poly aluminium chloride (PAC) and lime -alum solutions are administered to accelerate the flocculation and sedimentation process.

Primary treatment can reduce the Biochemical Oxygen Demand (BOD) of the incoming effluent by ~20-30% and the total suspended solids (TSS) load by some 50-60%. Primary treatment reduces load on the secondary treatment units.

V. Secondary (biological) treatment

Secondary treatment removes the dissolved organic matter that escapes primary treatment. Microbes consume the organic matter as food, and convert it to carbon dioxide, water, and energy in presence of air. The biological process is then followed by additional settling tanks ("secondary sedimentation") to remove more of the suspended solids. About 80% - 85% of the TSS and BOD can be removed by a well running plant with secondary treatment.

In some cases, esp. where effluents with high Chemical Oxygen Demand (COD) (i.e. containing inorganic salts or highly stable / long chain organic products) effluent is subjected to aerobic secondary treatment is subjected to anaerobic treatment. A special class of anaerobic bacteria reduce the long chains / salts into smaller chain which could be further reduced by aerobic treatment.

Secondary treatment technologies include the basic activated sludge process, the variants of pond and constructed wetland systems, trickling filters and other forms of treatment which use biological activity to break down organic matter.

vi. Tertiary treatment

Tertiary treatment involves additional treatment beyond secondary treatment. Tertiary treatment can remove 95%-99% of BOD, and TSS from effluent. The related technology could be expensive, requires well trained treatment plant operators, a steady energy supply, and chemicals. An example of a typical tertiary treatment process could be ultrafiltration, polishing effluent in an activated carbon filter and subjecting it to Reverse Osmosis. This could result into an effluent which could be compared to surface water or even drinking water standards. The need for tertiary treatment has to carefully judged, since the capital and operating cost of tertiary treatment could be significant.

Disinfection is the final step before discharge of the effluent. Disinfection is required to kill harmful pathogens in the effluent stream. Typical Chlorine solution (e.g. bleaching powder solution) is used for disinfection, because of easy availability and cheaper cost. However chlorine residuals in the effluent could lead to formation of harmful by-products, thus recently, many manufacturers favour alternative disinfectants like Ozone or Ultra Violet (UV) light. These are costlier options and esp. UV requires the effluent stream to be practically free of TSS.

A process flow sheet of a typical Effluent Treatment Plant (ETP) is shown below in Figure 6.

The primary treatment is Grey, Secondary Treatment is Blue and the Tertiary Treatment is coloured Green. Sludge dewatering and stabilization is coloured Orange.

vii. Sludge handling:

Sludge generated from the process should be dewatered using either (a) filter press, (b) centrifuge or (c) sludge ponds. While sludge ponds don't consume power, and are economical in operation, they consume much more space. Filter press and centrifuges are most effective in dewatering sludge (up to 40-50%) but consume power, therefore their operating cost is higher.

Dewatered sludge should be stabilized, either through anaerobic digestion, or through aerobic stabilization. The stabilized sludge is a designated Hazardous Waste, and should be disposed off with Common Hazardous Waste Treatment, Storage and Disposal Facilities (CHWTSDF).

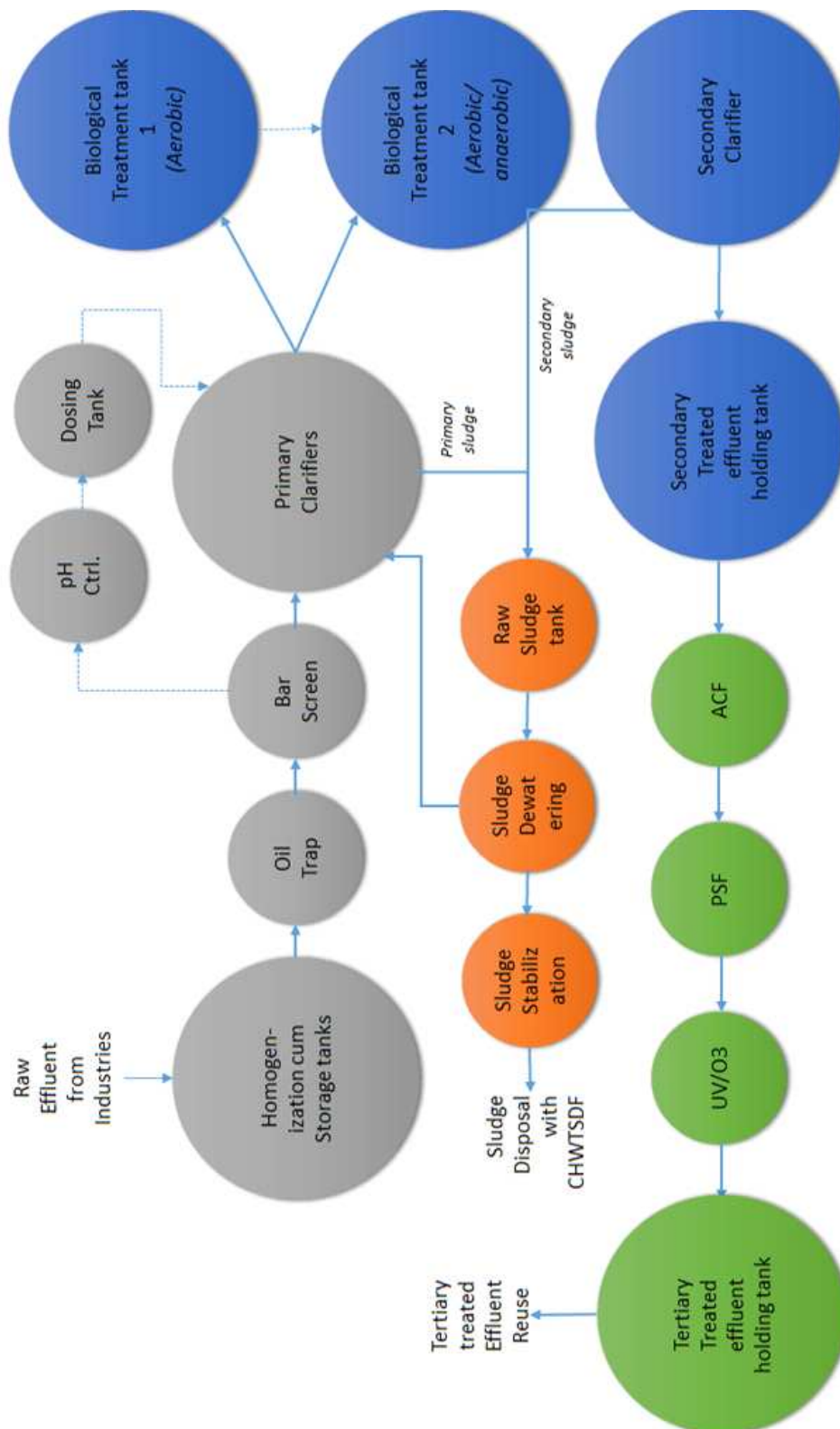


Figure 6 Typical Plan of an ETP

viii. Area required for ETP

Area is a major consideration for such effluent treatment plants. Area requirement may vary widely because of technology, process, administrative requirements, or simply because of the type of industry and its effluent. Thus, it is very difficult to predict such an area requirement. A generic estimate of area requirement for different effluent treatment process is provided below in Table 1.

Table 1 Land Required by various Aerobic Effluent Treatment Process

Process	Land Required (Ha/MLD)
Facultative Aerated Lagoon	0.27-0.4
Trickling filter	0.25-0.5
Activated Sludge Treatment	0.15 -0.25
Fluidized Aerated Bed (FAB)	0.06
Submerged Aerated Fixed Film (SAFF)	0.05

Source: Presentation by Dr. Arunabha Majumdar, Emeritus Fellow, School of Water Resource Engineering, Jadavpur University, Kolkata¹.

ix. Cost of ETP

Cost of an ETP depends on multiple factors like (a) land cost, (b) technology adopted, (c) strength of feed effluent etc., and is difficult to generalize. Table 2 below gives a tentative capital and operating cost for different technologies.

Table 2 Process wise Capital & Operating Cost

Process	Capital cost (million/ MLD)	Operating cost (million/year/MLD)
Facultative Aerated Lagoon	2.2-3.0	0.15-0.2
Trickling filter	4 - 5	0.5
Activated Sludge Treatment	5 – 6	0.5-0.7
Fluidized Aerated Bed (FAB)	6 - 8	0.9-1
Submerged Aerated Fixed Film (SAFF)	9	1.4

Source: Presentation by Dr. Arunabha Majumdar, Emeritus Fellow, School of Water Resource Engineering, Jadavpur University, Kolkata².

Actual cost of establishment of ETPs (with all details) are difficult to find, thus we have referred to costs of Common Effluent Treatment Plants (CETPs), which are usually larger and cater to a large number of industries at the same time.

Table 3 presents capital cost required for 10 CETPs located in Delhi. This group of CETPs were selected since these cater to similar type of small industries (light engineering, textile, pickling rubber etc.), and also receive sewage from the respective industrial areas.

Almost all of these CETPs have similar design. Primary treatment is provided with bar Screen and Grit Chamber. Chemical dosing, equalization, flash mixing and tube settlers are provided for secondary treatment. DM and activated carbon filter are provided for tertiary treatment.

¹ See <http://www.cseindia.org/userfiles/arunabha.pdf>

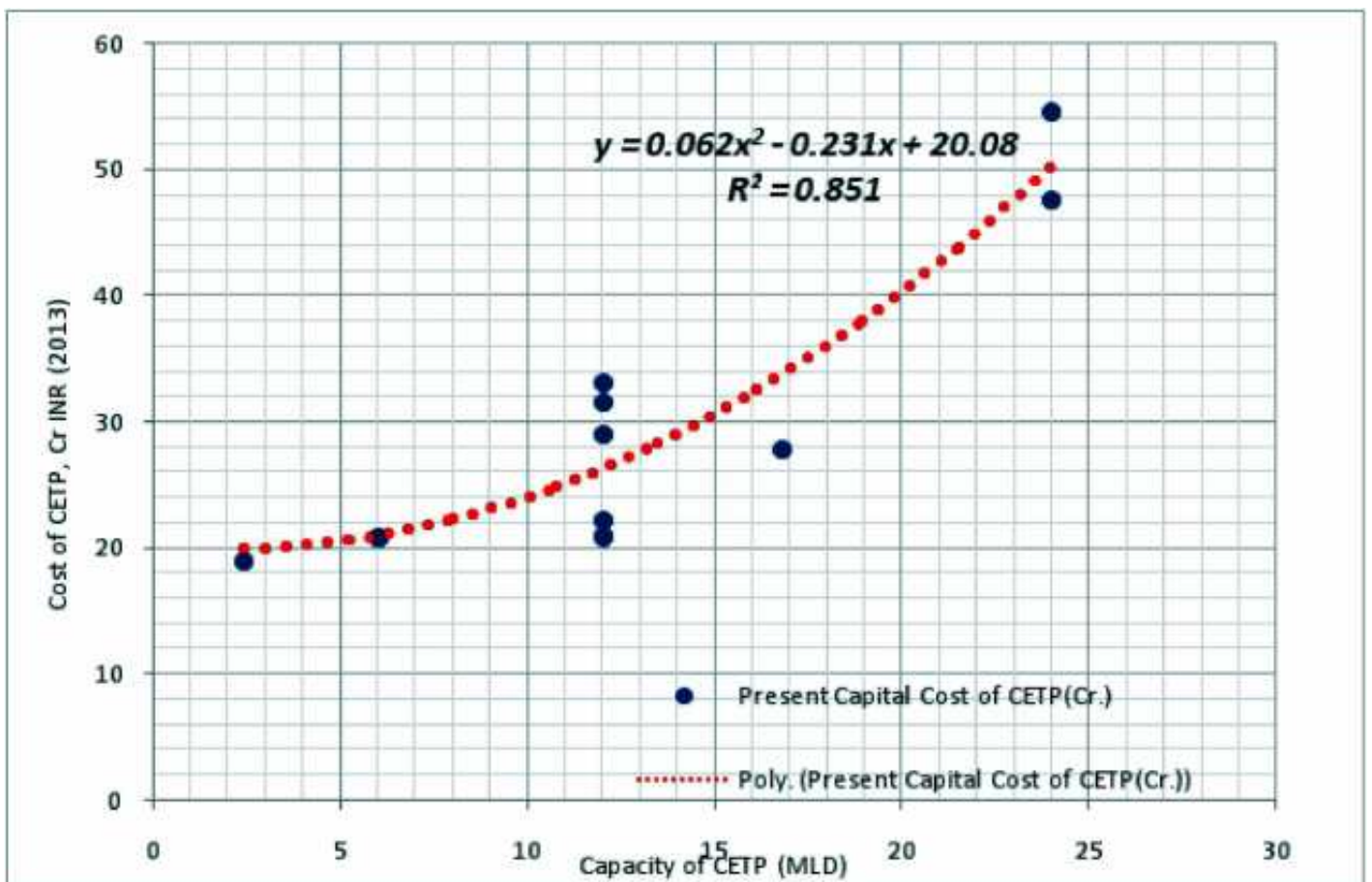
² See <http://www.cseindia.org/userfiles/arunabha.pdf>

Table 3 Capital Cost of CETPs in Delhi

	Year Estd.	Capacity (MLD)	Actual Cost (Cr.)	Present Cost ³ (Cr.)
Wazirpur CETP	2003	24	18.34	47.57
Mangolpuri CETP	2001	2.4	6.04	18.96
Mayapuri CETP	2003	12	11.18	29
Lawrence Road CETP	2004	12	9.38	22.12
Jhilmil CETP	2004	16.8	11.77	27.75
Badli CETP	2003	12	8.06	20.91
Okhla Ind. Area CETP	2003	24	21.01	54.49
GTK Road CETP	2002	6	7.29	20.8
SMA CETP	2003	12	12.14	31.49
Nagloi CETP	2003	12	12.75	33.07

Source: Performance Status of CETPs in India. Central Pollution Control Board (CPCB). 2005. See Annexure 1⁴.

This is graphically represented in Figure 7. The equation provides a base for calculation of capital cost of similar ETPs. So for example, for a CETP of 100 MLD capacity the capital cost would be approx. 617 Cr.



The following section gives control/ management and treatment option some common pollutants.

¹ Present capital cost = (previous capital cost) * (1 + discount rate)^{difference in years}

² http://cpcb.nic.in/upload/Publications/Publication_24_PerformanceStatusOfCETPsInIndia.pdf

6. pH:

i. Sources and Characteristics

pH denotes the concentration of Hydrogen ion (H^+). pH is measured on a scale of 1-14, where 7 denotes neutral; pH less than 7 indicates acidic and pH higher than 7 indicates alkaline effluent. In most Indian effluent discharge standard, a pH range of 6.5 – 8.5 is prescribed.

ii. Control

Many industries generate effluent with highly acidic and alkaline characteristics. pH could be neutralized i.e. high (alkaline) pH could be neutralized with solutions of strong acids (like H_2SO_4 or HCl), whereas low (acidic) pH could be controlled using strong alkali (like $NaOH$ or KOH). During neutralization change in pH should be noted using pH strip or pH pen.

7. Total Dissolved Solids:

i. Sources and Characteristics

Total Dissolved Solutes (TDS) refers to a range of water soluble organic/inorganic salts dissolved in the effluent. TDS is usually not removed in normal physic-chemical or biological treatment as discussed above.

ii. Control

TDS is usually not removed in the standard effluent treatment process. TDS can be only removed by Reverse Osmosis (RO) process.

In osmosis, solutes (like salts) are drawn across a semi permeable membrane from higher to lower solute density potential. In RO, solutes (i.e. salts) are drawn from lower to higher density potential employing high pressure. Ali Al-Karaghoul and Larry Kazmerski¹ (2011) has reported that cost of treatment of seawater (feed water salinity ~35,000 ppm) is approx. US\$ 0.986/m³ (2011US\$). This includes, cost of electricity (approx. 2.9- 3.2 kW/m³ of treated water) and other costs.

However, depending on feed water and treated water TDS differential, RO plants usually produce rejects with high concentration of salt. Control of this reject is necessary, as effluent with such high TDS content could not be discharged into soil or surface water directly, without any treatment. In places with abundant sunlit days and ample area availability solar evaporation could be practiced, else Multiple Effect Evaporation (MEE) should be used (which is very costly in terms of capital and operational cost).



Figure 8 RO Plant showing stacking of RO membranes

Source: www.veoliawater.com

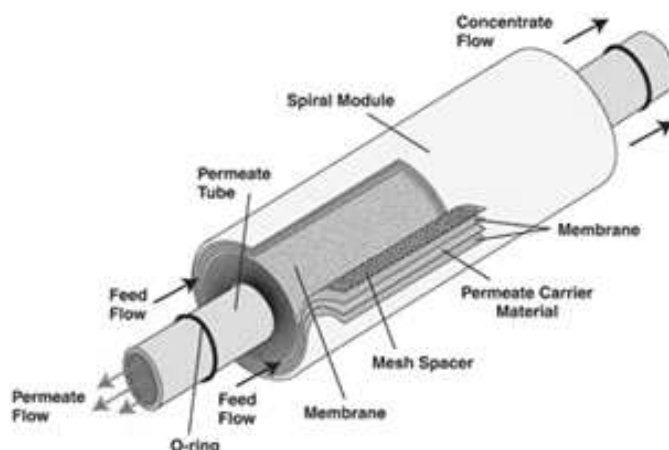


Figure 9 Section of RO membranes

¹ Please see http://wrri.nmsu.edu/conf/conf11/reverse_osmosis_deep.pdf

8. BOD removal:

i. Sources and Characteristics

Biochemical Oxygen Demand (BOD) denotes the depletion of dissolved oxygen by microorganism present in effluent, while depleting the easily perishable organic matter present in effluent. This is an indirect indicator of amount of easily perishable organic matter present in that amount of effluent. Indian environmental regulations and standards for effluent discharge rely heavily on 3 day BOD measured at 27°C (or $BOD_{3\text{days}@27^{\circ}\text{C}}$). Most industries, irrespective of their product line or process, are usually given a BOD compliance limit. Industries could find a general effluent discharge standard in Central Pollution Control Board's website¹. In many colder countries standard BOD is measured at 5 days at a temperature of 20°C ($BOD_{5\text{days}@20^{\circ}\text{C}}$).

Organic pollutants are almost ubiquitous in nature. A primary source of organic pollutant is sewage generated from water closets.

i. Control

Most of BOD could be removed by aerobic treatment of effluent. As stated earlier, high efficiency aerobic biological reactors could reduce inlet BOD by up to 90-95%, and industries may achieve their desired effluent discharge standard. Process like activated sludge treatment and its many variants, Submerged Aerobic Fixed Film (SAFF), Fluidized Bed Aerobic Reactor (FAB), Membrane Bio Reactor (MBR) etc.

In Activated Sludge (AS) process, screened effluent is digested by microorganisms in the presence of artificially supplied oxygen (through surface aerators or submerged diffused aerators). AS has been widely used in biological treatment in India.

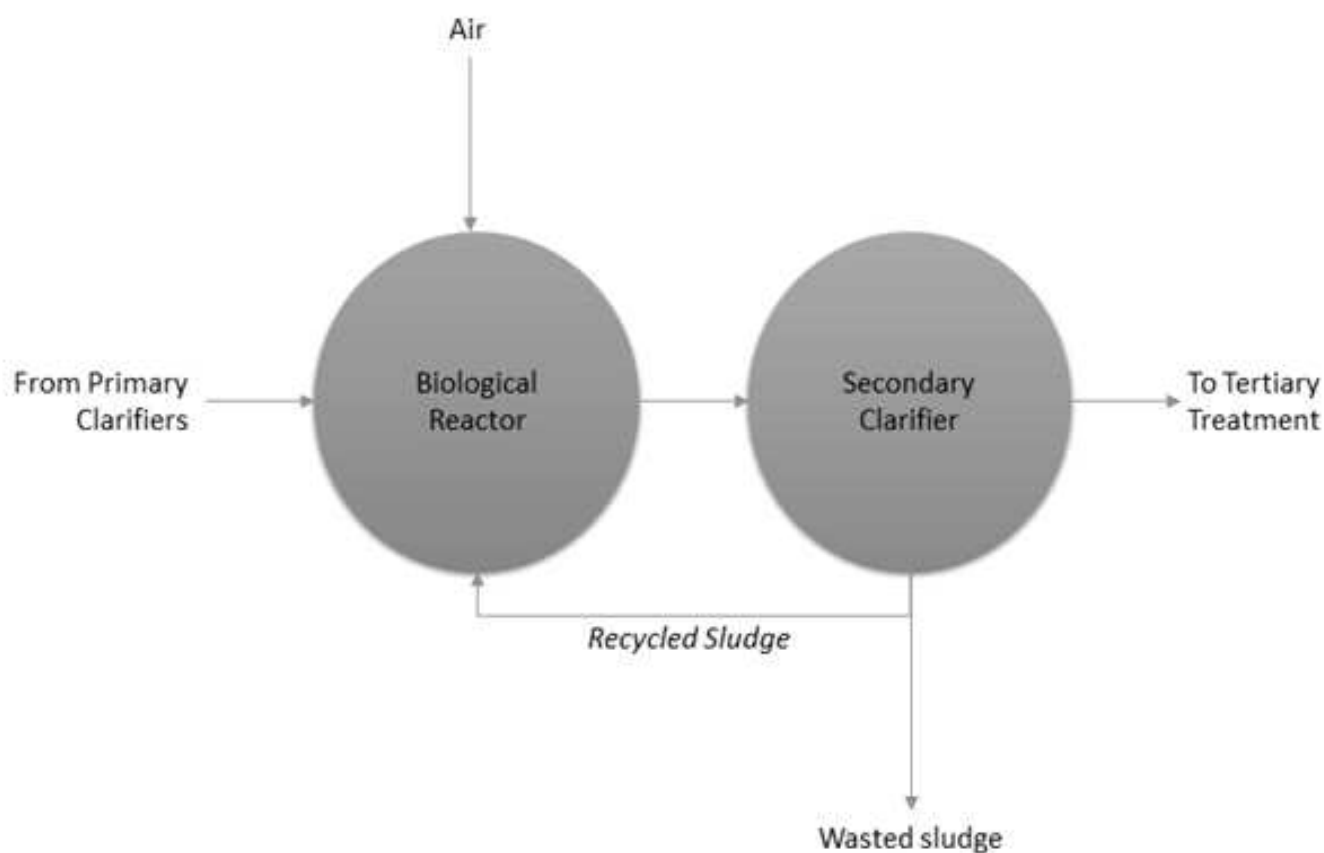


Figure 11 Activated Sludge process

¹ <http://www.cpcb.nic.in/GeneralStandards.pdf>

In SAFF, a packed bed reactor is used, in which the microorganisms gather on the surface of the packing materials. The organic matter in effluent, when passing through the packing material is digested by the microorganisms. Oxygen is supplied as small bubbles through submerged diffuser lines.

FAB type reactors consists of floating media of cylindrical shapes and different sizes. Microorganisms form clusters or attach to available surfaces. The FAB media provides a very large surface area (400 - 500 m²/m³ volume); this means a large amount of microorganisms could attack in a small volume. Thus, the overall area requirement for FAB reactors is small. Air is supplied through fine bubble diffusers.

However, high BOD (and correspondingly high COD) laden effluent should be treated with coagulation & settling post chemical dosing and a combination of aerobic and aerobic treatment.

9. COD removal:

i. Sources and Characteristics

Chemical Oxygen Demand (COD) refers to the dissolved oxygen depletion in effluent, due to oxidation of almost all organic matters present in effluent. During COD measurement, almost all organic matters (long complex chain molecules as well as short chain molecules) in effluent are digested using strong oxidising acids like chromic acid.

COD measured for a type of effluent is usually higher than 5 days / 3 days BOD for the same effluent. COD and BOD are usually strongly and positively correlated, i.e. BOD and COD increase (or decrease) proportionately. In many countries (like France or Japan), effluent discharge standards have shifted to COD, in place of BOD, since it is (a) easier and faster to measure and (b) more reliable than BOD estimates. Effluent containing almost any organic matter could be called having COD.

i. Control

Like BOD, COD could also be treated using aerobic / anaerobic and/ or a combination of both. Effluent with low to medium organic pollutants (COD < 1000 ppm) could be subjected to aerobic treatment, whereas, effluent with medium to high organic impurities (COD > 1000 ppm) should be subjected to sequential anaerobic treatment.

In case the effluent contains long chain organic molecules (e.g. complex pharma effluent or refinery effluent), the reactors could take significant amount of time to break down the long chain molecules. As a result of the break down, small molecules are generated, which are later digested by aerobic/anaerobic microbes.

D. Conclusion

The technological solutions referred here are used universally, as well as in India. Most are widely available through treatment plant vendors across India. We encourage Industries to study them in further details.

However these treatment methods refer to end-of-pipe treatment, i.e. treatment of waste gas or waste water after it is generated. Thus, investing in end-of-pipe technology may be worthwhile in terms of compliance, but is hardly sustainable or economically productive for industry.

We would like to encourage the industries to switch to techniques like product modification, substitution of raw materials, resource optimization and other proven Cleaner Production (CP) technologies. Please visit UNEP-UNIDO website¹ for more details on CP.

¹ <http://www.unido.org/en/what-we-do/environment/resource-efficient-and-low-carbon-industrial-production/cp/resource-efficient-and-cleaner-production/recp-programme.html>

Chapter - VII

Requirements for Temporary Storage of Hazardous Waste

1. Introduction

As per definition of Hazardous waste provided in the Hazardous Waste (Management, Handling and Trans-boundary) Movement Rules, 2008, as amended to date; any waste, which by reason of any of its physical, chemical, relative, toxic, flammable, explosive or corrosive characteristics could endanger or could cause danger to human health and environment; whether alone or in combination with other substances could be called hazardous waste.

The rules provides multiple means to identify hazardous waste :

- a. Process wise list of hazardous waste generation provided in Schedule I;
- b. Waste characterization by means of concentration of certain chemicals and flammability provided in Schedule II;
- c. Waste characterization by means of chemical characteristics (flammability, explosivity, reactivity and corrosiveness) in Schedule III Part C.

The following section provides a guidelines for industry on how to temporarily store different kinds of hazardous waste within premises before handling it over to the Common Hazardous Waste Transfer Storage and Disposal Facility (CHWTSDf, hereinafter either mentioned as 'CHWTSDf' or 'Operators'). Please note that this may be considered a generic guideline; and since each type of industry may have different types of hazardous waste, it will be prudent if the industry conducts a chemical tests of hazardous waste beforehand to ascertain its true nature and disposal routes. Industries are encourages to seek guidance on storage from MPCB or their respective CHWTSDfs.

2. Types of hazardous waste

Hazardous waste could be either solid or liquid by physical consistency. Apart from this it may satisfy any one or more of the governing characteristics i.e. toxicity, flammability, explosivity or corrosiveness, even eco-toxicity. From the angle of recyclability hazardous waste could be divided into two categories, recyclable and non-recyclable. From storage point of view, the physical consistency, i.e. liquid and solid hazardous would be considered.

3. Temporary storage of hazardous waste

a. Storage of solid hazardous waste

Solid hazardous waste could be stored in either puncture proof HDPE containers, or deposited in concrete tanks. In case such hazardous waste is reactive, corrosive and/or explosive, preference should be given to HDPE containers or PE gunny bags.

The drums/bags should be stacked in neat blocks. A 2 m gap should be maintained between such blocks for hand cart/trolley/ pellet truck movement.

HW Should not be stored beyond 90 Days.

b. Storage of liquid hazardous waste

For liquid hazardous waste thick puncture proof HDPE containers should be opted for durability and ease of handling. Metal containers should be opted out in case of explosive, reactive or corrosive hazardous wastes. Hazardous waste storage containment should be leak proof. The drums/bags should be stacked in neat blocks. A 2 m gap should be maintained between such blocks for hand cart/trolley/ pellet truck movement.

Additionally the hazardous waste storage area should be provided with some additional safety measures, in terms of civil construction and electrical fixtures, they are listed below.

c. Labelling of Hazardous Waste Containers

All hazardous waste storage should be provided with label as prescribed under Form 12 of Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules.

d. Records keeping of hazardous waste

Records of hazardous waste should be maintained meticulously in Form 3, with (a) type of hazardous waste, (b) name / department of waste generator, (c) date of generation etc. This should be used to (a) check whether waste is being disposed off within 90 days period, (b) used to generate Form 4 for submission to MPCB.

4. Civil works

Hazardous waste should be stored in pukka platforms, preferably made of RCC/PCC. The platform should be gently sloped (5% - 7%). The storage area should be provide with a secondary containment (bund), so that the area of the secondary containment should be at least 10% higher than the volume of liquid stored within the containment. Thus if 10,000 litre of used oil was to be stored within the secondary containment area, the volume of the secondary containment should be at least 11,000 litre (or assuming 1000 litre equivalent to 1 m³, approx. 11 m³). Diving this volume with the hazardous area storage area, the height of the secondary containment could be arrived at.

At the lowest end of the slope a collection pit should be provided. The collection pit should be provided with pumping arrangement. The head of the pump should adequate for lifting oil from the pit and delivering at a 10-15' ht. (height difference between the pit bottom and the top of the HDPE container).

The hazardous waste storage area should be provided with permanent shed/ rain protection.

Care should be taken that the hazardous waste storage area should be located away from storm drains etc., so that any liquid or leachate from the hazardous waste storage could not drain into storm water drains. CPCB requires that the lowest floor level is at least 150 mm above the maximum flood level.

5. Electrical wiring & fixtures

From the transformer (if present) or the main panel electrical line should be drawn into a panel, which should be preferably located outside the hazardous waste storage area. This panel should include a main cut-off switch, which should be located outside the main door. The panel and the switches should be protected from the rain and dust.

Flameproof electrical wires, fixtures and switches should be installed within hazardous waste storage areas panel. Piano type switches should be avoided as they may cause sparks.

Preferably spark proof (oil emerged) switches and flameproof lighting fixtures should be used where flammable, explosives or reactive hazardous waste is being stored.

If this is not possible due to techno -financial reasons, or in case flammable, explosives or reactive hazardous waste ware not being stored; then Miniature Circuit Breaker (MCB)/Earth Leakage Circuit Beaker (ELCB) (or else Residual Current Circuit Breaker (RCCB)) should be used in series or a Residual-current Circuit Breaker with Overload protection (RCBO) should be used.

Adequate number of lightning rods should be installed on top of the warehouse, based on the volume of the warehouse and the location of the warehouse. The hazardous waste storage area shold be provided with adequate number of lightening arrestors required; as should by IS 2309: 1989¹.

¹IS 2309: 1989 "Protection of Buildings and Allied Structures Against Lightning—Code of Practice (Second Revision) (1989)"

² Central Pollution Control Board. Protocol for Performance Evaluation and Monitoring of the Common Hazardous Waste Treatment Storage and Disposal Facilities including Common Hazardous Waste Incinerators. May, 2010. Page 8.

6. Fire preparedness

CPCB² has clearly stated the need of having automatic smoke, heat detection system in hazardous waste storage sheds. Such smoke and heat detection systems should be connected to a remote main fire detection panel, and fire alarms.

IS 2190: 2010 “Selection, Installation and Maintenance of First-Aid Fire Extinguishers—Code of Practice” does not explicitly mention hazardous waste storage area. Moreover the rating is liable to change with the type of hazardous waste stored.

If the hazardous waste storage area is located within an existing industrial building it may be treated as Gr. G ‘Industrial Building’; such cases are defined by IS 2190: 2010 as ‘*large number of yards, saw mills, godowns and warehouses storing combustible materials, cold storages, freight depots etc.*’ and categorized as Class A High Hazard category.

IS 2090:2010 requires the following design of fire extinguishers for Class A, high hazard type occupancies:

- 2 nos. 9 litre water expelling extinguishers or ABC 5 kg/6 kg fire extinguisher, for every 200 m² floor area or part thereof; with minimum of 4 extinguishers;
- 1 nos. 50 litre water CO₂ or 25 kg ABC fire extinguisher for every 100 m² of floor area or part thereof;
- The extinguisher should be so located as to be available within 15 m radius.

However, we may assume that an isolated hazardous waste storage area corresponding to Group H ‘Storage Building’, which is defined by IS 2190: 2010 as ‘*Flammable liquid stores, storage in drums and cans in open, paints and varnishes godown*’. Such structures are classified as Class B, medium hazard category.

IS 2090: 2010 requires the following design of fire extinguishers for Class B, medium hazard type occupancies:

- Two 9 litre mechanical foam extinguisher; or 5/6 kg dry powder extinguisher (or one of each type) for every 200 m² (2152 ft²) area (with minimum of four extinguisher per compartment).
- Extinguisher should be available within 15 m radius.

Ideally the number of fire extinguishers should not be reduced in case the area is found to be lesser than 200 m².

The fire extinguishers should be checked on monthly basis and refilled every three years.

If available, a landing valve of fire hydrant should be placed near the hazardous waste storage area.

The content of the hazardous waste storage area, and its compatibility / reactivity with water, CO₂, or any other fire-fighting media should be clearly spelled out outside the warehouse, and should be communicated to team responsible for fire-fighting beforehand.

7. Spill protection for liquid hazardous waste

In case liquid hazard waste is being stored, appropriate spill protection measures should be taken. Where liquid hazardous waste is being stored or may be stored in future, secondary containment should be present (see Civil Works above).

The hazardous waste storage area should be provided with an impervious sloping floor, ending at collection pit, fitted with a pump. In case of spillage, the liquid waste could be collected at the pit and pumped to fresh containers.

For small spills, liquid waste could be cleaned with a suitable type of spill protection kit, and if spill protection kit not available, with dry saw dust/cotton gauze. The spill protection kit or cotton/saw dust should be disposed off along with hazardous waste for incineration.

¹IS 2309: 1989 “Protection of Buildings and Allied Structures Against Lightning—Code of Practice (Second Revision) (1989)”

² Central Pollution Control Board. Protocol for Performance Evaluation and Monitoring of the Common Hazardous Waste Treatment Storage and Disposal Facilities including Common Hazardous Waste Incinerators. May, 2010. Page 8.

Details of Common Hazardous Waste Treatment Storage and Disposal facility in the State of Maharashtra: (As on 31st August 2012)

Sr No.	Criteria	Taloja (MWML)	TTCWMA (Mahape Navi Mumbai)	Rajangaon	Butibori
1.	Details of the facility	M/s. Mumbai Waste Management Limited, Plot No. P-32, MIDC, Taloja, Tal: Panvel, Dist: Riagad - 410208	M/s. Trans Thane Waste Management Association P-128, Shil-Mahape Road, Next to L&T Infotech Ltd. Mahape, Navi-Mumbai-400105	M/s. Maharashtra Enviro Power Ltd. (SPV of M/s. ShaktikumarM. Sancheti Ltd) Plot No. 56, MIDC Ranjangaon, Taluka-Shirur,Dist – Pune.	M/s. Vidharbha Enviro Protection Ltd. (SPV of M/s. Shaktikumar M. Sancheti Ltd) Sr. No.7 to 15, 131 &162, Butibori IndustrialArea,Mouza-Mandawa, Taluka- Hingana, Dist- Nagpur.
2.	Contact Person	Mr. Dinkar N Adhav Mobile- 9322218082, Ph. No. 27401468-72,022 39263926 (30 lines) Fax No :- 27401474/39263939	Mr. P.M.Shriwalson Mobile-9892174841 Fax-	Mr. Anand Bhandari Mobile- 9922901503 Mr. Asif Hussain Mobile-9922901513 Fax- 022138-670350	Col. R. K. Jain Mobile- 9923596245 Fax No- 0712-2245050
3.	Area allocation as per revised order dated 11.12.2008	A] Mumbai and Suburban Mumbai, Districts, Panvel, Khalapur & Uran Talukas of Raigad Districts and Thane District excluding Thane- Belapur Industrial Area. B] Alibaug, Karjat, Mahad, Mangaon, Mhasala, Poladpur, Pen Shriwardhan, Sudhagad, Talukas of Riagad District. Sindudurg, & RatnagiriDistrict.	Thane- Belapur IndustrialArea, Dist- Thane. The incinerable waste from this area shall be sent toCHWTSDF at Taloja, dist:Raigad.	A] Ahmednagar, Kolhapur, Pune, Satara, Sangli & Solapur District. B] Aurangabad, Beed, Dhule , Hingoli, Jalgaon, Jalna, Latur, Nanded, Nandurbar, Nashik, Parbhani, Osmanabad District.	Amravati, Akola, Bhandara, Buldhana,Chandrapur, Gondia, Gadchiroli, Nagpur,Wardha, Wasim, & Yavatmal Districts
4.	Area of Facility	40 Hect.	7 Hect	30 Hect.	30 Hect.
5.	Project Cost	Rs.42.30 Crore	Rs. 7.80 Crores	Rs. 80.88 Crores	Rs.80.44 Crores
6.	Date of letter of Intent/ Award	10.09.2001	—	02.07.2004	02.07.2004

Sr No.	Criteria	Taloja (MWML)	TTCWMA (Mahape Navi Mumbai)	Rajangaon	Butibori
7.	Site Notification	10.09.2001	24.03.1999	28.07.2006	28.07.2006
8.	Land lease agreement	24.02.2002	09.05.2000	13.08.2004	13.08.2004
9.	Detailed Project Report Approved by	Expert Committee of MIDC	Chemcontrol A/S ofDenmark	IIT, Powai, Mumbai	IIT, Powai, Mumbai
10	Techno- Economic feasibility study carried out by	APITCO Ltd. Hyderabad (Andhra Pradesh Industries and Technical Cosultancy Organization Ltd.)	Chemcontrol A/S ofDenmark and ECO-Chem Pollution Control Pvt. Ltd. Mumbai	Indbank Merchant Banking Services Ltd.	Indbank Merchant Banking Services Ltd.
11	Consent to Establish issued on	02.01.2002	02.01.2002	27.10.2005	27.10.2005
12.	Consent to Operate issued on	1. 1st Consent to Operate dt :- 08.04.2005 valid up to; 31/08/2009 2. Consent to operate for (SLF+ Incinerator) dt : 17/12/2009 valid up to:1/07/2014	1. 1st Consent to operate dated : 05.11.2003, valid up to : 30/09/2004 2. Consent to Operate dated : 18/07/2009 Valid up to : 30/09/2013	1. 1st Consent to operate dated : 31/05/2008 2. Consent to operate for land fill dt : 13/05/2010 valid up to : 30/11/2014. 3. Consent to operate for Plasma Plant – dt: 22/06/2010 valid up to: 31/10/2014	1. 1st consent to operate dated : 22.02.2007 valid upto: 28/02/2008 2. Consent to operate for landfill dt: 13/05/2010 valid up to: 28/02/2015 3. Consent to operate for HW Incinerator dated: 26/02/2010 valid up to: 31/10/2014
13.	In Operation / Under construction	Commissioned since 2001	Commissioned since Jan 2004	SLF- Commissioned Since Jan 2007 Incinerator- Commissioned since November 2008	SLF- Commissioned since Feb 2007 Incinerator- Commissioned since November 2008

Sr No.	Criteria	Taloja (MWML)	TTCWMA (Mahape Navi Mumbai)	Rajangaon	Butibori
14.	Life of Facility	20 Years- Service 30 Years- Post Monitoring and maintenance	5.0 Year – Service 30 Years- Post Monitoring & Maintenance	20 Year – Service30 Years- Post Monitoring & Maintenance	20 Year – Service 30 Years - Post Monitoring & Maintenance
15.	Capacity of the Facility	SLF- 120,000 MT/ Year	SLF- 10,000 MT/Year	SLF- 60,000 MT/Year	SLF- 60,000 MT/Year
		1. INC – 1.5 TPH. 2. INC- 1.5 TPH Total : 3 TPH Capacity	INC-No Facility (Incinerable HW sent toTaloja)	INC-3 TPH	INC-3TPH
16.	Cost of disposal pertones of waste, to SLF	DLF - Rs. 1000 per MT LAT - Rs. 2000 to 5000 per MT INC - Rs 18000 to 22000 per MT	DLF- Rs.900 per MT LAT- Rs.1800 per MT	DLF- Rs. 980 per MT LAT -Rs.2500 to 4000 per MT INC- Rs.12000 to 20000 per MT	DLF - Rs. 1182/MT LAT - Rs. 2500 to 4000 per MT INC- Rs.12000 to 20000 per MT
17.	i) MoEF Grant, if any	25 % of Total Project Cost or Maximum Rs. 2 Crores	25 % of Total Project Cost or Maximum Rs. 2 Crores	25 % of Total Project Cost or Maximum Rs. 2 Crores	25 % of Total Project Cost or Maximum Rs. 2 Crores
	ii) M.P.C.B.s Support if any	5 % of Total Project Cost or Maximum Rs. 2 Crores	5 % of Total Project Cost or Maximum Rs. 2 Crores	5 % of Total Project Cost or Maximum Rs. 2 Crores	5 % of Total Project Cost or Maximum Rs. 2 Crores
	iii) State Govt./ Dept.Grant if any (MIDC)	20 % of Total project Cost or Maximum 10 crores + 40 Ha land given by MIDC on lease @ Rs 1/- per sq. m	20 % of Total project Cost or Maximum 10 crores + 7Ha land given by MIDC on lease @ 1/- per sq. m	20 % of Total project Cost or Maximum 10 crores +30 Ha land given by MIDC on lease @ 1/- per sq. m	20 % of Total project Cost or Maximum 10 crores + 30 Ha land given by MIDC on lease @ 1/- per sq. m
18.	Subsidy released	MPCB- 2.000 Crores MIDC- 10.00 Crores MoEF- Nil Total - 12.00 Crores	MPCB- 039.20 lakhs MIDC- 157.20 lakhs MoEF- 196.50 lakhs Total - 382.90 lakhs (Rs. 3.83 Crores)	MPCB- 2.00 Crores MIDC - 10.00 Crores MoEF- 80 lakhs Total- 12.80 Crores	MPCB- 2.0 Crores MIDC- 10.00 Crores MoEF – 80 lakhs Total- 12.80 Crores
19.	HW Received at facility till 31/08/2012 for disposal	DLF – 389763.00 MT LAT – 358201.00 MT INC – 127374.00 MT	DLF – 279063.05 MT LAT – 24497.18 MT	DLF – 75382.00 MT LAT – 49079.00 MT INC – 52930.00 MT	DLF – 27782.00 MT LAT – 31314.00 MT INC- 3668.00 MT
20.	Total No of members till 31/08/2012	3299	1691	1911	585

Information on Integrated Common Bio-medical waste treatment and disposal facilities in Maharashtra with Incineration, Autoclave and Shredder.

Sr. No.	Name of Corporation / Council	Name of Common Bio-Medical Waste Treatment Facility
1	Mumbai Corporation	M/s. SMS Envoclean Pvt. Ltd., Deonar dumping Ground, Mumbai
2	Navi Mumbai Corporation	M/s. Mumbai Waste Management Ltd., P-32, MIDC, Taloja, Tal. Panvel, Dist. Raigad
3	Thane Municipal Corporation	M/s. Enviro Vigil, Chhatrapati Shivaji Mah. Hospital Compound, Kalwa, Thane
4	Kalyan-Dombivli Municipal Corporation.	M/s. PRS Enterprises, Atharwadi Jail Road, Kumbharde, Kalyan
5	Nashik Corporation	M/s. Water Grace Products Nashik
6	Ahmed-nagar Municipal Corporation.	M/s. Bioclean Systems Ltd., Gat No. 34, Burudgaon, Tal. & Dist. Ahmednagar
7	Jalgaon Municipal Corporation	M/s Mansai Bio-Medical Waste Enterprises Pvt. Ltd 90, Krishnendu, Gandhi Nagar, Jalgaon-425001
8	Pune Municipal Corporation.	M/s. Passco Environmental Services, Yashvantrao Chavan Memorial Hospital, Pimpri Chinchwad Municipal Corporation, Sant Tukaram Nagar, Pimpri, Pune- 411 018.
9	Pimpri Chinchwad Municipal Corporation	M/s. Yashvantrao Chavan Memorial Hospital, Pimpri Chinchwad Municipal Corporation, Sant Tukaram Nagar, Pimpri, Pune- 411 018. (Passco Environmental Services)
10	Talegaon Dabhade Municipal Council	M/s. Mimer Medical College, C/o. Life Secured Services, Talegaon Dabhade, Pune
11	Satara Municipal Council	Nature N Need Satara C.T. No. 83, Songaon Kachra Depot, Tal & Dist. - Satara.
12	Karad Municipal Council	M/s. Karad Hospital Association Shaniwar Peth, Nearpalika Oxidation Pond, 12 dabari, Karad Dist- Satara
13	Solapur Municipal Corporation.	M/s. Bioclean Systems Ltd., 83, Railway Lines, Nirgude Bungalow, Daffrin Chowk, Solapur.
14	Akluj Municipal Council	M/s. Sumitra Incinerator, Gat No. 311/ 1R2, At- Khudus, Post- Velepuri, Tal- Malshiras, Dist- Solapur.
15	Sangli-Miraj-Kupwad Municipal Corporation.	M/s. Surya Central Treatment Facility, Plot No. D60, MIDC, Miraj.

Sr. No.	Name of Corporation / Council	Name of Common Bio-Medical Waste Treatment Facility
16	Kolhapur Municipal Corporation.	M/s. Daas Enterprises, R.C.No. 206, C.S.No.29/92A, Kasaba Bawda, Kolhapur
17	Ichal-karanji/Jaysingpur/Kurundwad/peth- vadgoon Municipal Council	M/s. S.S. Services, C/o. Ichalkaranji Mun. Corpn., Takawade Road, Ichalkaranji
18	Ratnagiri Municipal Council	Maharashtra Bio-Hygenic Management, E-19, Lote Parshuram, Khed, Ratnagiri
19	Amravati Municipal corporation & Yavatmal Municipal Council	M/s. Global Ecosave System, S.No.238,DurgapurRoad, Badnera, Amravati.
20	Chandrapur Municipal Council	M/s. Superb Hygiene Disposals, B-16/7, MIDC, Chandrapur
21	Nagpur Municipal Corporation	M/s. Superb Hygiene Disposals, Plot No 133Mauja Bhandewadi, Nagpur
22	Aurangabad Municipal Corporation.	M/s. Water Grace Products, Survey No. 122, Near Patoda Village, Aurangabad.
23	Nanded Municipal - Corporation.	M/s. Superb Hygiene Disposals, Nanded
24	Jalna Municipal council	M/s. Atul Environment Services (office) 54, shivadatta HSG. Soc. Cid-co N-8, Aurangabad-431003
25	Beed Municipal Council	M/s. Champavati Pollution Control Society, BeedGut No.301 and Gut No. 307 at Village Pali, Tal& Dist- Beed.
26	Latur Municipal Council	M/s.Akshay Industries, Latur, Plot No. C-8/1, MIDC- Latur, Dist- Latur.
27	Gondia Municipal Council	M/s. Krupa Wastages, Ramdeo Sadan, Manohar Chowk, Gat. No. 530, At. Dahegaon, Tal. Amgaon, Dist. Gondia (Note: Establish is given to this facility. Presently, BMW generated in this region is treated by M/s. Superb Hygenic Disposal, CBMWTSDF, Nagpur.)

List of CBMWTSDF with deep burial facility

Sr. No.	Name of Council / Corporation	Name and Address of Facility
1	Palghar Municipal Council Dist. Thane	M/s. Touch 'N' Glow House Keeping Services, Shri S.T. Kadam Premises, Opp. Palghar Taluka Co-Op. Indl. Estate, Boisar Road, Palghar.
2	Uran Municipal Council Dist. Raigad	M/s. Evergreen Environmental, 4/10, Matruchaya, Uran, Dist- Raigad
3	Baramati Municipal Council Dist. Pune	M/s. Jaibhavani Medicare System, A- Sangi Ilassic, Flat No-16 Abhigaiwan Rd. A/P- Jalochi, Ta- Baramati, Dist. Pune.
4	Sindhudurg Municipal Council Dist. Sindhudurg	Govind Bio-medical Corporation, Tal- Kudal
5	Udgir Municipal Council Dist. Latur	Sangmeshwar pollution control society, Gate No. 67, Sajja Somnampur, Taluka – Udgir, District – Latur
6	Gadhinglaj Municipal Council, Dist. Kolhapur	M/s. Medical Waste Disposal Association, Gadhinglaj – 416502, Dist. Kolhapur.

List of Institution collecting Liquid Bio-Medical Waste from HCEs.

- 1) M/s. Yashraj Bio-Technology Ltd., Plot No. C-232, MIDC, Pawane, TTC, Navi Mumbai.
- 2) M/s. Advy Chemical, Plot No. A- 338, Wagle Industrial Estate, Road No. 26, Thane (W)

List of the Units Registered with MPCB as Recyclers / Reprocessors

E-Waste Recyclers

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – KALYAN		
1.	M/s. Earth Sense Recycle Private Limited, A-7, Gala No.1,2 &3, Ground Floor, Prerana Complex, Dapoda Road, Vill-Val, Bhivandi	E-Waste- 360 MTA
2.	M/s. Green World Recycling Pritesh Complex, Building No. B-12, Gala No. 7,8, Anjur Phata, Village Val, Tal: Bhiwandi, Dist: Thane	E-Waste- 1000 MTA
REGION – NAVI MUMBAI		
3.	M/s. Eco Friend Industries, A-205, TTC Industrial Area, Pawane Village, Thane Belapur Road, Navi Mumbai – 400 710.	E-Waste- 1000 MTA
4.	M/s. Antony Revive e Waste Pvt. Ltd. W-154, TTC, Pawane Village, Navi Mumbai – 400 710	E-Waste- 1000 MTA
REGION – RAIGAD		
5.	M/s. Mercury Metal industry, Plot no. D-48, MIDC Mahad, Tal:-Mahad, Dist: Raigad,	E-Waste- 250 MTA
6.	M/s. Shabbir Traders , Plot No. 999(7), Kiravali Narayan Kutir Udyog Mandal, Vill. Adivali, Tal. Panvel. Dist. Raigad	E-Waste- 250 MTA
REGION – THANE		
7.	M/s. Eco Recycling Limited Eco House, Near Top Glass Enclave, Bhoipada, Sativali Road, Vasai (East), Thane-401208	E-Waste- 7200 MTA
8.	M/s. Justdispose Recycling Pvt. Ltd. A-103/104/110/119, Arvind Industrial Estate, Navghar, Tal:- Vasai, Dist:- Thane	E-Waste- 500 MTA
REGION – PUNE		
9.	M/s. High-Tech Recycling Pvt. Ltd. Sr. No. 571/572, Nr. Silver Fort Hotel, A/P. Bhogaon, Tal. Mulashi, Pune	E-Waste- 500 MTA
REGION – PUNE		
10.	M/s. E-Recon Recycling, Gat No. 94, Village Chitegaon, Tq. Paithan, Aurangabad	E-Waste- 1000 MTA

**LIST OF THE UNITS REGISTERED WITH MPCB AS
RECYCLERS/REPROCESSORS
LEAD WASTE RE-PROCESSORS**

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – KALYAN		
1.	M/s Saurabh Metal Refinery Gut No. 143 Plot No. B/4 At. Sapronda, P.O. Kudus Tal. Wada, Dist. Thane	Lead Acid Battery Plates and Lead Scrap - 1440 MTA
2.	M/s Krishna Metal Refinery Plot No. 143/1-2, Sapronda Village P.O. Uchat, Taluka – Wada Distt. Thane – 421 030	Lead Acid Battery Plates and Lead Scrap - 3000 MTA
3.	M/s. Sharshi Metals S.N. 28/1, Part Village Sharshi Taluka – Wada, Dist. Thane	Lead Acid Battery Plates and Lead Scrap - 1200 MTA
4.	M/s. Ranchal Industries Gut No.49, Village-Gunj (Kudus) Post-Kupari, Taluka – Wada Distt. Thane-421 312	Lead Acid Battery Plates and Lead Scrap - 1200 MTA
5.	M/s. R.K. Metal Refinery Gut No.293 & 294, Village-USAR, Kondla Road P.O.-Kudus, Tal. Wada, Distt. Thane - 421 312	Lead Acid Battery Plates Plates/Lead Scrap - 4800 MTA
6.	M/s D.K. Metal Works Gut No. 100, At: Kondla Road Village-Kudus P.O. Kudus Taluka-Wada Dist. Thane 421312	Lead Acid Battery Plates / Lead Scrap - 4250 MTA
7.	M/s Kothari Metallurgical Export Pvt. Ltd. 56 At. Post – Chaindvali Wada – Shahpur Road, Taluka-Wada, Dist. Thane – 421 303	Lead acid battery plates/ Lead scrap - 7200 MTA
8.	M/s Shakti Metal Industries S.No.261, Village-Abidghar Taluka : Wada Distt. Thane	Lead Acid Battery Plates & Lead Scrap - 5000 MTA
9.	M/s Ajay Metal Refinery Gut No.390/6, S.No.1060 Village-Kondhle, Post-Kondhle Tal. Wada, Distt. Thane	Lead Acid Battery Plates and Lead Scrap - 2800 MTA
10.	M/s. S. S. Enterprises Gut No.98, Kondla Road, Village-Kudus, Taluka – Wada, Distt. Thane - 421 312	Lead Acid Battery Plates/ Lead Scrap - 4800 MTA
11.	M/s. Deshmukh Lead Pvt. Ltd. S.No.63/4/1B, Wada – Manor Road, At PostVarale, Taluka – Wada, Distt. Thane – 421 303	Lead Acid Battery Plates & Lead Scrap - 8000 MTA
12.	M/s G.N. Metal Refinery Survey No.125, Ghonsai Tal. Wada, Distt. Thane – 421 312	Lead Acid Battery Plates/ Lead Scrap - 2880 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
13.	M/s Indore Metal Corporation Survey No.397/p, Dinkar Pada, Kondla Road, KUDUS Taluka – Wada, Distt. Thane	Lead Acid Battery Plates/ Lead Scrap - 3600 MTA
14.	M/s. Samrat Udyog Plot No.147, Village – Sapronda Post : Kudus, Tal: Wada , Distt: Thane	Lead Acid Battery Plates/ Lead Scrap - 3000 MTA
15.	M/s. Samico International Plot No. 155, Village Sapronda, Post Kudus Tal. Wada, Dist. Thane	Lead Acid Battery Plates & Lead Scrap - 2400 MTA
16.	M/s. Sarita Metal Refinery, Gut No:53, Village: Supande,Post: Kanchad, Tal; Wada, Dist: Thane	Lead Scrap, Lead acid Battery Scrap - 1000 MTA
17.	M/s. S.H. Metal Works Plot no: 4, Gut no: 495 & 498 Village: Kondale, Post: Kudus, Tal: Wada, Dist: Thane	Lead Acid Battery Scrap/Plates, Lead Dross & Concentrate of the Capacity - 1500 MTA
18.	M/s. Raj Metal Refinery Gut no: 143, Plot no: 5, Uchat Road, Village: Sapronda, Tal: Wada , Dist: Thane	Lead Acid Battery Scrap/Plates, Lead Dross & Concentrate of the Capacity - 2400 MTA
19.	M/s. S. K. Metal Works, Plot No. 5, Gut No. 495 & 498, Village Kondale, Post Kudus, Tal. Wada, Dist. Thane	Lead Acid Battery Plates & Lead Scrap - 3000 MTA
20.	M/s. Welcome Metal Refinery, Gut No. 420, Village: Usar, Post: Kudus,	Lead Acid Battery Plates/ Lead Scrap - 3000 MTA
REGION – THANE		
21.	M/s. Hans Enterprises 1 Meera Golani Complex, Opp. Vasai Vajreshwari Road, Vasai (East), Dist. Thane - 401 208	Lead Acid Battery Plates & Lead Scrap - 1800 MTA
22.	M/s. Simplex India 4 Sativali Nagar, Khakhami Industrial Complex Ahmedabad Bombay Highway Vasai Dist. Thane	Lead Acid Battery Plates and Lead Scrap - 600 MTA
23.	M/s. N.V. Metals and Alloys Plot No. 310, Near Shri Hari Fabric Village, Umroli, Taluka Palghar (Palghar Baiser Road) Dist. Thane - 401 404, Maharashtra	Lead Acid Battery Plates and Lead Scrap - 600 MTA
24.	M/s Nikhil Metals Works At. Village Umroli,Taluka Palghar, Boisar Road, Plot No. 313, Near Shri Hari Fabrics Distt. Thane	Lead Acid Battery Plates & Lead Scrap - 720 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
25.	M/s Jarsons Metal 18 Ganesh Industrial Estate, National Highway No. 8, Walive Tungar Fhata, Post Sativali Vasai(East), Dist. Thane – 401 208	Lead acid battery plates/ Lead scrap - 6000 MTA
26.	M/s. Mahalaxmi Metal Works & Alloys Plot No.127, Savroli, Tal. Talsari, Distt. Thane	Lead Acid Battery Plates and Lead Scrap - 2200 MTA
27.	M/s Shanti Metal Refinery Near Service Station, Kaman Road, Sativali, Vasai(East), District – Thane – 401 202	Lead Acid Battery Plates & Lead Scrap - 1500 MTA
REGION – PUNE		
28.	M/s. MRJS Lead Pvt. Ltd. GAT No. 72 Village Dhanore Behind PCS Industries Ltd., Alanddi - Markal Road, Tal. Khed, Distt. Pune-412 105	Lead Acid Battery Plates and Lead Scrap - 1500 MTA
29.	M/s. Chloride Metal Ltd. Gat No.1242, Markal Taluka-Khed, Distt. Pune - 412 105	Lead Acid Battery Plates Lead Scrap Lead Ashes and Residues - 36000 MTA
REGION – KOLHAPUR		
30.	M/s. Nayan Metal Pvt. Ltd. D-6 MIDC, Lote Parshuram Tal. Khed, Dist. Ratnagiri-415 722	Lead Acid Battery Plates/ Lead Scrap - 960 MTA
31.	M/s. Sterling Lead Pvt. Ltd. Plot No. A-210 Kagal – Halkanangate Five Star Indl. Estate, Halasavade Tal. Karveer, Dist. Kolhapur	Lead acid battery plates/ Lead scrap - 7200 MTA
32.	M/s. Rohini Metal Alloys B-56 Kagal Hatkangale Industrial Area Kolhapur	Lead Scrap (excluding lead acid batteries) - 960 MTA
REGION – RAIGAD		
33.	M/s. Maharashtra Metal Industries Plot No.14, Arkosh Industrial Estate, Village: Dheku, Tal: Khalapur, District – Raigad	Lead Acid Battery Plates/ Lead Scrap - 3600 MTA
REGION – NAVI MUMBAI		
34.	M/s. New Metal Refinery Arvind Brothers, Compound Ganpati Pada Old Thane - Belapur Road, Dighe, Navi Mumbai – 400 065	Lead acid battery plates/ Lead scrap - 3000 MTA
REGION – AURANGABAD		
35.	M/s. S.K. Agency S.R.No,152/1, Plot No.41 Chatanaya Nagar Basmath, Tq. Basmath, Distt. Hingoli	Lead Acid Battery Plates/ Lead Scrap - 800 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
36.	M/s. Bharat Industries Plot No. L-135, MIDC Area Dist. Ahmad Nagar	Lead Acid Battery Plates and Lead Scrap - 1200 MTA
37.	M/s. Star Metal Plot No: W-15, MIDC Parbhani	Lead Scrap, Lead acid Battery Scrap -1200 MTA
REGION – NAGPUR		
38.	M/s. Pooja Pigments Khasra No.100 Behind Kalmna Kamptee Octroi Kalmna, Nagpur	Lead Acid Battery Scrap and Lead Scrap -2100 MTA
39.	M/s. Satwai Industries E-38 MIDC Hingna Nagpur,	Lead acid battery plates/ Lead scrap - 360 MTA
40.	M/s. Singh Metal Works Khasra No.64, Old Khasala Tal. Kampatee, Distt. Nagpur	Lead Acid Battery Plates & Lead Scrap - 100 MTA
41.	M/s. Shree Ram Metals Plot No.B-4/14, MIDC Butibori, Thasil – Hingna, Distt. – Nagpur Maharashtra	Lead Acid Battery Plates/ LeadScrap - 360 MTA
42.	M/s. Shree Metals (Mujbi) Private Ltd. Plot No.312/2, AT.Mujbi, P.O.- Bela Tah./Dist. Bhandara-441 904	Lead Acid Battery Plates & Lead Scrap - 4932 MTA
43.	M/s. Sethi Pigments Pvt. Ltd. Plot No.39, Wanjra Layout Kamptee Road, Nagpur– 400 026	Lead Acid Battery Plates/ Lead Scrap - 840 MTA
44.	M/s Rishabh Meta Process Gut No.27/1, Village: Jamni (Dhaba), StationRoad, Tah + Distt. Bhandara – 441 904	Lead Acid Battery Plates & Lead Scrap - 1800 MTA
45.	M/s. Guru Storage Batteries Plot No: 122, Vanjara Layout, Pili nadi Inl Area, Nagpur	Lead Scrap, Lead acid Battery Scrap –720 MTA
46.	M/s. Nagraj Alloys Pvt. Ltd., Survey No.41,P.H. No. 20, Village Asoli, Mouza Mahalgaon. Tal. Kamptee, Dist. Nagpur	Lead Acid Battery Plates & Lead Scrap - 6400 MTA
REGION – NASHIK		
47.	M/s. Swastik Industries Plot No. 27 S.N. 161/1 Sahkari Audyogik Vasahat Marydit, Bhusaval	Lead Acid Battery Plates and Lead Scrap - 1160 MTA
48.	M/s. Kadri Metal Refinery Plot No. E-94, MIDC Awdhan & Lalling Dhule-424 311	Lead Acid Battery Plates and Lead Scrap – 600 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
49.	M/s. RHT Steel (India) Pvt. Ltd. GAT No.40/12, A.B. Road, Village-Ajande(KH) Taluka - Shirpur Distt. Dhule-425 405	Lead Acid Battery Plates & Lead Scrap - 4800 MTA
50.	M/s. Nashik Metal Refinery S.No. 429/430, Village – Gonde, Tq. Igatpuri, Distt. Nashik,	Lead Acid Battery Plates and Lead Scrap - 900 MTA
51.	M/s. Ameya Metal Industries Gut No. 206 Village Pimpalnare Khatwad Phata Tal. Dindori Nashik	Lead Acid Battery Plates/ Lead Scrap - 600 MTA
52.	M/s. Success Metal Refinery, Gut No. 81/2, Newasa Khadka Road, Tal. Newasa, Dist. Ahmednagar	Lead Acid Battery Plates/ Lead Scrap - 1440 MTA

**List of the Units Registered with MPCB as
Recyclers/Reprocessors
OTHER NON-FERROUS METAL WASTE RE-PROCESSORS**

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – NAVI MUMBAI		
1.	M/s. Bharti Rubber Lining and Allied Service P. Ltd. Plot No. C-49, TTC Indl. Area Pawane Village, Navi Mumbai	Copper Druid Copper Dross Copper Residues Copper Oxide Mill Scale Brass Dross Zinc Ash Brass Scrap Copper Scrap and Zinc Dross - 10000 MTA
2.	M/s Beetachem Industries W-177, TTC, Pawana Village Thane Belapur Road Navi Mumbai	Spent Catalyst Containing Copper & Spent Catalyst Containing Nickel – 60 MTA
3.	M/s Accent Metals Pvt. Ltd. Plot No. C-46, TTC Industrial Area MIDC- Pawane, Navi Mumbai - 400 708	Copper Druid Copper Dross and Brass Dross - 4900 MTA
4.	M/s Nizalco Metals P. Ltd. Plot No.C-353, TTC Industrial Area MIDC Turbe Navi Mumbai	Copper Druid Copper Dross Brass Dross & Zinc Scrap - 3600 MTA
5.	M/s R. K. Manufacturing Company Plot No. A-395, TTC MIDC, Mahape, Navi Mumbai-400710	Copper Druid Copper Dross Copper Scrap Copper Oxide Mill Scale Copper Reverts Cakes and Residues Brass Scrp Brass Dross Zinc Scrap and Zinc Dross - 2700 MTA
6.	M/s Maurya Metal Pvt. Ltd. Plot No. A-762, TTC Industrial Area MIDC, Khairane Navi Mumbai – 400 709 Maharashtra	Brass Scrap, Scrap Brass, Dross Copper Scrap, Copper Dross, Copper Residues, Copper Druid, Zinc Scrap, Zinc Dross, Zinc Ash & Skimmings and Zinc Residues - 4800 MTA
7.	M/s B. R. Steel Products Pvt.Ltd. Plot No.C-39(B&C) Near Krishna Steels, Pawane Village TTC Industrial Area, Mhape Turbhe Navi Mumbai-400 705	Copper residue Cakes Copper dross Brass dross Zinc dross Zinc skimming Zinc ash and spent catalyst containing Nickel - 1300 MTA
8.	M/s Namdev Silicates & Chemicals (P)Ltd. Shed No. W-73(II) MIDC Taloja Raigarh-410 208 E-Mail: namdev@mtnl.net.in	Zinc Ash - 300 MTA Spent Nickel Catalyst - 1350 MTA Copper Scrap and Spent Catalyst Containing Copper - 900 MTA
9.	M/s Sigma Chemical Industries Plot No. H-6 MIDC Taloja Tal-Panvel Dist.- Raigad	Zinc Ash & Zinc Waste - 500 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
10.	M/s Aryavart Chemicals Pvt. Ltd. Plot No.G-14/3, MIDC Taloja Tal-Panvel Dist-Raigad	Spent Nickel Catalyst - 300 MTA Copper Reverts & Cakes - 100 MTA
11.	M/s. Sunshine Laboratories (I) Pvt.Ltd., Plot No. D-63, MIDC, TTC, Turbhe Navi Mumbai	Copper Scrap, Brass Scrap, Zinc Scrap and Copper Druid - 20,000 MTA
REGION – KOLHAPUR		
12.	M/s Rohini Metal Alloys B-56, Kagal Hatkangale Industrial AreaKolhapur, Maharashtra	Copper Scrap - 100 MTA
REGION – PUNE		
13.	M/s Astron Engineers (I) Pvt. Ltd. GAT No. 131, Near Lavale Phata Tal. Mulshi Dist. Pune	Copper Scrap, Brass Scrap, Zinc Scrap and Copper Druid - 4500 MTA
14.	M/s. Hamirani Metals P. Ltd. 10/3/4, Village Kiwale, New Mumbai Bangalore Highway, Kiwale -412 101	Copper Druid - 3000 MTA
15.	M/s. S. K. Naik & Sons Sr. No. 50/15, Naregaon Road Dharygaon Dist. Pune – 411 041	Copper Scrap Zinc Scrap & Brass Scrap - 2160 MTA
16.	M/s. Monika Metal Corporation S. No. 79, Plot No. B, Opp. Bhairav NathTemple, Kudulwadi Chikali Pune – 412 114	Copper Dross Copper Druid Copper Residues Copper reverts Copper Cakes Zinc Skimmings Brass Scrap & Brass Dross – 2400 MTA
17.	M/s. HSR Enterprises GAT No. 799, Pawar Vasti Vishnu Nagar, Near Kohinoor Weigh Bridge Chikali, Dist. Pune- 412114	Copper scrap, Brass scrap & copper druid, jelly filled copper cables of the capacity -1000 MTA
18.	M/s. Bharat Industries Plot No. 46, Phase-II Ramtekadi IndustrialEstate Hadapsar Pune-411013	Brass Scrap & Copper Scrap - 500 MTA
19.	M/s. Variety Metals Pvt. Ltd. Plot No. 21/22, Block D-1, MIDC, Chinchwad, Pune – 411 019	Brass Scrap, Copper Scrap, Waste Copper, Copper alloys & Zinc Scrap –980 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – THANE		
20.	M/s. Surchem Chemicals Pvt. Ltd. Plot No: F-12/3, MIDC , Tarapur, Boisar, Dist: Thane- 401506	a) Copper waste containing cable, spent catalyst, dross, cake, mill scale, residue, reverts, ETP Sludge. b) Zinc Waste containing spent catalyst dross. c) Cobalt Waste containing spent catalyst, PTA Catalyst, Scrap, ash & ETP Sludge. d) Molybdenum waste containing spent catalyst, scrap, residue, ash & ETP Sludge e) Nickel Waste Containing spent catalyst, residue, sludge, spent Raney Nickel & ETP Sludge -5000 MTA
21.	M/s J.K. Corporation Gali No. 9 & 10, Walia Indl. Area Village Sativali Vasai(E) Dist. Thane-401 208	Zinc Ash Zinc Residues & Zinc Scrap - 2700 MTA
22.	M/s Vijay Chem Industries Survey No. 150 A/2, Saparonde Village Kondala Road Dist. Thane	Zinc Ash - 1250 MTA
23.	M/s Rajkob Industries Plot No. N-41, MIDC Tarapur Boisar, Dist. Thane – 401 506	Copper Scrap Copper Dross Spent Catalyst containing Copper Copper Oxide Mill Scale Nickel Scrap Spent Catalyst Containing Nickel Zinc Dross and Zinc Scrap - 720 MTA
24.	M/s. Vineeth Chemicals Unit No. I, Agarwal Industrial Estate No. 3, Sativali Road Vasai(E) Dist. Thane,	Spent Nickel Catalyst & Nickel Scrap - 250 MTA
25.	Ms Vineeth Precious Catalyst (P) Ltd. 9 & 10, Estate No. 3, 15 to 18 Building No.8, Agarwal Udyog Nagar Sativali Road Vasai(E) Dist. Thane- 401208	Spent Nickel Catalyst & Nickel Scrap - 250 MTA Copper Scrap and Zinc Scrap - 150 MTA
26.	M/s R.T.Jain & Co. Plot No.F-1/19, MIDCTarapur, Boisar , District – Thane	Brass Dross, Copper Dross, Copper Dross, Copper Slag, Zinc Dross, Zinc Ash - 1800 MTA
27.	M/s. A.I.C. Chemical Private Ltd. Mohan Mill Compound Kolshet Road, Thane(West)	Zinc Ash, Zinc Dross, Hot Dip Galvanizers Slab Bottom Dross, Zinc Ash/ Skimming arising from galvanizing and die casting operations, Zinc Ash/ Skimming/other Zinc bearing waste arising from smelting and refining. Zinc Ash and residues including Zinc Alloy residues in dispersible form - 3000 MTA
28.	M/s. Mardia Tubes Ltd. Plot No. J-56, MIDC, Tarapur, Tal. Palghar, Dist. Thane	Copper Scrap, Brass Scrap, Zinc Scrap, Copper Dross, Brass Dross, Zinc Dross, Zinc Ash & Skimming -2900 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – NAGPUR		
29.	M/s Kothari Enterprises Mujbi P.O. Bela, Tah. Dist. Bhandera	Zinc Ash Zinc Dross Zinc Scrap and Zinc Skimmings - 1600 MTA
30.	M/s. Dhatu Nigam Village Tekadi Jabalpur Road P.O. Kanhan –441 401, Nagpur	Zinc Scrap & Zinc Ash - 192 MTA
31.	M/s. Gaurav Industries U-152 MIDC Estate Hingna Road Nagpur-440016 Maharashtra	Zinc Ash - 540 MTA
32.	M/s. Vidarbha Nicel Pvt. Ltd. C-33, MIDC Hingna Nagpur-440028	Spent Nickel Catalyst - 1020 MTA
33.	M/s Shree Metals(Mujbi)Private Limited Plot No.312/2, At. Mujbi P.Bela Tah./Dist. Bhandara-441 904	Zinc Dross Zinc Ash & Zinc Residues - 655 MTA Brass Dross - 560 MTA
34.	M/s Govind Metal Industries Khasra No.60/1, Station Road, Bhandara	Brass Dross, Copper Dross, Zinc Dross and Zinc Ash - 876 MTA
35.	M/s Rishabh Meta Process Gut No.27/1, Village: Jamni (Dhaba), Station Road Tah + Distt. Bhandara – 441904	Zinc Ash, Zinc Dross, Copper Dross, Brass Draoss, Copper Oxide Mill Scale, Waste Copper - 10000 MTA
36.	M/s. Nagraj Alloys Pvt. Ltd. Survey no: 41, P.H. No: 20, village : Asoli, Mouza, Mahalgaon Tal: Kamptee Dist: Nagpur	Copper Scrap/ jelly filled copper cables of the capacity -125 MTA Brass Scrap of the capacity -125 MTA
REGION – MUMBAI		
37.	M/s. Metal Press India 146 BCD, Industrial Estate, Charkop Kandivli (W), Mumbai – 400 067	Copper Scrap. Brass Scrap & Zinc Scrap - 450 MTA
38.	M/s. Arjandas Metals Industries Pvt.Ltd. Saki Vihar Road, Arjandas House, Sakinaka , Mumbai - 400 072	Brass Scrap Brass Dross Copper Scrap and Copper Dross - 8100 MTA
39.	M/s. Shri Hari Extrusion Ltd. Ashok Nagar A.C. Road Near Bank of Baroda Kandivali (East) Mumbai.	Brass Dross Copper Dross Zinc Dross and Copper Cable i.e. Dried Copper Residues Zinc Scrap and Zinc Ash & Skimmings - 9000 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – NASHIK		
40.	M/s. S.P. Chemicals Gate No. 84, Vikram Road Erundal 425-109, Dist. Jalgaon Maharashtra	Spent Nickel Catalyst and Nickel Scrap – 600 MTA
41.	M/s. Aditya Industries 474, Naigaon Road At Shinde Village Nashik-422002 Maharashtra	Copper Scrap Zinc Ash & Zinc Dross - 1000 MTA
42.	M/s. Suhans Chemicals Pvt.Ltd. D-46/5, MIDC Area Jalgaon - 425 003	Spent Catalyst containing Nickel - 610 MTA
REGION – KALYAN		
43.	M/s Raniganj Chemical Works Plot No. A-12, MIDC Chemical Zone Kalyan Badlapur Road Ambernath Dist. Thane -421501	Zinc Ash & Zinc Scrap - 140 MTA
44.	M/s. Parag Sulpha Chemicals Tech Shed No.-18, Chemical Zone MIDC Ambernath Dist-Thane Maharashtra	Spent Catalyst containing Copper Scrap, Copper Oxide Mill Scale and Copper Residues - 90 MTA
45.	M/s. Muby Chemicals W-105, Behind Hamilton CyclesMIDC Ambernath-421 501, Distt. Thane	Zinc Ash Zinc Residues Zinc Dross & Zinc Skimming - 860 MTA
46.	M/s Monarch Catalyst Pvt.Ltd. Plot No.A-94 & F-1/2, MIDC Phase-1 Dombivili (E), Distt. Thane – 421 203,	Spent Catalyst containing Nickel - 2000 MTA
47.	M/s. Om Balaji Inorgo Metal Pvt.Ltd. W-71/B, MIDC Chikhloli Ambernath, District – Thane Maharashtra – 421 505	Spent Nickel Catalyst - 350 MTA Spent Catalyst containing copper - 100 MTA
48.	M/s. Kam-Vit Chemicals Pvt.Ltd. Gut No.45-46 & 47Village: Kambre, WadaDistt. Thane, Taluk-Wada -421 303	Spent Catalyst containing Nickel, Copper, Copper Reverts, Cakes and Residue, Waste Copper and Copper alloys in dispersible forms, spent cleared metal catalyst containing copper - 2880 MTA
49.	M/s Ashok Chemical Industry Village – Parivali, Post-AngaonWada Road, Tal-Bhiwandi Distt. Thane	Zinc Ash - 1200 MTA
50.	M/s Metal Chem Plot No. F-1/16, MIDC Badlapur, P.O. Kulgaon, District-Thane – 421 503	Spent Catalyst containing Nickel - 360 MTA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
51.	M/s. Agni Industries Gut No. 81, 179-P, Village Lakhmapur, Tal. Wada, Dist. Thane	Lead / Copper / Zinc / Brass Scrap -2000 MTA
52.	M/s. Aashumi Chemicals P. Ltd. 169-B, Village Nangathane, Tal. WadaDist. Thane Maharashtra	Copper Dross Copper Oxide Mill Scale Copper Reverts Cakes & Residues Copper Scrap Copper Druid Copper slags Zinc Scrap Brass Dross Brass Scrap and spent Catalyst Containing Copper - 2000 MTA
53.	M/s. Devang Industry Inc., S. No. 217, Plot No. 12-15, Khupri, Tal. Wada, Dist. Thane	Zinc Dross, Zinc ash, Zinc ore, Zinc scull, Zinc residue, Zinc scrap - 1800 MTA
54.	M/s. Shri Hari Extrusion Ltd. Plot No. 63 -70, Gut No. 984(Part), Village Shirgaon, Tal. Palghar, Thane	Copper Scrap, Brass Scrap, Zinc Scrap and Copper Druid - 20,000 MTA
REGION – AURANGABAD		
55.	M/s. Shree Gurudutt Chemicals Gut No. 378, Aurangabad – Pune Road Tal. – Gangapur, Dist. Aurangabad	Zinc Dross & Zinc Scrap -1440 MTA

List of the Units Registered with MPCB as Recyclers/Reprocessors

USED/WASTE OIL RE-PROCESSORS

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – THANE		
1.	M/s Daya Lubricants Pvt. Ltd. Building No. 11, Waliv Phatta , Prime Industrial Estate, Sativali Road, Village Valiv Phata, Vasai (E) Thane, (D)- 401 208, Maharashtra E-Mail : info@dayalubricants.com	Used Oil - 3000 KLA Waste Oil - 14400 KLA
2.	M/s Deepak & Company, B-20, Road No. 16, Wagle Indl. Estates, Thane, Maharashtra-400 604	Used Oil - 1800 KLA
3.	M/s Shiva Petro Synth Specialities Ltd., Plot No. 2/3, Shah & Diwan Indl. Area, Opp. BIDCO Studio, Vill Mahim, Palghar Dist. Thane	Waste Oil - 7500 KLA
4.	M/s Meghani Enterprises, H-14, Shaah & Diwan Industrial Complex, Udyognagar Chintupada, Mahim Village, Palghar Dist. Thane Maharashtra	Used Oil -4500 KLA
5.	M/s Shiva Petro Synth Specialities Ltd. Plot No.2/3, Shah & Diwan Indl.Area Opposite BIDCO Studs Village – Mahim Palghar, District – Thane	Used Oil - 7500 KLA
REGION – KALYAN		
6.	M/s North East Lubrica Pvt. Ltd. S. No. 404, Abitghar, Taluka Wada, Dist. Thane - 421 303	Used Oil - 9000 KLA Waste Oil -9000 KLA
7.	M/s. RHJ Petrochem P. Ltd. Gut. No. 10, Vill. Vardha,Post Uchat, Tal. Wada, Dist. Thane	Used Oil - 6000 KLA Waste Oil - 18000 KLA
8.	M/s Meher Petro Chem Pvt. Ltd., Plot No. 17, KPD Indl. Estate, Mamor-Wada Road, Village: Homrapur, Dist. Thane - 421 303	Used Oil - 3000 KLA Waste Oil - 12000 KLA
9.	M/s Sai Om Petro Specialities Ltd., Plot No. 209, Village Khapari, Bhiwandi Wada Road, Tal. Wada, Dist. Thane	Waste Oil - 15000 KLA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
10.	M/s Industrial Easters & Chemicals Pvt.Ltd., Plot No.A-10, M.I.D.C Industrial AreaAmbernath, Distt.Thane, Maharashtra	Used Oil - 6000 KLA
11.	M/s Ishvar Petrochem Pvt. Ltd., G.U.T. No. 147/P, Village Sapraonde, P.O., Kudus, Ta-Wada, Dist. Thane-412312, Maharashtra	Waste Oil - 8550 KLA Used Oil -650 KLA
12.	M/s Al Ali Mohammed Industries, Sr. No. 57-1/2, Village Ghatesh Khurd, Khanivali Road, Tal-Wada, Dist. Thane – 421303 Maharashtra	Waste Oil - 18000 KLA Used Oil - 6000 KLA
13.	M/s Poonam Petrochem Pvt.Ltd. Gut No.459, Dinkarpada Village – Kondle, Taluka – Wada Distt. Thane-421 312 poonampetro@gmail.com	Used Oil - 3000 KLA Waste Oil - 6000 KLA
14.	M/s Plus Lubricants GUT No.228(P1), S.No.43Abithghar, Taluka – Wada, Distt.ThaneMaharashtra	Used Oil 7500 KLA Waste Oil - 7500 KLA
15.	M/s. Meet Petro Products Pvt. Ltd. Gut No: 177, Konsai Village, Post: Nehroli, Tal: Wada, Dist: Thane	Used Oil -2000 KLA Waste Oil -1000 KLA
16.	M/s. ABC Petro Chem Pvt. Ltd. Gat No: 10, Village: Vardha, Post Uchat, Tal: Wada, Dist: Thane	Used Oil –2000 KLA Waste Oil –1000 KLA
REGION – PUNE		
17.	M/s Naaz Enterprises, Gat. No, 691, Bhupi Phata, Jadhavwadi Haveli, Dist. Pune, Maharashtra	Used Oil - 800 KLA Waste Oil - 400 KLA
18.	M/s R. R. Scrap Merchant 203/1, Chikhali-Moshi Road, Chikhali, Tq.Haveli, Distt.Pune-412114 (Maharashtra)	Used Oil - 350 KLA Waste Oil - 1500 KLA
19.	M/s. Ameet Lubricants and Chemicals S. N. 584/1 and 2,Garde Road, Saswad, Distt. Pune	Used Oil - 2160 KLA Waste Oil - 2000 KLA
20.	M/s. Samarth Petroleum, Gut No. 653/1/C/211/2, Kumbhari Tal. South Solapur, Dist. Solapur, Maharashtra	Used Oil - 3600 KLA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
21.	M/s. Shriya & Shristi Associates Gut No.156/157, Phulare Wasti, Chimbali gaon, Pune-Nashik Road Chakan, Tal.Khed Distt.Pune	Used Oil - 1500 KLA Waste Oil - 900 KLA
22.	M/s. Metro Lubes Pvt. Ltd Plot No. A-69, MIDC Kurkumbh, Tal-Daund, Dist. Pune,	Used Oil - 3600 KLA
23.	M/s. Patidar Industries Plot No. A-74 MIDC Kurkumbh Tal. Daund, Pune –413 105	Used Oil - 8400 KLA Waste Oil - 8400 KLA
24.	M/s. Super Lubes Gat no: 116, Dehu- Alandi Road, Chikhali, Pune -14	Used oil -900 KLA Waste Oil -1800 KLA
25.	M/s. Aditya Industries, Plot No. A-73,MIDC, Pune - Solapur Road, Kurkumbh – 413105, Dist. Pune,	Used oil - 4800 KLA
REGION – NAGPUR		
26.	M/s Radiant Lubes P. Ltd., Plot No. C-8 & C-9,MIDC Gutibori, Tal. Hingana, Dist. Nagpur, Maharashtra	Waste Oil - 19740 KLA
27.	M/s Nova Lubes Pvt. Ltd., 187/4 Mahurjhiri Village, Katol Road, Distt. Nagpur	Used Oil - 2160 KLA
28.	M/s. Highrise Transformers A-28, MIDC Industrial Area Karanja(Ghadge), Tal.Karanja Distt.-Wardha-442 203	Used Oil - 960 KLA
29.	M/s. Midland Oil Co.Ltd. Sr.No.46, Village : Aalagondhi Tal.& Dist. Nagpur, Post – Rama – 441 108	Used Oil - 600 KLA Waste Oil - 5300 KLA
30.	M/s. Ambika Lube Industries Wanjara Layout, Kamptee Road, Nagpur	Used Oil -1320 KLA
REGION – CHANDRAPUR		
31.	M/s Lucky Petroleum, Plot No. E/11, MIDC, Ghugghus Road, Chandrapur	Used Oil - 1200 KLA
32.	M/s Sourabh Oils, E-30-31, MIDC, Ghugus Road, Chandrapur-442406 Maharashtra	Used Oil -3000 KLA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
REGION – NAVI MUMBAI		
33.	M/s Tax Oil Lubricants Pvt. Ltd., R-591, MIDC Industrial Area, Rable, Navi Mumbai – 400 701	Waste Oil - 12960 KLA
34.	M/s Balaji Rang Udyog Pvt.Ltd. Plot No.44, MIDC Taloja Industrial Area (NewChemical Zone) Taloja-410 208, Distt. Raigad	Waste Oil - 15000 KLA
35.	M/s Shree Pooshp Hans Chemical Plot No.W/186, MIDC, TalojaTal.-Panvel, Distt.Raigad – 410 208	Waste Oil - 10800 KLA
REGION – KOLHAPUR		
36.	M/s Subhadra Petrochemicals Pvt. Ltd., Plot No. F-2, MIDC, Kupwad Block, Sangali-416 436	Used Oil - 2500 KLA
37.	M/s. P Square Industries Ltd. Plot No: j-4, MIDC, Gokul Shirgaon, Kolhapur	Used Oil / Waste Oil -2400 KLA
38.	M/s Patel Petro Pvt. Ltd., Plot No. H-4, Behind Eurotex Industry, MIDC Gokul Shrigaon, Kolhapur-416234	Used Oil - 7200 KLA
39.	M/s Vippro Industries, Plot No. D-2/2, MIDC Gokul Sirgaon, Kolhapur-416 234	Used Oil - 7000 KLA Waste Oil - 5000 KLA
40.	M/s. Bana Refinery Pvt. Ltd., H-15, MIDC, Gokul Shirgaon, Kolhapur - 416 234	Used Oil - 7500 KL/A Waste Oil - 7500 KL/A
REGION – NASHIK		
41.	M/s Amol Oils, 92, Ajanta Road, Chincholi, Jalgaon,	Waste Oil - 3600 KLA Used Oil - 3000 KLA
42.	M/s Garg Distillaries Pvt. Ltd. Survey No. 26/2, 26/2-A, Village-Asali, Post Bhorkheda, Taluka- Sirpur, Distt.- Dhule	Used Oil -6000 KLA Waste Oil -6000 KLA
43.	M/s Samarth Industries Plot No.N-22, MIDC, Jalgaon - 425 003	Used Oil - 3600 KLA

Sr. No.	Name of the Unit	Waste Permitted and Quantity allowed
44.	M/s Insotech Refineries Plot No.1, Gut No.114/7, Post-Burudgaon, Nagar Daurid Road, Next to Kinetic Engineering Ahmednagar - 414 006	Used Oil - 2520 KLA
45.	M/s Ravi Industries G-45, M.I.D.C Area, Jalgaon , Maharashtra	Used Oil - 3000 KLA Waste Oil - 1800 KLA
46.	M/s. Paras Petrochem 229, Village: Daregaon, Malegaon, Nashik – 423203	Used Oil - 3000 KLA
REGION – AURANGABAD		
47.	M/s. Kapilo Petrochem (P) Ltd. T-60, MIDC Nanded, Maharashtra-431603	Used Oil -3000 KLA
48.	M/s. Kanchan Chemicals Plot No.B-25, MIDC, Osmanabad – 413 501	Used Oil - 8640 KLA
49.	M/s. Global Lubrication, Gut No. 94, VillageChitegaon, Tq. Paithan, Dist. Aurangabad -431007	Used Oil - 2000 KLA
REGION – RAIGAD		
50	M/s Tribo Lubes Pvt. Ltd. Takai Adoshi Road,Village Honad, Post Saigaon, Survey No. 13/7A,14/3, 15/6, Taluka Khalapur, Dist. Raigad	Waste Oil - 9000 KLA Used Oil - 7500 KLA
51.	M/s. Lubstar Petro–Chem Industries C-29, MIDC, Mahad, Dist. Raigad	Used Oil - 200 KLA
REGION – MUMBAI		
52.	M/s. Spear Petroleum Pvt. Ltd. 152 A, 15th Floor, Maker Chamber No.III Nariman Point, Mumbai - 400 021	Waste Oil - 11000 KLA
REGION – AMRAVATI		
53.	M/s. Shree Laxmi Refinery Plot no: C-19, Additional MIDC Nandgaon Peth, Amravati Dist: Amravati	Used oil -6000 KLA

CHAPER - VIII Periodic Return Filing

Sr. No.	Form No.	Description of Form	Requirements of Act / Rules	Authority	Frequency of submitting	Period for submission	Applicable to industries	Remarks
1	FORM 1	Environmant Clearance	EPA	MoEF / DoEF / MPCB	Before Starting any work on the plot	Initially and for renewal (before its validity)		
2	Common Consent Application under Water & Air Acts and HW Authorization as per HW Rules	Consent to Establish (NOC)	Air, Water, HW	MPCB	Before starting construction	3 months before validity		
3		Consent to Operate / Renewal	Air, Water, HW	MPCB	After obtaing NOC and before stating manufacturing	3 months before validity		
4	Not Applicable by MPCB	Submission of report on Produciton, total electricity consumption & effluent corporation	Air, Water, HW	MPCB	MM	Month		
5	Along with CCA application	Submission of ambient, fugitive and stack emissions, air analysis by SPCB approved laboratory	Air Act		Along with CCA application	Along with CCA application		
6	Along with Form 1 of Water Cess Act	Submission of analysis on discharged effluent by SPCB approved laboratory	Water Act	MPCB	MM	Month		
7		Intimation of deviation in air emission	Air Act	MPCB	As and when required			
8	FORM 3	Format for maintaining records of hazardous waste by the occupier or operator of a facility	HW Rules, 1989	MPCB	At least on monthly basis	Month		

9	FORM 4	Form for Filling Annual Returns by the occupier or operator of facility (Submission of category wise details of HW generation, disposal & stock and mode of disposal).	HW Rules, 1989	MPCB Annually, or or before 30th June Apr to Mar of previous year				
10	FORM 13	Hazardous Waste Manifest	HW Rules, 1989	MPCB	During each trip of disposal	During each trip of disposal		
11	FORM V	Environment Statement (Self-declaration of raw material consumption, production, Water consumption, effluent generation, HW generation & disposal, Air emission data, actions taken for improvements etc.).	EPA 1986	MPCB	Annually, on or before 30th September	Previous Financial Year - 1st Apr to 31st Mar		
12	FORM I	Return regarding Water consumed during the month of _ (Write Month & Year)	See rule 4 The Water (Prevention and Control of Pollution) Cess Rules, 1978	MPCB	by 5th day of the Month	Monthly data		
13	FORM I	For filling returns of sale of new batteries and collection of used batteries	Batteries Rules, 2011 [See Rule 4 (i) & 7 (i)]	MPCB	Half yearly	By 30th June (for the period October-March and 31st December (for the period April-September) every year]		To be submitted by bulk consumer to the State Board

14	FORM VIII	FORM FOR FILING RETURNS FOR BULK CONSUMERS OF BATTERIES	Batteries Rules See Rule 10(2) (II).	MPCB	Half yearly	By 30th June (for the period October-March) and 31st December (for the period April-September) every year]		To Submitted by bulk consumer to the State Board
15	FORM 1	Application for obtaining authorisation for generation, collection, storage, dismantling, recycling of e wastes	E-Waste Rules, 2011	MPCB	Initially and for renewal			
16	FORM 3	Form for filling annual returns	E-Waste Rules, 2011	MPCB	Annually	For Financial Year - 1st Apr to 31st Mar, before 30th June of the following FY.		
17	FORM I	Application for authorisation / Renewal of authorisation (under BMW Rules, 1998	Bio Medical Waste, Rule 8	MPCB	Initially and for renewal	-		
18	FORM II	BIOMEDICAL WASTE ANNUAL REPORT	Bio Medical Waste, Rule 10	MPCB	Annually, to the prescribed authority by 31 January every year.	1st Jan to 31st Dec .		
19	Schedule 6 [rule 5 (1)]	Information to be furnished regarding Notification of a major accident	MSIH Rules 1989	MPCB	As and when happned	As and when happned	All	
20	Schedule 7 [rule 7 (1)]	Information to be furnished for the notification of sites	MSIH Rules 1989	MPCB				
21	Schedule 8 [rule 10 (1)]	Information to be furnished in a Safety Report	MSIH Rules 1989	MPCB				

22	Schedule 11 [rule 13 (1)]	Details to be furnished in the On-Site Emergency plan	MSIH Rules 1989	MPCB				
23	Schedule 12 [rule 14 (1)]	Details to be furnished in the On-site Emergency plan	MSIH Rules 1989	MPCB				
24	Already covered above	Renewal of Air / Water / HW / BMW Consent / Authorisation	Water, Air, HW, BMW Rules	MPCB	Atleast 90 Days before expiry of			
26		Submission of CREP status to SPCB		Corporate Responsibility on Environmental Protection	MPCB	Half yearly	Half yearly	
27	Form 14	Submission of report of accident / spillage / leakage of hazardous waste during storage or in transit	HW Rules, 1989	MPCB	As and when accident, Spillage / leakages of HW happening			

CHAPTER - VIII

Recommendation to capture the data for Environmental Protection

Why to develop a capturing data system?

It is a regulatory requirement and more than it is very useful to continually improve & manage the environmental management system. An organization must develop and establish a system to capture the energy consumption, chemical consumption and other related data. Energy includes Power, Water, Cooling water, Chilled water, Nitrogen, Comp air, etc. Chemical consumption includes Lime, Acid & Alkali, Sodium Hypochlorite, Hydrogen Peroxide, Poly electrolyte, Alum, Ferric Oxide etc.

Following points needs to implement

1. Install energy meter for all sections
2. Install Water meter at inlet and outlet
3. Measure the initial and final reading on daily / weekly / monthly basis
4. Installed online monitoring instruments at inlet and outlet for pH, COD, BOD, TSS, TDS etc. parameters
5. Metering and monitoring facility will help industries in load calculation and to decide further course of action
6. Proper documentation and maintain record of targets, a definition of the scope of the EMS, and other main elements.
7. Helps to identify the causes of environmental problems and fixing and defining Objectives, Targets and the scope of the Environment Management System (EMS).
8. Over a period of time it would be useful to optimize the energy and chemical consumption depending upon the load and improving in efficiency
9. Efficient Legal Compliance
10. Helping industries in operational Control to ensure proper execution of activities, Identifying the deviations from planned arrangements.
11. In order to properly manage the system, measurements must be taken of its performance to provide data for action. Equipment related to environmental measurements, such as temperature and pH meters and pressure gauges, must be calibrated according to procedures, and records maintained.
12. This element helpful for identifying the Non-conformances and to plan for Corrective and Preventive Actions.
13. A non-conformance is a situation where the actual condition is not in accordance with planned conditions. A regulatory non-compliance, or an incident, is all examples of possible systemic non-conformances. Non-conformances may be identified through audits, monitoring and measurement, and communications. The intent is to correct the system flaws by addressing root causes, rather than just fixing the immediate incident only. The standard also requires that trends in corrective actions be evaluated to see if deeper-rooted preventive actions can also be implemented.
14. Proper and adequate monitoring infrastructure help industries in to be in audit ready position
15. Develop formats to record the data. Few samples are attached in Annexure.

Chapter - IX

Checklist to Support Inspection by Authorities.

As a part of their role environmental law enforcing authorities are required to visit industries with the prime objective to ensure compliance to applicable environmental laws and recommend improvements. For this purpose the MPCB officers are authorized under environment law to enter the industrial premises, visit any area within the premises, collect environmental samples and ask for environmental consent, authorizations and related records. In order to ensure that such visits are conducted without any delays, factory head must keep standing instructions at the security gate to allow visiting officer of MPCB and inform the factory head and concerned person looking after environment management at the factory. The entire visit by MPCB officer may require large amount of time if any environment related documents and records are not available. Below given is partial list of minimum documents which, if available readily will facilitate the visit without loss of valuable time of the MPCB officer.

Partial list of documents

1. Copy of consent to establish awarded by MPCB.
2. Copy of environmental clearance (EC) awarded by MoEF.
3. Copy of valid / current consent to operate and hazardous waste authorization (CCA) and previous consent to operate and hazardous waste authorizations.
4. Copy of application submitted for renewal of CCA, if applied.
 - i. Latest factory layout plan showing the locations of environmental facilities and green belt / areas (33% of open area of the factory).
5. Production quantities of various products and its compliance against the valid CCA & EC quantities.
6. Water Budget diagram, source of water and quantity of water recycled.
7. Records of daily water consumption for the current year.
8. Records of effluent quantity and quality for the current year and its compliance to consent conditions for current year.
9. Records of stack and ambient air monitoring and its compliance to consent conditions for current year.
10. Records of noise monitoring for the current year.
11. Records of energy and chemicals consumed for operating effluent treatment plant.
12. Form-1 Water Cess Returns submitted along with acknowledgement copy for current year.
13. Latest water cess assessment received from MPCB and receipt of the payment made.
14. Form 3 – monthly records of hazardous waste disposed for current year.
15. Copies of manifest filled for disposal of hazardous waste for current year.
16. Form 4 - Annual return of hazardous waste disposal submitted with acknowledgement for last three years.
17. Form V – Environment Statement submitted with acknowledgement for last three years.
18. Records of lead acid batteries returned to supplier and returns filed, only if more than 100 such batteries are purchased in the year.
19. Records of E-Waste disposed for current year
20. Arrangements and records of Bio Medical disposed in the current year.

We believe the above documents will help support the visit and any queries raised during the visit. This will also help the industry to showcase their environmental performance and help them build confidence of visiting officer MPCB.

CHAPTER - X

BEYOND COMPLIANCE

ISO 14001:2004 IN NUT SHELL

ISO Background

- ISO founded in 1946 to develop a common set of manufacturing, trade, and communication standards.
- ISO is headquartered in Geneva, Switzerland and is composed of 118 member countries.

The Standards

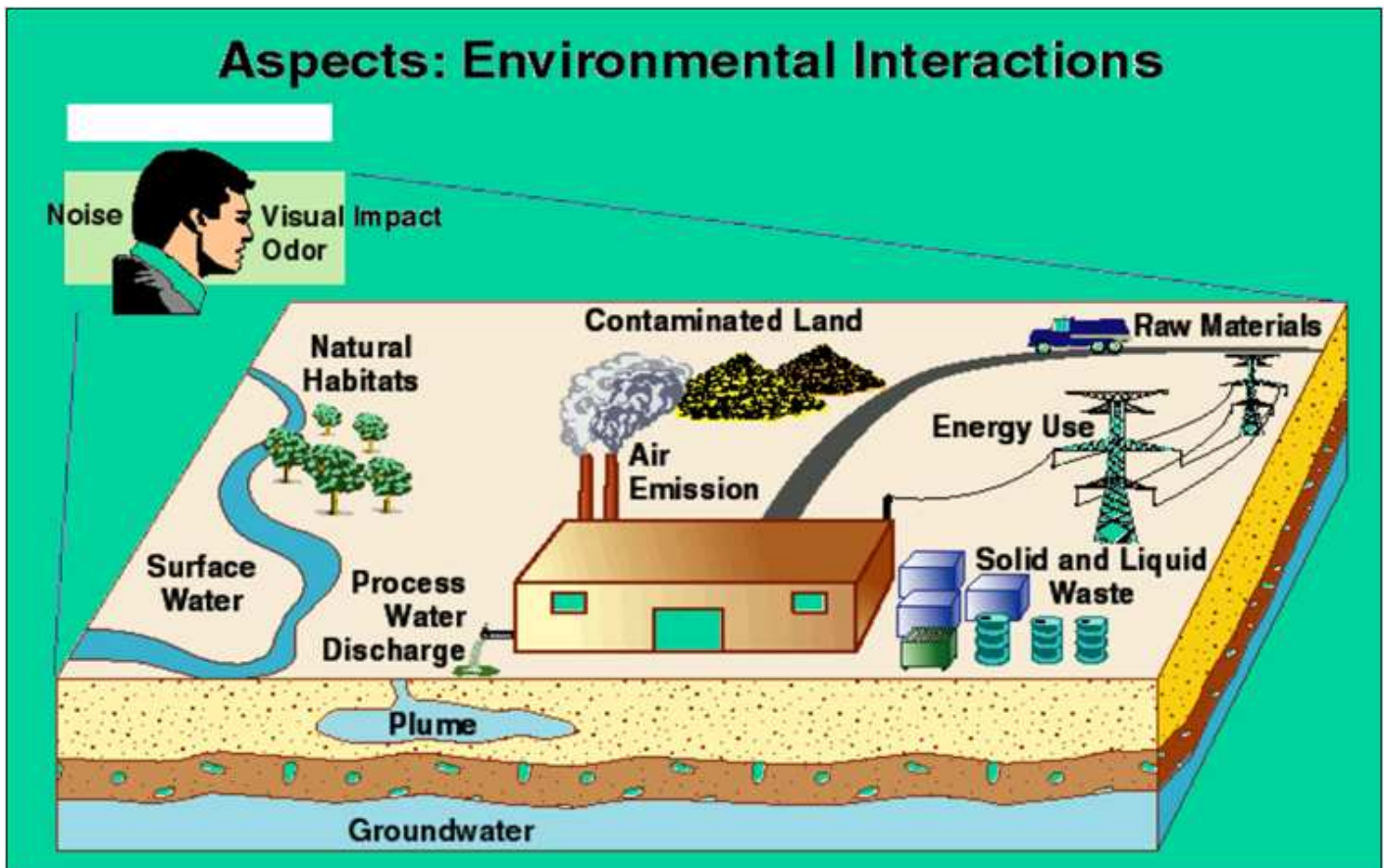
1. The ISO 14001 series consists of 5 elements (some are still being drafted).
2. There are two categories: specification standards and guidance standards.
3. The only specification standard is ISO 14001:2004. This is the standard to which organizations register. The other documents are guidelines.

Why Implement an EMS?

1. Helps to identify the causes of environmental problems.
 - a) better to make a product right the first time.
 - b) cheaper to prevent a spill.
 - c) cost effective to prevent pollution.
2. Trade and competitive issues
 - a) marketing tool.

ISO 14001 Conformance Status

- 1) Seek certification/registration of its environmental management system by an external organization.
- 2) Make a self-determination and self-declaration of conformance with the International Standard.



4.1 General requirements

An organization must establish, document, implement, and continually improve their environmental management system and show how they meet all the requirements of this standard. The organization defines the scope of the EMS, i.e. the boundaries of the organization to which the EMS applies.

4.2 Environmental Policy

The organization must have a policy, or commitment statement, developed by top management relative to the scope of the EMS that conforms to the standard. This is generally a short statement that drives the remainder of the EMS. There are specific items that must be committed to in the policy, such as compliance with legal and other requirements, prevention of pollution, and continual improvement. In addition, the policy must be communicated to all employees, and others working on behalf of the organization, and be available to the public. The policy provides a framework for reviewing objectives and targets and be appropriate to the nature and scale of the entity included in the scope. This policy must be documented, implemented, and maintained. This means that it is kept current through the EMS review and continual improvement process, and is implemented through the remainder of the EMS elements.

Planning- 4.3.1 Environmental Aspects

This element requires a procedure to identify environmental aspects and related impacts that the organization can control or have influence over, and determine those which are significant to the organization. ISO 14001 does not prescribe what aspects should be significant, or even how to determine significance. However, it is expected that a consistent and verifiable process is used to determine significance. Aspects are defined as how an organization's activities products and/or services interact with the environment. An impact is how an aspect changes the environment. The intent of this element is to help the organization identify how it affects the environment, prioritize aspects, and use the EMS to manage, control, and improve upon the aspects. So the organization must ensure that the significant aspects are taken into account in the EMS.

In order to ensure that the system is continually improving and current, this information must be kept up to date.

4.3.2 Legal and Other Requirements

This is a requirement for a procedure that explains how the organization obtains information regarding its legal and other requirements, and makes that information known to key functions within the organization.

The intent of this element is to identify the environmental legal and other requirements that pertain to its operations and activities so that the organization can ensure that they are taken into account in the EMS. In doing so, the organization must also determine how these requirements apply to the significant aspects.

4.3.3 Objectives, Targets, and Programs

There is no requirement for a procedure in this element. However, there must be some process that ensures that the objectives and targets are consistent with the policy, which includes the commitments to compliance with legal and other requirements, continual improvement, and prevention of pollution. Also, the organization must take into consideration significant aspects, legal and other requirements, views of interested parties, and technological, financial, and business issues when deciding what it wishes to accomplish as an objective. The objectives and targets need to exist at whatever functions and levels of the organization, and be measurable, where practicable. Management programs (MPs) are the detailed plans and programs explaining how the objectives and targets will be accomplished. These MPs usually note responsible personnel, milestones and dates, and measurements of success.

Noting monitoring and measurement parameters directly in the MP facilitates conforming to 4.5.1 on Monitoring and Measurement discussed below. MP's are required for the objectives and targets in an EMS.

4.4.1 Structure and Responsibility

ISO 14001 requires that the relevant management and accountability structure be defined in this element. Top management is expected to ensure that resources are available so that the EMS can be implemented, maintained, and improved. These resources include human resources, organizational structure, financial and technological resources, and others as needed. Roles, responsibilities, and authorities must be defined, documented and communicated as appropriate. The organization must denote the Management Representative who is responsible to oversee the EMS and report to management on its operation. This person(s) ensures that the EMS is established, implemented and maintained consistent with ISO 14001, and also reports to top management on the performance of the system including recommendations for improvement.

4.4.2 Competence, Training, and Awareness

The key point in this element is to ensure that persons performing tasks that have or can have significant impact on the environment and/or relate to the legal and other requirements are competent to do those tasks. Competence is ensured through appropriate education, training, and/or experience. The organization needs to identify training needs as they relate to the EMS, the significant aspects, and the legal and other requirements and make sure this training is provided (records of such are to be maintained). A procedure is needed that makes sure such persons are: aware of the need to conform with all EMS procedures and requirements and what they specifically need to do to do so; the significant aspects and the legal and other requirements associated with their respective responsibilities and why improved performance is beneficial; and the consequences of not following these procedures and requirements. In addition to job-specific knowledge, it is expected that all personnel within the EMS (including contractors) have general awareness on items such as the policy and emergency response.

4.4.3 Communications

Procedures are required for both internal and external communications. Note that ISO 14001 only requires procedures, and allows the organization to decide for itself the degree of openness and disclosure of information. Whatever the decision is in terms of disclosure, the decision process must be recorded. There is a specific requirement that the organization consider external communications about its significant environmental aspects and record its decision. For internal communications, the procedure needs to describe how it is done among the levels of the organization. For external communications, it has to describe how external communications are received, documented, and a response provided.

4.4.4 EMS Documentation

This requirement ensures that the organization has documented the system in either electronic or paper form such that it addresses the elements of the standard, describes how the organization conforms to each element, and provides direction to related documentation. Not all ISO 14001-required procedures need to be documented, as long as the system requirements can be verified. However, documentation must be provided such that enough is available to ensure the effective planning, operation, and control of processes related to the significant aspects, and to demonstrate conformance to ISO 14001. Such documentation at a minimum includes policy, objectives and targets, a definition of the scope of the EMS, and other main elements.

4.4.5 Control of Documents

The organization is required to control documents, such as system procedures and work instructions, to ensure that current versions are distributed and obsolete versions are removed from the system. There is a requirement for a document control procedure that ensures documents are approved prior to use, are reviewed and updated as necessary, changes to versions are identified, that the current versions are available at points of use, that they are legible, identifiable, and that obsolete ones are so noted to avoid unintended use. It is acceptable to use documents of internal origin in the EMS, but those must be identified as being essential to the EMS and their distribution controlled.

4.4.6 Operational Control

For this element, critical functions related to the policy, significant aspects, the legal and other Requirements, and objectives and targets are identified and procedures and work instructions are required to ensure proper execution of activities. Requirements for communicating applicable system requirements to contractors also need to be addressed in these procedures. The required procedures need to provide instruction such that the organization conforms to the policy, objectives and targets, the legal and other requirements, and addresses any impacts from significant aspects. Which procedures are needed can be determined by review of the significant aspects, objects and targets, the legal and other requirements, and policy and then deciding what must be procedural and documented to ensure that deviations from planned arrangements do not occur. In regard to the contractors, the organization will need to establish procedures related to the significant aspects the legal and other requirements, of the goods and services it uses, and communicating the relevant elements of those procedures to the suppliers and contractors.

4.4.7 Emergency Preparedness and Response

Although typically addressed through conventional emergency response plans, this element also requires that a process exist for actually identifying the potential emergencies, in addition to planning and mitigating them. Emergency incidents include those that may not be regulated, but may still cause significant impact as defined by the organization. As part of continual improvement, it is required that the organization not only responds to emergency situations, but also reviews the emergency procedures and make improvements as necessary. This may involve periodic testing of emergency procedures, if practicable.

4.5.1 Monitoring and Measurement

In order to properly manage the system, measurements must be taken of its performance to provide data for action. Procedures are required describing how the organization will monitor and measure key parameters of operations. These parameters relate to the operations that can have significant impacts, to monitor performance towards the objectives and targets, and to monitor conformance to the legal and other requirements and other EMS requirements.

Equipment related to environmental measurements, such as temperature and pH meters and pressure gauges, must be calibrated according to procedures, and records maintained.

4.5.2 Evaluation of Compliance

The first part of this element (4.5.2.1) requires the organization to have a procedure(s) to periodically evaluate its compliance with applicable legal requirements as defined in 4.3.2. The organization will need to keep records of these periodic evaluations. ISO 14001 in 4.5.2.2 also requires a similar evaluation for compliance with other requirements. Again these are defined in 4.3.2 and the procedure can be the same as, and even part of, 4.5.2.1.

4.5.3 Non-conformances, Corrective and Preventive Action

This element requires procedures for acting on non-conformances identified in the system, including corrective and preventive action. A non-conformance is a situation where the actual condition is not in accordance with planned conditions. Someone not following a procedure, a regulatory non-compliance, or an incident, is all examples of possible systemic non-conformances. Non-conformances may be identified through audits, monitoring and measurement, and communications. The intent is to correct the system flaws by addressing root causes, rather than just fixing the immediate incident only. The standard also requires that trends in corrective actions be evaluated to see if deeper-rooted preventive actions can also be implemented. The procedure needs to make sure the non-conformances are not only first addressed to mitigate environmental impact; but that further investigation occurs to determine their cause, and action taken to avoid it happening again. Preventive actions would then be those actions resulting from an evaluation as to why nonconformities are occurring and taking action to prevent their recurrence. The standard states that the corrective action is appropriate to the magnitude of the problem and the impacts encountered; to avoid either over-compensating or under-compensating for a problem. The organization must record the results of corrective actions taken, and must also review the effectiveness of actions taken

4.5.4 Control of Records

Records are expected to exist to serve as verification of the system operating and the organization's conformance to the standard and its own EMS requirements. Procedures in this element are required for the maintenance of records, and specifically require that records are identifiable, retrievable, safely stored, and legible, retained as appropriate and traceable.

4.5.5 Internal Audit

ISO 14001 requires that the system provide for internal audits. This procedure could include methodologies, schedules, checklists and forms, and processes used to conduct the audits. The purpose of this audit is to determine whether the system conforms to the requirements of ISO 14001 and the organization's own EMS detailed requirements, and if the EMS has been properly implemented and maintained. The procedure for internal audits has to address responsibilities and requirements for planning and executing the audits, reporting results, and what records will be generated (and maintained in accordance with 4.5.4). The procedures also address determination of audit scope, how often they will be conducted, and specifically how they will be done. Auditors need to be selected such that it ensures objectivity and impartiality of the audit process.

4.6 Management Review

This element requires that periodically, top management will review the EMS to ensure it is operating as planned, and is suitable, adequate, and effective. The organization needs to ensure that in the review: results of internal audits (EMS and compliance); external communications; environmental performance; status on objectives and targets; status of corrective and preventive actions; follow up on actions from prior management reviews; and changing conditions or situations; and recommendations for improvement are all discussed. Results and records of management review include: agendas, attendance records, minutes, and documented agreed upon action items.

CHAPTER - XI

Obligations on the Industries Operations & Process

Various Important Judgments

National Green Tribunal ,Delhi Bench directed all the SPCBs to initiate stringent actions against the un consented units including directions of closure.

- (1) In the matter of Adarsh Housing Co-operative Society, it was directed to demolish unauthorised structure, which was carried out in the violations of CRZ Rules (Application No.37/2013 filed by Wassan Singh v/s State of Punjab & Ors. before Hon'ble National Green Tribunal, Principal Bench, New Delhi – Order dtd.4/5/2013 and its disposal vide order dtd.9/9/2013)
- (2) In the matter of M.C.Mehta v/s G.O.I.(1997) 2;S.C.C.411(Calcutta Tanneries Case) Some 550 tanneries were located on the bank of Hooghly River in Calcutta were discharging untreated effluent in to the river. Surroundings of the tanneries were extremely unhygienic due to discharge of untreated effluents in open drains, stagnation of waste water in low-lying ,around the tanneries units, and accumulation of solid waste in tanneries.

Subsequently more than 275 tanneries applied for consent to the SPCB but in view of the S.C. Order dt 19th Feb 1993, consent was not granted to any of the tanneries of the said area. Moreover they were directed to submit an undertaking in the court on stamp paper that they are willing to move any place as fixed by the Govt of West Bengal.

Relocation of Polluting industry -The Honourable Supreme Court of India held in the matter of M.C.Mehta v/s Union of India (1997) 7SCC534 that the hot mix plants having been categorized, as hazardous industries under Master Plan 200, have to be relocated. It was observed that 43 hot mix plants can not be permitted to operate and function in Delhi .S.C. further observed that these plants may relocate / shift themselves to any other industrial estate in NCR. These hot mix plants should stop functioning and operating in the City of Delhi w e f 28.2.1997. However, SC directed the National Capital Region Planning Board to render all assistance to them in the process of relocation. S C also instructed to expedite the allotment of plots, construction of factory ,buildings etc and issuance of any licenses / permissions etc and grant on a priority basis. Therefore, the industries should comply with the Planning Regulations while establishing or operating its units. The Administration granting permission is under obligation to give priority to residential areas / development first and then to industrial activities.

- (3) In the matter of M.C.Mehta vs Union of India AIR 1987 SC 1086/1987-1 SCC 395 (Oleum Gas Leakage Case) – Hon'ble Supreme Court observed that the Rule of strict liability as decided in Rylands vs Fletcher that excludes certain natural disasters, known as acts of god, acts of a stranger etc. However, where an Enterprise is engaged in hazardous inherently dangerous activity and harm results to anyone on account of an accident in the operation of such hazardous and inherently dangerous activity, resulting, for example, in the escape of toxic gas, the enterprise is strictly and absolutely liable to compensate all those, who are affected by the accidents and such liability is not subject to any exceptions, which operate vis-à-vis the tortuous principle of strict liability under the Rule of Rylands v/s Fletcher. It is specifically held that the management of Shriram Fertilizers to furnish undertaking from Chairman of DCM Ltd., that in case of escape of gas, resulting into death or injury to the workmen or people living in the vicinity they would be “personally responsible” for payment of compensation for such death or injury.

(4) Lower Court Matters, wherein, MPCB have succeeded in securing following notable convictions.

- (a) In the Regular Criminal Complaints filed by the MPCB vs Virar Municipal Council, Nallasopara Municipal Council, Vasai Municipal Council and Navghar-Manikpur Municipal Council respectively before Hon'ble CJM-Thane. CJM-Thane convicted the Chief Officers of the said Municipal Councils for the offences punishable u/s 41(2) read with Section 33A and Section 43 read with Section 24 & Section 48 of the Water (Prevention & Control of Pollution) Act, 1974 with rigorous imprisonment for 2 years and to pay fine of Rs.1,000/-, in default to suffer rigorous imprisonment for one month, for not taking effective steps to comply with the environmental norms and statues. They have gone into revision and the revisions are pending.

Similarly, following industries and their persons incharge of & responsible for the conduct of the business of the companies have been convicted for violation of the provisions of the Law with rigorous imprisonment. The Judgment & Orders in the above matters are placed on the website of the MPCB (<http://www.mpcb.gov.in>). The said matters are pending in the revision.

(b) M/s. Metoxfine Chemicals pvt Ltd., CJM, PUNE,

D-2 Block, Plot No 54/24 & 25 MIDC, Chinchwad, Pune – 19. Accused no 1 to 4 convicted for the offences punishable u/s. 44 of the water act 1974, for 18 months imprisonment & fine of Rs.8000/-Gone into revision & order set aside. Hence, Board has gone into High court but high court has not allowed petition.

(c) M/s. Naik Ice & Cold Storage. Pet Killa, Ratnagiri.

CJM, RATNAGIRI, RCC No. 84/90 Accused convicted for offences punishable u/s.43 & 44 of the water act1974 with imprisonment for 18 months each & fine of Rs. 5000/- gone in to revision & acquitted in revision.

(d) M/s. Guj Petro chem pvt Ltd., JMFC , Panvel,plot No 17/20 & 17/21,MIDC, Taloja, Dist. Raigad - RCC No.324/88

Accused Convicted for the offences punishable u/s 44 of the water Act, 1974 with sentence of RI for 1 ½ years and fine of Rs.1000. Industry gone into revision before High Court.

(e) M/s.Textile corporation of Marathwada, Dist. Nanded CJM Nanded, RCC No. 204/84,

Accused convicted & to pay fine of Rs. 6,00,000/- gone into revision in the High Court.

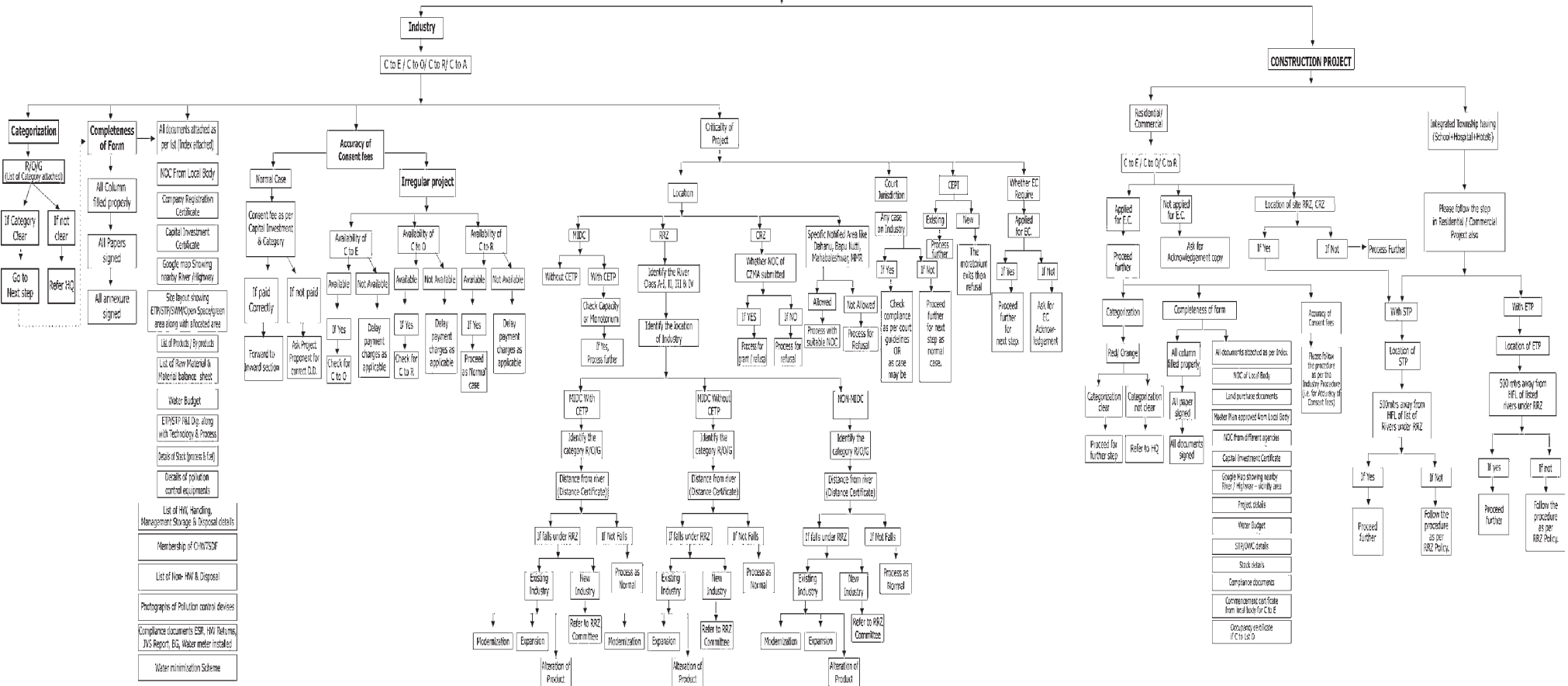
(f) M/s. Matushree Texttile Ltd.CJM, THANE, RCC No. 289/94

Board has won the case against M/s.Matushree Textile Ltd.,MIDC Indl.Area, Badlapur, Dist: Thane filed in C.J.M.-Thane court bearing Cr.Case No. 289/1994 on 21/3/2005. The said case was filed under the provisions of the Water (Prevention & Control of Pollution) Act, 1974.

Accused Nos. 1 to 4 have been convicted and punished with years imprisonment and Rs. 1000/- fine.

Annexure - 1 CONSENT PROCESSING FLOW CHART

CONSENT APPLICATION RECEIVED



Check list for consent scrutiny flow chart CATEGORIZATION

- 1) Check the category of the Industry depending upon the process of Industry and list of category given.
- 2) Attach the list of industry category.

COMPLETENESS OF FORM

- 1) Check all 51 Field of consent application filled properly.
- 2) Check all pages of consent application is signed.
- 3) Check all annexure are signed.
- 4) All documents attached as per the index (Attach index for consent annexure)
- 5) Check NOC from Local Body is correct and survey number of project is same as mentioned in application.
- 6) Check company registration certificate for

address.

- 7) Check Capital investment given as per MPCB new format and all factors are considered while issuing certificate.
- 8) Check is there any sensitive area nearby industry; River / Highway / Defense installation / Residential Area / Restricted Area.
- 9) Check Open space provided as per local norms, Green area provided as per norms Access / Movement for fire tender engine.
- 10) Check whether these products / activity is allowed in that area.

- 11) Check raw material to product ratio.
- 12) Check water consumption is considered as per norms (Thumb Rule for water consumption attached) all sources of consumption and waste generation are accounted, Supply permission for water taken.
- 13) Check capacity, technology provided is in line with characteristics of generated waste water and plant is capable to treat the same.
- 14) Check all sources of Air emission are considered while providing stack to the process / fuel exhaust.

- 15) Check the pollution control equipment provided are sufficient to prevent the air pollution and provided wherever required.
- 16) Check list of H.W., all sources of H.W. generation are considered as per H.W. rule, check storage facility, handling and record keeping of H.W. transport are followed as per the H.W. Rule and generated waste is disposed off to authorized firm only labeling of H.W. manifest form.
- 17) Check whether industry has taken membership for disposing H.W. to the

- CHWTSDF to ensure scientific and safe disposal of H.W. generated.
- 18) Check the waste generated is sold out / recycled.
- 19) Check all treatment facilities / pollution control equipments mentioned in form are working and in place.
- 20) Check whether company is complying all conditions stipulated in previous consent (in case of consent to Operate / Renewal).
- 21) Check whether company has implemented any scheme for waste minimization.

Annexure - 2

Guidance Template

Form 3 - Format for maintaining records of hazardous waste by the occupier or operator of a facility

Sr. No.	Variables	Details
1	Name and address of the occupier or operator of the facility:	<p>Name of the Factory Manager of the factory followed by Address of the Factory including following details:</p> <ol style="list-style-type: none"> Plot No, Name of Industrial Development Corporation, Name of place Name of District Name of State Pin Code of Place in the State
2	Date of issuance of authorization and its reference number	<p>"Date of Issuance" of Hazardous Waste Authorization = Date mentioned on the left/right-hand upper corner of HWA issued by SPCB</p> <p>"Registration Number" of HWA = Number provided on the Right-hand corner of the HWA issued by SPCB</p> <p>Ref: On the 1st page of the document - "Hazardous Waste Authorization" or "Combined Consent & Authorization" issued by SPCB to the GWM of the Plant.</p>
3	Description of hazardous waste	
A	The Physical form with description	The Physical-form of HW to be given as Solid / Liquid based on the Waste Code assigned HW
B	Chemical form	The exact description of corresponding HW

Form 3 - Format for maintaining records of hazardous waste by the occupier or operator of a facility

Sr. No.	Variables	Details
C	Total volume (m3) and weight (kgs)	<p>Total quantity of HW which is</p> <ol style="list-style-type: none"> to be transported outside the plant premises to TSDF/ actual user / recycler / reprocessor / treatment / co-incineration including the weight of the container in kgs and to be incinerated in-house. Only Contaminated Barrels/ Carboys / Lead Acid Batteries are sent out of the premises in "NUMBERS" else all other hazardous waste to be sent out of the premises only in kgs.
4	Description of storage and treatment of hazardous waste	
A	Date	Date of generation is date when Section Officer gets authorization from Sr Manager - Production and Manager EHS and then declares a material as waste (after multiple uses within the same section for the same purpose and exhausting all possible options of internal reuse, recycle) and enters the EHS Scrap Yard)

B	Method of storage of hazardous waste	<p>Storage area such as : Hazardous Waste Scrap Yard (covered / open to sky) ETP (covered /open to sky) Incinerator (covered / open to sky)</p> <p>specify the type of cover - permanent or monsoon shed</p> <p>Storage container :</p> <ol style="list-style-type: none"> MS / HDPE barrels (Closed mouth / Open mouth barrel covered with lid and /or plastic covers) HDPE / Poly Ethylene bags Bundle of empty hazardous RM bags / contaminated cartons HDPE Totes MS bulk container supplied by TSDF
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Form 3 - Format for maintaining records of hazardous waste by the occupier or operator of a facility

Sr. No.	Variables	Details
C	Date	Mention the date
D	Method of treatment of hazardous waste	Provide the method of treatment
5	Details of transportation of hazardous waste	
A	Name and Address of the consignee of package	<p>Name of the facility (actual-user/ recycler/ TSDF for incineration or landfill facility / treatment / coincineration) where HW is to be sent Address of the Facility including following details :</p> <ol style="list-style-type: none"> Plot No Name of Industrial Development Corporation, Name of placed. Name of Districte. Name of State Pin Code of Place in the State
B	Mode of Packing of the Waste for Transportation	<p>Provide details about the container such as:</p> <ol style="list-style-type: none"> MS / HDPE barrels (Closed mouth / Open mouth barrel covered with lid and /or plastic covers) HDPE / Poly Ethylene bags Bundle of empty hazardous RM bags / contaminated cartons HDPE Totes MS bulk container supplied by TSD

C	Mode of transportation to site of disposal	Transportation by road using 1. Open / Closed bodied Vehicle
D	Date of Transportation	The date on which the vehicle containing hazardous Waste leaves the plant premises with manifest

Form 3 - Format for maintaining records of hazardous waste by the occupier or operator of a facility

Sr. No.	Variables	Details
6	Details of disposal of hazardous waste	
A	Date of disposal	It is the date on which HW is a. actually charged into the onsite-incinerator for incineration b. received by the TSDF or common Disposal Facility or Cement Kiln as mentioned in the blue copy of Form-13 received back
B	Concentration of Hazardous Constituent in Final waste	Provide a reference to the analysis report of HW submitted to TDSF. This analysis is done as one time activity through MoEF approved lab for parameters specified by the TSDF operator and submitted to TSDF operator as asked by him before the operator agrees to accept our HW. A copy of the report to be attached and send to TSDF operator with each consignment.
C	Site of disposal (identify the location on the relevant lay out drawing for reference)	Provide the exact site of disposal e.g. 1. if the HW is sent for incineration then specify "Common Incinerator" at "Name of TSDF" 2. if the HW is sent for landfill then specify "Secured Landfill" at "Name of TSDF" 3. if the HW is sent for co-incineration then specify "Name of the unit - Cement Kiln" at "Name of organization and place"
D	Method of disposal	1. Incineration or 2. Co-incineration or 3. Secured Landfill
E	Persons involved in disposal	1. Name of Manager-EHS and 2. Name of the operator of TSDF / Name of the Factory Manager of Cement Kiln

Sr. No.	Variables	Details
7	Data on environmental surveillance	
7.A	Date of Measurement	The date on which the "Ground Water sample" or "Soil sample" or "Air sample" is taken

Sr. No.	Variables	Details
7.B.	Analysis of ground water sample	For the date-entry in 7.A, mention corresponding other details such as:
A	Location of sampling	Exact location inside the plant premises where sample is taken
B	Depth of sampling	Depth in meters from which sample was taken at each of the corresponding above locations
C	Data	Analysis results for each of the above corresponding samples
7.C.	Analysis of soil samples	For the date-entry in 7.A, mention corresponding other details such as:
A	Location of sampling	Each location inside the plant premises where sample is taken
B	Depth of sampling	Depth in meters from which sample was taken at each of the corresponding above locations
C	Data	Analysis results for each of the above corresponding samples
7.D.	Analysis of air sample	For the date-entry in 7.A, mention corresponding other details such as:
A	Location of sampling	Each location inside the plant premises where sample of ambient air is taken
B	Data	Analysis results for each of the above corresponding samples
7.E	Analysis of any other sample (give details)	<i>No data is captured for the same. To be left blank</i>

Sr. No.	Variables	Details
8	Details of hazardous waste sold/ auctioned to the recyclers or reprocessors or re-users:	
A	Date of Sale/Auction	The date on which HW is received by the facility for reuse/recycle as mentioned in the blue copy of Form-13 received back
B	Site of reuse / recycle / reprocessing	Provide the name of the location, process and equipment where the waste is used, recycled or reprocessed within the premises of the reuse/recycle facility.
C	Method of reuse / recycle / reprocess	Briefly describe the methods of reuse / recycle
D	Persons involved in reuse / recycle / reprocessing	1. Name of Manager-EHS and 2. Name of the Factory Manager of reuse/recycle Facility

Sr. No.	Variables	Details
9	Details of hazardous waste reused / recycled	
A	Total quantity of hazardous waste generated	Provide the quantity of each waste-category in kgs that is sent for each consignment to a reprocessing unit for the purpose of getting the recovered material back with or without the waste generated from the reprocessing activity
B	Details of hazardous waste minimization activity	Briefly describe the use of recovered good quality material in process (cleaning / stripping) / product
C	Materials received	Provide the quantity of good quality material received from the reprocessor against each consignment sent to his facility
D	Final quantity of waste generated	Provide the quantity of waste generated against each consignment sent and reprocessed
E	Net reduction in waste generation quantity & Percentage	Calculated Parameters whose Formula equals a. Net reduction in waste generation quantity = (a-c)b. Net reduction in waste generation Percentage = (a-c)*100 /a

	Date	Current Date in MM-DD-YY format
		Provide date on which GWM signs the hardcopy of Form3 compiled at the end of month
	Place	Location of the Plant
	Name and signature of the head of facility	Name of Factory Manager of the Plant

Form 4 - Form for Filling Annual Returns by the occupier or operator of facility

Sr. No.	Variables	Details
1	Name and address of the Generator / Operator of the Facility	<p>Name of the Factory Manager of the factory followed by Address of the Factory including following details :</p> <ul style="list-style-type: none"> a. Plot No, b. Name of Industrial Development Corporation, c. Name of place d. Name of District e. Name of State f. Pin Code of Place in the State

2	Name of the authorized person and full address with telephone and fax number	Name of the Factory Manager of the factory followed by address of the Factory including following details : a. Plot No, b. Name of Industrial Development Corporation, c. Name of place d. Name of District. Name of State f. Pin Code of Place in the State g. Landline Board Telephone Numbers of the plant h. Fax Numbers of Factory Manager and/or the Board Number of the plant
3	Description of hazardous waste	
A	Physical form with description	The Physical-form of HW to be given as Solid / Liquid
B	Chemical form	Please refer table (Form 4 – 3B) below
4	Quantity of Hazardous Wastes (in MTA)	
A	Type of hazardous waste	Name each hazardous-waste-category applicable for the plant / location /site
B	Quantity (in Tonnes / KL)	Total Quantity, of each hazardous waste category for the financial-year (1st April to 31st March), that has been sent either out of the premises or incinerated in-house.All HW Category to be reported in MT other than Discarded Barrels and Lead Acid Batteries in Numbers.
5	Description of storage	Storage area such as Hazardous Waste Scrap Yard (covered / open to sky)ETP (covered / open to sky)Incinerator (covered / open to sky)SRP (covered / open to sky) specify the type of cover - permanent or monsoon shed storage container a. MS / HDPE barrels (Closed mouth / Open mouth barrel covered with lid and /or plastic covers) b. HDPE / Poly Ethylene bags c. Bundle of empty hazardous RM bags / contaminated cartons d. HDPE Totes e. MS bulk container supplied by TSDF
6	Description of treatment	Provide the description of treatment given to HW

Sr. No.	Variables	Details
7	Details of transportation	
A	Name and Address of the consignee of package	<p>Name of the facility (actual-user/ recycler/ TSDF for incineration or landfill facility / treatment / coincineration) where HW is to be sent Address of the Facility including following details:</p> <p>a. Plot No,</p> <p>b. Name of Industrial Development Corporation,</p> <p>c. Name of place</p> <p>d. Name of District</p> <p>e. Name of Statef. Pin Code of Place in the State</p>
B	Mode of Packing of the Waste for Transportation	<p>Provide details about the container such as</p> <p>a. MS / HDPE barrels (Closed mouth / Open mouth barrel covered with lid and /or plastic covers)</p> <p>b. HDPE / Poly Ethylene bags</p> <p>c. Bundle of empty hazardous RM bags / contaminated cartons</p> <p>d. HDPE Totes</p> <p>e. MS bulk container supplied by TSDF</p>
C	Mode of transportation to site of disposal	<p>Transportation by road using</p> <p>1. Open / Closed bodied Vehicle</p>
D	Date of Transportation	For despatch to each Consignee, mention the corresponding dates on which the truck containing Hazardous Waste bins, have left the plant premises with the manifest.

Sr. No.	Variables	Details
8	Details of disposal of hazardous waste	
A	Date of disposal	<p>It is the date on which</p> <p>a. HW is incinerated at the onsite-incineration facility</p> <p>b. is received by the TSDF or Cement Kiln as mentioned in the blue copy of Form-13 (Manifest) received back</p>
B	Concentration of Hazardous Constituent in Final waste	Provide a reference to the analysis report of HW submitted to TDSF. This analysis is done as one time activity through MoEF approved lab for parameters specified by the TSDF operator and submitted to TSDF operator as asked by him before the operator agrees to accept our HW. A copy of the report to be attached and send to TSDF operator with each consignment.

C	Site of disposal (identify the location on the relevant layout drawing for reference)	Provide the exact site of disposal e.g. <ol style="list-style-type: none"> 1. if the HW is sent for incineration then specify: Common Incinerator at “<i>Name of TSDF</i>” 2. if the HW is sent for incineration to a disposal facility then specify: Incinerator at “<i>name of disposal facility</i>”. 3. if the HW is sent for landfill then specify: Secured Landfill at “<i>Name of TSDF</i>” 4. if the HW is sent for co-incineration then specify: Name of the unit - Cement Kiln at “<i>Name of organization and place</i>” 5. if the HW is incinerated onsite then specify: In-house Incineration
D	Method of disposal	<ol style="list-style-type: none"> 1. Incineration or 2. Co-incineration or 3. Secured Landfill

Sr. No.	Variables	Details
8	Details of disposal of hazardous waste	
E	Persons involved in disposal	<ol style="list-style-type: none"> 1. Name of Manager-EHS and 2. Name of the operator of TSDF / Name of the Factory Manager of Cement Kiln
9		
a1	Name and type of material sent back to the manufacturers	to be kept blank
b1	Quantity in Tonnes/ KL	Zero, if no material is sent back to the supplier
a2	Name and type of material sent back to others	to be kept blank
b2	Quantity in Tonnes/ KL	Zero, if no material is sent back to the supplier
	Date	Current Date in MM-DD-YY format Provide date on which GWM signs the hardcopy of Form4 compiled at the end of month
	Place	Location of the plant
	Name and signature of the head of facility	Name of Factory Manager of the Plant

Table – Form 4 -3B

Sr. No.	Category No.	Waste Generated (Same name as given in HW Rules)	Chemical Form
1	3.1		Organic/Inorganic chemicals
2	3.3		Organic/Inorganic chemicals
3	5.1		Organic/Inorganic chemicals
4	15.2		Asbestos
5	20.1		Organic chemicals
6	20.3		Organic chemicals and polymer
7	21.1		Polymerand Organic/Inorganic chemicals
8	23.1		Polymer and Organic/ chemicals
9	23.1		Organic/Inorganic chemicals and polymer
10	33.1		Organic/Inorganic chemicals
11	33.3		Organic/Inorganic chemicals
12	33.3		HDPE/Polyethylene/cellulous and Organic/Inorganic chemicals
13	33.3		Iron/ mild steel/HDPE/Polyethylene and Organic/Inorganic chemicals
14	34.1		Organic/Inorganic chemicals
15	34.2		Organic/Inorganic chemicals
16	34.3		Organic chemicals
17	34.4		Organic/Inorganic chemicals
18	35.3		Activated Carbon
19	36.2		Oxides of Inorganic materials.
20	Class B		Lead and mineral acids

Form 13 - Hazardous Waste Manifest

Sr. No.	Variables	Details
1	Occupier's Name & Mailing Address (including Phone No.)	<p>Name of the Factory Manager of the Plant followed by address of the Factory including following details:</p> <ul style="list-style-type: none"> a. Plot No, b. Name of Industrial Development Corporation, c. Name of place d. Name of District e. Name of State f. Pin Code of Place in the State g. Landline Board Telephone Numbers of the plant h. Fax Numbers of Factory Manager and/or the Board Number of the plant
2	Occupier's Registration No.	<p>"Date of Issuance" of Hazardous Waste Authorization = Date mentioned on the left/right-hand upper corner of HWA issued by SPCB "Registration Number" of HWA = Number provided on the Right-hand corner of the HWA issued by SPCB</p> <p>Ref: On the 1st page of the document - "Hazardous Waste Authorization" or "Combined Consent & Authorization" issued by SPCB to the GWM of the Plant.</p>
3	Manifest Document No.	Unique Sequential Number that is allocated by the Manager-EHS, for each and every vehicle consignment of hazardous waste, that is to move outside the plant premises for re-use/recycle/reprocess/disposal.

Form 13 - Hazardous Waste Manifest

Sr. No.	Variables	Details
4	Transporter's Name & Address: (including Phone No.)	<p>"Name" and "Address" of the SPCB authorized Transporter, which transports HW to any of the following facilities (actual-user/ recycler/ reprocessor/ TSDF for incineration or landfill / co-incineration facility) Address of the Transporter to include following details :</p> <ul style="list-style-type: none"> a. Plot No, b. Name of Building c. Name of Street d. Name of Place e. Name of District f. Name of State g. Pin Code of Place in the State

		<p>h. Phone No of the transporter</p> <p>i. Fax No of the transporter</p>
5	Type of Vehicle (Truck/Tanker/Special Vehicle)	Provide any one of the following options: Truck/Special Vehicle Only these two types of vehicles are in use. Tankers are not used for transportation of HW. Some tanker are used for transporting untreated effluent to CETP. However, these tanker are not governed by HW Rules and hence manifest is not followed for such tankers.
6	Transporter's Registration No.	<p>"Registration Number" = Number provided on the Right-hand corner of the authorization issued to the transporter by SPCB</p> <p>On the 1st page of the document - "Hazardous Waste Authorization" issued to the Owner of "Transportation Agency" by the respective SPCB</p>

Sr. No.	Variables	Details
7	Vehicle Registration No.	<p>"Vehicle Registration Number" = Vehicle Registration Number provided (by RTO - Road Transport Organization) on the HW Authorization issued to the transportation agency by SPCB</p> <p>On the document - "Hazardous Waste Authorization" issued to the Owner of "Transportation Agency" by the respective SPCB contains the registration no of the vehicle.</p>
8	Designated Facility Name & Site Address	<p>Name of the facility (actual-user/ recycler/ TSDF for incineration or landfill facility / treatment / coincineration) where HW is to be sent address of the Facility including following details:</p> <p>a. Plot No,</p> <p>b. Name of Industrial Development Corporation,</p> <p>c. Name of place</p> <p>d. Name of District</p> <p>e. Name of State</p> <p>f. Pin Code of Place in the State</p>
9	Facility's Registration No.	<p>"Date of Issuance" of HW Authorization = Date mentioned on the left/right-hand upper corner of HWA or CCA of the facility to which HW to be sent"Reference Number" = Number provided on the Right-hand corner of HWA or CCA</p> <p>On the 1st page of the document - "Hazardous Waste Authorization" or "Combined Consent & Authorization" of the facility issued by the respective SPCB</p>
10	Facility's Phone	<p>a. Landline Board Telephone Numbers</p> <p>b. Fax Numbers of the TSDF/ actual user / recycler / reprocessor / treatment / coincineration where HW is to be sent</p>

Sr. No.	Variables	Details
11	Waste Description	The exact description of one of HW
12	Total Quantity..... m ³ or MT	Total quantity of HW which is to be transported outside the plant premises to TSDF/ actual user / recycler / reprocessor / treatment / incineration including the weight of the container.
13	Consistency (Solid/Semi-Solid/Sludge/Oily/Tarry/Slurry)	The Physical-form of HW to be given as Solid / Liquid / Semi solid
14	Transport Description of Wastes	Describe how the HW is being transported e.g. <ol style="list-style-type: none"> 1. In open mouth barrels covered with lid 2. In closed mouth barrels with lid tightly closed 3. In bulk container supplied by the TSDF operator 4. In HDPE / PE bags in a closed truck
15 a	Containers: Number	Provide the number of barrels/bags/ bulk containers of hazardous waste being transported
15 b	Containers :Type	Mention the type of container in which the HW is being transported e.g. <ol style="list-style-type: none"> a. MS / HDPE barrels (Closed mouth / Open mouth barrel covered with lid and /or plastic covers) b. HDPE / Poly Ethylene bags c. Sludge/Oily/Tarry/Slurry) Bundle of empty hazardous RM bags / contaminated cartons d. HDPE Totes e. MS bulk container supplied by TSD

Sr. No.	Variables	Details
16	Total Quantity..... m ³ or MT	Total quantity of HW which is to be transported outside the plant premises to TSDF/ actual user / recycler / reprocessor / treatment / incineration excluding the weight of the containers.
17	Unit Wt/Vol.....m ³ or MT	Total weight of HW being sent outside the premises as given in row 16 divided by total number containers
18	Waste Category Number	Hazardous-waste-category as provided in HWA
19	Special Handling Instructions & additional Information	Use appropriate PPE while handling HWAvoid spillage of HW on ground and waterIf spilled, contain HW and prevent soil/water/air contamination

20	Occupier's Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper condition for transport by road according to applicable national government regulations. I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper condition for transport by road according to applicable national government regulations
	Typed Name & Stamp Signature Month Date Year	Provide the name of the transportation agency and its stamp Signature of the representative of the transportation agency month name of the transportation date of transportation year of transportation

Sr. No.	Variables	Details
21	Transporter Acknowledgement of Receipt of Wastes Typed Name & Stamp Signature Month Day Year	Provide the name of the transportation agency and its stamp Signature of the representative of the transportation agency month name of the transportation date of transportation year of transportation
	Discrepancy Note Space	For facility operator to highlight any difference in qty of HW(s) received vs. qty and HW(s) transported
	Facility Owner or Operator's Certification of Receipt of Hazardous Waste Typed Name & Stamp Signature Month Day Year	Facility operator /owner to provide its Name, stamp and signature. Facility operator to provide month, date and year to the receipt of HW at his facility.

FORM - V

Environment Statement

Environmental Statement For The Financial Year Ending 31st March, 20XX-YY

Part - A

(1)	Name and address of the occupier of the industry, operation or process		
(2)	Industry category		
	Primary (SIC Code)	Primary Standard Industrial Classification Code	
	Secondary (SIC Code)	Secondary Standard Industrial Classification Code	
(3)	Production capacity (MT/year)	1. Write Product Name	Quantity mentioned in consent per Annum
		2. Write Product Name	Quantity mentioned in consent per Annum
		3. Write Product Name	Quantity mentioned in consent per Annum
		4. Write Product Name	Quantity mentioned in consent per Annum
(4)	Year of establishment	The year in which production was initially commenced	
(5)	Date of the last environmental statement submitted	Actual date of previous financial year environment statement submitted to PCB.	

Part - B

Water and Raw Material Consumption

(I) Water consumption m³/d

Process	Total quantity of fresh water (IDC/Municipality+Tanker+Borewell) consumed in process "Product + Cleaning (Vessel/Equipments/Floor) + Calibration of existing tanks" divide by 365/366 days. Note: figure should match with form 1(Total sum of easily bio-degradable and not easily bio-degradable)
Cooling & Boiler	Total quantity of fresh water (IDC/Municipality+Tanker+Borewell) consumed in Cooling & Boiler divide by 365/366 days.
Domestic	Total quantity of fresh water (IDC/Municipality+Tanker+Borewell) used for Domestic purpose divide by 365/366 days.
Others (Gardening, construction, fire-hydrant, Calibration of new tank etc.)	Total quantity of fresh water (IDC/Municipality+Tanker+Borewell) used for gardening, construction, fire hydrant and other purposes divide by 365/366 days
Total	Sum total of Process, Cooling & boiler, Domestic and Others.

Name of products	Process Water consumption per unit of product	
	During previous financial year	during current financial year
	(1)	(2)
Report same as in point (3) of Part A	Total quantity of fresh water (IDC/ Municipality+Tanker+Borwell) consumed in process” Product + cleaning (Vessel/ Equipments/Floor) + Calibration of existing tanks”per Ton/KL of production for the previous financial year.	Total quantity of fresh water (IDC/ Municipality+Tanker+Borwell) consumed in process “Product + cleaning (Vessel/ Equipments/Floor) + Calibration of existing tanks” per Ton/KL of production for the reporting financial year.

Note: Water consumption cannot be rationally related to the production.

Data to match with:

1. Environment statement
2. Annual water cess return.

(ii) Raw Material consumption

Sr. No.	Name of raw material	Name of products	Consumption of raw material MT per unit of output (KL/MT/L/kgs.)	
			during the previous financial year	during the current financial year
	Report all the raw materials consumed under the category. Take RM consumption data from Accounts Dept.Covert RM consumed in KL into MT	Name of product for which RM is consumed.		
1	RM1			
2	RM2			
3	RM3			
4	RM4			
5	RM5			
6	RM6			
7	RM7			
8	RM8			

Part – C

Pollution Discharged to the Environment per unit of output

(Parameters as specified in the consent issued)

(a) Water Pollutant

Sr. No.	Parameter	Quantity of pollutants discharged (kg/day)	Concentration of pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons	Reason
(1)	(2)	(3)	(4)	(5)	(6)
	All the parameter in water consent applicable for reporting year is required to be mentioned.	For All those parameter which are not reported in concentration unit (eg pH, Temperature, Color, alpha, beta emitter, % Sodium etc.) Mention Not Applicable #Converts the parameters which are reported in concentration unit into kg/day .	For All those parameter which are not reported in concentration unit (eg pH, Temperature, Color, alpha, beta emitter, % Sodium etc.) Mention its original unit. Report parameter with concentration unit in mg/L only {Average mg/lit = Total annual mass of pollutant(g)/ Total annual effluent treated (KL) }	For parameter with conc. unit Percentage difference of prescribed standard value for parameter given in applicable water consent and the value reported in column 4 w.r.t standard value. For parameter with non conc. Unit Report either 'within specified limit' or 'Outside the specified limit' whichever applicable	Negative Variance/Within Limit Indicates the Quality Parameter of Treated Effluent is Much better than Prescribed Standards Positive Variance/ Outside the limit Actual reason for such deviation to be reported with valid reason.
# Kg/day = Monthly summation of (mg/l* Litres of effluent treated/1000000) Divide by No. of days (365/366)					
1					
2					
3					
4					

(b) Air Pollutant

Stack: - Provide the Stack Name and No. (If applicable)					
Sr. No.	Parameter	Quantity of pollutants discharged (kg/day)	Concentration of pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons	Reason
(1)	(2)	(3)	(4)	(5)	(6)
	All the parameter s for stack emission in air consent applicable for reporting year is required to be mentioned for above mentioned stack	<p>Kg/day load = “Total monthly sum of (Running hrs*Emission Discharge Rate *Conc. of pollutant/ 1000000)”/ No. of days 365 or 366</p> <p>Emission Discharge Rate = Stack velocity * cross section area of stack</p> <p>* Take stack running hour data (for the year) from plant engg log book and incinerator logbook</p>	<p>Avg concentration of pollutant as per the testing report from MoEF approved laboratory.</p> <p>Average mg/ Nm³ =</p> <p>Kg/day (from column 3)</p> <p>multiply by</p> <p>(no. of days in year 365/366 *10^{^6})</p> <p>divide by</p> <p>(Discharge Rate * Total running hours)</p>	Percent variance of Standard value for parameter given in applicable air consent and the value reported in column 4 w.r.t standard value	<p>Negative Variance Indicates theQuality Parameter ofTreated Effluent is Much better than Prescribed Standards</p> <p>Positive Variance Actual reason for such deviation to be reported with valid reason.</p>
1					
2					
3					
4					

Note: Report Air pollutant individually for all the stacks

Part - D

Hazardous Wastes

(As specified under Hazardous Waste (management, Handling & Transboundary Movement) Rules, 2008 and amendments thereof)

	Waste Source	Total Quantity (Kg)	
		During previous financial year	During current financial year
(a)	From Process : The Hazardous wastes generated as part of process activity and given in applicable HW Authorisation applicable to reporting year	Source:- Report the same data as reported in form 4 for the previous reporting financial year	Source:- Report the same data as reported in form 4 for the reporting financial year
(b)	From pollution control facility : The Hazardous wastes generated from the operation of environment facility and given in HW Authorisation applicable to reporting year ETP, Incinerator, Stacks, Dust collectors, Scrubbers.	Source:- Report the same data as reported in form 4 for the previous reporting financial year	Source:- Report the same data as reported in form 4 for the reporting financial year

Note : **Data to match with:**

1. Form-4
2. Environment statement

Part - E

Solid Wastes

	Waste Source	Total Quantity (Kg)	
		During previous financial year	During current financial year
(a)	From process : The solid waste generated as part of process activity Report all the solid waste given in HW Authorisation/ List given in consents/HW Authorisation application 1. If solid waste not given in HW Authorisation: - Refer for applicable solid waste from below consolidated list : 2. Wooden Scrap 3. Metal scrap 4. Plastic scrap 5. Electrical Waste 6. Paper/Cardboard 7. Glass scrap	Report the same data as reported in form 4 for the previous reporting financial year	Report the same data as reported in form 4 for the reporting financial year

(b)	From pollution control Solid waste generated as part of operation of pollution control facility ETP, Incinerator, Stacks, Dust collectors, Scrubbers Report all the solid waste given in HW Authorisation. If solid waste not given in HW Authorisation: - Refer the point (a) of same table.	Report the same data as reported in form 4 for the previous reporting financial year	Report the same data as reported in form 4 for the reporting financial year
(c)	Quantity recycled or re-utilised within the unit Report the quantity of solid waste recycled/reused within the plant Note: Do not report intermediate/ Hazardous waste consumed.	Report the same data as reported in form 4 for the previous reporting financial year	Report the same data as reported in form 4 for the reporting financial year

Note : **Source :**

1. Scrap invoice &
2. As per form-4

Part - F

Please specify the characterisation (in terms of composition and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Sr. No.	Waste	Concentration of hazardous constituents in the final waste	Disposal Practice
Hazardous waste			
	The hazardous waste as mentioned in Part D	Report same as reported in form IV	It should be as per the HW Authorisation/ same as that reported in form IV
1			
2			
3			
Solid Waste			
	The solid waste mentioned in Part E	Not Applicable	Report Actual disposal practice at the plant
1			
2			
3			

Part - G

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

A) Impact of Pollution Abatement on Conservation

Impact of pollution abatement is identified and presented below along with the activity responsible for the same :

Reference list

- a) Cleaner Effluents
- b) Incinerator Project :
- c) Solvents Reuse
- d) Natural Resource Conservation
- e) Noise Abatement
- f) Dust Control
- g) Energy conservation
- h) Rain water harvesting
- i) Reuse of Wash Water
- j) Guard Pond facility.

B) Impact of Pollution Abatement on the Cost of Production

The expenses on the pollution abatement increased the cost of production by Rs._____ per ton or KL of product.

Part - H

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

Part - I

Any other particulars for improving the quality of the environment

(Signature of a person carrying out an industry)

DATE: Mention Actual date of submission

Name : Name of Unit head
Designation : Factory Manager
Address : Address of the site

Form 1 – Monthly Water Cess Returns

[The Water (Prevention and Control of Pollution) Cess Rules, 1978] shall be generated from the ESS System Water Module.
The instructions for generating this report are given in ESS System Water Module User Manual and Reports Generation user manual.

FORM I

(See rule 4)

Return regarding Water consumed during the month of (Write Month & Year)

Name and Address of the consumer	Purpose for which water consumed	Reading at the beginning of the day of calendar month under report	Reading at the end of the day of calendar month under report	Quantity of water consumed in Kilo Litres	If the meter was out of order, monthly average consumption of water for the previous 3 months working period	Quantity of water qualifying for rebate according to the assessee	Remark*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Name of the Factory Manager of the factory followed by Address of the Factory including following details : a. Plot No b. Name of Industrial Development Corporation, c. Name of place d. Name of District e. Name of State f. Pin Code of Place in the State	1. Industrial Cooling spraying in mine pits or boiler feed {Report quantity of fresh water consumed for utility purposes } Cooling Tower, Boiler, Fire Hydrant Tank Make up water, Chilling Plant	(i) from municipal water supply mains	—	—	Provide the total quantity of water consumed for Utility purpose.	Take the daily average of previous three month water consumption for utility purposes & multiply the same with the no. of days for which meter was out of order Plus(+) The total water consumed in utility for the no. of days in reporting month for which meter was in operation	Not Applicable At present we don't intend to go for rebate
		(ii) from well/ tube well	—	—			
		(iii) from canal					
		(iv) from river	—	—			
		(v) from any other source	—	—			
	{Report the quantity of fresh water received from sources other than IDC/ Municipality, Tube well/well, River/Canal } Such as Rainwater, Tankers, Sea Water, lake, Pond, Dam						

4. Processing whereby water gets polluted and the pollutants are not easily bio-Degradable and are toxic. Report the quantity of fresh water used for industrial processing such as water:- consumed in product, used for vessels/ equipment/floor cleaning & calibration of tanks	(i) from municipal water supply mains			Provide the total quantity of water used for industrial processing such as water :- consumed in product, used for vessels/ equipment/ floor cleaning & calibration of tanks	Take the daily average of previous three month water consumption for Process use & multiply the same with the no. of days for which meter was out of order Plus(+) The total water consumed in process use for the no. of days in reporting month for which meter was in operation		
	(ii) from well/ tube well						
	(iii) from canal						
	(iv) from river						
	(v) from any other source {Report the quantity of fresh water received from sources other than IDC/ Municipality, Tube well/Well/ River/Canal } Such as Rainwater, Tankers, Sea water, lake, Pond, Dam						

(*) for claiming rebate under col. 7 the assessee shall indicate in this column the analytical and other reports annexed to this return in support of this claim

(-) The water received from all the sources (**IDC/Municipality, Tube well/well/River/Canal/any other source**) is collected and stored centrally and then distributed for use in Industrial/domestic/utility purposes. Thus it is not feasible to provide the initial and final meter reading for the portion of water consumed from individual water sources as mentioned above.

Signature :

Name : **Name of Factory Manager**

Address : **Address of unit**

(Plot No, Name of Industrial Development Corporation, Name of place Name of District, Name of State, Pin Code of Place in the State)

ANNEXURE TO FORM I

Report of Analysis of treated effluent showing performance of the treatment plant for the month of.... **(Write month & Year)...**

Sample collected on. **(Mention sample collection date).....**

Sample tested on..... **(Mention sample testing date).....**

By the laboratories ... **(Mention testing Laboratory name).....**

Sr. No.	Polluting parameters as mentioned in the conditions imposed under consent granted under section 25/26 of the water (prevention and control of pollution) act, 1974	Maximum permissible limits or range allowed as per consent conditions	Concentration or range of parameters as per report	Dates	On which
				There was break down or failure of the plant	On which under performance was noticed
(1)	(2)	(3)	(4)	(5)	(6)
	Provide the list of treated effluent quality parameters mentioned in applicable water consent	Specify the limit value prescribed in applicable consent	Report the actual concentration/range of parameters from the analysis report	Mention the date (s) for which ETP/STP was under breakdown for the reporting month	Mention the date (s) on which ETP/STP treated effluent parameters exceeding/ close to the standard limit prescribed in applicable water consent.

Signature :

Date : **Mention the actual date of form I submission**

Name : **Name of Factory Manager,**

Address : **Address of unit**

(Plot No, Name of Industrial Development Corporation, Name of place Name of District, Name of State, Pin Code of Place in the State)

FORM-VIII

[See Rule 10(2) (ii)]

FORM FOR FILING RETURNS FOR BULK CONSUMERS OF BATTERIES

[To be submitted by bulk consumer to the State Board by 30th June (for the period October-March) and 31st December (for the period April-September) every year]

<p>1 Name and address of the bulk consumer</p>	<p>Name of the Factory Manager of the factory followed by Address of the Factory including following details :</p> <p>a. Plot No</p> <p>b. Name of Industrial Development Corporation,</p> <p>c. Name of place</p> <p>d. Name of District</p> <p>e. Name of State</p> <p>f. Pin Code of Place in the State</p>	
<p>2 Name of the authorized person and complete address with telephone and fax numbers</p>	<p>Name of the Factory Manager of the factory followed by address of the Factory including following details :</p> <p>a. Plot No,</p> <p>b. Name of Industrial Development Corporation,</p> <p>c. Name of place</p> <p>d. Name of District</p> <p>e. Name of State</p> <p>f. Pin Code of Place in the State</p> <p>g. Landline Board Telephone Numbers of the plant</p> <p>h. Fax Numbers of Factory Manager and/or the Board Number of the plant</p>	
<p>3 Number of new batteries of different categories purchased from the manufacturer/importer/dealer or any other agency during October-March and April-September Category :</p>	<p>No. of Batteries</p>	<p>Approximate weight (in Metric Tonnes)</p>
<p>1) Automotive</p>	<p>Battery purchased for automotive purpose in unit during the reporting period</p>	

	a) Four Wheeler	Total No. of battery purchased for company owned vehicle such as forklifts/BOPT during the reporting period	Total weight of battery in MT purchased for company owned vehicle such as forklifts/BOPT during the reporting period
	b) Two Wheeler	Not Applicable	Not Applicable
	2. Industrial	Batteries purchased for Industrial purpose in unit during the reporting period	
	a) UPS	Total No. of batteries purchased for UPS service in the unit during the reporting period	Total Weight of Batteries in MT Purchased for UPS service in the unit during reporting period
	b) Motive Power	Total No. of batteries purchased for Motive power purpose in unit during the reporting period	Total Weight of Batteries Purchased for Motive power purpose in unit during reporting period
	c) Stand-By	Total No. of batteries purchased, received and kept as a stock in engineering store/ store in unit during the reporting period	Total weight in MT of batteries purchased, received and kept as a stock in engineering store/ store in unit during the reporting period
	3. Other	Mention the total No. of battery purchased for purpose other than reported above in unit such as starting battery for DG set, Centralized Emergency Lamp System, FH Diesel Pump, Electrical Transformer	Mention the total Weight of Batteries Purchased for purpose other than reported above in unit such as starting battery for DG set, Centralized Emergency Lamp System, FH Diesel Pump, Electrical Transformer
4	Number of used batteries of categories mentioned in Sr. No.3 and Tonnage of scrap sent to manufacturer/importer/dealer/ registered recycler/or any other agency to whom the used battery scrap was sent*	Mention the total no. of used batteries of all above mentioned categories in Sr. No. 3 sent to manufacturer/importer/dealer/ registered recycler/	Mention the quantity in MT of all above mentioned categories in Sr. No. 3 sent to manufacturer / importer / dealer / registered recycler /

List of manufacturer/importer/dealer/ registered recycler/or any other agency to whom the used battery scrap was sent. (For more details please visit MPCB Website)

Place **(Mention Location of unit)**

Date **(Mention Current Date in MM-DD-YY format, Provide date on which GWM signs the hardcopy of Form VIII)**

(Signature of Factory Manager)

Signature of the Authorised Person

BIOMEDICAL WASTE ANNUAL REPORT

FORM II

(see rule 10)

(To be submitted to the prescribed authority by 31 January every year).

Sr. No.	Variables	Details
1.	Particulars of the applicant	
(i)	Name of the authorised person (ocupier/operator)	Provide : Name of the Factory Manager of the factory and company name
(ii)	Name of the institution	Provide Below details a. Plot No. b. Name of Industrial Development Corporation, c. Name of place d. Name of District e. Name of State f. Pin Code of Place in the State g. Landline Board Telephone Numbers of the plant h. Fax Numbers of Factory Manager and/or the Board Number of the plant
2	Categories of waste generated and quantity on a monthly average basis	Annexure I
3	Brief details of the treatment facility	Bio Medical waste is treated at common waste treatment facility. Detail for common Bio Medical Waste treatment facility : Provide the detail as under (i) Name of the operator (ii) Authorisation No. (iii) Name and address of the facility a. Plot No, b. Name of Industrial Development Corporation, c. Name of placed. Name of District e. Name of State f. Pin Code of Place in the State g. Landline Telephone Numbers of the facility h. Fax Numbers of facility

4	Category-wise quantity of waste	Not ApplicableWaste is not treated inhouse, all the bio medical waste generated at OHS of plant is send to common waste' treatment facility.
5	Mode of treatment with details	Common bio medical waste treatment facility does the following treatment and disposal (Obtain and provide the mode of treatment from Common bio medical waste treatment facility)
6	Any other information	—
7	Certified that the above report is for the period from	January 20XX to December20XX
	Date	Current Date in MM-DD-YY format Provide date on which GWM signs the hardcopy of Form 2
	Signature	Signature of Factory Manager
	Place	Mention Location of unit
	Designation	Factory Manager

Option.	Waste Category	Quantity (Kg) (Monthly Average of January to December)
Category 1	Human Anatomical Waste	Not Applicable
Category 2	Animal Waste	Not Applicable
Category 3	Microbiology & Biotechnology Waste	Not Applicable
Category 4	Waste sharps	Provide the Total quantity of waste generated which may cause puncture and cuts such as needles, syringes, scalpels, blades, glass, etc. This includes both used and unused sharps.
Category 5	Discarded Medicines and Cytotoxic drugs	Provide the Total quantity of waste comprises of outdated, contaminated anddiscarded medicines
Category 6	Solid Waste	Provide the Total quantity of solid waste comprises of items contaminated with blood, and body fluids such as cotton, dressings, soiled plaster casts, lines, beddings, other material contaminated with blood except waste sharps.
Category 7	Solid Waste	Not Applicable
Category 8	Liquid Waste	Provide the Total Quantity of liquid waste generated from Pathological laboratory , washing, cleaning, house-keeping and disinfecting activities at OHS
Category 9	Incineration Ash	Not Applicable
Category 10	Chemical Waste	Not Applicable

Annexure - 3
Catagorisation of Industries as per CPCB 2012

Sr. No.	Red Cateogry Industry
1.	Airports and Commercial Air Strips
2.	Aluminium smelter
3.	Asbestos and asbestos based industries
4.	Automobiles Manufacturing (Integrated facilities)
5.	Basic Chemicals and electro chemicals acids and its derivatives including manufacture of acids.
6.	Ceramic, Refractories.
7.	Cement
8.	Chlor Alkali
9.	Chlorates perchlorates and peroxides
10.	Chlorine fluorine bromine iodine and their compounds
11.	Coal Washeries
12.	Copper smelter
13.	Coke making lleuefaction coal tar distillation or fuel gas making
14.	Common Treatment and disposal facilities (CETP, TSDF, E-Waste recycling, CBMWTF, Effluent conveyance project, incinerators, Solvent / Acid recovery plant, MSW sanitary landfill sites STP)
15.	Distillery including Fermentation industry
16.	Dyes and Dye-Inrermidates
17.	Dry coal processing/mineral processing industries, Industries Involving ore sintering, palletlsation grinding, pulverization.
18.	Emulsion of oil & water.
19.	Fermentation industry including manufacture of yeast, beer, distillation of alcohol (ENA)
20.	Fertilizer (basic) (excluding formulation)
21.	Ferrous and Non ferrous metal extraction involving different furances through melting refining, reprocessing, casting and alloy making
22.	Fibre glass production and processing (Excluding moulding)
23.	Fire crackers manufacturing and bulk storage facilities
24.	Flakes from rejected PET Bottle.
25.	Fly ash export transport and disposal facilities
26.	Health care establishment (As defined in BMW Rules)
27.	Heavy engineering including Ship Building (With investment on Plant & Machineries more than Rs. 10 Crores)
28.	Hot mix plants
29.	Hotels (3 Star & above) and Hotels having 100 rooms and above
30.	Hydrocyanic acid and its derivatives

31.	Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black
32.	Industrial estates/ parks/ complexes/ areas/ export processing zones/ SEZs/ Biotech parks/ leather complex.
33.	Industrial inorganic gases namely :- a) Chemical gases: Acetylene, hydrogen, chlorine, fluorine, ammonia, sulphur dioxide, ethylene, hydrogen sulphide, phosphine b) Hydrocarbon gases: Methane ethane propane
34.	Industries engaged in recycling /reprocessing/recovery /reuse of Hazardous Waste under schedule IV of Hazardous Waste (M, H&TBM) Rules, 2008 and its amendments
35.	Industry or process involving foundry operations
36.	Industry or process involving metal surface treatment or process such as pickling, plating/ electroplating/paint stripping/heat treatment/phosphating or finishing and anodising/enamelling/ galvanising
37.	Iron and Steel (involving processing from ore) integrated steel plants and or Sponge Iron Units.
38.	Isolated storage of hazardous chemicals (as per schedule of Manufacture, Storage & Import of Hazardous Chemicals Rules 1989 as amended)
39.	Lead acid battery manufacturing (excluding assembling & charging of acid lead battery in micro scaler < Rs. 25 lakhs)
40.	Lime manufacturing (Using Lime Kiln)
41.	Manufacturing of Explosives, detonators, fuses including management and handling activities
42.	Manufacturing of Glass
43.	Manufacturing of Glue and gelatin
44.	Manufacturing of Lubricating oils, greases or petroleum based products
45.	Manufacturing of Paints, Varnishes, pigments and intermediate (excluding blending, mixing)
46.	Manufacturing of Starch/Saggo
47.	Milk processing and dairy products (integrated project)
48.	Mineral stock yards/Railway sidings
49.	Mining and ore beneficiation
50.	New Highway construction projects
51.	Non alcoholic beverage (soft drink) & bottling of alcoholic/non-alcoholic products (capital investment on plant & machinery > Rs. 1 crore)
52.	Nuclear Power Plants
53.	Oil & Gas extraction including CBM (offshore & onshore extraction through drilling wells)
54.	Oil and gas transportation pipeline
55.	Oil Refinery (Mineral Oil or Petro Refineries)
56.	Organic chemicals manufacturing
57.	Parboiled rice mills (more than 10 TPD)
58.	Pesticides (Technical) (excluding formulation)
59.	Petrochemicals (Manufacture of and not merely use of as raw material)
60.	Pharmaceuticals (excluding formulation).

61.	Pulp and Paper (paper manufacturing with or without pulping)
62.	Phosphate rock processing plant
63.	Phosphorous and its compounds
64.	Photographic films and its chemicals
65.	Ports & Harbours Jetties and Dredging Operations
66.	Power Generation Plants [Except Wind, Solar and Mini Hydel Power plants capacity <25 MW) and DG set of capacity> 5 MVA]
67.	Processes involving chlorinated hydrocarbons
68.	Railway Locomotive workshops / Integrated Road transport workshop/ Authorised service centres
69.	Reprocessing of used oils and waste oils
70.	Ship breaking activities
71.	Slaughter houses (As per the notification S.O.270(E) dated 26.03.2001) and meat processing industries, bone mill, processing of animal horns, hoofs and other body parts
72.	Steel and steel products using various furnaces like blast furnaces / open hearth furnace / induction furnace / arc furnace / submerged arc furnace / basic oxygen furnace / hot rolling using reheating furnace
73.	Stone crushers
74.	Sugar (excluding Khandsari)
75.	Surgical and medical products involving prophylactics and latex
76.	Synthetic detergents and soaps (excluding formulation)
77.	Synthetic fibres including rayon tyre cord, polyester filament yarn
78.	Synthetic resins
79.	Synthetic rubber excluding molding
80.	Tanneries
81.	Thermal Power Plants
82.	Tobacco products including cigarettes and tobacco/opium processing
83.	Vegetable oils including solvent extraction and refinery hydrogenated oils
84.	Yarn/textile processing involving any effluent/emission-generating process bleaching, Dyeing, printing and scouring.
85.	Zinc Smelter

Note : 1. Any industry/industrial activity which is not covered in above list having coal fired boiler with steam generation capacity more than 5 T/hr will be covered under Red Category.

SI No.	Green Category Industry
1.	Assembling of Acid lead battery (up to 10 batteries per day excluding lead plate casting)
2.	Aluminium utensils from aluminium circles
3.	Assembly of air coolers/conditioners repairing and servicing
4.	Assembly of bicycles, baby carriage and other small non-motorised vehicles
5.	Automobile fuel outlet (only dispensing)
6.	Ayurvedic and Homeopathic medicine (without boiler)
7.	Baling (hydraulic press) of waste papers
8.	Bakery/Confectionery/Sweets production (with production capacity < 1tpd with oil, gas or electrical oven)
9.	Bio fertilizer & bio-pesticide without using inorganic chemicals
10.	Biomass Briquettes (sun drying without using toxic or hazardous wastes)
11.	Biscuit trays etc. from rolled PVC sheet (using automatic vacuum forming machine)
12.	Blending and packaging of Tea
13.	Blending of melamine resins & different powder, additives by physical mixing
14.	Block making for printing without foundry (excluding wooden block making)
15.	Brass & Bell metal utensils manufacturing from circle (without re-Rolling facility)
16.	Candy
17.	Cardboard or corrugated box and paper products (excluding paper or pulp manufacturing and without using boiler)
18.	Carpentry and wooden furniture manufacturing (excluding saw mill) with the help of electrical (motorized) machines such as electric wood planner, steel saw cutting circular blade etc.
19.	Cement products (without using Asbestos) like pipe, pillar, jafri, well ring, blocks/tiles etc. (should be done under closed covered shed to control fugitive emissions)
20.	Ceramic colour manufacturing (not using boiler and wastewater recycling process)
21.	Chalk making from plaster of paris.
22.	Chilling plant and Ice making without use of ammonia
23.	Coated electrode manufacturing
24.	Compact disc, computer floppy & cassette manufacturing
25.	Compressed oxygen gas from crude liquid oxygen
26.	CO ₂ recovery
27.	Cotton and woolen hosiery making (SSI & Cottage industries)
28.	Cotton spinning & weaving (small scale)
29.	Decoration of ceramic cups & plates by electric furnace

30.	Diesel Generator sets (15 KVA to 1 MVA)
31.	Diesel pump repairing & servicing
32.	Distilled water
33.	Electric lamp (bulb) manufacturing (small scale)
34.	Electrical & electronic items assembling
35.	Flavoured bette nut production/grinding.
36.	Flour mills (drv process)
37.	Fly ash bricks/blocks manufacturing
38.	Fountain pen Manufacturing
39.	Glass ampules & vials making from glass tubes.
40.	Glass putty and sealant
41.	Glass, ceramic, earthen potteries and tile manufacturing using electrical kiln or not involving fossil fuel kilns
42.	Gold and Silver smithy (purification with acid, smelting operation and sulfuric acid polishing peration) (using less than or equal to 1 litre of Sulphuric Acid / Nitric Acid per month)
43.	Groundnut decorticating (dry)
44.	Handloom/Carpet weaving (without dyeing and bleaching Operation)
45.	Hotels (up to 20 rooms)
46.	Insulation and other coated papers (excluding paper or pulp manufacturing) manufacturing
47.	Jobbing and machining
48.	Leather cutting and stitching (more than 10 machines and using motor)
49.	Leather footwear and leather products (excluding tanning and hide processing) (except cottage scale)
50.	Lubricating oils, greases or petroleum based products (only blending at normal temperature)
51.	Manufacturing of coir items from coconut husk
52.	Manufacturing of metal caps, containers etc.
53.	Manufacturing of optical lenses (using electrical furnace)
54.	Manufacturing of pasted veneers without using boiler or Thermic Fluid Heater or sundrying -
55.	Manufactming of shoe brush & wire brush
56.	Manufacturing of silica gel (without furnace)
57.	Medical oxygen
58.	Mineralized water
59.	Oil mill ghani & extraction (no hydrogenation/refining)

60.	Organic and inorganic nutrients (NY Physical mixing)
61.	Organic manure (manual mixing).
62.	Paints and varnishes (mixing and blending) (without ball mill)
63.	Packing of powdered milk
64.	Paper pins and U-clips
65.	Phenyl/Toilet cleaner formulation & Bottling
66.	Reel manufacturing
67.	Polythene & plastic processed products manufacturing (virgin plastics)
68.	Poultry, hatchery, Piggery
69.	Power looms (without dyeing and bleaching)
70.	Printing press
71.	Puffed rice (muri) (using oil, gas or electrical heating system)
72.	Ready mix cement concrete
73.	Reprocessing of waste cotton
74.	Rope (Cotton & Plastic)
75.	Rubber goods industry (with baby boiler only)
76.	Scientific and mathematical instruments manufacturing
77.	Soap manufacturing (Handmade without steam boiling)
78.	Solar module (Non conventional energy apparatus) manufacturing unit
79.	Solar power generation through solar photovoltaic cell, wind power & mini hydel power(< 25 MW)
80.	Spice grinding (<20 HP motor)
81.	Steel furniture without Spray Painting
82.	Steeping and processing of grains
83.	Surgical and medical products not involving effluent/emission generating processes
84.	Synthetic detergent formulation
85.	Teflon based products
86.	Tyres and tubes retreading (without boiler)

Sl. No.	Orange category Industries
1.	Almirah / Grill Manufacturing
2.	Aluminium and copper extraction from scrap using oil fired furnace
3.	Automobile servicing, repairing and painting (excluding only fuel dispensing)
4.	Avurvedic and Homeopathic medicine
5.	Bakery & confectionery units with production capacity> 1 tpd]
6.	Biaxially oriented PP film alongwith metalising operation
7.	Brickfields (excluding fly ash brick manufacturing using lime process)
8.	Building & construction projects more than 20 000 Sq rntr built up area
9.	Cashew nut processing
10.	Chanachur and laddoo from puffed and beaten rice(muri and chira)using husk fired oven
11.	Chilling plant cold storage and Ice making
12.	Coffee seed. processing
13.	Coke briquetting (sun drying)
14.	Cotton spinning and weaving (medium and large scale)
15.	Cutting, sizing and polishing of marble stones
16.	Dairy and dairy products (small scale) (capital investment on plant &: machinery <Rs. 1 crore)
17.	DalMills
18.	DG Set of capacity> 1 MVAbut < 5 MVA
19.	Digital printing on pvc cloth
20.	Dismantling of rolling stocks (wagons / coaches)
21.	Dry cell battery (excluding manufacturing of electrodes) & assembling &: charging of acid lead battery in micro scaler < Rs. 25 lakhs
22.	Emery powder (fine dust of sand) manufacturing
23.	Engineering and fabrication units (With investment on Plant & Machineries < Rs. 10 23 Crores)
24.	Excavation of sand from the river bed (excluding manual excavation)
25.	Facility of handling storage and transportation of food grains in bulk.
26.	Fertiliser (granulation and formulation only)
27.	Fish feed, poultry feed and cattle feed
28.	Fish processing and packaging (excluding chilling of Fish)
29.	Foam manufacturing
30.	Food & food processing including fruits & vegetable processing
31.	Forging of ferrous & non-ferrous metal (using oil or gas fired boilers) -
32.	Formulation/palletization of camphor tablets, naphthalene balls from camphor/naphthalene powders
33.	Glass, ceramic, earthen potteries and tile manufacturing using oil or gas fired kiln, Coating on glasses using cerium fluoride magnesium fluoride etc.
34.	Glue from starch {physical mixing)
35.	Gravure printing, digital printing on flex, vinyl
36.	Heat treatment using oil fired furnace (excluding cyaniding)
37.	Hotels (Less than 3 star) or hotels having> 20 rooms and less than 100 rooms.

38.	Ice cream
39.	Infrastructure development project
40.	Jute processing without dyeing
41.	Liquid floor cleaner, black phenyl, liquid soap, glyserol monostearate manufacturing.
42.	Manufacture of mirror from sheet glass
43.	Manufacturing of iodized salt from crude/raw salt
44.	Manufacturing of mosquito repellent coil
45.	Manufacturing of tooth powder, toothpaste, talcum powder and other cosmetic items
46.	Mechanized laundry using oil fired boiler
47.	Modular wooden furniture from particle board , MDF, swan timber etc, Ceiling tiles/partition board from saw dust,wood chips etc. & other agricultural waste using synthetic adhesive resin wooden box making
48.	Packing materials manufacturing from non asbestos fibre vegetable fibre yarn
49.	Paint blending & mixing (Ball mill)
50.	Pharmaceutical formulation and for R&D purpose (for sustained release/extended release of drugs only and not for commercial purpose)
51.	Plyboard manufacturing (including vineer & laminate) with oil fired boiler/ thermic fluid heater (without resin plant)
52.	Potable alcohol (IMFL) by blending , bottling of alcoholic products (capital investment on plant & machinery < Rs. 1 crore
53.	Power press
54.	Printing ink manufacturing
55.	Printing or etching of glass sheet using hydrofluoric acid
56.	Producer gas plant using conventional up-draft coal gasification(linked to rolling mills glass and ceramic industry, refractories for dedicated fuel supply)
57.	Pulverisation of bamboo and scrap wood
58.	Repairing of electric motor & generator
59.	Reprocessing of waste plastic (excluding PVC)
60.	Rice mill less than 10 TPD &: rice hullers
61.	Rolling Mill (oil or g8S fired) and cold Rolling mill
62.	Saw mill
63.	Seasoning of wood in steam heated chamber.
64.	Silk screen printing. Saree printing by wooden blocks
65.	Spice grinding (> 20 HP motor)
66.	Spray painting, paint baking, paint stripping,
67.	Tamarind powder manufacturing
68.	Tea processing
69.	Thermocol manufacturing
70.	Thermometer making
71.	Transformer repairing/manufacturing
72.	Types and tubes vulcanization/hot retreading
73.	Wire drawing & Wire netting

Annexure - 4

OFFICERS AUTHORISED FOR TAKING COGNIZANCE OF OFFENCES

S.O. 394(E).-In exercise of the powers conferred under clause (a) of section 19 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby authorises the officers and authorities listed in column (2) of the Table hereto for the purpose of the said section with the jurisdiction mentioned against each of them in column (3) of that Table :

TABLE

Serial No.	Officer	Jurisdiction
(1)	(2)	(3)
1.	Any Director, Joint Secretary, Adviser or Additional Secretary to the Government of India in the Department of Environment, Forests and Wildlife.	Whole of India
2.	The Chairman or Member-Secretary of the Central Pollution Control Board constituted under section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974).	Whole of India
3.	The Government of the State (represented by the Secretary to the State Government incharge) of environment.	Whole of the State
4.	The Chairman or Member-Secretary of the State Pollution Control Board constituted under section 4 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or a State Pollution Control Board constituted under section 5 of the Air (Prevention and Control of Pollution) Act, 1981(14 of 1981).	Whole of the State
5.	Collector	Whole of Revenue District
6.	Zonal Officers of the Central Pollution Control Board who have been delegatd powers under sections 20,21,23 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and section 24 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981).	Area as laid down by the Central Board
7.	Regional Officers of the State Pollution Control Board who have been delegated powers under section 20, 21 and 23 of the Water (Prevention and control Pollution) Act, 1974.	Area as laid down by the State Board
8.	Regional Officers of the State Pollution Control Board who have been delegated powers under section 24 of the Air (Prevention and Control Pollution) Act, 1981.	Area as laid down by the State Board
¹ [9.	Any Regional/Zonal Officers or a Director in charge of a Region / Zone of the Ganga Project Directorate	Zonal/Regional area laid down by the Ganga Project Directorate
10.	Any Deputy Secretary, Director, Joint Secretary or Additional Secretary to the Government of India in the Ganga Project Directorate	Whole of the State in which the Ganga Action Plan is under Implementation
² [11.	Joint Secretary (Legal) in the Department of Environment. Forests and Wildlife, Ministry of Environment & Forests, New Delh - 110 003	Whole of India
³ [12.	Chairman or Members Scretary of the Committee notified under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 in respect of Union Territories.	Whole of Union Territory

Note : Principal Notification No. S.O. 394(E), published in Gazette No. 185. Dt. 16.4.1987. Nos. 9 and 10 and entries relating thereto inserted vide S.O. 237 (E). Dt. 29.3.89 published in the Gazette No. 171, Dt. 29.3.89 S.N. 11 and entries relating thereto inserted vide S.O.656(E), Dt. 24.8.1989 published in the Gazette No. 519 dt. 21.8.1989

1. Insereted by S.O.237(E), dated 29.3.1989
2. Insereted by S.O.656(E), dated 21.8.1989
3. Insereted by Notification S.O.624(E), dated 3.9.1996

S.O. 83(E).-In exercise of the powers conferred under sub-section (1) of section 10 ¹[of the Environment (Protection) Act, 1986 (29 of 1986)], the Central Government hereby empowers the persons listed in the Table here below for the purpose of the sub-section.

TABLE

Sl. No.	Officer/Agency	Appointed under
(1)	(2)	(3)
1.	Director General, Factory Advice Service and Labour Institute.	Dock Worker (Safety, Health and Welfare) Act, 1986
2.	Deputy Director General Factory Advice Service & Labour Institute	—do—
3.	Director (Dock Safety)	—do—
4.	Joint Director (Dock Safety)	—do—
5.	Deputy Director (Dock Safety)	—do—
6.	Assistant Director (Dock Safety)	—do—
7.	Additional Assistant Director (Dock Safety)	—do—
8.	Chief Inspector of Factories	The Factories Act, 1948
9.	Additional Chief Inspector of Factories.	—do—
10.	Joint Chief Inspector of Factories	—do—
11.	Deputy Chief Inspector of Factories	—do—
12.	Inspector of Factories	—do—
13.	Controller General of Indian Bureau of Mines.	The Mines & Mineral (Regulation and Development Act, 1957)
14.	Chief Controller of Mines.	—do—
15.	Controller of Mines	—do—
16.	Regional Controller of Mines	—do—
17.	Deputy Controller of Mines	—do—
18.	Port Authority.	The Dock Workers Safety Health & Welfare Scheme, 1961 and Dock Workers Advisory Committee Rules.
19.	Inspector	—do—
20.	Chief Inspector of Plantation	The Plantation of Labour Act, 1951.
21.	Inspector	—do—
22.	Inspector of Dock Safety	The Indian Dock Labourers Act, 1934.

23.	Conservator of Ports.	The Indian Port Act, 1908.
24.	Deputy Conservatory of Ports.	The Indian Port Act, 1908.
25.	Harbour Master	—do—
26.	Director (Marine Department)	The Merchant Shipping Act, 1958.
27.	Manager (Marine Operation)	—do—
28.	Director (Pollution Control)	—do—
29.	State Pollution Control Board and the Officers empowered by State Board under section 21 and 23 of the Water (Prevention and Control of Pollution) Act, 1974 or under section 24 of the Air (Prevention and Control of Pollution) Act, 1981.	The Water (Prevention and Control of Pollution) Act, 1974 and rules made thereunder. The Air (Prevention and Control of Pollution) Act, 1981
30.	Central Pollution Control Board and any officer empowered by the Board under section 23 of the Water (Prevention and Control of Pollution) Act, 1974 or under section 24 of the Air (Prevention and Control of Pollution) Act, 1981.	The Air (Prevention and Control of Pollution) Act, 1981 or the Water (Prevention and Control of Pollution) Act, 1974 and rules made thereunder.
31.	State Transport Authority.	The Motor Vehicles Act, 1939.
32.	Regional Transport Authority	—do—
33.	Any other authority or person delegated with powers by the State Transport Authority under the provisions of section 44(5) of the Motors Vehicles Act, 1939.	—do—
34.	Food (Health) Authorities in the State/Union territory or such other subordinate or local authorities as may be specified under the provisions of the Prevention of Food Adulteration Act, 1955 for the time being.	The Prevention of Food Adulteration Act, 1955 and Rules made thereunder.
35.	Food Inspector.	The Prevention of Food Adulteration Act, 1955 and Rules made thereunder.
36.	The Atomic Energy Regulatory Board.	The Atomic Energy Act, 1972.
37.	Drug Controller of India	The Drugs & Cosmetics Act, 1940
38.	Commissioner for Food and Drug Administration or any authority incharge of State Drug Control Administration.	The Drugs & Cosmetics Act, 1940
39.	Drug Inspector	—do—
40.	Chief Controller of Explosives	The Explosives Act, 1884 and the Explosives Rules, 1983.
41.	Joint Chief Controller of Explosives	—do—
42.	Deputy Chief Controller of Explosives	—do—
43.	Controller of Explosives	—do—

44.	Licenisg Officer	The Insecticides Act, 1968.
45.	Insecticides Inspector	—do—
46.	Chief Controller of Explosives	The Petroleum Act, 1934.
47.	Deputy Chief Controller of Explosives.	—do—
48.	Controller of Explosives.	—do—
49.	Deputy Controller of Explosives	—do—
50.	Assistant Controller of Explosives	—do—
51.	Inspector.	—do—
52.	Chief Inspector of Boilers	The India Boilers Act, 1923.
53.	Deputy Chief Inspector of Boilers	—do—
54.	Inspector of Boilers.	—do—
55.	Director General of Shipping	Merchant Shipping Act, 1958.
56.	Surveyor	—do—
57.	Director General (TD) or his nominee not below the rank of Development Officer.	Industrial (Development and Regulation) Act, 1951
58.	Chairman & Director Gerenal, National Council for Cement and Building Materials or his nominee not below the rank of Programme leader.	—do—
59.	Office appointed under the Bengal Smoke Nuisance Act, 1905	The Bengal Smoke Nuisance Act, 1904
	The Bombay Smoke Nuisance Act, 1912 and	The Bombay Smoke Nuisance Act, 1912 and
	The Gujarat Smoke Nuisance Act, 1963	The Gujarat Smoke Nuisance Act, 1963
¹ [60.	Chief Inspector of Mines Safety	The Mines Act, 1952 and the rules and regulations made thereunder]
² [61.	Chairman of the Committee in respect of Union Territories	The Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981
62.	Member Secretary of the Committee in respect of Territories	The Water (Preveation and Control of Pollution) Act, Union 1974 and the Air (Prevention and Control of Pollution) Ac t, 1981]

The words “of the Environment (Protection) Act, 1986 (29 of 1986)” inserted vide corrigendum No. S.O. 238(E) dated 26-3-87 published in the Gazotic No. 129 dated 26.3.87.

S.O. 84(E)—In exercise of the powers conferred under sub-section (i) of section 11 ³[of the Environment (Protection) Act, 1986 (29 of 1986)], the Central Government hereby empowers the persons listed in the Table here below for the purpose of the sub-section.

TABLE

S. No.	Officer/Agency	Appointed under
(1)	(2)	(3)
1.	Director General, Factory Advice Service and Labour Institute Institute.	Dock Worker (Safety, Health and Welfare) Act, 1986
2.	Deputy Director General Factory Advice Service & Labour Institute	Dock Worker (Safety, Health and Welfare) Act, 1986
3.	Director (Dock Safety)	—do—
4.	Joint Director (Dock Safety)	—do—
5.	Deputy Director (Dock Safety)	—do—
6.	Assistant Director (Dock Safety)	—do—
7.	Additional Assistant Director (Dock Safety)	—do—
8.	Chief Inspector of Factories	The Factories Act, 1948
9.	Additional Chief Inspector of Factories.	—do—
10.	Joint Chief Inspector of Factories	—do—
11.	Deputy Chief Inspector of Factories	—do—

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1. Principal Notification published vide S.O. No. 83(E) Dt. 16.2.87 and S. No. 60 and entries relating thereto inserted vide S.O.63(E) published in Gazette No. 42 Dt. 18.1.88.
 2. Sl. No. 61 and 62 and entries relating thereto inserted vide S.O.622(E), Dt. 3.9.1996
 3. The Words “of the Environment (Protection) Act, 1986, (29 of 1986)” inserted vide corrigendum No. S.O. 239(E) Published in the Gazette No. 129 dt. 26.3.87.