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Compliance report of CEPI Action Plan
NAVI MUMBAI
As on 22/01/2015

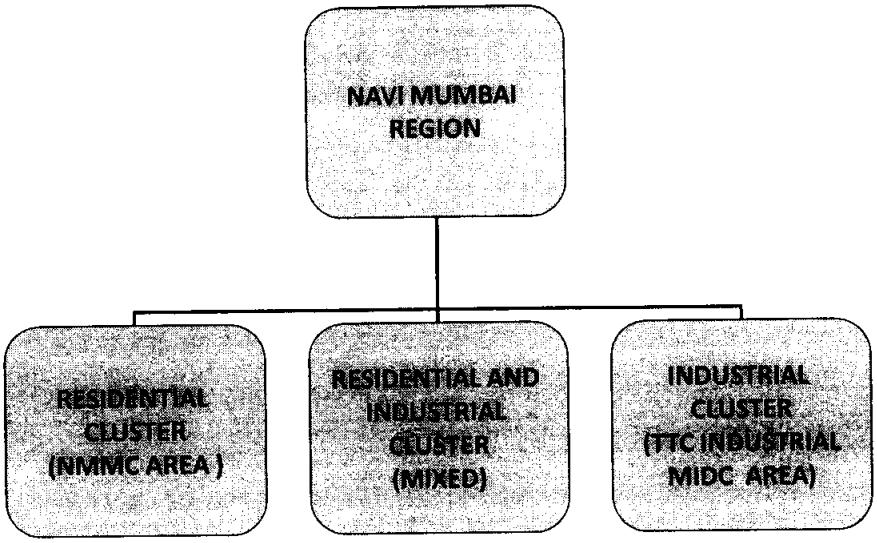
MAHARASHTRA POLLUTION CONTROL BOARD

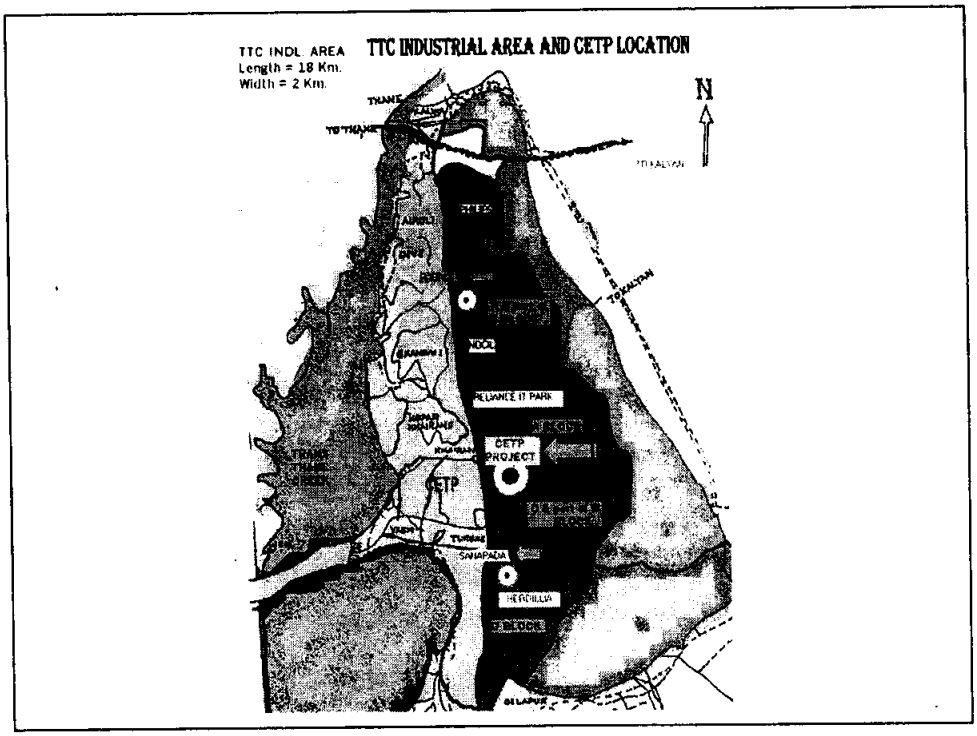
www.mpcb.gov.in

Chronology order of CEPI – Navi Mumbai

Sr.No.	Date	Details	Location of the meeting
1	Dec-2009	CPCB/MoEF Published CEPI	--
2	July-2010	Preparation of Tentative Action plan	--
3	Aug-2010	Issued letters to Organizations	--
4	Sept-2010	Issued letters to Industries	--
5	Oct-2010	Reply received from most of the Stake Holders	--
6	Oct-2010	Submitted 1st Compliance Report	--
7	Nov-2010	Preparation of Final Action plan	--
8	4th & 5 th Feb-2011	Arranged CEPI Review Meeting with Industries & Organizations	Conference Hall at Raigad Bhavan, CBD Belapur
9	10 th May-2011	Review Meeting	CETP – Khairane
10	24 th Jan-2012	Review Meeting	TTCWMA – Mahape
11	29 th May-2012	Review Meeting	NMMC MSW Site – Turbhe
12	14 th Dec-2012	Review Meeting	CETP – Khairane
13	June-2013	Present Status Report on CEPI Action Points Submitted CPCB	--

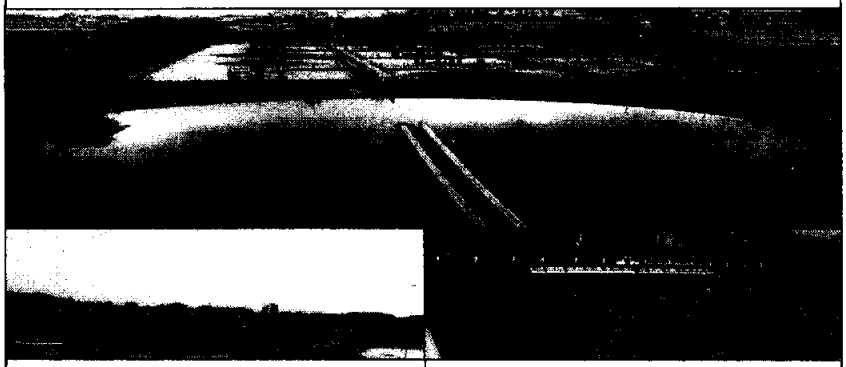
Core Sector of Navi Mumbai Region





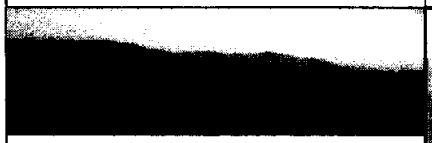
INFRASTRUCTURE IN NAVI MUMBAI REGION

COMMON EFFLUENT TREATMENT PLANT – AT TTC-MICD KHAIRANE

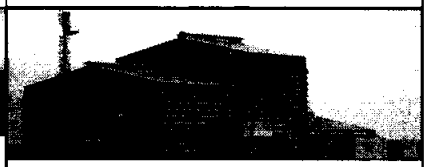


MUNICIPAL SOLID WASTE TREATMENT FACILITY AT TURBHE

SEWAGE TREAMENT PLANTS AT VARIOUS LOCATION

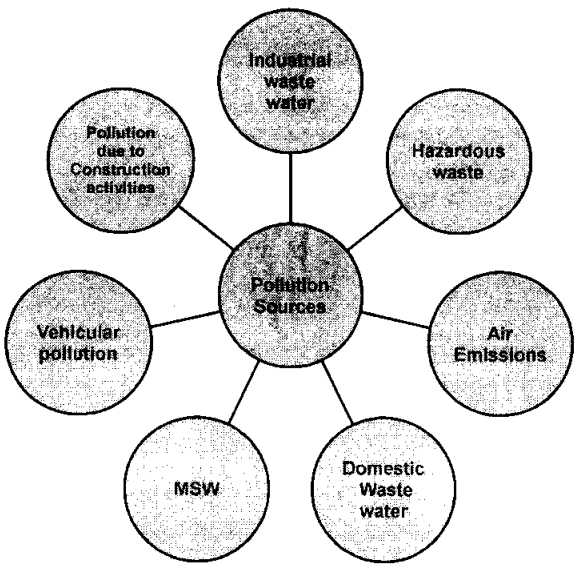


COMMON HAZARDOUS WASTE TREATMENT FACILITY AT MAHAPE

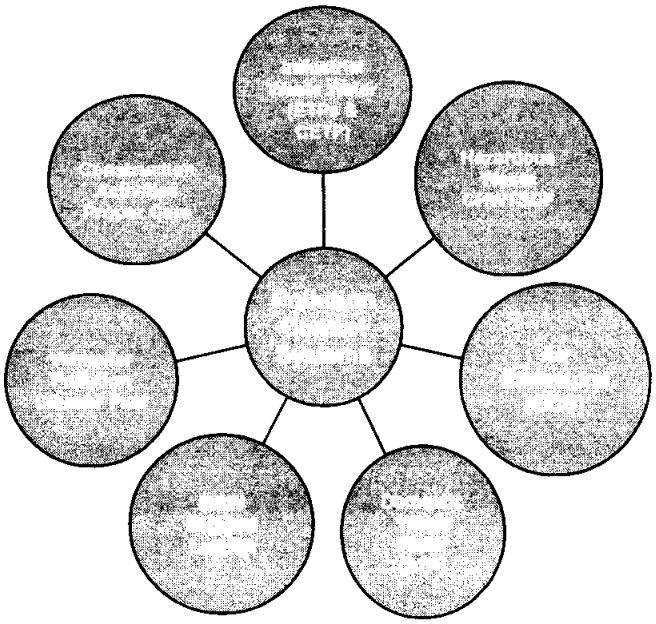


INCINERATOR AT TALOJA

POLLUTION SOURCES



POLLUTION CONTROL SYSTEMS



INDUSTRY STATISTICS

Category	LSI	MSI	SSI	TOTAL
RED	44	27	549	620
GREEN	5	7	2091	2103
TOTAL	69	47	2529	3192

AMBIENT AIR MONITORING STATIONS

1. Fire Brigade Compound, Vashi – CAAQMS
2. Fire Brigade Compound, Airoli – CAAQMS
3. Dr.D.Y Patil College Building, Nerul – Two days in a week
4. Datta Meghe College Building, Airoli – Two days in a week
5. Central Lab Building, MPCB, Mahape – Two days in a week
6. NMMC has installed one more CAAQM Station at MSW Site Turbhe & Work of CAAQM Station at KoparKhairane is in process.

Average results of Ambient Air Qaulity Monitored in Navi Mumbai

Ambient Air Quality Monitored at Vashi			
Location :Fire Brigade compound, Vashi.		Type :Residential	
Program Name :CAAQMS		Status :In operation	
Period	SO2	NOx	RSPM
	µg/m^3	µg/m^3	µg/m^3
Standards	80	80	100
Jan-2014 to Dec 2014	43.96	59.33	169.75
Jan-2013 to Dec 2013	22.50	43.74	85.66
Jan-2012 to Dec-2012	22.67	53.63	103
Jan-2011 to Dec-2011	18.35	47.53	112
Jan-2010 to Dec-2010	19.61	49.21	81.93

Ambient Air Quality Monitored at Airoli			
Location :Airoli fire station		Type :Rural & other Areas	
Program Name :CAAQMS		Status :In operation	
Frequency:Continuous Monitoring			
Period	SO2	NOx	RSPM
	µg/m³	µg/m³	µg/m³
Standards	80	80	100
Jan-2014 to Dec 2014	17.82	37.30	33.17
Jan-2013 to Dec 2013	35.04	45.43	**130.26**
Jan-2012 to Dec-2012	17.02	59.6	**139.7**
Jan-2011 to Dec-2011	21.35	69.62	**160.1**
Jan-2010 to Dec-2010	23.31	81.47	**139.5**

Ambient Air Quality Monitored at Nerul						
Location :Dr.D.Y. Patil College Building Nerul					Type :Residential	
Program Name :NAMP					Status :In operation	
Frequency:Two days in a week						
Concentration of Pollution						
Sr.No.	Date	SO2	NOx	RSPM	SPM	PM2.5
		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
Standards		80	80	100	200	60
Jan-2014 to Dec - 2014		16.82	37.83	**143.22**	**308.41**	--
Jan-2013 to Dec - 2013		16.35	42.01	**101.20**	**185.56**	--
Jan-2012 to Dec-2012		15.1	39.9	**100.7**	**213.7**	--
Jan-2011 to Dec-2011		15.31	42.56	**130.7**	**315.6**	--
Jan-2010 to Dec-2010		13.59	33.19	**89.99**	**188.9**	--

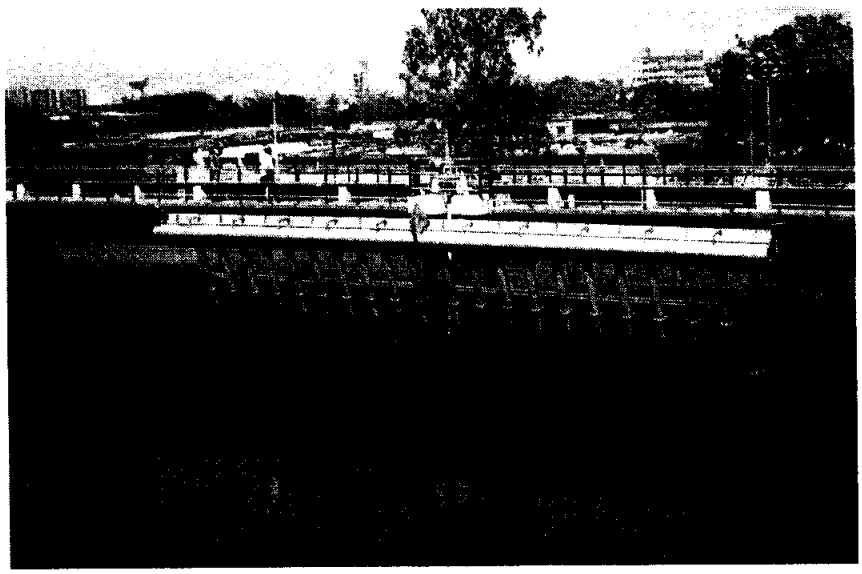
Ambient Air Quality Monitored at Rabie						
Location :T.B.I.A, Rabale						Type :Rural & other Areas
Program Name :NAMP						Status :In operation
Frequency:Two days in a week						
Concentration of Air Poliutants						
Sr.No.	Date	SO2 µg/m³	NOx µg/m³	RSPM µg/m³	SPM µg/m³	PM2.5 µg/m³
Standards		80	80	100	200	60
Jan-2014 to Dec - 2014		18.26	39.94	143.94	290.08	--
Jan-2013 to Dec - 2013		18.68	45.67	73.37	113.90	--
Jan-2012 to Dec-2012		17.95	45.8	89.72	182.1	--
Jan-2011 to Dec-2011		18.9	46.86	111.9	262.2	--
Jan-2010 to Dec-2010		22.71	41.82	105.3	217.2	--

Ambient Air Quality Monitored at MPCB-Nirmal Bhavan, Mahape						
Location :Central lab Building, MPCB Navi Mumbai						Type :Industrial
Program Name :NAMP						Status :In operation
Frequency:Two days in a week						
Concentration of Air Poliutants						
Sr.No.	Date	SO2 µg/m³	NOx µg/m³	RSPM µg/m³	SPM µg/m³	PM2.5 µg/m³
Standards		80	80	100	200	60
Jan-2014 to DEC - 2014		17.98	39.35	154.72	310.50	--
Jan-2013 to DEC - 2013		17.97	45.62	165.49	309.76	--
Jan-2012 to Dec-2012		17.42	44.37	120.3	265.7	--
Jan-2011 to Dec-2011		17.75	44.89	110.5	246.9	--
Jan-2010 to Dec-2010		23.58	42.98	100.5	227.7	--

SEWAGE TREATMENT PLANTS IN NAVI MUMBAI

Sr. No.	Node	Capacity in MLD	Treatment Type	Final Disposal
1	CBD Belapur, Sector -12	21.00	C-Tech (SBR)	Creek
2	Nerul, Sector- 2	17.00	Aerated Lagoon	Creek
3	Nerul, Sector -50	100.0	C-Tech (SBR)	Creek
4	Vashi, Sector -18	100.0	C-Tech (SBR)	Creek
5	Sanpada, Sector- 20	37.50	C-Tech (SBR)	Creek
6	Airoli, Sector- 18	80.0	C-Tech (SBR)	Creek
7	Koper Khairane, Sector-5	87.5	C-Tech (SBR)	Creek
8	Ghansoli, Sector (Operated by CIDCO)	30.0	C-Tech (SBR)	Creek
Total Capacity		**473 MLD**		

SEWAGE TREATMENT PLANT C-TECH TECHNOLOGY

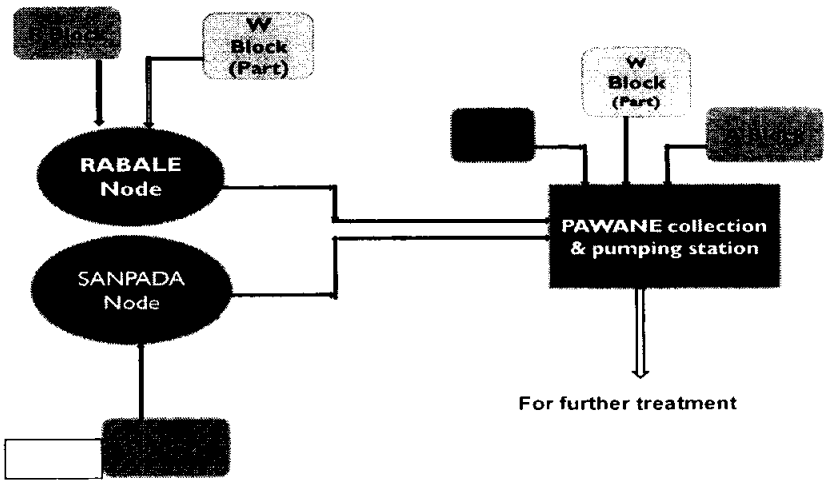


ANALYSIS REPORT OF SEWAGE TREATMENT PLANT

Location	pH	BOD	COD	SS	O & G
STP, Sec.-02, Nerul, Navi Mumbai	7.08	26.5	64	32.5	BDL
STP, Sec.-18, Vashi, Navi Mumbai	7.3	9.8	40.8	15.6	BDL
STP, Sec.-20, Sanpada, Navi Mumbai	6.9	23.75	62	43.5	BDL
STP, Sec.-50, Nerul, Navi Mumbai	7.58	6.5	24.8	13.6	BDL
STP, Sec.-12, CBD Belapur, Navi Mumbai	7.15	8	32	14.5	BDL
STP, Sec-14, Koperkhairane, Navi Mumbai.	6.9	34.4	104.0	28.0	BDL
STP, Sec-18, Airoli, Navi Mumbai	7.4	12.5	42.0	14.0	BDL
STP, Sec-14 & 15, Ghansoli, Navi Mumbai	7.1	6.2	24.0	12.5	BDL
As on Dec 2014					

COMMON EFFLUENT TREAMENT PLANT

Effluent Transfer Network System



Details of CETP

Sr. No	Units	12 MLD Plant	15 MLD Plant
		Unit Capacity in CuM	Unit Capacity in CuM
1	Equalization Tank	2375*2Nos.	2,500*2Nos.
2	Inlet Chambers	8	10
3	Flash Mixer	6	10
4	Clariflocculator	1,716	1,980
5	Aeration Tank	15,500	16,000
6	Clarifier	2643	3200
7	Sludge Sump	70	125 (2 Nos.)
8	Thickner	280	310 (2 Nos.)
9	Filtrate Sump	45	160
10	Sludge Drying Beds	400 Sq. Mt.*7 Nos.	-----
11	Centrifuge Decanter (15 CuM/hr)	1 Nos.	2 Nos

Recent modification in CETP

1. Installed & Commissioned of pH meters, Flow meters & DO meters at the outlet and a Digital Data Logger for online monitoring of its parameters.
2. Installed & Commissioned 2 Nos. 20 HP AIRE-02 TRITON process / Mixer aerators in the aeration tank in order to further improve the efficiency of aerobic treatment.
3. Installed & Commissioned Central Control Panel (Mimic Panel) for the plant operators to monitor the functioning of all unit operations from one place and exercise adequate control.
4. In order to upgrade and meet the analytical competency, Installed Online TOC Analyser for continuous monitoring of quality of treated effluent.
5. Laboratory up gradation such as complete Microbiological laboratory set up comprising of Microscope with the high pixel Camera, bigger computer screen, BOD incubator & Autoclave machine etc. is installed to continuously monitor the health of biological bio mass / process.

Recent modification in CETP

6. Installed of CCTV Cameras at various points at the plant process in order to monitor the operations closely.
7. Installed a pilot plant of 2000 ltrs. for Bio gas generation by feeding biological sludge with small amount of kitchen waste.
8. Installed & Commissioned Solar PV system of 2.4 KWP.
9. Extension of existing Admin. Building for lab up gradations and training facilities.
10. Mono belt filter installation for more efficient solution of ETP sludge.
11. In addition to the above, replacement of effluent transfer Pumps & Motors, aerators & Gear boxes etc. are carried out as per the operational need.
12. Actuator valve with timer has already been installed at the Clariflocculator and Secondary clarifier in the first week of May, 2011.
13. Alarm system (hooters) have been installed at clariflocculators & clarifiers.

COMMON EFFLUENT TREATMENT PLANT

NWMP STATIONS (MINARS) SURFACE WATER MONITORING

- There are two Surface Monitoring Stations monitored under NWMP.

1. Vashi Creek at Vashi Bridge

2. Vashi Creek at Airoli Bridge

Waste Management

MSW :

- Total MSW generation 550 MT/D.
- Landfill site is operational since January 2005.

BMW :

- MWML at Taloja has established a bio medical waste facility for disposal of BMW wastes is operational since 2003.

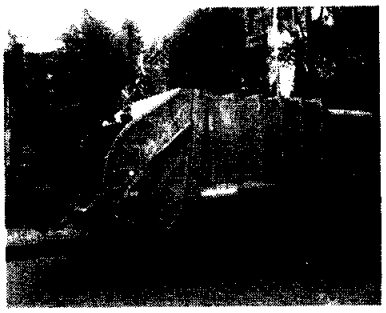
Collection & Transport

Implementation of MSW master plan in a phased manner.

Outsourcing contracts for 100 % sweeping, door to door garbage collection and transportation.

Separate collection system for construction and demolition waste to dispose at abandoned stone quarries.

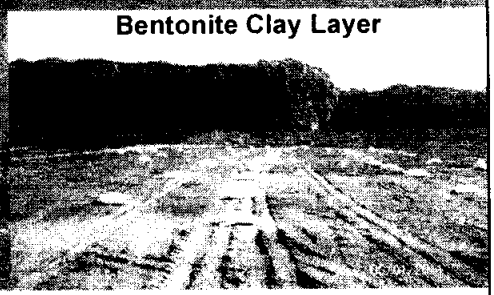
100 % collection and disposal of Bio-Medical waste at centralized treatment facilities.



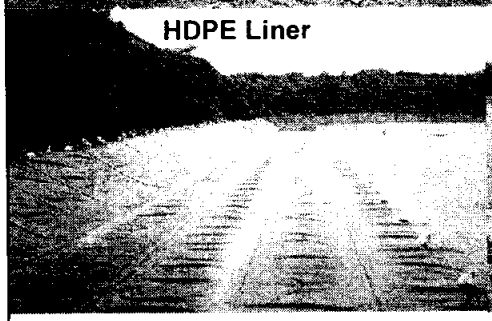
MSW Scenario

Initial condition of MSW site

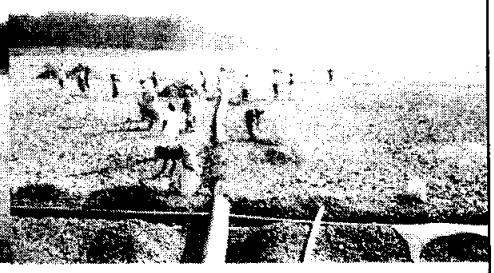
Bentonite Clay Layer

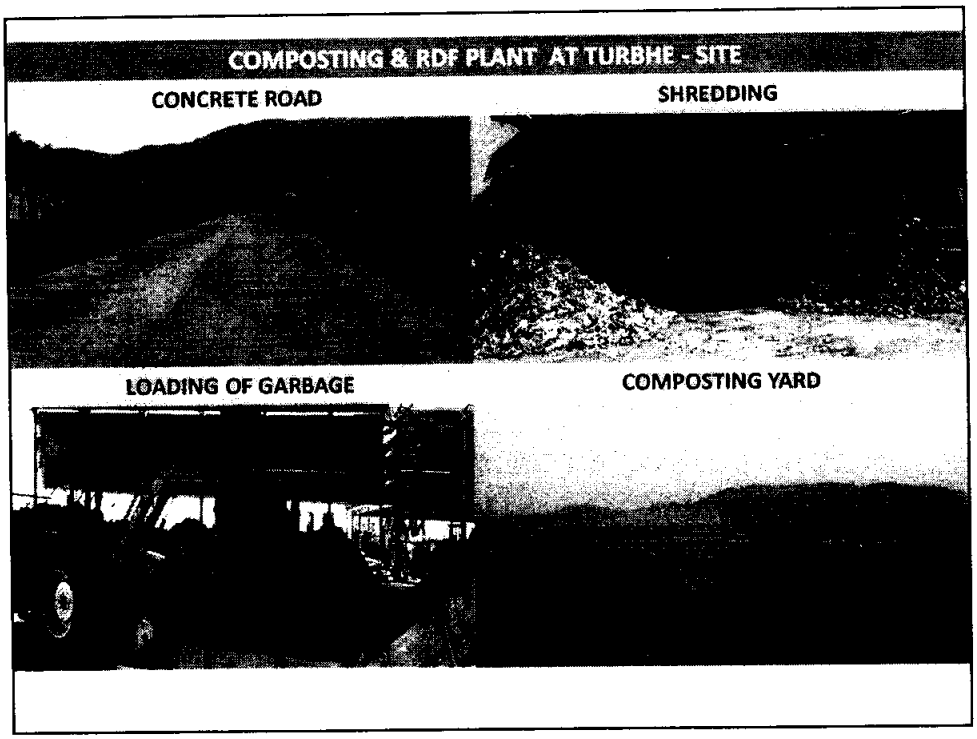


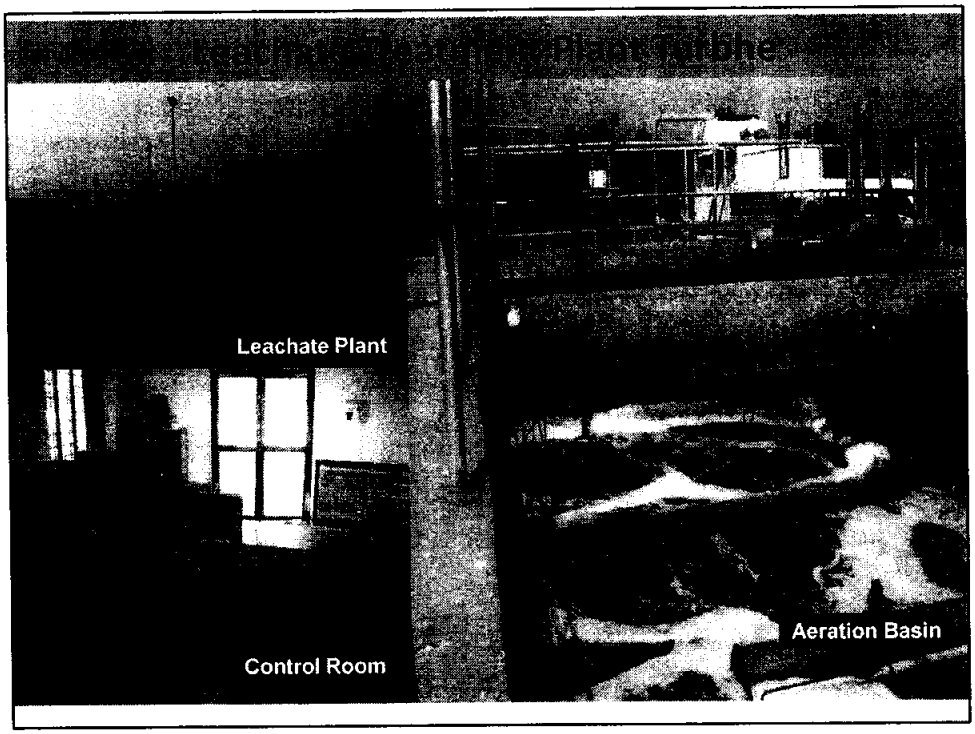
HDPE Liner



Filter Media & HDPE Pipe Network




COMPOSTING & RDF PLANT AT TURBHE - SITE
CONCRETE ROAD
SHREDDING
LOADING OF GARBAGE
COMPOSTING YARD


Leachate Plant
Control Room
Aeration Basin

Material Balance Sheet

Municipal Solid Waste Received 500 TDP

20-25 % RDF 125 TPD	20 % Compost 100 TPD	5 % Recyclables 25 TPD (Plastic,metal, glass)	25 % Rejects to SLF 125 TPD	5 % Inerts to eco Paver Blocks 25 TPD (Sand,debris,stones, etc.)	20-25 % Moisture

Common Hazardous Waste Treatment Storage Disposal Facility

- Mumbai Waste Management Limited
  - Secured landfill :- **1,20,000 MT/Y**
  - Incinerator :- **20,000 MT/Y**
- Trans Thane Creek Waste Management
  - Secured landfill :- **10,000 MT/Y**

Major Closed Industries

Textile	-	**17**
Petrochemical	-	**01**
Pesticide	-	**01**
Bulk Drugs	-	**04**
Dyes	-	**04**
Other	-	**30**
Total	-	**57 industries are closed.**

REDUCTION IN POLLUTION DUE TO CLOSED INDUSTRIES

- About 57 major polluting industries are closed.
- Reduction in Pollution Load due closed industries
  - BOD Reduction 800.49 T/A
  - COD Reduction 1855.59 T/A
  - SO2 Reduction 17300.50 T/A
  - Hazardous Waste 14926.10 T/A

IMPROVEMENT IN POLLUTION STATUS DUE TO CHANGE IN FUEL PATTERN

- About 16 industries have started using Natural Gas as fuel (PNG).
- 11 industries are major consumers
- 5 industries are minor consumers

  - SO2 Reduction 576.70 T/A

IMPROVEMENT IN POLLUTION STATUS

- BOD Reduction 14.90 T/A
- COD Reduction 86.20 T/A
- SO2 Reduction 780.70 T/A

- Implementation of CEPI Action Plan by improvement of Environmental Pollution Control System has resulted in Reduction of Pollution Load
- This has resulted in low pollution levels & hence improvement in CEPI status.
- Use of CNG for industrial and transportation already started

Action Plan

- MPCB has given directions to all industries under CEPI for improvement in Environmental Quality by way of up gradation of pollution control system.
- Most of the industries have responded well and submitted proposals of up gradation of pollution control system.
- M/s Mahanagar gas ltd. has started laying down gas pipeline. All the industries will be proposed to use natural gas.

Status

- Many chemical and other industries are closing and new IT parks , Residential towers are coming up.
- Major cities are connected by road to Navi Mumbai, main source of Air pollution due to vehicles
- In TTC industrial area , CETP and CHWTSDF are operating satisfactorily.
- 3 CAAQMS and three NAMP stations located shows generally good ambient air quality.

Major Issues in TTC MIDC Area

- MIDC has not laid down drainage network in some parts i.e. Digha, Airoli.
- Incidence of leakage of effluent due to breakage of pipeline.
- Overflow of MIDC chambers.
- Unloading of debris along the roads in MIDC area.
- Overflow of CETP collection chamber particularly during heavy rain.
- NMMC has not provided drainage system for Slum pockets in MIDC area.
- Internal Road conditions.
- In adequate & Improper operation of ECS & ETP by industries.

Expenditure as on date towards compliance of CEPI Acition Plan

Sr.No.	Action Points	Cost Incurred for last one year in (Rs.Cr.)
1	Performance Evaluation of CETP	2.64
2	Up gradation of STPs at Sanpada, Koparkhairane, Belapur.	147
3	Leachate Treatment Plant at MSW Site	3.46
4	RDF Plant at MSW Site	35
5	Up gradation of MSW Site as per NEERI recommendations	20
6	Development of Green belt by MIDC and TBIA	4.5
7	Development of Green belt by individual industries	2
8	Development of Green belt and Gardens by NMMC	15
9	Development of Internal Roads in MIDC	21
10	Internal Roads in Residential Area	50
11	Concreting of Thane Belapur Road	80
12	Over Bridges at various places	100
13	Up gradation of individual ETPs/ECS	18.50
14	PNG Stations and Pipeline in MIDC area	40
15	PNG Stations and Pipeline in Residential area	50
16	Converting Buses/Auto Rikshaws to CNG	10
17	New CAAQM Station by NMMC at MSW Site	0.835
	Total Expenditure Incurred	**599.935**

CEPI Score

Ind Cluster	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	Air CEPI	CEPI Score
Navi Mumbai as on Dec 2014	4.000	5.00	20.0	3.00	0.00	0.00	3.00	3.00	10.00	0.00	3.00	5.00	31.00	40.00
	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	Water CEPI	
	2.00	5.00	10.0	3.00	0.00	0.00	3.00	3.00	1.50	0.00	4.50	5.00	22.50	
	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	Land CEPI	
	2.00	5.00	10.0	3.00	0.00	0.00	3.00	5.00	1.50	5.00	12.50	5.00	35.50	

CEPI Score

Description	Year	Score
As per CPCB	2009	73.77
As per MPCB	2010	47.01
As per MPCB	2013	46.69
As per MPCB	2014	40.00

Conclusion

- In TTC industrial area , CETP is operating satisfactorily.
- Many chemical and other industries are closed and new IT parks , Residential towers are coming up.
- 3 CAAQMS and three NAMP stations located show generally good air quality except SPM.
- It seems from the monitoring & up-gradation carried out by the industries, the pollution load is drastically reduced.

SAVE ENVIRONMENT SAVE LIFE

THANK YOU