ગુજરાત પ્રદૂષણ નિયંત્રણ બોર્ડ
પર્યાવરણ ભવન, સેક્ટર-૧૦-એ, ગાંધીનગર ૩૮૨૦૧૦

GPCB

GUJARAT POLLUTION CONTROL BOARD
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Dr. K. U. Mistry
Chairman

1718/cab 2015

2229/MSIC 20-5-13

By R.P.A.D.

D.O. No. GPCB/P-1/14(5)/146481
Date : 10 MAY 2013

Dear Shri Tyagiji,

Sub : Lifting of moratorium from CEPI Areas

Ref : This Office letter No : GPCB/P-1/14/90172 dated 26/08/2011 and other presentations.

In continuation to above referred letter and presentations at Delhi, implementation of the Action Plan and progress made thereof particularly for three clusters in Gujarat namely Ankleshwar, Ahmedabad and Vatva are very vigorously persuaded and State Level Committee is reviewing the same. We enclose herewith a detailed compliance report on implementation of the Action Plan for three CEPI areas where moratorium is still continued.

You may appreciate that Ankleshwar has shown tremendous progress and several industries including CETPs have been upgraded through EMS at the cost of many crores rupees. It is pertinent to note that for CEPI calculation, analytical results, of surface water recipient bodies are to be taken into consideration. In Ankleshwar, sample taken at FETP outlet is not a representative sample for calculation of CEPI as receiving body is deep sea. You are also aware that report prepared by CSMCRI Bhavnagar and NIO Goa both GoI institutions have certified that there is no major impact on marine culture due to discharge of treated effluent from FETP through pipeline into deep sea. The issue has been brought to the notice of CPCB from time to time. In line with Ankleshwar, Ahmedabad and Vatva clusters have also upgraded their EMS including putting up of Multi Effect Evaporator (MEE), spray dryers, electrolysis plants, ESPs, bag filters, bioreactors etc.

Incidentally, team of CPCB has recently carried out monitoring and sampling of CEPI area of Vapi, Ankleshwar, Ahmedabad and Vatva and the results are awaited.

You are aware that:

(1) Significant reduction in water and air pollution has been achieved in above CEPI areas.

(2) The area has suffered a significant loss of production, employment and government revenues resulting ultimately to national growth.

(3) There cannot be the same norm for on land or estuary discharge and deep sea marine discharge. Otherwise, it will become meaningless to lay costly onshore and offshore pipeline extended up to deep sea and to run the pipeline by running pumps and motors and consuming heavy electricity requiring burning of fuel and increasing air pollution. In this regard, you are also aware that **for Ankleshwar FETP outlet, previous COD norm of 500 mg/l has been reduced to 250 mg/l i.e. equal to on land/estuary discharge since1st July 2010** If the same norm is to be achieved on land, it is necessary to stop heavy recurring expenditure of running the pipe conveyance and simultaneously to damage the air environment. Will you permit us to do this?

(4) You also know that if any industry is found polluting, we issue closure order for some time and after observing compliance and undertaking for further compliance, we revoke the closure order and allow that industry to restart and give opportunity to make new efforts so that production and pollution control, both the activities, continue together. Same philosophy and approach should be adopted in lifting long lasting moratorium.

(5) Now, further extension of monitoring will certainly cause very serious impacts on developing State and developing nation.

Therefore, considering above facts, please lift the moratorium from Ankleshwar, Vatva and Ahmedabad and allow the industrial growth with continuing efforts to reduce pollution. We assure you to continue our efforts to bring down the pollution from the current status as we have brought it down during last three years. Pollution reduction is ongoing process and we assure to adhere to it.

With regards,

Yours,

Encl: As above

(Dr. K. U. Mistry)

To,
Shri Ajay Tyagi
Chairman
Central Pollution Control Board
Parivesh Bhavan, East Arjun Nagar
New Delhi – 110 032.

CEPI ACTION PLANS

GUJARAT

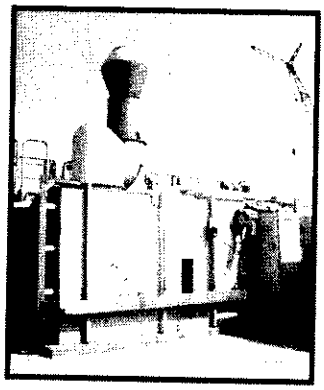
ANKLESHWAR
VATVA
AHMEDABAD
VAPI
BHAVNAGAR
JUNAGADH

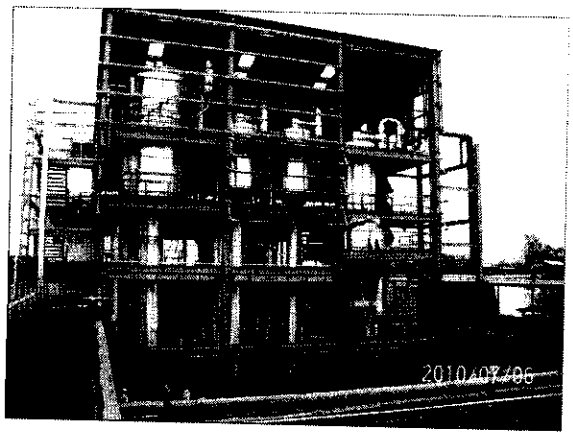
CEPI ACTION PLANS

GUJARAT

ANKLESHWAR

Status of Implementation of Comprehensive Environmental Pollution Abatement Action Plan for Ankleshwar Industrial Cluster as on 31/03/2013





Gujarat Pollution Control Board

12.Summary of proposed action points:

12.1. Short Term Action Points (upto 1 year, including continuous Activities)

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
WATER				
1	Standard flow meter at final outlet of ETP	Identification of units having effluent **quantity >= 25m3/day**.	***30.11.2010***	**Completed within time limit.**
		Industrial Association will issue the circular to their member to provide the Standard flow meter. GPCB will also issue notice to such units.	***30.11.2010***	**Completed before time limit.**
		Standard flow meter required to install at final outlet of ETP by units having effluent discharge **quantity >= 25 m3/day**.	***31.12.2010***	**Completed within time limit.** List of industries with Magnetic / Standard flow meter at final outlet of ETP is attached herewith. **(Annexure – A).** List of industries who are directly connected with the underground network is attached herewith. **(Annexure – A1).**
2	Water consumption from non permitted sources (eg. Borewell, tanker etc.) or more than permitted quantity	Identification of source of water i.e. tanker, bore well etc. for its authenticity. Industry shall have only one source of water.	31.8.2010	**Completed within time limit.**
		Issue direction to stop the unauthorized use of water by the industries.	31.10.2010	**Completed within time limit.**
		Direction to seal the non permitted bore well, tankers	31.12.2010	**Completed within time limit.**
3	Sealing of unauthorized discharge other than regular discharge	Concerned authority will be asked to identify unauthorized outlet.	Ongoing process and will be made more vigorous	**Completed within time limit.**
		All industrial units will be asked to submit notarized undertaking to GPCB with a copy to respective association stating that there is no unauthorized outlet.	31.8.2010	**Completed within time limit. Copy of Notarized under taking is attached as Annexure – C**

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
4	zero discharge unit – not to have drainage connection or any outside discharge.	Inventorisation of the units having consent under Water Act for zero discharge.	31.7.2010	**Completed within time limit. List attached as Annexure – D.**
		Review the condition specifically for zero discharge condition	30.9.2010	**Completed.**
		Drainage connection to be disconnected of zero discharge units and certified by GIDC/ BEAIL and checked by GPCB.	30.9.2010	**Completed.**
		All zero discharge industrial units will be asked to submit notarized undertaking to GPCB with a copy to respective association stating that there is no unauthorized outlet and observing zero discharge.	30.9.2010	**Completed.**
5	Identification of unauthorized connection to BEAIL pipeline	Unauthorized connection in BEAIL pipeline to be checked and disconnected by competent authority and verified by GPCB.	Ongoing process	**Complied.** (During vigil checking, GPCB had identified 7 ghost connections in GIDC, Ankleshwar underground drainage system).
		Third party monitoring is to be carried out	Ongoing process	**Complied.** (TIFAC-CORE-SCET, Surat had been awarded a work of monitoring as an independent third party monitoring agency and is presently also functioning. Expense incurred on this since May 2010 to Feb 2013 is Rs. 315.35 Lakhs. Additionally, GEMI has also started functioning 25/09/2012 and expense incurred till Feb 2013 is Rs. 24.91 Lakhs.).
6	Identification of non-biodegradable / high COD and/or high NH3-N containing effluent	Identification of industrial units having high pollution potentiality with regard to COD and/or NH3-N and to ask such industries to submit time bound action plan for its treatment along with financial outlay.	31.8.2010	**Identification Completed and work of installation of subsequent New EMS also completed except for Aventis Pharma Limited which is under progress and near completion.** **Note :** So far, identified industries have invested about Rs. 302 Crores and work of around Rs. 26 Crores is under progress **(Total 328 Crores)** for upgradation of their EMS. Collective cost of operation of these new EMS adopted by various industries is around Rs. 1500 Lakhs per month. **(Annexure – E)**

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
		Identification of the streams having Non-biodegradable effluent containing refractory COD, toxicants like Ammonical Nitrogen where treat ability not possible/difficult/techno-economically not viable.	31.8.2010	**Identification Completed and work of installation of subsequent New EMS also completed except for Aventis Pharma Limited which is under progress and near completion.** **MEE** : 51 industries including non-identified industries have commissioned their MEEs and 06 under installation / commissioning. Thus, total 56 industries have installed 66 numbers of MEEs. **(Annexure – F)** **RO** : 35 industries including non-identified industries have commissioned their ROs and 7 proposed / commissioning. Thus, total 42 industries have installed 47 numbers of ROs. Around 8 to 10 MLD of permeate and condensate from MEE is now being reused. **(Annexure – G)** **FACCO / Fenton Treatment :** 11 industries have adopted. Two CETPs at Ankleshwar and Panoli have also adopted. **(Annexure – H)**
		The units manufacturing Pesticides, Dyes intermediates, Bulk drugs will be asked to study their present treat ability of effluent and accordingly segregate non-biodegradable streams.	31.10.2010	
		A time bound action plan required to be submitted to install multiple effect evaporator/RO system/ Incinerator System/Ammonia stripper/ New technology like FACCO including cleaner production and cleaner technology by concerned industries.	**31.12.2010**	
		Implementation/Commissioning of above proposal	**30.09.2011**	
7	Reduction of pollution load on CETP, upgradation of CETP and efficient operation of CETP	**The units generating effluent more than 25 KL/day required to strengthen individual effluent treatment plant to meet with the CETP inlet norms, so as to reduce inlet pollution load on CETP and thereby improvement in treated effluent quality from CETP.**	***31.12.2010 for units having discharge > 100 m3/day*** ***31.12.2011 for units having discharge > 25 m3/day***	**Partially Completed** (Total 05 out of 06 identified units having discharge more than 100 m3/day have already upgraded their ETP. Work at remaining 01 MNC units is under progress, will be completed by April 2013). **Completed** (Total 03 out 04 identified units having discharge more than 50 KLD and less than 100 KLD have completed the work and remaining unit is not in operation since long). **Completed** (The industries having discharge more than 25 KLD, the industries associations has made representations that due to lack of space /

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
				technological constraints etc. they should be allowed to continue with the CETP membership. CETPs of Ankleshwar and Panoli are having adequate capacity for treatment of effluent of these units).
		Installation of FACCO or any other suitable technology at CETP for small scale industrial unit.	30.9.2010	**Completed**
		Identification of high COD and high Ammonical Nitrogen containing effluent and individual installation of FACCO or any other suitable technology for large scale units having high COD effluent and Ammonical Nitrogen removal system.	31.12.2010	**Completed**
		An action plan for strengthening of individual ETP to be submitted to BEAIL, PETL, ETL & to GPCB and required to monitor its progress by concerned agencies.	31.10.2010	**Completed**
		CETP / FETP should optimize operation / performance of their existing units.	**31.12.2010**	**Completed**.
		To strengthen performance evaluation of ETPs , to be done by third party agency.	31.12.2010	**Completed.** (Both the CETPs and FETP are covered under Environment Audit Scheme and their performance evaluation is done by Schedule I auditors twice in a year).
		CETP authority shall study their treatability of effluent from prominent agency and come out with action plan and up gradation./ modification.	30.9.2010	**Completed**. (CETPs are taking technical assistance from time-to-time from different prominent institutes like IIT-Mumbai, IIT-Kanpur, CLRI – Chennai, Agharkar Research Institute – Pune and NEERI-Nagpur).
		Based on the recommendation of agency CETP authority shall complete required upgradation / modification of CETP/FETP.	**30.06.2011**	**Completed.** (FETP is further being upgraded as per the Action Point mentioned in Long term Action Plan)

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
		To change the management of BEAIL under Government Supervision and Chief Executive Officer have to be appointed.	Implemented and GIDC is the main stakeholder.	**Completed** (Already implemented since 01/04/2008.)
		To finalize disciplinary action against non compliant units	Ongoing process	**Completed and made ongoing process** (GPCB, Ankleshwar office has monitored 7664 units during the period of June 10 to March 2013. Total 187 industries had been served with closure notices and 167 industries had been served with notice of direction during this period. Additionally, bank guarantee had been levied from ____ industries).
8	Checking of illegal discharge of Acidic/ highly polluted effluent	Movement of spent acid shall be checked vigilantly. Acidic/ highly polluted effluent which is discharged illegally to be checked by GPCB as well as Industrial Association on routine basis	Ongoing process	**Implemented**
		Third party monitoring	Implemented	**Implemented wef 1-5-2010 and still continued.**
		To set up vigilance cell for vigorous & surprise monitoring under supervision of senior officer	Immediate	**Completed. Vigilance Cell made functional from June, 2010.**
9	Identification & rectification of various leaking manholes, overflowing pumping stations.	Foolproof mechanism for regular monitoring, cleaning and maintenance is required by concerned authority.	31.12.10	**Completed.** (The necessary rectification has been done is now also made ongoing process). **(Annexure – J)**
		Reasons of overflow of man-holes should be identified and adequate measures should be adopted.	**31.03.2011**	**Completed by Notified Area Authority within time limit and made ongoing process.**
10	**Action till commissioning of separate CETP for Pharma units**	**High COD streams of existing pharmaceutical industries should be segregated and treated and disposed of by individual units through adequate environmental friendly technologies till commissioning of new CETP.**	**Immediate**	**Completed.**
11	Monitoring of surface	Surface and sub surface water quality	On going	**Implemented. (Annexure – K)**

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
	and sub surface water quality.		process.	
12	Impact on Health-within and surrounding population.	As per the information available no incidence of death due to pollution or occupational disease or poisoning is recorded. Occupational health centers are provided by MAH units in this cluster to monitor health of the industrial workers. Primary health center are provided in each industrial cluster. PIA will establish occupational health center	31-12-2010 30.06.11	**Completed. Health survey in and around Ankleshwar Cluster was conducted through Dr. A. V. Ratnam – "Parirakshana". Report has been forwarded to HO.** **Being Implemented.** (Construction of building for the purpose is completed and infrastructure work is about to complete.)
13	To stop tray drying and salting process	Identification of the unit having tray drying and salting process	30.9.2010	**Completed**
AIR				
1	Strengthening of air pollution control measures	Industrial units consuming solid fuel like coal, agro waste, etc. required to upgrade air pollution control system by installing bag filters /multi cyclone separator so that ambient air in the nearby area meet with the revised norms of $PM_{2.5}$.	31.12.2010	**Completed before time limit.** (Ankleshwar cluster is fortunate with the supply of natural gas since last about 25 years and hence most of the industries are using natural gas as a fuel. The textile and paper mill that use solid fuel like coal, lignite, agro waste have already installed adequate APCM viz. bag filters / multi cyclone separator. **(Annexure – L)**
		To upgrade the solvent recovery plants to achieve more than 95 % solvent recovery	31.12.2010.	**Completed**
2	Plantation in the industrial estate	Considering the present plantation as baseline datum, five years plan for plantation of industrial	30.09.2010	**Completed** (Since starting of implementation of the Action plan

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
		estate to be submitted by the GIDC/ association in consultation with Forest department. To allot unused plots, road side areas and other areas reserved for green belt within GIDC and to sign MoU between GIDC and association for plantation		about 4 lakhs trees have been planted in Ankleshwar, Panoli and Jhagadia industrial estate. Additionally, saplings are also planted along the road side available places and across the industrial estate.)
3	Restriction on using un authorized fuel.	Industrial units shall use authorized fuel as consented and shall not use any unauthorized fuel.	30.09.2010	**Completed**
4	**Control of fugitive emission**	Good practices like cleaner production and cleaner technology to be adopted in fuel handling and to have better house keeping	30.09.2010 and ongoing process.	**Completed (Annexure – L)**
5	Ambient Air Quality Monitoring	Existing AAQMS to be strengthen to monitor AAQ as per new notification New AAQMS shall be installed.	31.12.2010	**Completed.** **NAMP / SAMP : (Annexure – L)** **AAQ through Industries Associations : (Annexure – M)** **VOC monitoring : (Annexure – N)**
6	Implementation of the suggestions of the odour Control Expert Committee	Implementation of the suggestions of the odour Control Expert Committee as per following 1. Consider use of non-halogenated and non-aromatic solvents (eg. Ethyl acetate, alcohols and acetone) instead of more toxic solvents (eg. Benzene, chloroform and trichloroethylene) 2. Contain and enclose batch reactors and install close feed system. 3. Reduce operating temperature. 4. Install nitrogen blanketing on pumps, storage tanks and during formulation processes. Install process condensers 5. VOC vapours from solvent handling activities and processes should be connected to air control devices. 6. Activated carbon adsorption may be used to achieve VOC removal efficiency of 95-98%. 7.Thermal oxidation/incineration system can destroy 99.99% VOC.	**31.12.2010**	**Completed**

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
7	Monitoring of AAQM	To check Ambient Air quality	On going process.	**Completed**
8	**Monitoring of VOC in cluster**	**To monitor the VOC concentration in cluster and to take remedial measures.**	**Immediatel y**	**Completed**
		Final quality report shall be submitted	**31.01.2011**	**Completed**
HAZARDOUS WASTE				
1	Checking of illegal transportation and dumping of Hazardous waste	Vigil check required to be kept on illegal transportation and dumping of hazardous waste.	On going process	**Completed / Already implemented**
2	CPCB guidelines for TSDF are to be strictly followed	TSDF operator will comply with these requirements and GPCB shall verify	31-08-2010	**Completed**
3	Adoption of 4- R's (Reduce, Recover, Reuse, Recycle)	Inventorization of the various solid/ Hazardous waste generated from the industries	31.12.2010	**Completed**
4	Common facility for collection, storage & transportation of incinerable waste generated from individual industrial units	Common hazardous waste incinerator capacity to be enhanced.	31.12.2010	**Completed**
5	Captive facility for destruction of incinerable waste	Up gradation of captive incineration system. Incinerators not as per CPCB guidelines shall be dismantled and the industry shall send waste to common incinerator.	31.12.2010	**Completed.** It has been ensured that captive incineration systems are as per CPCB guidelines. **(Annexure – N1)**
6	Transportation of Hazardous waste	Vigil checking on transportation of hazardous waste.	Ongoing Process	**Already completed / implemented**. Additionally, all the vehicles engaged in transportation of hazardous waste are GPS mounted.

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
7	Waste Minimization Measures	Industries shall install, • Metering and control of quantities of active ingredients to minimize waste. • Reuse of byproducts from the process as raw materials or as raw material substitutes in other processes. • Use of automated filling to minimize spillage. • Use of Close Feed system into batch reactors. • Venting equipment through vapour recovery system and APCM. • Use of high pressure hoses for equipment clearing to reduce waste water generation.	31.12.2010	**Completed and made ongoing process**

12.2. Long Term Action points (more than 1 year)

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
WATER				
1	Identification & rectification of various leaking manholes, overflowing pumping stations.	Lining of creek passing through GIDC along with motor-able road and lighting.	31.12.11	**Completed.**
2	Separate CETP for Pharma units	To set up a new CETP specific for pharma units only to treat effluent having very high concentration of ammonical nitrogen and COD.	31.07.2012	**Being implemented. CTE application is pending at HO.**
3	To stop tray drying and salting process	Setting up of common spray drying facility or identification of spare capacity with existing spray dryer	31.3.2011	**Completed**
		Complete phase out of tray drying and salting process	30.6.2011	
4	To Prevent misuse of Under Ground drainage in GIDC, Ankleshwar (New Action Point)	For prevention of misuse of old underground drainage network in GIDC Ankleshwar, separate scheme of discharge by only over ground pressurized pipe line to be provided by GIDC / Notified Area Authority.	31.03.2014	For prevention of misuse of old underground drainage network in GIDC Ankleshwar, separate scheme of discharge by only over ground pressurized pipe line is worked out and is under implementation. **(Annexure – B)**
5	To further upgrade performance of FETP (New Action Poiint)	As per the instructions from Honorable High Court, the FETP is to further upgrade its performance.	31.03.2014	Further, to upgrade the performance of FETP NCTL has awarded a work for performance improvement to NEERI. **(Annexure – I)**
AIR				
1	Adoption of cleaner fuel	Large industrial units using solid fuel shall be switch over to cleaner fuel wherever it is feasible considering availability of gas and economics.	6 months to two years	**Already implemented**. (More than 90% of the industries are using natural gas).

Sr No	Activity	Action	Time limit	Status of Compliance of Action Points as on dt. 31/03/2013
2	Ambient Air Quality Monitoring	Installation of continuous ambient air monitoring station.	31.12.11	**Being Implemented at Ankleshwar. Process of procurement by the GPCB is under process and may be completed by December, 2013**
		Online monitoring system linked with Regional Office and Head Office shall be provided at-least at two stations (Ankleshwar and Panoli).	**31.12.11**	**Being Implemented at Ankleshwar. Process of procurement by the GPCB is under process and may be completed by December, 2013.**
HAZARDOUS WASTE				
1	Adoption of 4- R's (Reduce, Recover, Reuse, Recycle)	Creation of waste exchange center inline with Novel Spent Acid System	30.6.2011	**Completed.** Usage of high calorific waste in cement industries started. Ammonium carbonate solution is permitted to be used for production of Magnesium Carbonate, ammonium chloride solution is used for production of calcium chloride with ammonia recovery etc. BEIL (Common facility) has been granted permission for co-processing of 16000 MT/Year of high calorific hazardous waste with cement industries. Individual pharmaceutical, pesticides manufacturing units have also started sending their high calorific waste to cement industries for co-processing in cement kiln.
2	Incinerator based on Plasma Technology	Plasma Technology for hazardous waste destruction:	31.12.11	**Being Implemented**
3	***Transportation of Hazardous waste***	***GPS based tracking system for transport of hazardous waste should be incorporated.***	***31.12.2012***	**Completed**

- **On Account of vigorous implementation of the Action Plan in the Ankleshwar Cluster, quality of effluent at FETP has shown a drastic continual improvement and results of GPCB, CPCB, NCTL and third party monitoring team TIFAC-CORE-SCET for the same are presented as Annexure O, Annexure P, Annexure Q and Annexure R.**
- **Results indicating continual improvement in the Amlakhadi are presented as Annexure S and Annexure T.**
- **Yearly average values for the FETP outlet quality and Amlakhadi are also presented as Annexure U.**

- **GPCB took an initiative to conduct a study through the same agency (IIT, Delhi) and procedure for the calculation of CEPI as adopted by CPCB. The outcome of the same indicates the CEPI score as 66.655 in the study report of June 2012. The same is presented as Annexure V.**

Annexure - A

NARMADA CLEAN TECH LIMITED,ANKLESHWAR			
Flaw Meter list			
Sr. No.	Billing code	Name of the Company	Remarks
Ankleshwar Estate			
1	ANKA007	A-ONE CHEMICALS	mag.flaw meter
2	ANKA012	AMSAL CHEM PVT. LTD.	mag.flow meter
3	ANKA015	ASIAN PAINTS LIMITED- PAINT DIV.	mag.flow meter
4	ANKA017	ASIAN PAINTS LIMITED- PHTHALIC DIV.	mag.flaw meter
5	ANKA019	AMAL LIMITED	mag.flow meter
6	ANKA020	ATUL LIMITED (GUJ.AROMETICS DIV.)	mag.flow meter
7	ANKA021	ASTIK DYESTUFF PVT.LTD.	mag.flow meter
8	ANKA045	ANGEL SYNTHETICS LTD.(DIV. HIMSON)	mag.flaw meter
9	ANKB001	SVG FASHIONS LTD.	mag.flow meter
10	ANKB008	BAKUL PHARMA PVT. LTD.	mag.flaw meter
11	ANKB022	BAYER CROPSCIENCE LIMITED	mag.flow meter
12	ANKB024	ELANTAS BECK INDIA LIMITED	mag.flow meter
13	ANKC009	CADILA HEALTHCARE LIMITED- API DIV.U-1	mag.flaw meter
14	ANKC017	CADILA PHARMACEUTICALS LTD- UNIT-1	mag.flow meter
15	ANKC026	CADILA PHARMACEUTICALS LTD-2	mag.flaw meter
16	ANKC030	CADILA HEALTHCARE LIMITED- UNIT-2	mag.flow meter
17	ANKD001	DIPEN INDUSTRIES	mag.flow meter
18	ANKD002	DEVANSHI DYESTUFF	mag.flaw meter
19	ANKE004	ENVIRO TECHNOLOGY LIMITED	mag.flaw meter
20	ANKE008	HEUBACH COLOUR PVT.LTD- UNIT-II	mag.flaw meter
21	ANKE016	HEUBACH COLOUR PVT.LTD- UNIT-III	mag.flow meter
22	ANKF003	COROMANDEL FERTILISERS LTD.(FICOM)	mag.flow meter
23	ANKG008	GLENMARK GENERICS LTD.	mag.flaw meter
24	ANKG009	GUJARAT ORGANICS LTD	mag.flow meter
25	ANKG011	GUJARAT INSECTICIDES LIMITED	mag.flaw meter
26	ANKH007	HEMANI ORGANICS & CHEMICALS PVT.LTD	mag.flow meter
27	ANKH011	HEUBACH COLOUR PVT.LTD.unit-1	mag.flaw meter
28	ANKI004	ION EXCHANGE (INDIA) LIMITED	mag.flow meter
29	ANKI009	INDUSTRIAL SOLVENTS PVT.LTD.	mag.flow meter
30	ANKK002	K. PATEL CHEMO PHARMA PVT. LTD.	mag.flow meter
31	ANKK003	K. A. MALLE PHARMACEUTICALS LTD.	mag.flaw meter
32	ANKK004	K. PATEL DYE CHEM INDUSTRIES PVT.LTD.	mag.flaw meter
33	ANKK007	KANORIA CHEMICALS & INDUSTRIES LTD.	mag.flow meter
34	ANKK018	KRIMA SIL PVT. LTD.	mag.flow meter
35	ANKL006	LYKA LABS LIMITED	mag.flow meter
36	ANKL007	LUPIN LIMITED	mag.flow meter
37	ANKM056	MEGHMANI ORGANICS LIMITED-(U-II)	mag.flow meter
38	ANKN002	NARAYAN ORGANICS PVT. LTD.	mag.flaw meter
39	ANKN010	NARENDRA TEXTILES PVT. LTD.	mag.flaw meter
40	ANKP053	PAR DRUGS & CHEMICALS PVT.LTD	mag.flow meter
41	ANKP059	POONAM PROCESSORS PVT.LTD.	mag.flow meter

42	ANKR002	RAJESH CHEMICALS INDUSTRIES	mag.flow meter
43	ANKR004	RAMDEV CHEMICAL INDUSTRIES -UNIT-I	mag.flow meter
44	ANKR013	RPG LIFE SCIENCES LIMITED	mag.flow meter
45	ANKR016	RANG SARJAN CHEMICALS	mag.flow meter
46	ANKR052	RAMDEV CHEMICAL INDUSTRIES -UNIT-II	mag.flow meter
47	ANKS001	SHARDA INDUSTRIES	mag.flow meter
48	ANKS003	SWATI DYEING & PRINTING MILLS	mag.flow meter
49	ANKS022	SUYOG DYE CHEMIE PVT. LTD.	mag.flow meter
50	ANKS025	SHREE SULPHURICS PVT. LTD.	mag.flow meter
51	ANKS037	SAJJAN INDIA LIMITED	mag.flow meter
52	ANKS048	SBS COLOURS & CHEMIQUES PVT. LTD.	mag.flow meter (GEB Power fail from 28/11/2012)
53	ANKS060	SUN PHARMACEUTICAL(GUJ.LYKA)IND.LTD	mag.flow meter
54	ANKS062	LUPIN LTD(SYNCHEM CHEMICALS)	mag.flow meter
55	ANKS078	SURMOUNT LABORATORIES PVT. LTD.	mag.flow meter
56	ANKS084	SHIV SILICA PVT. LTD.	mag.flow meter
57	ANKS089	SUBHASRI PIGMENTS PVT.LTD.	mag.flow meter
58	ANKS101	SHRI DINESH MILLS LTD.	mag.flow meter
59	ANKS159	SHREE GUMANDEV PROCESSORS PVT. LTD.	mag.flow meter
60	ANKU001	UNITED PHOSPHORUS LIMITED (UNIT-2)	mag.flow meter
61	ANKU002	UNITED PHOSPHORUS LIMITED (UNIT-1)	mag.flow meter
62	ANKV019	SUNSINE VALVAT(VYSHALI BLEACHING)	mag.flow meter
63	ANKW002	WOCKHARDT LIMITED	mag.flow meter
64	ANKZ001	ZCL CHEMICAL LTD.	mag.flow meter
65	ANKI012	ICPA HEALTH PRODUCTS	mag.flow meter
66	ANKN017	SHREE SYAM DYEING & PRINTING	mag.flow meter
67	ANKA024	AKSHAR FABRICS PVT. LTD.	mag.flow meter
68	ANKC022	COSMOS TEXTILE PVT.LTD	mag.flow meter
69	ANKB013	BACHANI TEXTILE PVT.LTD	mag.flow meter
70	ANKT001	IPCA LABORATORIES LTD.	mag.flow meter
71		BASF INDIA LTD(UNIT-1)	mag.flow meter
72		BASF INDIA LTD(UNIT-2)	mag.flow meter
73		RALLIS INDIA LTD	mag.flow meter
74		CHIRON BEHRING VACCINES PVT LTD	mag.flow meter
75	ANKV007	VASUDEV DYES & CHEMICALS	water meter
76	ANKD003	DANO PHARMA CHEMICALS	water meter
77	ANKH003	HARISH CHEMICAL ENGG. ENTERPRISE	water meter
78	ANKI008	Subhashri Pigment Unit-2(ISHITA CHEMICALS)	water meter
79	ANKJ001	JIGAR INDUSTRIES	water meter
80	ANKJ005	JAY KHODIYAR CHEMICALS	water meter
81	ANKJ008	J. S. CHEMICALS	water meter
82	ANKJ016	JAYSHREE AROMATICS PVT. LTD.	water meter
83	ANKK013	KAIWLYA CHEMICALS	water meter
84	ANKK016	OCEAN CHEMICALS INDUSTRIES	water meter
85	ANKK030	KOHINOOR COLOURS PVT. LTD.	water meter
86	ANKK033	KOMAL PHARMACEUTICALS	water meter
87	ANKK034	RONSON PIGMENTS PVT.LTD.	water meter

88	ANKK035	KIRAN CHEMICALS	water meter
89	ANKL008	LAXMI CHEMICALS	water meter
90	ANKM003	MANGALAM CHEMICALS	water meter
91	ANKM012	MANGAL MURTI CHEMICALS	water meter
92	ANKN009	NAVADIA CLERIFY	water meter
93	ANKN005	NILKANTH REFINES	water meter
94	ANKN032	NAVADIA REFINES	water meter
95	ANKP023	PIGMENT INDIA	water meter
96	ANKP026	PURNIMA CHEMICAL INDUSTRIES PVT.LTD	water meter
97	ANKR022	REGOJ CHEMICAL INDUSTRIES	water meter
98	ANKS027	SKY & SKYLARK INDUSTRIAL PRODUCTS	water meter
99	ANKS106	SUNCEM SURFACE COATINGS PVT. LTD.	water meter
100	ANKS108	SUPHARMA CHEM	water meter
101	ANKS139	SAGAR CHEMICALS	water meter
102	ANKS157	SARITA CHEMICALS	water meter
103	ANKT003	TAO CHEMICALS	water meter
104	ANKT005	TRIMURTI DYE CHEM INDUSTRIES	water meter
105	ANKT011	TEJAL INDUSTRIES	water meter
106	ANKV017	VISHNU CHEMICALS	water meter
107	ANKV035	VARAHI PHARMACHEM	water meter
108		HIND DYES AND DRUGES INTERMIDIATE PVT.LTD	water meter
109	ANKY003	AVDHOOT CHEMICALS (YAMA DYE CHEM)	water meter
110		PRAGNA CHEMICAL LTD	water meter
111	ANKB010	BATCH TECH CHEMICAL	water meter
112	ANKD016	D.J.FLURINE	water meter
113	ANKW001	WHITEX PVT.LTD	water meter
114	ANKN008	NAVADIYA PLAST	water meter
		TOTAL	
		Panoli Estate	
115	PANC011	CHEMINOVA INDIA LTD.(INTERMEDIATES)	mag.flow meter
116	PANC012	CHEMINOVA INDIA LTD.(TECHNICAL DIV)	mag.flow meter
117	PANG012	GHARDA CHEMICALS LIMITED	mag.flow meter
118	PANH005	HIKAL LIMITED	mag.flow meter
119	PANI014	ISAGRO(ASIA)AGROCHEMICALS PVT.LTD.	mag.flow meter
120	PANM005	MEGHMANI ORGANICS LIMITED	mag.flow meter
121	PANM009	MADURA COATS LTD.	mag.flow meter
122	PANP007	PESTICIDES INDIA - A DIV.OF PII LTD.	mag.flow meter
123	PANP011	PANOLI ENVIRO TECHNOLOGY LTD.	mag.flow meter
124	PANS011	SUN PHARMACEUTICALS INDUSTRIES LTD	mag.flow meter
125	PANS092	SHREE SWAMI HARI GIRI PAPER MILLS LTD.	mag.flaw meter
126	PANS174	SOLVAY SPECIALITIES INDIA PVT LTD.	mag.flow meter
127	PANU008	UNIQUE CHEMICALS	mag.flow meter
128	PANM061	MERCHEM LIMITED	mag.flow meter
129	PANG015	GUJARAR AGRO CHEM LTD	mag.flow meter
130	PANK012	KAMADHENU NUTRIETS PVT.LTD	mag.flow meter

Annexure -A1

List of Industries Directly Connected

Annexure - A

Sr. No.	Name of the Company	Plot No.	Type	(Qty. in KLD) CC&A Qty.	BQC Qty.
A	ANKLESHWAR				
1	A-ONE CHEMICALS	A/1/4702,	SSI	229.500	254.500
2	AMSAL CHEM PVT. LTD.	A-1,401-402,	LSI	93.000	93.000
3	ASIAN PAINTS LIMITED- PAINT DIV.	2602,	LSI	180.000	180.000
4	ASIAN PAINTS LIMITED- PHTHALIC DIV.	2702,	LSI	120.000	120.000
5	AMAL LIMITED	136/137,	LSI	55.000	40.000
6	ATUL LIMITED (GUJ.AROMETICS DIV.)	297,	LSI	755.000	755.000
7	ASTIK DYESTUFF PVT.LTD.	707/B&C,	SSI	65.000	65.000
8	AKSHAR FABRICS PVT.LTD.	306,	SSI	36.000	36.000
9	ANGEL SYNTHETICS LTD.(DIV.OF HIMSON)	132-A,	LSI	10.500	10.500
10	ABHILASHA PHARMA PVT.LTD.	1408/1409,	SSI	6.970	6.970
11	SVG FASHIONS LTD	2 B,	LSI	120.000	120.000
12	BAKUL PHARMA PVT. LTD.	6202,	SSI	54.700	74.700
13	BATCH-TECH CHEMICALS	C/1 - 3428,	SSI	1.500	1.500
14	BACHANI TAXTILES PVT. LTD.	3206/B,	SSI	65.000	65.000
15	BAYER CROPSCIENCE LIMITED	6009-10 & 6301-10A,	LSI	540.000	450.000
16	ELANTAS BECK INDIA LIMITED	1 & 122,	LSI	490.000	490.000
17	CADILA HEALTHCARE LIMITED- API DIV.	291,	LSI	175.000	175.000
18	CADILA PHARMACEUTICALS LTD- UNIT-1	294,	LSI	185.000	185.000
19	COSMOS TEXTILES PVT. LTD.	312/1,	SSI	45.000	45.000
20	CADILA PHARMACEUTICALS LTD-2 (ABBOTT)	3203,	LSI	95.000	493.000
21	CADILA HEALTHCARE LIMITED- UNIT-2	5/1/B,	LSI	381.500	381.500
22	DIPEN INDUSTRIES	1706/10,	SSI	25.000	25.000
23	DEVANSHI DYESTUFF	141/2/F,	SSI	244.000	274.000
24	DANO PHARMA CHEMICALS	C-1/7131,	SSI	7.800	29.650
25	D. J. FLOURINE	C/1, 6823,	SSI	10.235	12.190
26	ELAM PHARMA PVT. LTD.	3709/4,	SSI	7.000	7.000
27	ENVIRO TECHNOLOGY LIMITED	2413/14,	CETP	3500.000	7405.000
28	HEUBACH COLOUR PVT.LTD- UNIT-II	A1-406,	LSI	926.000	926.000
29	HEUBACH COLOUR PVT.LTD- UNIT-III	6105/6111,	LSI	686.000	686.000
30	COROMANDEL INTERNATIONAL LTD	3204,	LSI	276.000	276.000
31	GLENMARK GENERICS LTD.	3109/C,	LSI	200.000	470.000
32	GUJARAT ORGANICS LTD	127/1,	SSI	98.000	98.000
33	GUJARAT INSECTICIDES LIMITED	805/806,	LSI	820.000	820.000
34	HARISH CHEMICAL ENGG. ENTERPRISE	C-1/B,3903,	SSI	7.700	9.000
35	HEMANI INTERMEDIATES PVT. LTD. - II	3208,	LSI	90.000	205.000
36	HIND DYES & DRUGS INTERMEDIATES	C-B-4754,	SSI	4.000	4.000
37	HEUBACH COLOUR PVT.LTD.	9002-9010,	LSI	3149.000	3149.000
38	ION EXCHANGE (INDIA) LIMITED	5811/12/13,	LSI	608.000	605.000
39	SUBHASRI PIGMENTS PVT.LTD. (UNIT - II)	J/1209,	SSI	32.100	32.100
40	INDUSTRIAL SOLVENTS & CHEMICALS PVT.L	7906-7909,	LSI	92.000	395.000
41	ICPA HEALTH PRODUCTS LTD	286-287,	SSI	5.700	10.000
42	JIGAR INDUSTRIES	3709/5,	SSI	7.000	36.000
43	JAY KHODIYAR CHEMICALS	C-1/B/2513,	SSI	2.400	2.400
44	J. S. CHEMICALS	4801/A/8,	SSI	6.550	6.550
45	JARAD CHEMICALS	416,	SSI	3.800	3.800
46	JAYSHREE AROMATICS PVT. LTD.	4705/1/3,	SSI	4.000	41.600
47	K. PATEL CHEMO PHARMA PVT. LTD.	151-155,	MSI	116.890	400.000
48	K. A. MALLE PHARMACEUTICALS LTD.	6005,	SSI	45.000	91.000
49	K. PATEL DYE CHEM INDUSTRIES PVT.LTD.	156/A/B,	SSI	42.000	146.000

Sr. No.	Name of the Company	Plot No.	Type	CC&A Qty.	BQC Qty.
50	KANORIA CHEMICALS & INDUSTRIES LTD.	5407,	LSI	250.000	350.000
51	KAIWLYA CHEMICALS	4705/2/5,	SSI	3.300	3.300
52	OCEAN (KHUSHBU) CHEMICALS INDUSTRIES	6810,	SSI	5.000	5.000
53	KRIMA SIL PVT. LTD.	3613,	SSI	24.500	24.500
54	KOHINOOR COLOURS PVT. LTD.	7204/5,	SSI	5.300	5.300
55	KOMAL PHARMACEUTICALS	1802,	SSI	4.500	36.500
56	RONSON PIGMENTS PVT.LTD.(KARNAVATI)	6006/1/D,	SSI	2.500	2.500
57	KIRAN CHEMICALS	5721,	SSI	7.300	19.250
58	LYKA LABS LIMITED	4801/B-4802/A,	LSI	82.000	82.000
59	LUPIN LIMITED	124-125,	LSI	495.000	1124.000
60	LAXMI CHEMICALS	6006/A/B,	SSI	6.000	6.000
61	MANGALAM CHEMICALS	4705/1/5,	SSI	2.000	2.000
62	MANGAL MURTI CHEMICALS	J-1208,	SSI	5.000	5.000
63	MARUTI COLOURS	1805,	SSI	2.700	2.700
64	RUDRAAKSH SILK MILLS (MADHU PROC.)	A-2/2215,	SSI	22.800	22.800
65	MEGHMANI ORGANICS LIMITED-(UNIT-II)	5001/B,	LSI	220.000	220.000
66	NARAYAN ORGANICS PVT. LTD.	1107/1&2,	SSI	27.800	175.400
67	NILKANTH REFINES	C-1/5508,	SSI	0.400	0.400
68	NAVADIA PLAST	5706/2,	SSI	2.500	1.020
69	NAVADIA CLERIFY	5706/1,	SSI	3.100	8.100
70	NARENDRA TEXTILES PVT. LTD.	141/2E,	SSI	140.000	140.000
71	SHREE SHYAM DYEING & PRINTING MILLS	A/1-419,420,	SSI	437.000	437.000
72	NAVADIA REFINES	1308,	SSI	7.450	7.450
73	PRAGNA CHEMICAL INDUSTRIES	2303/A,	SSI	3.000	15.000
74	PIGMENT INDIA	C-1/7013,	SSI	3.000	3.000
75	PURNIMA CHEMICAL INDUSTRIES PVT.LTD	5905/3,	SSI	38.700	38.500
76	PAR DRUGS & CHEMICALS PVT.LTD	5901/1,	SSI	71.500	71.500
77	POONAM PROCESSORS PVT.LTD.	A/1-164,	SSI	0.000	47.000
78	RAJESH CHEMICALS INDUSTRIES	1819,	SSI	19.400	19.400
79	RAMDEV CHEMICAL INDUSTRIES	3441/B,	SSI	18.000	46.000
80	RPG LIFE SCIENCES LIMITED	3102/A,	LSI	50.000	50.000
81	RANG SARJAN CHEMICALS	C1B/408,	SSI	36.150	36.150
82	REGOJ CHEMICAL INDUSTRIES	6702,	SSI	5.000	47.000
83	RAMDEV CHEMICAL INDUSTRIES -UNIT-II	3440&3443,	SSI	32.000	183.000
84	SHARDA INDUSTRIES	6909,	SSI	17.000	17.000
85	SWATI DYEING & PRINTING MILLS	A-1,421-422,	SSI	33.000	33.000
86	SUYOG DYE CHEMIE PVT. LTD.	2404-2405,	SSI	69.000	94.150
87	SHREE SULPHURICS PVT. LTD.	2801/A,	LSI	55.000	55.000
88	SKY & SKYLARK INDUSTRIAL PRODUCTS	2512 & 2513,	SSI	9.000	9.300
89	SAJJAN INDIA LIMITED	6117-19,	LSI	56.500	226.000
90	SBS COLOURS & CHEMIQUES PVT. LTD.	1904,	SSI	235.000	235.000
91	SUN PHARMACEUTICAL(GUJ.LYKA)IND.LTD	4708,	LSI	170.000	170.000
92	LUPIN LIMITED	2201-2202,	LSI	8.000	56.000
93	SURMOUNT LABORATORIES PVT. LTD.	A-2/4003,	SSI	2.700	2.700
94	STERFIL LABORATORIES PVT. LTD.	A-1/4003,	SSI	5.000	5.000
95	SHIV SILICA PVT. LTD.	6212,	SSI	18.000	47.500
96	SUBHASRI PIGMENTS PVT.LTD.	1213,	SSI	194.000	325.880
97	SHRI DINESH MILLS LTD.	P.BOX NO.14, BHADKODRA	LSI	325.000	325.000
98	SUNCEM SURFACE COATINGS PVT. LTD.	A-1/168,	SSI	1.500	1.500
99	SUPHARMA CHEM	4705/2/3/4,	SSI	3.350	6.420
100	SAGAR CHEMICALS	7415,	SSI	4.000	4.000
101	SHREE KRISHNA SILK MILLS	A-1/448,	SSI	38.000	38.000
102	SARITA CHEMICALS	4780,	SSI	4.800	4.800

Sr. No.	Name of the Company	Plot No.	Type	CC&A Qty.	BQC Qty.
103	SHREE GUMANDEV PROCESSORS PVT. LTD.	706,	SSI	36.000	36.000
104	IPCA LABORATORIES LTD	4722,	SSI	21.300	21.300
105	TAO CHEMICALS	6222,	SSI	3.000	3.000
106	TRIMURTI DYE CHEM INDUSTRIES	9103/1,	SSI	5.000	5.000
107	TEJAL INDUSTRIES	730,	SSI	2.700	2.700
108	UNITED PHOSPHORUS LIMITED (UNIT-2)	3405/3406,	LSI	246.000	561.000
109	UNITED PHOSPHORUS LIMITED (UNIT-1)	117/118,	LSI	423.200	423.200
110	VASUDEV DYES & CHEMICALS	6006/1/A,	SSI	6.500	37.500
111	VISHNU CHEMICALS	C-1,3429,	SSI	0.750	9.700
112	SUN SHINE VELVET PVT. LTD	127/2B,	SSI	60.000	69.000
113	VARAHI PHARMACHEM	9108/2,	SSI	9.200	9.200
114	WOCKHARDT LIMITED	138,	LSI	298.000	487.400
115	AVDHOOT CHEMICALS (YAMA DYE CHEM)	4801/A/14,	SSI	8.000	8.000
116	ZANDU CHEMICALS LTD.	3102/B,	LSI	65.000	65.000
117	CHIRON BEHRING VACCINES PVT. LTD	3501/A, 3502&03/A,	LSI	60.000	60.000
118	WHITEX CHEMICALS	6808,	SSI	4.000	4.000
	TOTAL ANKLESHWAR ESTATE			**19250.245**	**26901.980**
	PANOLI				
119	CHEMINOVA INDIA LTD.(INTERMEDIATES)	27/28,	LSI	206.000	220.000
120	CHEMINOVA INDIA LTD.(TECHNICAL DIV)	241,	LSI	85.910	166.500
121	GHARDA CHEMICALS LIMITED	3525,	LSI	290.000	400.000
122	HIKAL LIMITED	629/630,	LSI	447.000	447.000
123	ISAGRO(ASIA)AGROCHEMICALS PVT.LTD.	640,	LSI	179.700	207.800
124	MEGHMANI ORGANICS LIMITED	21,21/1,	LSI	227.000	500.000
125	MADURA COATS LTD.	221/222,	LSI	451.000	451.000
126	MERCHEM LIMITED	24/1,	LSI	235.000	235.000
127	P.I. INDUSTRIES	237,	LSI	143.575	359.424
128	PANOLI ENVIRO TECHNOLOGY LTD.	619,	CETP	1020.000	2040.000
129	SUN PHARMACEUTICALS INDUSTRIES LTD	24/2, 25,	LSI	95.000	405.000
130	SHREE SWAMI HARI GIRI PAPER MILLS LTD.	620/621/P,	LSI	107.000	107.000
131	SOLVAY SPECIALITIES INDIA PVT LTD.	3526/27,	LSI	190.000	638.000
132	UNIQUE CHEMICALS	5,	LSI	130.000	200.880
133	KAMADHENU NUTRIENTS PVT. LTD	23/1,	LSI	321.000	321.000
134	GUJARAT AGROCHEM LTD	2901 TO 2906	LSI	150.000	195.000
	TOTAL PANOLI ESTATE			**4278.185**	**6893.604**
	Total			**26143.849**	**26901.980**

Annexure - B

Sub – Over ground and pressurized effluent carrying network – A project for Ankleshwar Estate

Philosophically it is accepted that one of the significant reasons for having deviations among the actual quality / quantity received at FETP, NCTL and what is measured (quantity) and monitored (quality) at different ends of member industries, who are the contributors of effluent to FETP, is unauthorized discharge by any mode. Apart from indiscipline from member industries' side, underground and gravity network is responsible for unauthorized discharge and therefore it is decided to replace the same by over ground and pressurized effluent carrying network so that transparently and fairly the streams could be monitored and controlled.

The present underground and gravity effluent carrying network is being replaced by over ground and pressurized effluent carrying network.

Estates are segmented conveniently and 6 – 6 industries are grouped into a segment and an overhead tank per segment is provided from where effluent would flow by pressure (due to head of tank) up to common collection facility.

It is conceptualized to have a central monitoring and control for a segment at overhead tank station. In other words, six (or any multiple of six) industries would be merged their effluent lines at an overhead tank and a controlling device having facility to monitor and record the parameters – pH, TOC, TN & flow continuously would be installed. A small control room would be devised below overhead tank where there would be online and continuous watch on these parameters and whosoever found violating with respect to any of the parameters would not be allowed to discharge their effluent into the overhead tank. A control valve for auto stop would be an integral part of the device.

A facility would be developed with provision of a close loop having monitoring and controlling device with control valve and other relevant instrumentations like communication network, related auxiliaries and recorders.

This would ensure the pollution control at source and would prohibit FETP to pollute beyond the stipulated parameters.

The present status of Over ground and pressurized effluent carrying network project for Ankleshwar & Jhagadia Industrial Estates:

1. Conceptual Phase : Completed

2. Design Phase: The services of M/s. L&T Integrated Services, Vadodara has been retained and estate survey along with basic engineering has been completed.

   Services of M/s. Mars Planning & Engineering Services, Ahmedabad has been retained for detailed engineering and cost estimation and job is completed.

3. Implementation Phase: Cost estimation for Ankleshwar Estate is approx. Rs.9 Cr and for Jhagadia is approx. Rs.13 Cr.

It is decided to avail subsidy under CIP scheme of IC office. It is also decided that GIDC will undertake the project. Complete DPR received and the same has been handed over to SE-GIDC, Bharuch for making and moving proposal to IC office, Gandhinagar. Recently, project has been sanctioned under the CIP scheme. GIDC will initiate e-tendering & will finalize the contractor. Approx. time period for implementation of project is 15 months from date of order to the contractor.

Annexure - C

... गैर न्यायिक

एक सौ रुपये

रु. 100

Rs. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

NOTARY

गुजरात गुजरात GUJARAT

T 889944

સ્ટેમ્પ નંબર .... તારીખ ....

રૂા. .... અંકે રૂપિયા ....

સ્ટે. લેનારનું નામ ....

સ્ટે. લેનારનું સરનામું ....

....

સ્ટે. લેવા આવનારનું નામ ....

સ્ટે. લેવા આવનારનું સરનામું ....

....

સ્ટે. લેવા આવનારની સહી ....

એલ. પી. પટેલ
સ્ટેમ્પ વેન્ડર લા.નં. ૪/૯૬
ડી-બી/૨૨, સરદાર પટેલ કોમ્પલેક્ષ,
જી.આઈ.ડી.સી., અંકલેશ્વર.

NOTARY A. G. GANDHI ANKLESHWAR & BHARUCH GOVT. OF INDIA

UNDERTAKING

I, Gp. Capt. A.G. Chitre (Retd.), Director of M/s. Heubach Colour Pvt. Ltd. (Unit-II) Plot No. A/1 406, GIDC Estate, Ankleshwar hereby undertake that:

1. I solemnly declare that there is no unauthorized disposal of any kind of trade effluent or wastes from our industry.
2. There are no old unused connections or connections made by previous unit in what so ever manner for unauthorized disposal of trade effluent.
3. We use only consented outlet for discharge of our treated trade effluent and sewage.
4. I have thoroughly checked the entire premises of my industry and personally verified all facts mentioned herein above.

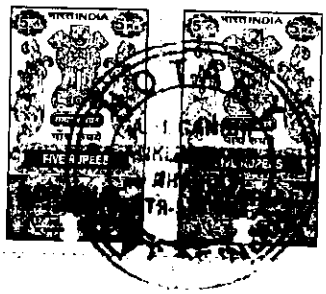
I have submitted this undertaking without any prejudice and with full consciousness and understanding.

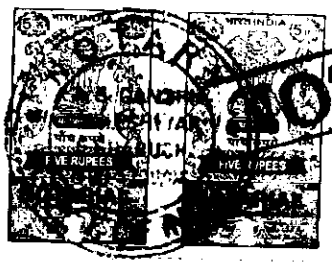
Date. 02nd August 2011

Sign :

Name: **Gp. Capt. A.G. Chitre (Retd.)**

Designation: **Director**





NOTARY

NOTARY
ASHISH B. GANDHI
NOTARY
NTR/5799/08
Ank. & Bharuch
GOVT. OF INDIA

BEFORE ME
EXECUTED ACCEPTED
& SIGNED BEFORE ME.
ASHISH B. GANDHI
NOTARY
NTR/5799/08
ANKLESHWAR & BHARUCH

ASHISH B. GANDHI
NOTARY
NTR/5799/08
GOVT. OF INDIA
02 AUG 2011
Ankleshwar & Bharuch
Reg. No. 1306/11

Annexure -D

Sub:- List Of Zero Discharge member industries at Ankleshwar

Sr. No	Name Of The Company	Plot No.
1	M/s A. S. Chemicals	C-2/11
2	M/s Abhayraj Pharma Pvt. Ltd	2302
3	M/s Advance Paints Ltd.	3202/A
4	M/s Aerochem Industries	4773
5	M/s Akshay Chemicals	5905/2
6	M/s. BGP Innovatives **OLD NAME M/s Alchem Innovatives**	3604
7	M/s Alliance Industries	6505
8	M/s Ambica Chamical Industries	7414
9	M/s Ambica Metallic Chemicals	6408,
10	M/s Amit & Associates	313/1&2
11	M/s Ankleshwar Metal Ind. Pvt. Ltd	1010
12	M/s Arty Constrachem Industries	C1B, 3417
13	M/s. Maryada Chemicals Change name old is M/s Arvind Chemicals	703/1
14	M/s Asian Barrels	10/11,
15	M/s Aum Pharmachem	C-1, 6228
16	M/s Auromaa Industries	A-1, 2403/1
17	M/s Awishkar Chemical Works	6101/3-A
18	M/s Basic Pharma Life Science Pvt Ltd	146/B,
19	M/s Bharat Kems Corporation	313-315
20	M/s Bharat Pharma Laboratories	J-3439
21	M/s Bharat Pharma Laboratories	C-1/433,
22	M/S Ultra Rubber Pvt. Ltd. Earlier it was given on rent to M/s Bhavani Industries	1108-B,
23	M/s Bhumi Electrochem	4906/1,
24	M/s Bhumi Techno Pack	4906/A,
25	M/s Blitzkrieg Organics & Biochemicals Industries	5067,
26	M/s Bonny Chemicals	J/7016
27	M/s Capricorn Coatings & Colours	7313/2,
28	M/s Chemet Chemical Ltd.	6230-31,
29	M/s Chemet Wets & Flows Ltd	129/C-2,
30	M/s Chempack Industries	7410/11/12,
31	M/s D. K. Enterprises	4732,
32	M/s D.V'S Industries	6012/2,
33	M/s Deep Pharm Chem Pvt. Ltd	1102/1-A,
34	M/s Delite Paints	4516,
35	M/s Deschem Industries	502/12,
36	M/s Devam Alum Industries	4711,
37	M/s Dhara Stationary Pvt Ltd	4910,
38	M/s E. S. Patanwala Pvt. Ltd	4906/14(A-1),

Sr. No	Name Of The Company	Plot No.
39	M/s Efkam Organics	4801/A/10&11,
40	M/s EON Aromatics	C-1B/2514,
41	M/s Ewac Alloys Limited	7917,
42	M/s Fivebros Forgings Pvt. Ltd	145-A,
43	M/s Ganesh Corporation,	6709-10,
44	M/s Ganga Rasayan (P) Ltd	141/2C,
45	M/s Gayatri Enterprises	6413,
46	M/s Geeta Chemicals	4906/B/C/D,
47	M/s Ghanshyam Chemicals	7401,
48	M/s Grace Paper Industries Private Ltd	4,
49	M/s Gravure Packaging Products	5717,
50	M/s Gujarat Reactive Chemicals Pvt. Ltd	6001,
51	M/s Hariom Industries	7519,
52	M/s Harsh Pharma Lab	6610,
53	M/s Haryana Sheet Glass Ltd	9208/13,
54	M/s Hetal Industries	9104/2,
55	M/s Hindustan Bakelite Company	J-3436,
56	M/s Inco Colours India Pvt. Ltd	6114,6115/2,
57	M/s Jalaram Wood Processors	83/2,
58	M/s Jay Agro Industries	5805,
59	M/s Jay Ganesh Chemicals	5733,
60	M/s Kanchan- Taru Chemicals	703/3,
61	M/s Kevee Chemicals	6718,
62	M/s Khodiyar Chemicals (NOC Given)	C-49,
63	M/s Kosan Industries Limited	302/309,
64	M/s Krishi Crop Pvt. Ltd	7/1,2 & 3,
65	M/s Lakhani Paper & Board Mills	
66	M/s. Anju Life Science **OLD NAME M/s Laxmi Chemicals Industries**	6007/1,
67	M/s Madhu Chem Industries	C-1/B-4737
68	M/s MAG-Ferro Products	6804,
69	M/s Mamta Chemicals	6704,
70	M/s Marine Rubber Industries	C-1, B-7124,
71	M/s Markand Enterprises	C-1B,5507,
72	M/s Matru Chemicals	6906,
73	M/s Meet Chemicals	3207,
74	M/s Minol Acids & Chemicals Pvt. Ltd	5904/1,
75	M/s Miranda Tools	903,904,
76	M/s Modheshwari Chemicals	A-1, 1511
77	M/s. Modheshwari Chloride **OLD Name M/s Modheshwari Chemicals**	J-7017,

Sr. No	Name Of The Company	Plot No.
78	M/s Namplas Chemicals Pvt Ltd	129,B/2,
79	M/s Narmada Recoveries	C-1-B-3408,
80	M/s Narusa Industries	6724,
81	M/s New Chem Industries	4721,
82	M/s OM Shiv Industries	6606,
83	M/s P. M. Agro Pack (No Data available)	6219/7,
84	M/s Parth Chemicals Industries	4606,
85	M/s Parth Industries	C-1-B,7836,
86	M/s Perfact Chemicals	4801/A/15,
87	M/s Pioneer Chemicals	6832,
88	M/s. Ambe Enterprise **OLD NAME M/s Polymers & Transmission Products**	423/C1B & 428,
89	M/s Polystar Industries	616,
90	M/s Pranav Insulations	281,
91	M/s Pravin Chemicals	C/4769
92	M/s Precious Paper Products	140/2/A/2,
93	M/s Preeten Healthcare Pvt Ltd	C-1/7103,
94	M/s Premier Chemical Industries	C-1/B-2013,
95	M/s Parimal Industries	9109/3,
96	M/s Progressive Paint O Chem	C-1/3915,
97	M/s Raghav Industries Ltd	2802/2803,
98	M/s Raghuvir Chemicals	6217/4 & 5,
99	M/s Raina Industries	A2/6104/10,
100	M/s. Poseidon Paper Convertor **OLD NAME M/s Raj Leads (Guj.) Pvt Ltd**	A-1/4105,
101	M/s Rajesh Pharmaueticals	C-1/3912,
102	M/s Rajshree Industries	7515,
103	M/s Rallis India Ltd	2808,
104	M/s Rang Krupa Enterprises (No Data available)	3454,
105	M/s Rapicut Carbides Ltd	119,
106	M/s Rashdeep Chemicals	3451/B,
107	M/s Ravichem Industries	726-27,
108	M/s Raviraj Chemicals	C-1B/7120,
109	M/s Regency Paints	204,
110	M/s S. V. Chemicals	J/3438,
111	M/s Saheb Healthcare Change name Old is Preeten Healthcare Pvt. Ltd.	A-1/7304,
112	M/s Sai Chemicals (No data available)	4753,
113	M/s Sara Chemicals	3205/B,
114	M/s Shah Metal Industries	C-1/3914,
115	M/s Shakti Dye Chem	3703,
116	M/s Shakti Insulated Wires Pvt Ltd.	624/2-A,

Sr. No	Name Of The Company	Plot No.
117	M/s Sharad Speciality Chemicals	4307,
118	M/s. AYIT Pharma Change Name Old is M/s Shayona Chemicals	4705/2/6,
119	M/s Shiv Chemical Industries (NOC Given)	9917,
120	M/s Shiva Intermediates (A. Div. Of Shiva Mandeal Pvt Ltd)	4806/A/16,
121	M/s Shree Jalaram Chemicale (NOC Given)	7518,
122	M/s Shree Padmavati Chemicals	5906/3,
123	M/s Shree Ram Metal Industries	C-1-1039,
124	M/s Shree Saibaba Chemical Industries	3709/3,
125	M/s Shree Sulphamic Chemicals (NOC Given)	4518,
126	M/s Shree Tripura Enterprise	J-1207,
127	M/s Shreerang Industrial Enterprises	C-1/6826,
128	M/s Shri Ganesh Enterprises	C-1/B 195,
129	M/s. Nilkanth Organics Pvt. Ltd (Unit -II) **OLD Name** M/s Shubh Industries	A-1,3806,
130	M/s Shyam Chemicals Pvt Ltd	6004,
131	M/s Shyam Enterprise	C1/B,1512,
132	M/s Skau Chemicals	7405,
133	M/s Solar Polymers	C1/6825,
134	M/s Star Dyechem Industries	C-1/B 6914,
135	M/s Starlet Industries	4314,
136	M/s Sterling Chemical Industries	113/2,
137	M/s Sterling Chemicals	622,
138	M/s Sukha Chemical Industries	4705/1/2,
139	M/s Sun Smit Dye Chem Pvt Ltd	3455,
140	M/s Sun White Chemicals	C1B-3420,
141	M/s Sunshine Colours	7314/7,
142	M/s Supranav Chemical Industries Pvt Ltd	J-7015,
143	M/s Supreme Packaging Pvt Ltd	C1B-7834,
144	M/s Surat Ammonia & Chemical Company	6207/2 & 3,
145	M/s Sushma Textile Pvt Ltd	801/A,
146	M/s SVM Cera Tea Limited	4802/B,
147	M/s Swastik Industries	C-1/7101,
148	M/s Techno -Chem Manufacturing Co.	431,
149	M/s The Hindustan Mineral Products Co. Ltd	2203,
150	M/s Tolani Fabricators	7315,
151	M/s Trexil Chemicals Industries	C1 B-424,
152	M/s Trimurti Chemicals	6101/B,
153	M/s Tulsi Dye Chem (No data available)	C-1/B-415,
154	M/s Uma Panels	140/2/A
155	M/s United Phosphorus Limited (Unit - 3)	3101/2,

Sr. No	Name Of The Company	Plot No.
156	M/s Urvashi Chemicals Pvt Ltd	C1B/2009,
157	M/s Varahi Chemicals Industries	9109/7,
158	M/s Varoon Industries	230,
159	M/s Vasudev Chemicals	C-1/B/4743,
160	M/s Vidsa Inorganics Pvt Ltd.	9112/1,2,3,
161	M/s Viketa Electronics	4759,
162	M/s Vinayak Enterprise	5101/A,
163	M/s Vishal Malleables Limited	85/2,
164	M/s Vishwa Chemicals	4801/A/13,
165	M/s Vora Industries	1510,
166	M/s. KPL International Limited (No Data available)	5803,
167	M/s. Navadia Fine Chem	1309,
168	M/s. S. R. Chemicals	7516,
169	M/s. Shiv Shakti Chloride And Chemicals (NOC Given)	5018,
170	M/s. Shivam Organics	9106/1,
171	M/s. Shree Padmavati Chemical - (Unit - 2) (NOC Given)	5906/1&2
172	M/s. Sun Shine Chemicals	5237,
173	M/s. Umiya Industries	4405
174	M/s. V. R. Chemicals (Noc Given)	5149,
175	M/s. Bhakti Products	J-1714
176	M/s Pitru Chemethics	5150
177	M/s. Advance Dyestuff	9104/1
178	M/s Acqurate Engineering Industries	147/148
179	M/s Acquire Chemicals	7901/D
180	M/S. Balmukund Chemicals	C-1/4765,
181	M/s. Movie Coats	5003/3,
182	M/s. Holyland Corporation	3302/D,
183	M/s. Tex - Aux Chemicals	9107/1,
184	M/s Bectochem Organics	3815/-A-1
185	M/s Bodal Chemicals Pvt. Ltd - Unit - III	6006/B
186	M/s Atharva Enterprise	J-5231
187	M/s Avon Appliances	A-1/169/170
188	M/s Ankleshwar Ammonia Supply Co.	6508
189	M/s Finor Piplaj Chemicals Pvt. Ltd	714,
190	M/s Mukti Chemical Industries	718/19,
191	M/s J. D. Corporation (No Data available)	5222,
192	M/s. Shri Jagdish Enterprise	5252
193	M/s Acme Petrochem Pvt. Ltd.	3812
194	M/s Central Chemical Industries	2807/1,

Sr. No	Name Of The Company	Plot No.
195	M/s Aegis Intermediates	7905/D, GIDC Estate
196	M/s Jagdish Chemicals	4718,
197	M/s Jay Process	5732,
198	M/s IVINN	C-1-B/2512/B,
199	M/s. Gayatri Chemsynth Pvt. Ltd.	A-1/1404,
200	M/s. Riddhi Chemicals	5057 &5058
201	M/s. Crop Life Science Ltd.	5165,
202	M/s Agro Pack	B-155
203	M/s Vishal Malleables Limited	104/105
204	M/S. Dayaram Healthcare	A1/4906-17
205	M/S. Florance Industries	10006/B
206	M/s. Vevir Organics	7102
207	M/S. Supreme chemicals	7840/2
208	M/S. SBS Colours and Chemiques Pvt. Ltd. Unit-3	1905
209	M/S.Shree Shubh Chemicals	6603
210	M/S.Oxford industries Ltd.	3608
211	M/S. Vishrudh Organics Pvt. Ltd.	141/02/B
212	M/S J. P. Industries	4309
213	M/s Nucleophil Chemicals	6708,
214	M/s B. M. Pharma	4507,
215	M/s M-Chem Corporation	6409,
216	M/S Prime Corporation	C-1B / 2014
217	M/S Gujarat Glycols Pvt. Ltd.	7503
218	M/s Crystal Solvents Pvt. Ltd	3809-10,
219	M/S Shree Mahakali Traders	4927
220	M/S Unnati Industries	4921
221	M/s Techno Forge Limited	1021,
222	M/s. Agro Chem Industries	J-1715, GIDC Industrial Estate
223	M/s. Ramanand Traders (Unit-II)	10007/A,
224	M/s. Smit Enterprise	5152,
225	M/s. Colours india	C/1-7012,
226	M/S. Shilpa Chemical Industries	4777
227	M/s. Kohinoor Colours Pvt. Ltd. (Unit-2)	5107,
228	M/s. Nigam Pharmachem Industires	5061,
229	M/s. Yogi Chem	9110/3,
230	M/S. Laboris Chemicals	C-1/B-6834
231	M/s. Colochem India	C-1/4766,
232	M/s. Meridian Chem-Bond Ltd.	5906/4,
233	M/s. Silicon Jewel Industries Pvt. Ltd.	Survey No. 57-58,

Sr. No	Name Of The Company	Plot No.
234	M/s. Krishna Industries	Plot No. 5722, GIDC, Ankleshwar
235	M/s. Shree Ram Chemicals	C1-7009, GIDC
236	M/s. Navjivan Chemicals	C1B/3411
237	M/s. Gujarat Barrels	113,114 & 115
238	M/s. Shree Dutt Agrochem	C1B-4746
239	M/s. Laurel Research Lab	C1B-3418
240	M/s. K. I. Chemicals	10009/5
241	M/s Maruti Industires	4108/A,
242	M/s. Bharat Drum Supplying Co.	7303
243	M/s Sunrise Chemicals	J-3437,
244	M/s Meridian Chem Bond Ltd	3206/A-1,
245	M/s. S. B. Industries	5217
246	M/s. Techno Forge Ltd	1022
247	M/s. Shreeji Gas Agency	328, 329/1
248	M/s. Creative Enterprise	612
249	M/s. J. S. Industries	1517
250	M/s. Bharat Chemical Industries	7905/B&C
251	M/s. Shree Charbhuja Agro Fertilizer Co.	2808/A/1/2
252	M/s. Vipul Pharma Chem	4906/22
253	M/s Nandosal Industries	4806-07
254	M/s. Roxy Chemicals	A2-3447
255	M/s. Deepmoulesh Industries	A-1/4106
256	M/s. Akanksha Paper Mills Pvt. Ltd.	6108 & 6109
257	M/s Navdeep Chemicals Pvt. Ltd. (Unit-3)	1105
258	M/s Navdeep Chemicals Pvt. Ltd. (Unit-2)	430
259	M/s. Relief Pharma Chem	A-2/2502
260	M/s. Sarjak Pharma Chem	5137
261	M/s. Sun Shine Industries	5905/4/B,
262	M/s. Kinjal Chemicals Pvt. Ltd	5038
263	M/s. JRD Chem Industries	C1/B - 3413
264	M/s. Arihant Chemicals Industries	5144
265	M/s. Shayona Intermediates	7406, GIDC, Ank
266	M/s. Sigma Chemopharma Pvt. Ltd	C-1/B-4755 & 4756
267	M/s. Nigam Industries	5059 & 5060
268	M/s. Vivek Chemicals	C-1-B/3910
269	M/s. Hemal Impex	C1B-7812
270	M/s. Monal Colour Chem Pvt. Ltd	4805
271	M/s. Surat Ammonia & Chemicals Co.	Plot No. 6207/2&3

Sub:- List Of Zero Discharge member industries at Panoli

Sr. No	Name Of The Company	Plot No.
1	M/s Amruta Industries	2312
2	M/s A. H. Chemicals	C-1/1926
3	M/s Aanjaney Pharma Chem Private Ltd	2306
4	M/s ABC Organics & Chemicals	605
5	M/s Agro Pack	227/1,
6	M/s. Meghmani Organics Ltd (Agro Division) Unit -IV **OLD Name M/s Agronule**	22/2
7	M/s Akshay Inoganics	665
8	M/s Amar Chemical	C1B, 110/2
9	M/s Angreji Nitroproducts	606
10	M/s Anjani Chemicals	628/A
11	M/s Aum Industries	610/3
12	M/s Bhagwati Enterprise	906/8,
13	M/s Bharat Fluorine Industries	523
14	M/s Bhasali Petrochem Pvt. Ltd	2808
15	M/s Bini Chemicals	3011
16	M/s Bini Organics Pvt. Ltd.	J-1416-18
17	M/s Catalco Chemicls Pvt. Ltd.	A-1/1819-20,
18	M/s Crystal Clear Products	C1-1031/8,
19	M/s Crystal Clear Products	C-I-1031/9,
20	M/s Dalmia Chemicals Ltd	425,
21	M/s Devdutt Chemical Industries	J/1015,
22	M/s Dhwanil Dye Chem	102,
23	M/s. Elbee Aqua Link Change name old is M/s Esjay Industries	C/1018,
24	M/s Evertex Industries Pvt. Ltd	227/2,
25	M/s Faiz Chemicals	C-1/1924,
26	M/s Glass Fibre Laminates	201/15,
27	M/s Gopsi Pharma Pvt. Ltd	2309/10/11,
28	M/s Gujarat Amines	2107,
29	M/s Gujarat Fluorine Corporation	608,
30	M/s Hi- Tech Carbon & Catalyst	J-405/4,
31	M/s Hindusthan Magcobar Chemicals Ltd	208/1,
32	M/s Hiran Paints	3029,

Sr. No	Name Of The Company	Plot No.
33	M/s Honest Chemical Industries	2104,
34	M/s I. G. Chemical Industries	326,
35	M/s Industrial Chemicals	419,
36	M/s Jay Lime Industries Transfer of Plot to M-57	2305,
37	M/s Kanika Sales Corporation	3121,
38	M/s Krishna Inter Chemicals	J-405/5,
39	M/s Luna Chemical Industries Pvt. Ltd.	2316,
40	M/s Luxica Pharma Ind.	2308,
41	M/s M. P. Corporation	L/1821,
42	M/s Mahakrishna Chemicals Ltd	301,
43	M/s Make Fine Chemicals & Engineering Pvt. Ltd	408/1-2,
44	M/s Manali Gum Industries Pvt. Ltd	657/1/GS/1to3,
45	M/s MC-Bauchemie(India) Pvt. Ltd	A-1, 1101
46	M/s Meera Dyes	3002,
47	M/s Nanda Fluorine Corporation	407/13,
48	M/s Navkar Chemicals	3010,
49	M/s OMKAR Chemicla Industries	C1B,407/1,
50	M/s P. G. Resins & Coatings Pvt Ltd	522,
51	M/s Panoli Products Pvt Ltd	3313/3316,
52	M/s Panorama Aromatics Ltd	2908/2911,
53	M/s Pestkill Pesticides Industries	233-236,
54	M/s Poorab Sales Corporation	C-1,1931,
55	M/s Pooja Industries	C-1/B-317/1
56	M/s Principal Pharmaceuticals & Chemicals Ltd	325/1-2,
57	M/s Promise Chemicals Pvt Ltd	C-1/1701,
58	M/s Pushpa J. Shah	906/12-13,
59	M/s Rahul Intermediates	422,
60	M/s Rajeev Chlorides & Carbonics (P) Ltd	3124 & 3125,
61	M/s Sahyadri Rasayan	2931/2932,
62	M/s Shiv Shakti Industries	2103,
63	M/s Shivam Incorporation	521,
64	M/s Shree Ashapura Chemicals	2919,
65	M/s OM sai ram corporation (old name is Shreeji Organic Chemicals)	2106,

Sr. No	Name Of The Company	Plot No.
66	M/s Shreenath & Associates	1814/1,
67	M/s Simrone Products	C-1/1706,
68	M/s Snow White Products	C1-1027,
69	M/s Sukhdev Chemicals (P) Ltd	318/319,
70	M/s Sulphur Mills Ltd	A1/1818,
71	M/s Sulphur Mills Ltd	C1/1929-1930,
72	M/s Sumeet Organic Industries	524,
73	M/s Sun Chemicals	A-2, 624,
74	M/s Super Chem & Co.	C1B-1910,
75	M/s Thakor Reductants Pvt Ltd	103,
76	M/s Trikaldarshi Chemical Industries	104,
77	M/s Unique Pharmaceutical Laboratories (A Div. of J. B. Chemicals & Parmaceuticals	304-308,
78	M/s Unisco Paints & Varnishes	666,
79	M/s Vadilal Chemicals Limited	615,
80	M/s Vardan Petrochemicals (P) Ltd	526/27 & 670,
81	M/s Varun Chemicals	C-1/1919-20,
82	M/s Verma Gases (India) Pvt Ltd	669,
83	M/s Vinayak Chemicals	668,
84	M/s Vrundavan Chemicals	C-1/B-407/6,
85	M/s World Chem Industries	C-1/B-407/4,
86	M/s. Parth Chemical Industries **OLD NAME M/s Pyramid Distillation**	618 / A
87	M/S N.J Agrochem Pvt. Ltd.	3506/3507 & 3317/3318
88	M/s. Thakor Petro Chem Pvt Ltd. (NOC GIVEN)	3104,
89	M/s Impro Iterchem Pvt. Ltd	414,
90	M/s. Rama Ferti - Chem Ltd.	A-1501 & 1502,
91	M/s S. R. Chemicals	1917 & C-1/1918, GIDC
92	M/s. Indo Tex Chem	C-1B/1212/1213/1
93	M/s. Soham Plaster Industries	201/9413
94	M/S. Shree Balaji Enterprise	2601,3408, 3409
95	M/S. Dhanlaxmi Industries	504, GIDC Industries, Panoli
96	M/s. DeH Specialized Constructions	C-1/1028 & 1029, GIDC
97	M/S. Citizen Minerals	402
98	M/S. Kiran Pondy chens Ltd.	A-1/1104

Sr. No	Name Of The Company	Plot No.
99	M/s Farmson Chemicals Industries	C-1 /B/1912
100	M/S. Global Associates	3001
101	M/S RFCL Limited	1
102	M/S Unity Chemicals	C-1/1922, GIDC Estate
103	M/s. Kawya Lab **OLD NAME** M/S Uma Industries	3404
104	M/S Micrp Chemtech Pvt. Ltd.	2806
105	M/S Remik Chemicals Pvt. Ltd.	3109 & 3110
106	M/s Jeckson & Sons	516,
107	m/s Raj Manufacturing & Trading (P) Ltd.	3530
108	M/S Mega Innovative Crops Pvt. Ltd.	415
109	M/s Anil Chemicals and Industries Ltd.	614
110	M/s Aims Chemicals Industries	C-1/B-905-1
111	M/s. Om Sairam Industries	906/26,
112	M/s P I Industries Ltd (A Div of P I Polymers)	Adjacent to plot 237,
113	M/s. A. S. Industries	3108,
114	M/S. Sumil Chemical Industries Pvt. Ltd.	C-1B-211/1,2,3, GIDC Estate Ankleshwar
115	M/s. Veer Inorganics	C-1/B-905/2, & C-1/B-905/9,
116	M/s. Ibex Corparation	C-1/B-407/2,
117	M/s. Zeel Dye Chem	3026,
118	M/s. NED Energy Limited	1722,
119	M/s. Ramdoot Industries	C-1/B-1712, Opp. Telephone Exchange
120	M/s. V. K. Chemical Industries	C1B 905/6
121	M/s. GASCO	A1-1816
122	M/s Agri Care	228,
123	M/s Richa Intermediates Pvt Ltd	505,
124	M/s Cyclo Pharma Chem **OLD Name Plus Chemicals**	220/A,
125	M/s. Vismita Intermediates (P) Ltd	3016 & 3017
126	M/s. Reshmika Minerals & Chemicals Pvt. Ltd	23
127	M/s Rohan Chemicals	3040,
128	M/s. Clinch Silicones Pvt. Ltd	C 1/1702
129	M/s. Venus Plaster Industries	1727, Nr. Telephone Exchange
130	M/s. Sahyog Industries	3212
131	M/s. A. B. S. Industries	408/10

Sr. No	Name Of The Company	Plot No.
132	M/s. Anchor Industries	201/15
133	M/s. AMC Chemicals Pvt. Ltd	3402
134	M/s. Vishwa Chemicals	3030
135	M/s. Pushpa J. Shah (Unit -II)	906/17
136	M/s. Raj Chemo Plast	2701
137	M/s. Cheminova India Ltd (Formulation -Unit II)	27+28/B
138	M/s. Atul Ltd	6 & 7
139	M/s Blue Dip Organics Industries	513
140	M/s. Om Pile Pvt. Ltd	A-1/1506
141	M/s J. B. Chemicals & Pharmaceuticlas Ltd.	215 to 219
142	M/s. Agro Pack (Unit - 3)	203/1
143	M/s. S Y N Chemicals	2930
144	M/s. Deven Chemicals Industries	201/23
145	M/s. Kalyani Corporation	906/23
146	M/s. Skay Chem Corporation	3009
147	M/s Cheminova India Ltd. - Formulation Division	242/P,
148	M/s Ginni Filaments Limited	205 & 206,
149	M/s. Siddhi Products	2313
150	M/s. Tec Enterprise	106,
151	M/s. Sulphur Mills Ltd	23,02,31,232
152	M/s. Mahadev Pharmaceuticals	1032/7&8,
153	M/s. Shivam Silica Industries	3539,
154	M/s. Siddharth Chlorochem Pvt. Ltd	Plot No. 313, Phase II

Annexure - E

Financial Outlay for various major activities related to EMS and its up gradation in Ankleshwar Cluster:

Sr No	Activity	Financial Outlay (Lakh Rs)	Remarks
Investment by Individual Industries			
1	Investment by individual industries for up gradation of EMS	32999.97	Work completed except for one case.
Total (A)		**32999.97**	
Investment by Common Environment Infrastructure Providers			
2	Up gradation of FETP by NCTL	810=00	Work is in progress
3	Up gradation of underground Drainage system & lining of open creek by NAA	1379=00	
4	Proposed overhead pressure pipeline and overhead tanks (in total 19 clusters) in GIDC Ankleshwar for disposal of trade effluent	2000=00	Feasibility study completed by L & T. Services of M/S Mars Planning & Engg. Services, A'bad retained for detailed engineering and cost estimation and is completed. Project to be executed by GIDC. The scheme is presently for sanction of subsidy under CIP scheme of IC office. Estimated implementation period is 15 months.
5	Plazma Plant for incineration of hazardous waste	8500=00	EC and CTE for the plazma plant namely M/S Plasma Energy Applied Technologies Ankleshwar Pvt. Ltd. are already obtained.
6	Common MEE and additional incinerator at BEIL	3432=00	Rotary kiln incinerator having capacity of 6.5 million K Cal / Hr is commissioned. Trails of common MEE is started.
7	CETP for pharmaceutical industries	6200=00	Land acquired, EC obtained from MoEF, New Delhi. CTE application is pending with GPCB.
Total (B)		**22321=00**	
Other Investment			
8	Magnetic Flow meters installations by NCTL	38.30	
9	Third Party Monitoring by TIFAC-CORE-SCET, a Surat based Govt. Approved Engineering College and GEMI, Gandhinagar.	340.26	For the period May 2010 to Feb 2013
10	AAQM in GIDC Estates of Ankleshwar & Panoli through Industries Association	20.80	Annual recurring cost
Total (C)		**399.36**	
GRAND TOTAL = A + B + C		**55720.33**	

Over and above, the collective cost of operation of new EMS adopted by various industries in the Ankleshwar cluster is estimated to be @ Rs. 1500 Lakhs per month.

ANNEXURE - F

List of units having Multiple Effect Evaporators (MEE)

Sr. No.	NAME OF INDUSTRIES	ADDRESS	GIDC	Remarks
1	AARTI INDUSTRIES LIMITED	758/1-2	JHA	
2	ATUL LTD.	297, 297/1	ANK	
3	CADILA HEALTHCARE LTD UNIT 1.	291 -293	ANK	
4	CADILA HEALTHCARE LTD UNIT 2	5/1/B	ANK	2 MEEs
5	CADILA PHARMACEUTICAL LTD . UNIT 1	294	ANK	
6	CHEMIEORGANICS CHEMICALS PVT. LTD	758	JHA	
7	COROMANDEL FERTILIZERS LIMITED	3204	ANK	
8	GLENMARK GENERIC LIMTED	3102/C TO 3109/A, 3103	ANK	
9	GULSHAN POLYOLS LTD	762	JHA	
10	HEMANI INTERMEDIATE PVT LTD	3208	ANK	
11	INDUSTRIAL SOLVENT LIMITED	7906-09	ANK	
12	ISAGRO ASIA AGRO CHEMICALS PVT LTD	640	PAN	
13	KANORIA CHEMICALS AND INDUSTRIES LIMITED	3407	ANK	
14	LUPIN LTD	124,125,123,123/1&9	ANK	4 MEEs
15	MEGHMANI ORGANICS LTD	21/1	PAN	
16	MEGHMANI ORGANICS LTD	5037	ANK	
17	PI INDUSTRIES LTD	237	PAN	
18	SAJJAN INDIA LIMITED	6102/3	ANK	3 MEEs
19	SUN PHARMACEUTICALS LTD	4708	ANK	2 MEEs
20	SUN PHARMACEUTICALS LIMITED	24/2, 25	PAN	2 MEEs
21	TONIRA PHARMA LTD	4752	ANK	2 MEEs
22	UNITED PHOSPHORUS (UNIT - 5)	750	JHA	
23	WOCKHARDT LTD (BULK DRUG DIVIDION)	138	ANK	
24	ZANDU CHEMICALS LTD (ZCL CHEMICALS LTD)	3102/B	ANK	
25	CHEMCRUX ENTERPRISES LTD	4712-14	ANK	
26	DYNEMIC PRODUCTS LIMITED UNIT-II	3709/6	ANK	2 MEEs
27	HIRAN ORGOCHEM LTD	663	PAN	
28	GUJARAT AGROCHEM LIMITED	2901	PAN	
29	SOLVAY SPECIALITY INDIA PVT LTD	35	PAN	
30	AVENTIS PHARMA LTD	3501-3503-15,6310-B-14	ANK	U/C
31	BASF INDIA LIMITED, UNIT-1	6216	ANK	
32	BASF INDIA LIMITED, UNIT-2	8001, 8001A	ANK	

Sr. No.	NAME OF INDUSTRIES	ADDRESS	GIDC	Remarks
33	BAKUL PHARMA PVT LIMITED	6202	ANK	
34	ARCOY BIO-REFINERY PVT. LIMITED	29	PAN	
35	RAMDEV CHEMICAL INDUSTRIES (UNIT II)	3440, 3443, J-3439	ANK	
36	CENTURY TEXTILES AND INDUSTRIES LIMITED	826	JHA	
37	UPL (UNIT 1)	117, 118	ANK	U/C
38	SUBHASRI PIGMENTS PVT. LIMITED	1211, 1213, 1201, 1202	ANK	2 MEEs Proposed
39	YASHASHVI RASAYAN PVT. LIMITED	765	JHA	
40	R. P. INDUSTRIES	519,1,2,3	PAN	
41	RACHANA DYECHEM	2917	PAN	U/C
42	GUJARAT ORGANICS LIMITED	127/1	ANK	
43	J.B. CHEMICALS & PHARMACEUTICALS LTD	215 TO 219, 308 TO 310	PAN	
44	BEIL (COMMON MEE)		ANK	Trial run
45	RIDDHI PHARMA	A2/2511	ANK	Comm.
46	RUKUL INDUSTRIES	1705/B & C	ANK	
47	UPL (UNIT 5)	750, 746	JHA	
48	UNIQUE CHEMICALS	5	PAN	
49	J.B. CHEMICALS & PHARMACEUTICALS LTD	128/1	ANK	
50	HIKAL LTD.,	629, 630	PAN	
51	CHEMINOVA (INDIA) LTD. (TECH. DIV.)	241	PAN	
52	MERCHEM LTD	24/1	PAN	
53	ALKEM LABORATORIES LTD.	NAUGAMA		2 MEEs
54	GHARDA CHEMICALS LTD	3525,3512-A	PAN	
55	DYNEMIC PRODUCTS LIMITED UNIT-I	6401	ANK	
56	TATVA CHINTAN PHARMACHEM PVT. LTD.	502/8,17 &18,	ANK	Proposed

U/C : Under Construction
Comm. : Commissioning

ANNEXURE - G

List of units having Reverse Osmosis (R.O.) System

SR	NAME OF INDUSTRIES	ADDRESS	GIDC	Remarks
1	AARTI INDUSTRIES LIMITED	758/1-2	JHA	
2	ATUL LTD.	297, 297/1	ANK	
3	CADILA HEALTHCARE LTD UNIT 1.	291 -293	ANK	
4	CADILA HEALTHCARE LTD UNIT 2	5/1/B	ANK	
5	CADILA PHARMACEUTICAL LTD . UNIT 1	294	ANK	3 ROs
6	DYSTAR INDIA PRIVATE LIMITED	3002	ANK	
7	GLENMARK GENERIC LIMTED	3102/C TO 3109/A, 3103	ANK	
8	GULSHAN POLYOLS LTD	762	JHA	
9	INDUSTRIAL SOLVENT LIMITED	7906-09	ANK	
10	ISAGRO ASIA AGRO CHEMICALS PVT LTD	640	PAN	
11	KANORIA CHEMICALS AND INDUSTRIES LIMITED	3407	ANK	2 ROs
12	LUPIN LTD	124,125,123,123 /1&9	ANK	3 ROs
13	PI INDUSTRIES LTD	237	PAN	
14	TONIRA PHARMA LTD	4752	ANK	
15	UNITED PHOSPHORUS LTD. (UNIT - 5)	750	JHA	
16	WOCKHARDT LTD	138	ANK	
17	GUJARAT AGROCHEM LIMITED	2901	PAN	
18	ZANDU CHEMICALS LTD.(ZCL LTD)	1201,02,13	ANK	
19	ALKEM LABORATORIES LIMITED	289-290	ANK	
20	CHEMCRUX ENTERPRISES LTD	4712-14	ANK	
21	UNIQUE CHEMICALS	5	PAN	
22	SOLVAY SPECIALITY INDIA PVT LTD	35	PAN	
23	BAKUL PHARMA PVT LIMITED	6202	ANK	
24	J.B. CHEMICALS & PHARMACEUTICALS LTD	215 TO 219, 308 TO 310	PAN	
25	J.B. CHEMICALS & PHARMACEUTICALS LTD	128/1	ANK	
26	ARCOY BIO-REFINERY PVT. LIMITED	29	PAN	
27	CENTURY TEXTILES AND INDUSTRIES LIMITED	826	JHA	
28	S. KUMARS NATIONWIDE LIMITED	825	JHA	
29	SUN PHARMACEUTICALS LIMITED	24/2, 25	PAN	
30	BASF (UNIT II)	8001	ANK	UF & NF – Comm.
31	GUJARAT INSECTICIDES LIMITED	805, 806	ANK	

Annexure I

Progress Report - NEERI

(Upgradation of performance of final effluent treatment plant at Ankleshwar)

Work carried out

- Phase I : Lab scale studies under control condition on tertiary treatment using activated carbon is evaluated and progress report is submitted to NCTL.

- Phase II : Lab scale AOP process with different oxidation and catalyst was evaluated and report regarding the lab scale studies is also submitted to NCTL.

- Biological study formulating different cultures are being used for the development of biomass as well as degradation. The study is also in process.

- Feasibility of the biological treatment is yet to be finalized however, preliminary report is submitted to NCTL.

Work in continuation

1. Column adsorption studies are carried out for the removal of colour as well as degradable and non biodegradable compounds. Identification of adsorbed compounds are carried out through GC-MS

2. The compounds being adsorbed are identified and their degradation and non biodegradation is in process

3. The work is being carried out for different set of samples (composite) collected time to time from treatment plants (CETP and FETP)

4. The exact dose related to flow rate as well as the break through is being carried out through column studies for the tertiary treatment

5. Another study related to the wastewater coming from biological treatment is also being carried out for the adsorption studies to evaluate load reduction

6. Biological studies with different options of seeding are being carried out and the results are encouraging (copy of progress report for biological treatment is enclosed)

7. Further study related to the possibility of enhancement of biomass is in progress

8. For advance oxidation process certain variables are being changed like flow rate of ozone and the time and the results are awaited.

9. Reactor with high power UV is developed and experiments are in process

10. NCTL team comprising of CEO & GM visited NEERI, Nagpur to visualize the progress on 7th & 8th January, 2013 and also observed the continuous flow model.

11. NEERI assured NCTL that work is undertaken as per current scenario at FETP in order to achieve marine discharge norms.

12. NEERI informed NCTL that because of cocktail nature of the inlet effluent and unanticipated variables, more time is

being taken. NEERI shall give an effective and efficient treatment scheme.

13. NCTL requested NEERI to indicate realistic time schedule for completion of the study.

Annexure - J

NOTIFIED AREA OFFICE

(GUJARAT INDUSTRIAL DEVELOPMENT CORPORATION)

Office of the Dy. Executive Engineer (Drainage)
Plot No. 618/619, AIA Community Centre
GIDC Ankleshwar 393 002
Phone : 02646-251359
Fax : 02646-251750

Our Ref. No. : N.A./ANK/DEE/DRG/ 216 Date 30 JAN 2013

ActionTacken Report:- (AS ON 29/01/13)

SR	Description	Qty	Unit	Amount (Rs. in Lac)
1	M.H. Repaired and New Constructed	242	Nos	14.64
2	U.G Drainage line repaired			
	(E) 200 MM Dia PVC (Housing Sector)	201	RMT	0.94
	(F) 315 MM Dia PVC (Housing Sector)	350	RMT	3.99
	(G)400 MM Dia PVC (Nr. Ramdev Chokdi)	132	RMT	1.85
	(H) 400 MM Dia GRP (Nr. Valia Chokdi)	210	RMT	2.10
3	Remodelling of Existing Natural Crick passing through Industrial Estate			
	(C) Open SWD (i) Rubble Masonry and Concrete Channel)	5000	RMT	1346.00 Lac
	(D) PIPE LINE			
	(v) 315 MM Dia HDPE in Housing Sector	1500.1	RMT	
	(vi) 400 MM Dia GRP PIPE LINE	2500.00	RMT	
	(vii) 600 MM Dia GRP Pipe	843.00	RMT	
	(viii) 700 MM Dia GRP Pipe	2236	RMT	

To stop the effluent passing in open crick towards to Amla Khadi Notified Area authority has fixed the agency M/S Kunal Structures to laid GRP as well as HDPE pipe of 700, 600, 400 & 315 MM Dia. All the pipe laying and concreting work for Crick has already been completed by 15/02/2012 and cost for the same is amounting to Rs. 1346.00 Lac.

- The final report from DDIT was already has been received and the nacessary improvement on existing drainage line shall be taken on hand. After the monsoon i.e.end of the sep.-2011 and work will be completed within the one month from the day of starting the work.also are connections have been identified and there is no any unauthorized connection.
- As per directives of NCTL & GPCB, the 5 units selected surrounded 8 pumping station, for over ground line i.e. above ground level drainage line. Have started to discharge effluant through over ground level drainage line.
- To stop the disposal of unauthorised effluent, it is decided to lay. The over ground drainage line for 131 units. The consultant is also appointed for survey and tender. Procedure for tender etc. is in process.
- Now, No quantity of sewage effluent from STP is discharged in Amlakhadi

CHIEF OFFICER
Notified Area, ANKLESHWAR

Annexure K

Ground Water Monitoring Data

Source of Sample : Borewell of Shri Ahmedbhai Patel, Piraman Village								
Year	pH	TDS mg/l	DO mg/l	COD mg/l	NO3 -N mg/l	F mg/l	NO2 -N mg/l	NH3 -N mg/l
2005-06	8.31	1422	---	11	3.6	0.3		
2006-07	7.13	1604	5.02	19	2.4	0.8		
2007-08	7.45	1588	6.08	18	5.54	0.56	0.04	BDL
2008-09	7.82	1504	3.25	3.95	1.425	0.0208	0.05	BDL
2009-10	7.78	2482	5.91	7.97	0.54	0.02	0.4	BDL
2010-11	7.14	1972		2.6	0.56	0.51	BDL	0.56
2011-12	7.12	1536	7.87	5.0	1.49	0.46	0.029	BDL
2012-13	8.05	1634	5.46	2.0	0.84	0.40	0.004	BDL
Source of Sample : Borewell of Khadiwala, Mottafalia Piraman Village								
Year	pH	TDS mg/l	DO mg/l	COD mg/l	NO3 -N mg/l	F mg/l	NO2 -N mg/l	NH3 -N mg/l
2005-06	8.25	676	6.5	5.3	6.5	0.28		
2006-07	8.15	976	5.77	7.8	1.6	0.89		
2007-08	7.55	1116	5.21	8	3.32	0.56	0.08	BDL
2008-09	8.1	1128	3.22	3.95	2.875	0.0208	BDL	BDL
2009-10	8.28	1788	4.61	7.97	0.54	0.02	0.45	BDL
2010-11	7.90	1929		5.3	1.54	0.33	0.12	0.56
2011-12	7.90	960	4.75	3.5	0.5	0.59	0.026	0.5
2012-13	8.02	972	8.37	2.0	0.54	0.75	0.01	BDL
Source of Sample : Borewell of Piraman Village Panchayat								
Year	pH	TDS mg/l	DO mg/l	COD mg/l	NO3 -N mg/l	F mg/l	NO2 -N mg/l	NH3 -N mg/l
2005-06	8.36	1100	---	5.7	2.5	0.4		
2006-07	7.62	1586	5.1	18.1	6.6	0.73		
2007-08	8.05	106	5.77	16	2	0.46	0.09	BDL
2008-09	8.28	192	3.37	3.95	3.325	0.0234	0.02	BDL
2009-10	8.46	604	3.82	7.97	0.05	0.02	0.3	BDL
2010-11	7.56	1976		5.3	6.05	0.4	0.01	0.56
2011-12	7.93	146	3.86	12.0	0.15	0.08	0.03	0.62
2012-13	8.30	1548	8.24	13	1.06	0.68	0.01	BDL

(Source GPCB: Regional Office)

BOREWELL OF ALUNJ							
MONTH	BOD	PH	TDS	DO	COD (mg/ltr)	NITRATE (mg/ltr)	FLUORIDE (mg/ltr)
Apr-09	0.98	7.77	1784	3.96	7.82	2.8	0.36
May-09	0.94	7.43	950	3.1	8	2.21	0.45
Jun-09	0.82	7.88	1282	2.84	8.06	0.7134	0.6
Jul-09	0.9	7.57	1434	3.45	8.03	0.5412	1
Aug-09	0.7	7.84	1818	5.55	8	0.1476	0.3
Sep-09	0.67	7.84	1832	3.96	7.84	0.369	0.3
Oct-09	0.76	7.8	1872	3.98	7.97	0.1722	0.35
Nov-09	0.89	7.68	1972	5.11	7.94	0.1476	0.25
Dec-09	0.79	7.82	2812	4.39	7.9	1	0.15
Jan-10	0.82	8.17	1906	4.97	7.94	0.64	0.2

Feb-10	0.83	8.2	1798	7.75	7.9	1.23	0.25
Mar-10	0.81	7.37	1858	4.88	8	0.64	0.18
Apr-10	0.83	8.15	1922.00	4.72	12.00	0.36	1.13
May-10	1.09	8.29	1796.00	4.97	8	0.34	0.09
Jun-10	1.06	7.78	1972.00	4.89	8	0.32	0.18
Jul-10	0.97	7.98	1932	5.34	8		0.31
Aug-10	1.57	7.89	1938	4.21	8	1.6	0.63
Sep-10	1.29	8.25	1760	4.39	8	2.43	0.5
Oct-10	2.71	7.89	1942	4.62	8	1.97	0.44
Nov-10	1.39	8.16	1774	6.02	8	0.90	0.59
Dec-10	<5	8.20	1934	3.87	20	1.85	0.67
Jan-11	2.36	7.63	1890	4.81	12	0.042	0.41
Feb-11	2.11	7.46	1030	-	12	0.95	0.80
Mar-11	0.93	7.80	2040	-	2.6	2.28	0.66
Apr – 11	2.2	7.64	2090	-	12	6.13	0.67
May – 11	6.51	7.71	2032	-	22	2.45	0.426
Jun – 11	2.1	8.11	2078	-	10	1.73	0.64
July - 11	< 5	7.49	1910	-	4	0.024	0.33
Aug-11	<5	8.73	1768	-	12.3	1.14	0.26
Sept-11	0.32	7.32	1866	-	< 5	1.41	BDL
Oct-11	1.62	8.38	2056	-	8	1.76	0.65
Nov-11	5	8.42	1978	-	13	1.58	0.21
Dec-11	2.19	7.87	1988	-	13	2.09	0.82
Jan-12	4.0	7.75	2074	-	22	0.75	0.66
Feb-12	2.09	7.78	1964	-	8	2.11	0.44
Mar-12	4.2	7.98	2024	-	20	1.82	1.38
Apr – 12	2.0	8.57	1886	-	9	0.71	0.31
May – 12	6.3	8.12	1896	-	25	2.80	0.48
Jun – 12	1.3	7.98	1916	-	35	1.21	0.49
July – 12	2.26	7.62	1906	-	12	1.76	0.78
Aug-12	0.96	7.77	2014	-	12	0.20	0.22
Sept-12	2.8	7.59	1892	-	18	1.06	0.35
Oct-12	< 5	8.07	1898	-	12	1.88	0.59
Nov-12	1.8	8.02	2158	-	10	1.01	0.21
Dec-12	< 5	8.22	1728	-	17	0.51	0.12
Jan-13	< 5	7.69	2060	-	08	0.78	0.42
Feb-13	3	7.99	1974	-	20	0.19	0.243

Annexure L

Monthly Data for Ambient Air Quality at GIDC – Ankleshwar						
Sr.No.	Location	Month	Parameters			
			RSPM	SPM	SO_2	NO_x
I	NAMP M/s Ralis Pharma India Ltd, GIDC, Ankleshwar (Industrial Area)	Jan-08	123.56	250.56	23.58	29.76
		Feb-08	121.88	245.63	23.56	29.26
		Mar-08	105.56	212.22	21.02	26.51
		Apr-08	103.30	205.60	23.45	29.17
		May-08	119.63	239.50	25.06	31.89
		Jun-08	119.00	239.13	22.76	28.83
		Jul-08	107.67	214.22	20.87	26.21
		Aug-08	95.11	184.44	19.48	24.39
		Sep-08	98.50	189.63	20.66	25.71
		Oct-08	104.17	203.25	21.96	27.27
		Nov-08	92.83	183.00	20.45	25.78
		Dec-08	97.56	197.22	20.92	26.43
		Jan-09	99.89	199.00	21.57	27.04
		Feb-09	22.10	27.70	22.10	27.70
		Mar-09	104.63	208.75	22.31	27.93
		Apr-09	103.11	205.89	21.40	26.40
		May-09	107.44	221.11	22.33	28.60
		Jun-09	113.50	233.50	22.68	29.09
		Jul-09	93.56	188.67	18.80	24.81
		Aug-09	88.38	175.63	18.83	25.25
		Sep-09	91.67	182.22	19.50	25.81
		Oct-09	98.33	196.67	22.50	29.51
		Nov-09	88.00	175.13	22.79	29.95
		Dec-09	91.59	182.41	20.90	27.63
		Jan-10	81.78	163.44	22.90	29.62
		Feb-10	80.25	143.25	23.35	30.18
		Mar-10	84.56	176.00	22.26	29.10
		Apr-10	90.29	187.58	21.56	28.20
		May10	94.93	200.17	16.93	22.56
		Jun-10	91.58	191.92	18.94	26.06
		Jul-10	75.08	156.58	16.91	23.57
		Aug-10	61.77	121.3	13.07	19.12
		Sep-10	71.54	146.17	14.72	20.46
		Oct-10	73.83	151.33	15.04	20.99
		Nov-10	79.63	163.50	15.68	22.12
		Dec-10	86.75	183.42	16.58	24.15
		Jan-11	96.00	197.33	17.07	25.52
		Feb-11	101.00	209.00	19.50	26.30
		Mar-11	107.00	220.00	21.10	30.20
		Apr-11	114.00	234.00	22.30	32.50
		May-11	126.00	244.00	21.70	30.50

			PM_{10}	$PM_{2.5}$	SO_2	NO_x
		Jun-11	109.00	33.00	19.90	28.80
		July-11	92.00	27.00	16.00	25.50
		Aug-11	68.00	20.00	13.20	21.90
		Sept-11	77.00	23.00	15.00	23.30
		Oct-11	88.00	26.00	16.70	25.40
		Nov-11	91.19	27.67	16.63	24.95
		Dec-11	94.44	27.50	17.78	26.54
		Jan-12	100.63	30.38	20.68	29.71
		Feb-12	103.93	30.89	21.43	30.62
		Mar-12	121.07	39.11	22.47	32.06
		Apr-12	108.38	36.88	18.13	27.96
		May-12	111.78	41.22	17.36	26.62
		Jun-12	115.32	44.25	16.63	25.43
		July-12	95.50	26.38	14.06	23.20
		Aug-12	86.57	23.19	13.80	23.52
		Sept-12	98.00	-	12.81	10.34
		Oct-12	98.00	-	13.93	29.34
		Nov-12	91.38	30.25	18.75	26.50
		Dec-12	91.22	29.11	19.22	25.67
		Jan-13	83.89	29.89	17.78	26.67
		Feb-13	77.63	26.00	17.88	24.88
		Mar-13	78.50	26.50	23.00	30.00
			RSPM	**SPM**	**SO_2**	**NO_x**
II	NAMP M/s Durga Traders, Rajpipala Road, Near ONGC Colony) Ankleshwar (Residential Area, in the North-West direction of Ankleshwar Industrial Area)	Jan-08	90.11	182.33	15.40	25.56
		Feb-08	89.56	180.44	15.46	24.37
		Mar-08	77.88	159.38	14.73	23.14
		Apr-08	76.80	155.30	19.30	26.68
		May-08	77.63	157.25	20.31	29.24
		Jun-08	75.00	151.00	19.73	27.35
		Jul-08	74.44	149.89	16.00	23.34
		Aug-08	70.00	136.22	13.98	20.56
		Sep-08	67.78	133.22	13.49	19.71
		Oct-08	74.27	144.00	14.80	22.70
		Nov-08	75.50	150.83	14.43	22.30
		Dec-08	77.44	155.78	15.38	23.52
		Jan-09	80.11	158.33	16.09	24.33
		Feb-09	81.75	162.00	16.68	25.33
		Mar-09	84.67	169.89	17.00	26.62
		Apr-09	79.38	157.88	16.88	25.33
		May-09	83.00	171.44	17.90	25.61
		Jun-09	82.44	169.56	19.07	27.11
		Jul-09	69.78	140.11	16.02	22.16

Aug-09	72.13	144.25	16.58	23.50
Sep-09	75.44	150.00	17.08	24.68
Oct-09	82.44	164.44	18.58	26.50
Nov-09	79.75	159.63	18.14	26.35
Dec-09	74.56	149.89	17.88	25.88
Jan-10	72.00	144.00	18.30	26.40
Feb-10	76.00	152.00	17.80	25.60
Mar-10	73.11	152.56	17.31	24.51
Apr-10	74.88	155.42	16.42	23.75
May10	82.1	173.1	15.09	22.6
Jun-10	78.13	164.88	14.00	21.87
Jul-10	71.25	148.50	12.99	20.70
Aug-10	51.50	103.5	10.61	17.21
Sep-10	61.25	126.13	12.10	18.88
Oct-10	67.08	138.46	12.76	19.41
Nov-10	74.43	152.57	13.33	22.11
Dec-10	80.46	173.67	14.05	23.80
Jan-11	87.57	179.53	14.66	24.14
Feb-11	95.00	197.00	15.90	26.00
Mar-11	101.33	208.71	17.71	28.86
Apr-11	98.00	202.00	16.90	26.40
May-11	113.00	208.00	15.90	25.30
	PM_{10}	**$PM_{2.5}$**	**SO_2**	**NO_x**
Jun-11	91.00	26.00	13.70	23.09
July11	80.00	22.00	11.50	20.50
Aug-11	60.00	18.00	10.30	19.30
Sept-11	72.00	20.00	11.70	20.90
Oct-11	79.00	24.00	13.40	23.30
Nov-11	77.57	23.00	12.73	22.11
Dec-11	76.75	24.00	13.17	22.27
Jan-12	83.67	26.00	15.10	24.34
Feb-12	87.13	27.63	16.21	25.21
Mar-12	91.33	30.33	17.43	26.52
Apr-12	90.50	27.50	16.29	25.21
May-12	91.67	33.22	15.62	24.84
Jun-12	93.00	33.82	14.39	23.40
July-12	70.89	20.56	11.50	20.46
Aug-12	64.25	16.88	10.27	19.19
Sept-12	75.00	-	11.51	6.85
Oct-12	91.00	-	11.10	10.53
Nov-12	85.50	26.25	16.75	22.75
Dec-12	86.33	26.33	18.44	22.00
Jan-13	80.67	26.11	16.89	21.22
Feb-13	73.13	23.88	15.75	21.50
Mar-13	73.00	22.50	17.00	23.00

			RSPM	SPM	SO_2	NO_x
III	SAMP Gram Panchayat, Piraman, Dist. Bharuch (Residential Area, Adjacent to Ankleshwar Town, in the South-West direction of Ankleshwar Industrial Area)	Jan-08	82.56	169.44	13.79	22.61
		Feb-08	83.11	169.56	15.03	25.61
		Mar-08	79.88	160.88	15.03	24.14
		Apr-08	73.30	146.70	15.74	23.65
		May-08	81.38	164.75	16.81	24.61
		Jun-08	78.13	156.63	16.09	23.65
		Jul-08	75.89	149.67	15.46	21.97
		Aug-08	71.67	139.78	13.90	20.29
		Sep-08	69.56	133.22	12.23	19.47
		Oct-08	72.09	137.82	12.47	19.87
		Nov-08	71.00	141.00	12.40	19.20
		Dec-08	71.67	144.56	12.64	20.06
		Jan-09	74.22	150.00	12.92	20.89
		Feb-09	77.00	154.00	13.00	21.40
		Mar-09	74.89	151.33	12.87	21.18
		Apr-09	71.86	144.00	12.42	19.80
		May-09	75.40	156.00	12.90	20.70
		Jun-09	77.78	161.11	13.03	20.89
		Jul-09	75.11	147.56	12.72	19.89
		Aug-09	78.75	156.63	13.38	22.28
		Sep-09	80.22	159.89	13.49	21.88
		Oct-09	85.11	170.22	18.52	22.16
		Nov-09	89.38	175.50	14.44	23.35
		Dec-09	90.44	182.89	14.73	24.56
		Jan-10	91.11	182.56	15.16	25.08
		Feb-10	87.50	174.75	14.93	23.35
		Mar-10	82.89	173.78	14.10	22.41
		Apr-10	84.58	176.58	13.87	23.34
		May-10	92.83	194.33	14.59	24.41
		Jun-10	80.42	169.21	13.22	22.54
		Jul-10	74.13	154.33	12.37	20.75
		Aug-10	60.11	118.10	10.54	17.51
		Sep-10	64.04	131.08	11.84	19.33
		Oct-10	70.63	144.96	12.64	20.09
		Nov-10	75.53	155.53	13.00	21.15
		Dec-10	78.42	164.00	13.44	22.23
		Jan-11	81.60	171.53	14.44	23.66
		Feb-11	83.33	171.67	14.78	24.62
		Mar-11	90.00	185.33	15.86	25.62
		Apr-11	88.00	182.00	15.50	25.30
			PM_{10}	$PM_{2.5}$	SO_2	NO_x
		May-11	94.00	30.00	14.70	24.80
		Jun-11	90.00	26.00	12.70	21.80
		Jul-11	78.00	21.00	11.40	20.00
		Aug-11	61.00	17.00	10.60	19.00
		Sep-11	71.22	21.22	11.86	20.64

		Oct-11	74.13	22.13	13.10	23.03
		Nov-11	73.62	20.71	12.72	22.72
		Dec-11	76.11	22.44	13.30	23.54
		Jan-12	79.89	23.89	14.10	24.42
		Feb-12	82.63	25.38	14.58	25.26
		Mar-12	90.78	30.22	15.32	26.57
		Apr-12	85.13	28.00	13.20	22.83
		May-12	86.22	32.89	12.62	22.01
		Jun-12	88.75	35.25	12.23	21.37
		Jul-12	74.67	20.33	10.12	18.68
		Aug.12	67.69	18.38	9.27	17.65
		Sept-12	-	-	-	-
		Oct-12	71.50	-	6.73	8.06
		Nov-12	82.50	20.75	11.13	19.63
		Dec-12	84.56	20.78	11.44	20.56
		Jan-13	78.00	20.00	11.22	19.56
		Feb-13	69.63	19.88	11.38	17.63
		Mar-13	68.00	20.00	12.00	21.00
			RSPM	**SPM**	**SO_2**	**NO_x**
IV	SAMP Kumkum Banglow, Village Kosamadi, Dist. Bharuch (Residential Area, In the South-East direction of Ankleshwar Industrial Area)	Jan-08	77.67	158.11	13.28	21.66
		Feb-08	82.00	166.63	13.83	22.94
		Mar-08	76.78	155.56	13.38	22.52
		Apr-08	69.40	139.70	14.20	22.05
		May-08	77.38	157.13	13.73	22.46
		Jun-08	73.88	148.38	13.49	21.25
		Jul-08	71.89	142.00	13.23	20.33
		Aug-08	66.00	130.44	11.58	16.63
		Sep-08	71.00	139.00	13.00	19.09
		Oct-08	73.25	141.00	13.83	20.50
		Nov-08	72.00	142.00	13.00	21.00
		Dec-08	74.56	149.78	13.69	21.57
		Jan-09	77.00	154.89	13.81	22.02
		Feb-09	80.00	159.00	14.10	22.20
		Mar-09	76.63	154.25	13.63	21.55
		Apr-09	78.50	157.00	14.05	22.85
		May-09	83.50	173.50	13.80	21.80
		Jun-09	85.00	175.38	13.96	22.18
		Jul-09	80.78	161.11	13.08	20.17
		Aug-09	79.47	158.86	13.59	21.57
		Sep-09	83.56	167.22	14.50	23.64
		Oct-09	89.44	179.11	16.67	25.18
		Nov-09	92.75	184.88	17.20	26.30
		Dec-09	96.44	196.33	17.94	27.32
		Jan-10	96.89	193.78	18.31	27.48
		Feb-10	93.88	187.50	18.01	25.95
		Mar-10	95.89	199.78	17.50	25.34
		Apr-10	99.38	205.83	16.73	24.23
		May10	104.30	217.40	17.28	25.64

		Jun-10	94.13	197.91	16.24	24.14
		Jul-10	87.13	182.08	14.49	22.81
		Aug-10	71.33	139.50	11.86	18.51
		Sep-10	68.21	138.83	13.0	20.76
		Oct-10	76.69	157.71	14.07	22.48
		Nov-10	79.13	164.93	14.39	22.78
		Dec-10	81.21	171.58	14.67	23.26
		Jan-11	92.53	194.33	15.74	24.47
		Feb-11	93.50	193.50	16.40	25.82
		Mar-11	100.67	208.11	17.22	26.83
		Apr-11	98.00	197.00	16.80	26.20
			PM_{10}	**$PM_{2.5}$**	**SO_2**	**NO_x**
		May-11	103.00	37.00	16.00	25.40
		Jun-11	99.00	32.00	14.50	23.90
		July11	81.00	24.00	12.40	19.80
		Aug-11	66.00	17.00	11.50	18.40
		Sept-11	74.88	23.13	12.35	20.16
		Oct-11	81.63	24.63	13.53	23.01
		Nov-11	78.76	23.43	13.77	23.88
		Dec-11	82.67	25.00	14.17	24.56
		Jan-12	88.50	29.00	14.99	25.24
		Feb-12	88.00	27.67	15.93	26.16
		Mar-12	108.67	40.78	17.01	26.94
		Apr-12	91.75	30.13	15.80	25.90
		May-12	97.22	38.78	14.64	24.46
		Jun-12	96.69	37.50	13.80	23.22
		Jul-12	78.20	24.88	11.35	20.18
		Aug-12	78.62	20.38	10.20	18.58
		Sept-12	-	-	-	-
		Oct-12	86.50	-	5.79	11.06
		Nov-12	81.50	25.38	13.25	20.25
		Dec-12	82.56	26.56	13.00	21.56
		Jan-13	77.00	27.11	12.89	21.67
		Feb-13	67.88	23.38	13.50	19.75
		Mar-13	66.50	21.00	14.00	20.00

(Source GPCB / GEMI / Siddhi Consultant)

ANNUAL AVERAGE OF AMBIENT AIR QUALITY UNDER NAMP

Location	Year	Average values			
		RSPM	SPM	SO_2	NOx
Rallis India Ltd., GIDC, Ankleshwar	2008	107.40	213.70	21.98	27.60
	2009	91.85	183.06	21.31	27.48
	2010	81.00	165.39	18.16	24.68
	2011 (up to May)	108.80	220.87	20.33	29.00
		PM10	PM2.5	SO_2	NOx
	2011 (From June)	88.52	26.31	16.46	25.20
	2012	101.82	33.17	17.44	25.91

Location	Year	Average values			
		RSPM	SPM	SO_2	NOx
Durga Traders, Bhavna Farm, Rajpipla road, Ankleshwar	2008	77.20	154.64	16.08	24.04
	2009	78.79	158.12	17.33	25.28
	2010	71.85	148.73	14.56	22.24
	2011 (up to May)	98.98	199.05	16.21	26.14
		PM10	PM2.5	SO_2	NOx
	2011 (From June)	76.62	22.43	12.36	21.64
	2012	84.19	26.85	14.55	20.94

ANNUAL AVERAGE OF AMBIENT AIR QUALITY UNDER SAMP

Location	Year	Average values			
		RSPM	SPM	SO_2	NOx
Piraman Gram Panchayat, Piraman, Ta. Ankleshwar	2008	75.85	151.17	14.30	22.09
	2009	79.18	159.09	13.70	21.58
	2010	78.52	161.60	13.31	21.85
	2011 (up to April)	85.73	177.63	15.15	24.80
		PM10	PM2.5	SO_2	NOx
	2011 (From May)	77.26	22.56	12.55	21.94
	2012	81.30	25.59	11.89	20.64

Location	Year	Average values			
		RSPM	SPM	SO_2	NOx
Kumkum Bunglows, Valia road, Kosamadi	2008	73.82	147.48	13.35	21.00
	2009	83.59	168.46	14.69	23.07
	2010	87.35	179.74	15.55	23.62
	2011 (up to April)	96.18	198.24	16.54	25.83
		PM10	PM2.5	SO_2	NOx
	2011 (From May)	83.37	25.77	13.53	22.39
	2012	88.93	30.11	13.25	22.14

Annexure M

AAQM Results (Carried out through Industries Associations) : Ankleshwar Estate

Sampling Location : Above Sports Club, Nr.Gattu School, Ankleshwar			
Month	No. of Days	Benzene µg/m³	Benzo (a) Pyrene ng/m³
Jun.10	7	ND	ND
Jul.10	7	ND	ND
Aug.10	7	ND	ND
Sep.10	7	ND	ND

Sampling Location : Nr. Blitox Plant (M/s. Rallis India Ltd. (Unit-III), Ankleshwar			
Month	No. of Days	Benzene µg/m³	Benzo (a) Pyrene ng/m³
Jun.10	7	ND	ND
Jul.10	7	2.2225	0.31025
Aug.10	7	2.025	0.363
Sep.10	7	1.686	0.35
Oct.10	4	1.27	0.25
Nov.10	2	3.59	ND
Dec.10	1	ND	ND

Sampling Location : Above E.V.T. Block (M/S Rajat Pharma Ltd., P.No.307,311, GIDC, Ankleshwar			
Month	No. of Days	Benzene µg/m³	Benzo (a) Pyrene ng/m³
Dec.10	1	ND	ND
Jan.11	2	ND	ND
Feb.11	2	ND	ND
Mar.11	2	1.02	0.90
Apr.11	1	0.96	0.52
May.11	2	1.52	0.45
Jun.11	2	0.30	1.00
Jul.11	2	2.96	0.74
Aug.11	2	3.03	0.39
Sep.11	2	ND	ND
Oct.11	2	ND	ND
Nov-11	2	1.49	0.74
Dec-11	2	2.23	1.06
Jan-12	2	1.42	0.52
Feb-12	2	2.75	0.82
Mar-12	2	2.31	0.73
Apr.12	2	2.27	0.81
May.12	2	2.11	0.77
Jun.12	2	2.42	0.91
Jul.12	2	2.29	0.95
Aug.12	2	2.19	0.88
Sep.12	2	2.44	0.91
Oct.12	2	2.84	0.73
Nov-12	2	2.77	0.70
Dec-12	2	2.48	0.74
Jan-13	2	2.44	0.77
Feb-13	2	2.32	0.72
Mar-13	2	2.34	0.67

(Source : AIA / Aqua-Air Environmental Engineers Pvt. Ltd.)

Sampling Location : Nr. Water Storage Tank (M/S Resins & Plastic Ltd., P.No.3607, GIDC, Ankleshwar			
Month	No. of Days	Benzene µg/m³	Benzo (a) Pyrene ng/m³

Jan.11	2	ND	ND
Feb.11	2	ND	ND
Mar.11	2	1.22	0.50
Apr.11	2	0.70	0.90
May.11	2	2.14	0.47
Jun.11	2	1.40	1.48
Jul.11	2	2.15	0.59
Aug.11	2	2.89	0.67
Sep.11	2	3.03	0.62
Oct.11	2	1.12	0.36
Nov-11	2	2.94	1.06
Dec-11	2	2.92	1.22
Jan-12	2	2.58	0.5
Feb-12	2	2.60	1.03
Mar-12	2	2.72	1.07
Apr.12	2	3.20	1.29
May.12	2	2.99	1.21
Jun.12	2	3.15	1.18
Jul.12	2	2.22	0.83
Aug.12	2	2.40	0.76
Sep.12	2	2.37	0.70
Oct.12	2	2.66	0.77
Nov-12	2	2.52	0.70
Dec-12	2	2.29	0.65
Jan-13	2	2.33	0.80
Feb-13	2	2.42	0.76
Mar-13	2	2.32	0.73

(Source : AIA / Aqua-Air Environmental Engineers Pvt. Ltd.)

Sampling Location : M/S Patel Auto Garage,P.No.901/1, GIDC, Ankleshwar			
Month	No. of Days	Benzene $\mu g/m^3$	Benzo (a) Pyrene ng/m^3
Apr.11	2	1.37	0.65
May.11	2	2.35	0.62
Jun.11	2	1.89	0.34
Jul.11	2	ND	ND
Aug.11	2	ND	ND
Sep.11	2	ND	ND
Oct.11	2	ND	ND
Nov-11	2	ND	ND
Dec-11	2	0.41	ND
Jan-12	2	ND	ND
Feb-12	2	ND	ND
Mar-12	2	ND	ND
Apr.12	2	ND	ND
May.12	2	ND	ND
Jun.12	2	ND	ND
Jul.12	2	ND	ND
Aug.12	2	ND	ND
Sep.12	2	ND	ND
Oct.12	2	ND	ND
Nov-12	2	ND	ND
Dec-12	2	ND	ND
Jan-13	2	ND	ND
Feb-13	2	ND	ND
Mar-13	2	ND	ND

(Source : AIA / Aqua-Air Environmental Engineers Pvt. Ltd.)

AAQM Results (Carried out through Industries Associations) : Panoli Estate

Sampling Location : Gram Panchayat Sanjali Village, Nr.GIDC, Panoli			
Month	No. of Days	Benzene µg/m³	Benzo (a) Pyrene µg/m³
May.10	3	BDL	BDL
Jun.10	3	BDL	BDL
Nov.10	1	BDL	BDL
Dec.10	9	BDL	BDL
Jan.11	9	BDL	BDL
Feb.11	5	BDL	BDL
Mar.11	7	BDL	BDL

Sampling Location : P.I.Industries, GIDC, Panoli			
Month	No. of Days	Benzene µg/m³	Benzo (a) Pyrene µg/m³
May.10	3	BDL	BDL
Jun.10	4	BDL	BDL
Jul.10	2	BDL	BDL
Aug.10	1	BDL	BDL
Sep.10	2	BDL	BDL
Oct.10	5	BDL	BDL
Nov.10	5	BDL	BDL
Dec.10	9	BDL	BDL
Jan.11	8	BDL	BDL
Feb.11	3	BDL	BDL
Mar.11	7	BDL	BDL

Sampling Location : Water Filtration Plant, GIDC, Panoli			
Month	No. of Days	Benzene µg/m³	Benzo (a) Pyrene µg/m³
Oct.10	5	BDL	BDL
Nov.10	3	BDL	BDL

Annexure N

VOC Monitoring by GEMI (Till August 12)
By Siddhi Consultants (From Nov 12 to Mar 13 for Ankleshwar)

Sampling Location : Rallis (India) Limited, Plot No.3301,GIDC, Ankleshwar		
Month	Benzene µg/m³	Benzo (a) Pyrene ng/m³
Dec.10	17.17	1.40
Jan.11	33.38	1.42
Feb.11	28.74	< 0.5
Mar.11	27.51	< 0.5
Apr.11	18.22	< 0.5
May-11	11.91	<0.5
June-11	10.91	<0.5
July-11	11.70	<0.5
Aug -11	11.07	<0.5
Sept-11	4.47	<0.5
Oct-11	5.49	<0.5
Nov-11	6.3	<0.5
Dec-11	11.12	<0.5
Jan-12	4.66	<0.5
Feb-12	8.76	<0.5
Mar-12	8.62	<0.5
Apr.12	9.36	< 0.5
May-12	4.59	< 0.5
June-12	5.96	< 0.5
July-12	6.00	< 0.5
Aug -12	11.39	< 0.5
Sept-12	--	--
Oct-12	--	--
Nov-12	BDL	BDL
Dec-12	BDL	BDL
Jan-13	BDL	BDL
Feb-13	BDL	BDL
Mar-13	BDL	BDL

(Source : GPCB / GEMI / Siddhi Consultant)

Sampling Location : Hikal Ltd., Plot No.629,630,GIDC,Panoli		
Month	Benzene µg/m³	Benzo (a) Pyrene ng/m³
Dec.10	5.30	<0.5
Jan.11	2.64	< 0.5
Feb.11	14.96	< 0.5
Mar.11	14.83	< 0.5
Apr.11	16.80	< 0.5
May-11	10.74	<0.5
June-11	10.98	<0.5
July-11	11.72	<0.5
Aug -11	11.33	<0.5
Sept-11	8.40	<0.5
Oct-11	7.65	<0.5
Nov-11	9.56	<0.5
Dec-11	4.99	<0.5
Jan-12	6.82	<0.5
Feb-12	8.07	<0.5
Mar-12	2.68	<0.5
Apr.12	1.55	< 0.5
May-12	11.65	< 0.5
June-12	11.33	< 0.5
July-12	11.31	< 0.5
Aug -12	10.58	< 0.5
Sept-12	--	--
Oct-12	--	--

Nov-12	BDL	BDL
Dec-12	BDL	BDL
Jan-13	--	--
Feb-13	--	--
Mar-13	--	--

(Source : GPCB / GEMI)

Annexure – N1

Captive Hazardous Waste Incinerators

Sr. No.	Name of Industry	Location	District
1	Gujarat Insecticides Limited	Ankleshwar	Bharuch
2	Luna Chemical Industries Pvt. Ltd.	Panoli	Bharuch
3	Rallis India Limited	Ankleshwar	Bharuch
4	P. I. Industries Limited	Panoli	Bharuch
5	Coromandel Fertilizers Limited	Ankleshwar	Bharuch
6	Wockhardt Limited	Ankleshwar	Bharuch
7	Impro Interchem Pvt Ltd	Panoli	Bharuch
8	Isagro Asia Agrochemical Limited	Panoli	Bharuch
9	Bayer Crop 5cience Limited	Ankleshwar	Bharuch
10	Asian Paints (I) Limited (Phathalic Division)	Ankleshwar	Bharuch
11	Siddhi Samrat Dye Chem Pvt. Limited	Ankleshwar	Bharuch
12	Minol Acid and Chemicals	Ankleshwar	Bharuch
13	Cheminova (India) Limited (Tech. Division)	Panoli	Bharuch
14	Cheminova (India) Limited (Intermediate Division)	Panoli	Bharuch
15	Sajjan India Limited	Ankleshwar	Bharuch
16	Amsal Chem Pvt. Limited	Ankleshwar	Bharuch
17	Hemani Intermediates Pvt. Limited	Ankleshwar	Bharuch
18	Bodal Chemical Pvt. Limited (Unit V)	Ankleshwar	Bharuch
19	Aarti Industries Limited	Jhagadia	Bharuch
20	Padmavati Chemical Limited	Ankleshwar	Bharuch

Annexure - O

PERFORMANCE OF FETP AT PIRAMAN - A TREND ANALYSIS BY GPCB

Sampling Location : Outlet of FETP

MONTH	Permissible Limit					
	PH	NH3-N	COD	BOD	O&G	PHENOL
		Mg/ltr	Mg/ltr	mg/ltr	mg/ltr	mg/ltr
	5.5 -8.5	50	250	100	10	5
	Concentration of Parameter					
	PH	NH3-N	COD	BOD	O&G	PHENOL
		Mg/ltr	Mg/ltr	mg/ltr	mg/ltr	mg/ltr
Jan-09	7.53	806.4	2369	835	8.8	2.16
Feb-09	7.48	817.6	3002	1427	7.2	9.16
Mar-09	7.5	784	1407	439	1.2	1.42
Apr-09	6.86	714	2349	662.5	4.2	6.16
May-09	7.16	342.4	1545	428	2.8	5.16
Jun-09	7.46	418	1407	403	2.4	3.39
Jul-09	7.88	621.6	1217	375	2.8	6.66
Aug-09	7.72	961	1106	338	2.2	4.965
Sep-09	7.64	543	974	216	2.7	6.83
Oct-09	7.97	868	876	210	3.2	5.33
Nov-09	7.72	563	904	188	2.4	3.83
Dec-09	7.77	638	1148	228	4	3.83
Jan.10	7.3	742	1496	287	3.2	2.83
Feb-10	8.19	733.6	1731	393	3.6	1.75
Feb-10	7.16	664	1703	302	5.6	3.33
Mar-10	7.39	599	1945	597		
Apr-10	7.65	795	1953	642	9.2	3
May-10	7.21	560	1397	360	7.2	2.67
Jun-10	7.64	762	1240	241	2.0	BDL
Jul-10	7.46	403	762	175	2.8	BDL
Aug-10	7.65	304	598	116	1.2	1.1
Sep-10	7.64	515	634	213	4.8	0.69
Oct-10	7.96	502	976	300	2.0	6.78
Nov-10	7.55	439	1001	261	2.8	2.15
Dec-10	7.50	354	907	236	3.6	2.34
Feb-11	8.53	425.6	983	227	5.6	2.68
Mar-11	7.62	190	521	140	1.2	2.60
Apr-11	7.49	266	816	222	21.9	4.73
May-11	7.81	526	814	113	0.8	8.83
Jun-11	7.93	464	861	209	0.4	3.53
Jul-11	7.74	153	695	140	3.2	2.45
Aug-11	7.27	195	637	192	0.8	0.57
Sept-11	8.14	339	407	216	1.6	1.68
Oct-11	7.94	379	930	178	3.2	0.51
Nov-11	7.97	178	629	148	2.8	0.62
Jan-12	7.94	196	595	167	10.4	1.64
Mar-12	7.89	235	705	111	1.4	BDL
April-12	7.82	165	505	135	0.8	BDL
May-12	7.57	214	463	143	3.2	0.24
Jun-12	7.63	153	548	114	1.6	0.93

Annexure -P

PERFORMANCE OF FETP AT PIRAMAN - A TREND ANALYSIS BY CPCB

Sampling Location : Outlet of FETP

Date of monitoring	Permissible Limit in mg/lit except pH									
	pH	**TSS**	**TDS**	**COD**	**BOD**	**NH_3-N**	**CN^-**	**Phenol**	**S^-**	**O&G**
	5.5 – 8.5	**100**	**-**	**250**	**100**	**50**	**0.2**	**5**	**5**	**10**
	Concentration of Parameter in mg/lit except pH									
	pH	**TSS**	**TDS**	**COD**	**BOD**	**NH_3-N**	**CN^-**	**Phenol**	**S^-**	**O&G**
28.11.06	7.3	375	9130	1689	514	661	--	-	1.95	227
29.11.06	7.4	370	9274	2160	408	616	--	-	1.28	17
28.06.07	7.5	395	9274	1341	94	688	--	7.3	BDL	26.8
31.10.07	7.02	353	13567	1965	175	788	--	17.3	8.9	33.8
17.01.08	7.6	489	7954	1482	659	495	3.85	18.1	13.5	23.0
07.03.08	7.9	290	10304	2112	524	661	--	5.75	12	10.2
22.04.08	7.8	470	12457	2292	351	612	1.50	14.86	--	--
27.05.08	8.04	1220	8060	3090	708	725	0.11	13.68	--	14
17.06.08	8.0	256	9216	2483	475	454	0.21	9.47	37.3	12
29.07.08	7.76	273	9629	1645	356	813	0.25	--	34.8	22.4
28.08.08	8.31	563	9162	911	487	636	0.37	11.36	26.4	27.5
26.09.08	8.45	246	6530	1223	338	756	0.39	8.65	17.3	14.0
22.10.2008	8.4	553	11420	2303	857	953	1.85	13.60	34.2	38.0
07.11.2008	8.37	386	11167	2613	885	708	0.91	10.19	38.1	20.0
19.12.2008	8.23	571	11780	3008	721	338	--	5.64	--	--
28.01.2009	7.97	430	9151	4158	728	642.6	--	19.33	65.9	47
05.03.2009	8.20	397	11853	2779	630	690.4	0.21	9.37	62.5	19.5
30.06.2009	7.82	327	9164	1764	556	475	0.19	8.04	--	18
10.09.2009	7.55	173	8798	702	39	586	0.34	0.82	0.5	13.9
10.12.2009	7.11	496	11228	1510	294	785	--	4.84	--	8.06
10.03.10	7.78	371	12413	1241	380	666	1.61	3.41	13.1	59
10.03.10(C)	--	405	9823	1498	394	664	2.12	2.75	10.4	--
24.06.2010	7.7	238	11513	1235	321	932	0.02	9.4	7.68	17.8
29.09.2010	7.78	202	8353	956	188	320	0.81	5.71	3.5	20
26.11.2010	7.64	148	7407	891	192	460	0.226	4.16	0.8	21.9
30.03.2011	7.36	106	6875	703	215	263	0.17	__	__	__
07.06.2011	7.78	115	6520	528	106	276	0.48	__	7.26	9.50
25.08.2011	7.27	120	5784	419	159	182	0.19	0.55	1.48	0.56
21.12.2011	7.43	146	8099	804	198	316	0.35	1.47	1.12	9.9
28.04.2012	7.68	160	7034	452	90	164	0.37	1.93	BDL	8.2
08.08.2012	7.30	143	7039	537	39	146	0.16	0.61	1.0	5.6
06.12.2012	7.02	186	7158	579	75	129.3	0.52	1.135	8.0	3.7
27.02.2013	7.49	94	7284	555	52	136.9	--	0.91	0.77	19

Annexure – 9

PERFORMANCE OF FETP : AT ANKLESHWAR - ANALYSIS BY FETP

Trends in FETP Inlet

Month & Year	Avg COD	Avg BOD	Avg NH3-N	Avg TDS
May 2010	2617	703	645	9142
June 2010	2483	669	655	8500
July 2010	2118	580	562	7961
Aug 2010	1536	453	476	7016
Sept 2010	1416	418	503	6439
Oct 2010	1848	573	542	6333
Nov 2010	1879	572	505	6565
Dec 2010	1928	555	410	6569
Jan 2011	1982	522	459	6714
Feb 2011	1831	436	318	5725
Mar 2011	1295	266	192	4616
April 2011	1432	293	264	4710
May 2011	1413	301	313	6028
June 2011	1480	285	323	5969
July 2011	1199	336	225	6466
Aug 2011	1066	272	187	5163
Sept 2011	1195	279	237	5017
Oct 2011	1392	369	278	5166
Nov 2011	1266	268	203	4810
Dec 2011	1344	355	239	5364
Jan 2012	1265	367	208	6339
Feb 2012	1248	329	212	6530
Mar 2012	1260	324	241	6329
April 2012	1127	293	202	5959
May 2012	1155	272	171	6052
June 2012	1169	299	183	5138
July 2012	1107	317	172	4445
Aug 2012	1061	283	160	4205

Sep 2012	1090	239	196	4619
Oct 2012	1078	276	146	5776
Nov 2012	1011	245	123	5512
Dec 2012	1313	312	124	6511
Jan 2013	1492	404	147	7833
Feb 2013	1198	293	128	6448
March 2013	1298	331	122	7186

(All values in mg/lit)

Trends in FETP Outlet

Month & Year	Avg COD	Avg BOD	Avg NH3-N	Avg TDS
May 2010	1812	421	640	9717
June 2010	1315	290	620	8504
July 2010	1236	205	538	8142
Aug 2010	851	162	446	6936
Sept 2010	635	116	407	6227
Oct 2010	932	184	488	6220
Nov 2010	1042	252	461	6549
Dec 2010	1067	250	363	6537
Jan 2011	1244	250	445	6714
Feb 2011	1115	235	330	5725
Mar 2011	758	141	178	4616
April 2011	900	171	255	4710
May 2011	896	174	297	6028
June 2011	772	126	296	5969
July 2011	723	154	228	6466
Aug 2011	539	99	177	5299
Sept 2011	484	47	207	4803
Oct 2011	801	120	275	5261
Nov 2011	715	112	191	4781
Dec 2011	759	125	241	5522
Jan 2012	633	78	214	6559
Feb 2012	634	61	226	6858
Mar 2012	626	66	228	6516
April 2012	572	58	174	6022
May 2012	596	63	147	6070
June 2012	612	75	160	5416
July 2012	514	65	149	4596
Aug 2012	453	36	126	4227
Sep 2012	403	25	159	4828
Oct 2012	554	40	159	6353

Nov 2012	470	24	108	5591
Dec 2012	512	25	118	6493
Jan 2013	580	37	136	7833
Feb 2013	510	43	135	6448
March 2013	603	66	151	7186

(All values in mg/lit)

Trends in Inlet/Outlet Flow Rate at FETP per Day in MLD

Month & Year	Ankleshwar	Panoli	Jhagadia	Total Inlet	Total Discharge
May 2010	30.26	3.05	2.27	35.58	36.18
June 2010	33.06	3.07	2.24	38.37	37.81
July 2010	34.17	3.47	3.50	41.14	40.89
Aug 2010	34.80	4.62	4.24	43.66	43.35
Sept 2010	19.26	3.72	3.43	26.41	32.60
Oct 2010	29.74	4.13	4.49	38.22	38.10
Nov 2010	38.71	4.36	3.43	45.59	45.36
Dec 2010	40.61	4.17	2.41	46.97	46.75
Jan 2011	34.17	3.83	2.26	40.26	40.16
Feb 2011	31.73	3.36	2.04	36.67	36.64
Mar 2011	32.41	3.90	1.71	38.02	37.97
April 2011	32.81	3.64	1.79	37.89	37.94
May 2011	31.16	3.78	0.95	35.87	35.92
June 2011	32.10	4.85	2.70	39.02	38.87
July 2011	34.18	4.81	4.23	43.21	43.04
Aug 2011	39.05	5.10	3.52	47.67	47.47
Sept 2011	41.92	4.21	2.91	48.84	48.69
Oct 2011	31.95	4.76	1.48	37.62	37.43
Nov 2011	34.57	5.16	1.02	40.68	40.47
Dec 2011	30.97	3.65	2.79	36.20	36.07
Jan 2012	31.89	3.86	3.59	39.34	39.13

Feb 2012	34.41	3.95	3.67	42.03	41.81
Mar 2012	36.32	4.36	3.47	44.15	44.01
April 2012	36.74	3.92	2.84	43.50	43.22
May 2012	34.22	3.83	2.48	40.53	40.54
June 2012	32.23	3.62	2.39	38.24	37.14
July 2012	37.55	4.61	3.96	46.12	44.85
Aug 2012	40.49	3.95	4.45	48.89	48.82
Sep 2012	41.37	4.50	5.31	51.17	50.96
Oct 2012	37.00	4.74	4.12	45.86	45.66
Nov 2012	36.62	4.57	3.01	44.20	38.93
Dec 2012	33.64	4.03	3.51	41.19	42.53
Jan 2013	28.77	2.03	3.53	34.33	34.95
Feb 2013	36.51	3.23	3.55	43.28	42.65
March 2013	29.86	3.06	3.50	36.42	37.97

Note: Average flow of sewage of following month is included in flow of Ankleshwar

Month	Flow MLD
Jan 2011	5.97
Feb 2011	6.01
Mar 2011	4.34
April 2011	5.58
May 2011	5.85
June 2011	6.16
July 2011	3.99
Aug 2011	3.97
Sept 2011	4.00

Oct 2011	4.00
Nov 2011	4.00
Dec 2011	4.00
Jan 2012	3.87
Feb 2012	4.00
Mar 2012	4.00
April 2012	4.00
May 2012	4.00 (NCTL discontinued receipt of sewage at FETP wef 12-5-2012
June 2012	Nil

Annexure - R

PERFORMANCE OF FETP : AT ANKLESHWAR - ANALYSIS BY TIFICA-CORE-SCET, SURAT

Month	COD (mg/l)	NH_3-N (mg/l)
Aug-10	1220.8	277.6
Sep-10	640.0	424.8
Oct-10	1084.4	457.7
Nov-10	916.5	435.2
Dec-10	909.7	298.8
Jan-11	1046.3	447.0
Feb-11	1128.9	346.3
Mar-11	879.3	193.4
Apr-11	736.3	248.5
May-11	955.0	318.0
Jun-11	723.8	325.6
Jul-11	762.6	217.4
Aug-11	488.2	201.4
Sep-11	584.0	222.2
Oct-11	779.6	249.8
Nov-11	689.2	182.7
Dec-11	775.9	231.0
Jan-12	704.0	222.1
Feb-12	659.1	227.3
Mar-12	629.4	222.2
Apr-12	532.4	191.5
May-12	551.5	160.2
Jun-12	553.9	162.6
Jul-12	514.5	154.7
Aug-12	450.4	124.4
Sep-12	390.9	136.3
Oct-12	554.7	139.4
Nov-12	461.4	89.7
Dec-12	538.0	99.7
Jan-13	627.8	118.1
Feb-13	496.0	111.3
Mar-13	601.0	121.7
Average	**705.80**	**229.96**

Annexure S

SAMPLE COLLECTED UNDER AMLAKHADI ACTION PLAN

SAMPLING POINT : AMLAKHADI AT LOW LEVEL BRIDGE ON N. H. NO. 8 ULIMATELY REACHING TO ESTUARY OF RIVER NARMADA

Month	COD	NH3	BOD	pH	PHENOL	O&G
02-01-2009	1200	42.56	137	7.08	2.17	3.2
07-02-2009	1651	123.2	419	6.6	0.1	8
03-03-2009	372	28.56	135	7.21	0.3	2
04-04-2009	371	41.44	109	6.75	BDL	2
08-05-2009	97	3.36	27	6.93	-	0.4
03-06-2009	185	15.68	58	6.24	0.42	0.8
02-07-2009	225	15.68	79	7.37	BDL	0.8
03-08-2009	792	212.24	289	7.23	1.25	2.4
02-09-2009	67	BDL	19	7.48	BDL	8
05-10-2009	218	40.61	78	7.5	BDL	1.6
05-11-2009	60	BDL	13	7.64	BDL	0.4
03-12-2009	59	3.36	14	7.6	BDL	0.4
04-01-2010	20	3.36	4.9	7.7	BDL	0.4
06-02-2010	43	20.16	7.78	7.56	BDL	0.4
02-03-2010	44	11.2	11.44	7.65	BDL	0.4
05-04-2010	124	36	27	7.4	BDL	1.2
06-05-2010	149	14	41	7.52	BDL	4.8
21-06-2010	93	16	22	7.9	BDL	0.4
05-07-2010	200	42	45	7.45	0.58	1.2
03-08-2010	247	32	65	8.11	BDL	1.2
01-09-2010	124	42	34	8.24	BDL	1.2
02-10-2010	107	23.52	34	7.51	0.295	2.4
02-11-2010	20	2.24	5	7.75	BDL	BDL
13-12-2010	24	3.92	5	7.75	BDL	BDL
03-01-2011	96	47.04	28	7.82	0.4	BDL
01-02-2011	20	10.08	5.1	7.75	BDL	BDL
05-03-2011	10	8	1.56	8.6	BDL	BDL
06-04-2011	87	12	18	7.74	0.32	BDL
02-05-2011	42	10	6.65	8.06	BDL	BDL
01-06-2011	205	20	26.5	7.7	0.21	BDL
02-07-2011	18	3.92	4.2	8.24	BDL	BDL
01-08-2011	241	5.6	25	7.66	0.66	1.6
02-09-2011	7	0.5	1.03	7.37	p.nil	p.nil
05-10-2011	23	0.6	3.33	8.42	Nil	nil
01-12-2011	67	20	9	7.95	0.52	0.4
03-01-2012	145	3	43	7.63	0.09	0.8
01-02-2012	54	3.92	12	7.52	BDL	BDL
01-03-2012	37	28	15	8.45	BDL	BDL
05-04-2012	44	20	7.7	8.45	BDL	BDL
01-05-2012	96	11.76	23	8.09	BDL	BDL
01-06-2012	92	13.38	23	8.08	BDL	BDL
02-07-2012	37	0.28	6.0	7.53	BDL	BDL
03-08-2012	52	BDL	13	7.28	0.12	BDL
10-09-2012	73	BDL	20	7.46	BDL	BDL

01-10-2012	40	1.68	12	8.50	BDL	BDL
01-11-2012	35	BDL	8.0	8.11	BDL	0.8
03-12-2012	53	3.2	10	7.92	BDL	BDL
01-01-2013	39	BDL	9	7.47	BDL	BDL
02-02-2013	65	8	24	8.15	BDL	0.4

(Source : GPCB)

Annexure T

CPCB DATA: WATER QUALITY OF THE AMLAKHADI OVER THE YEARS AT ANKLESHWAR								
(Sampling was carried out near NH-8, Mumbai-Ahmedabad, Ankleshwar, and * near FETP, Ankleshwar)								
Year(s)	Parameter(s)							
	pH	TSS	TDS	BOD	COD	O & G	NH_3-N	CN
1997	5.25	343	5200	1000	6468	0.52	39.2	--
2001	6.87	400	8222	484	1635	--	123.2	--
2003	7.5	188	12422	700	2323	50	404	--
2005	7.5	335	8304	653	1958	--	--	--
Jan-06	4.5	329	13041	1393	2877	-	434	--
Jun-06	6.7	115	3908	323	914	-	139	--
Jul-06	7.7	394	5293	251	1152	29	101	--
July 2006*	7.5	136	798	29	128	10	12	--
Oct-07	7.3	82	1243	75	207	--	27	--
Oct 2007*	6.9	204	1503	101	489	--	38	--
Jan-08	7.7	282	5495	657	2263	28	286	1.11
Mar-08	7.7	95	2744	135	411	--	--	--
27.05. 2008	6.45	276	9224	658	2519	--	222	0.76
17.06.2008	7.36	174	5784	662	1411	40	217	0.08
29.07.2008	7.34	80	2122	85	508	-	63	--
28.08.2008	8.05	169	1533	203	948	14.5	86	0.2
26.09.2008	8.41	21	955	11	54	5.5	5.9	0.11
22.10.2008	6.62	119	3184	138	583	8.65	99	2.4
07.11.2008	6.95	65	3261	177	674	17	64	0.06
05.03.2009	8.16	26	1132	56	155	--	31	--
06.08.2009	7.72	49	934	18	83	5.3	18	--
10.09.2009	7.25	53	1493	57	186	6.5	26.5	--
10.12.2009	7.48	70	1270	40	183	2.84	12	--
30.03.2010	7.87	84	1043	18	87	9.8	7.1	--
24.06.2010	7.72	117	1688	29	128	7.6	8.7	0.13
29.09.10	7.32	79	2040	84	276	14	70	1.22
26.11. 10	7.56	62	1099	21	51	7.3	7.5	0.067
30.03.2011	7.53	83	2234	111	224	-	14.2	0.10
08.06.2011	8.04	41	720	28	122	2.4	61	0.13
25.08.2011	7.99	29	783	3.8	23.7	0.17	5.0	___
21.12.2011	7.48	58	1515	74	139	--	121	--
28.04.2012	7.48	38	701	27	102	5.8	12.6	--
08.08.2012	7.27	61	841	26	180	--	12.5	--
06.12.2012	7.41	100	752	24	87	4.1	10.8	0.12
27.02.2013	8.04	85	936	19.1	81.9	9.4	13.43	--

(Source : CPCB)

Annexure -U

Yearly Average Data

GPCB data for FETP outlet				CPCB data for FETP outlet			
Year	COD, mg/l	BOD mg/l	Amm-N, mg/l	Year	COD, mg/l	BOD mg/l	Amm-N, mg/l
2008	1757.37	426.77	638.14	2008	2168	570.2	665.6
2009	1525.33	479.13	673.08	2009	2182.6	449.4	635.8
2010	1257.15	317.15	567.12	2010	1164.2	295	608.4
2011	729.3	178.5	311.56	2011	550	160	240.33
2012	551.30	135	140.60	2012	522.67	68	146.43
2013 Till Feb 13	386.50	46	66.50	2013 1st Qtr	555	52	136.9

GPCB data for Amlakhadi				CPCB data for Amlakhadi			
Year	COD, mg/l	BOD mg/l	Amm-N, mg/l	Year	COD, mg/l	BOD mg/l	Amm-N, mg/l
2008	686.42	178.83	79.36	2008	1041.22	302.89	130.36
2009	441.42	114.75	52.67	2009	151.75	42.75	21.87
2010	99.58	25.18	20.53	2010	135.5	38.00	23.33
2011	71.33	11.28	11.92	2011	127.17	54.20	50.30
2012	63.17	9.47	16.06	2012	123.0	25.67	11.97
2013 Till Feb 13	52	8	16.5	2013 1st Qtr	81.9	19.1	13.43

NCTL data for FETP Inlet				NCTL data for FETP outlet			
Year	COD, mg/l	BOD mg/l	Amm-N, mg/l	Year	COD, mg/l	BOD mg/l	Amm-N, mg/l
2008	2560	581	680	2008	1449	256	491
2009	2302	728	529	2009	1335	322	481
2010	2238	610	556	2010	1254	322	529
2011	1408	332	270	2011	809	146	260
2012	1157	296	178	2012	548	51	164
2013 Up to March 13	1329	342	132	2013 Up to March 13	564	49	141

Annexure - V

Analysis & Calculation of Comprehensive Environmental Pollution Index(CEPI) for Ankleshwar, Jhagadia & Panoli Industrial Estates

Submitted to

Narmada Clean Tech Ltd.
(NCTL), Ankleshwar (Gujarat)

Prepared by

Department of Civil Engineering,
IIT Delhi

June 2012

Disclaimer:

"This report is based on the calculations done based an the data and information provided by Narmada Clean Tech Ltd. (NCTC), Ankleshwar, Gujarat. IIT Delhi does not take any legal or atherwise responsibility on the validity and adequacy of the monitoring data and information used in the calculations. The results af this report may be used for the purpose of internal assessment and improving the environmental perfarmance of the industrial cluster. The document is not legally binding."

Table of Contents

1.0 Introduction

The Central Pollution Control Board (CPCB) in association with Institute of Technology (IIT), Delhi carried out a comprehensive environmental assessment of prominent industrial clusters in the country. The aim of the study was to identify polluted industrial clusters and prioritize planning needs for intervention to improve the quality of environment in these industrial clusters and the Nation as a whole.

As a part of the study, Comprehensive Environmental Pollution Index (CEPI) was developed which is a descriptive index of pollution. It is a rational number between 0 and 100, assigned to characterize the environmental quality at a given location following the algorithm of source, pathway and receptor[1]. The aggregated CEPI indicates adverse effects on environment. It is also an indication of potential health hazards. The CEPI index is based on the parameters related to incidence of pollution in water, land (ground water) and air. Development of CEPI system has been a comprehensive exercise of CPCB involving Ministry of Environment and Forests and Indian Institute of Technology, New Delhi. In addition 15 other leading national agencies were also involved.

In all 88 industrial clusters had been assessed which were selected on the basis of environmental data available with State Pollution Control Boards (SPCBs) and Central Pollution Control Board (CPCB)[2]. The report showed that the 43 industrial clusters/areas having aggregated CEPI scores of 70 and above should be considered as critically polluted, with a need for further detailed investigations in terms of the extent of damage and formulation of appropriate remedial action plans. 32 clusters/areas having CEPI scores of

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[1] Central Pollution Control Board (2009a), Report on Criteria for Comprehensive Environmental Assessment of Industrial Clusters, CPCB, Ecological Impact Assessment, Series: EIAS/4/2009-10, December 2009.

[2] Central Pollution Control Board (2009b), Report on Comprehensive Environmental Assessment of Industrial clusters, CPCB, Ecological Impact Assessment, Series: EIAS/5/2009-10, December 2009.

60-70 were considered as severely polluted areas and shall be kept under surveillance followed with efficiently implemented pollution control measures.

Based on the assessment 43 industrial clusters having CEPI greater than 70, on a scale of 0 to 100, have been identified as critically polluted. Among them, states of Gujarat and Uttar Pradesh have been identified with 6 critically polluted areas each. Followed by Maharashtra-5, Tamil Nadu-4, Orissa and Rajasthan 3 each, Andhra Pradesh, Haryana, Karnataka and Punjab, each with 2 and Chhattisgarh, Jharkhand, Kerala and Madhya Pradesh, having one critically polluted industrial cluster each.

25 new industrial clusters have been identified and are found to be critically polluted viz. Ghaziabad (Uttar Pradesh), Bhiwadi (Rajasthan), Ludhiana (Punjab). Noida (Uttar Pradesh), Dombivalli (Maharashtra), Kanpur (Uttar Pradesh), Cuddalore (Tamil Nadu), Aurangabad (Maharashtra), Faridabad (Haryana), Agra (Uttar Pradesh), Haldia (West Bengal), Ahmedabad (Gujarat), Vatva (Gujarat), Ib valley (Orissa), Varanasi-Mirzapur (Uttar Pradesh), Navi Mumbai (Maharashtra), Mangalore (Karnataka), Jharsuguda (Orissa), Coimbatore (Tamil Nadu), Panipat (Haryana), Indore (Madhya Pradesh), Bhavnagar (Gujarat), Vishakhapatnam (Andhra Pradesh), Junagarh (Gujarat), Asansole (West Bengal).

Ankleshwar industrial cluster with a score of 88.5 (Air EPI, Water EPI and Land EPI as 72.00, 72.75 and 75.75 respectively) was listed as one of the critically polluted area. Following this, GPCB started quick actions, expanded its infrastructure, decided and declared main points to control pollution at source, prepared action plans including these points and finalized the same in consultation with main stakeholders (including the industries associations, CETP/TSDF operators, NGOs, CPCB and GIDC authorities) and issued necessary directions. Consultative meetings were held with various stakeholders for improving the action plans.

Narmada Clean Tech Ltd. (NCTL) formerly known as Bharuch Eco Aqua Infrastructure Ltd. (BEAIL), a company, subsidiary of Gujarat Industrial Development Corporation (GIDC) and jointly promoted by Member Industries of Ankleshwar, Jhagadia and Panoli Industrial Estates decided to get the analysis of CEPI done with an objective to assess the effectiveness of action plans and various pollution prevention and control initiatives taken.

2.0 A Brief Description of the Study Area

Ankleshwar Industrial Estate set up by Gujarat Industrial Development Corporation in 1975. This industrial estate is spread over an area of 1574.34 hectares in close proximity to National Highway No.8 and Delhi-Mumbai Railway Line. This industrial estate houses more than 1200 industries which consist of industries manufacturing chemicals, pesticides, pharmaceuticals, bulk drugs, petroleum products, engineering, textiles, plastics, rubber and packaging etc.

Panoli Industrial Estate is set up by Gujarat Industrial Development Corporation. This industrial estate is spread over an area of 1056 hectares in close proximity to National Highway No.8 and Delhi-Mumbai Railway Line. This industrial estate houses more than 700 industries which consist of industries manufacturing chemicals, pesticides, pharmaceuticals, bulk drugs, petroleum products, textiles.

Tables 2.1 and 2.2 show number of red category industries in the industrial cluster.

Table 2.1 Number of Highly Polluting Industries (17 categories)

Sector	Large	Medium	Small	Total
Chlor-Alkali	2	-	-	2
Copper	1	-	-	1
Dyes & Dyes Intermediate	7	5	176	188
Distillery	4	-	-	4
Pulp and paper	3	4	2	9
Pesticides	15	-	-	15
Pharmaceuticals	16	8	48	72
Sugar	3	-	-	3
Tannery	-	-	1	1
Total	51	17	227	295

Table 2.2 Number of Red Category Industries (54 categories)

Category	Large	Medium	Small	Total
Red	25	17	436	478

** Above are the figures of industries located within the industrial estates of Ankleshwar and Panoli.*

Eco-geological features

River Narmada passes through on the Far North side of Ankleshwar Industrial Cluster. There are no identified ecological parks, sanctuaries or any eco sensitive zones within the CEPI area. Being a planned industrial area there are no specific local flora and fauna in the area except planned plantation and gardens.

There are no identified monuments of historical, archaeological or religious importance within the CEPI area.

There has been an important development in terms of treated wastewater discharge. Previously when BEAIL pipeline was not commissioned, effluent was reaching to estuary of River Narmada through Amlakhadi. With passage of time and considering the gravity of the issue, pipeline was laid for conveyance and disposal of entire effluent of all the three industrial estates located at Ankleshwar, Panoli and Jhagadia to deep sea and thereby, stop the direct discharge of effluent into the Amlakhadi. However, still in some cases of leakages and / or other unforeseen circumstances, effluent might reach to Amlakhadi and therefore to keep watch on the situation, under Amlakhadi action plan, samples are collected along the stretch from four different locations. At times, domestic effluent of the nearby area also goes to Amlakhadi. In case of abnormality or discharge of effluent to Amlakhadi irrespective of its quality, necessary immediate action(s) are being taken by concerned stake holders.

3.0 Environmental Quality Data for CEPI Calculations

Environmental quality data with regards to various regulatory parameters of air, surface water and ground water was collected by SGS India Pvt Ltd in consultation with NCTC. The

sampling sites and frequencies were decided by NCTC. Human health related data and other information had been taken as provided by NCTC[3].

The calculations have been done based on the data and information provided by Narmada Clean Tech Ltd. (NCTC), Ankleshwar, Gujarat. Check on the validity and adequacy of the monitoring data and information used in the calculations is beyond the scope of this report.

The results of this report may be used only for the purpose of internal assessment and improving the environmental performance of the industrial cluster.

4.0 Calculation Methodology and CEPI Calculations

The calculation methodology followed is as specified by CPCB, 2009[4]. A brief overview of the methodology is presented below.

A) Pollutant:

This factor is calculated as A = A1 x A2

Where,

A1 is Presence of toxins and

A2 is Scale of industrial activities.

Maximum Score for this factor is considered as 30.

B) Pathway:

This factor is calculated as B = B1 + B2 + B3

Where,

[3] Parirakshana Hyderabad (2011), Report on Health Status of Ankleshwar industrial area in Bharuch Dist. of Gujarat, submitted to NCTC.

[4] Central Pollution Control Board (2009a), Report on Criteria for Comprehensive Environmental Assessment of Industrial Clusters, CPCB, Ecological Impact Assessment, Series: EIAS/4/2009-10, December 2009.

B1 is Pollutant concentration,

B2 is Impact on people and

B3 is Impact on Eco-geological feature.

Maximum Score for this factor is considered as 20.

C) Receptor:

This factor is calculated as C = C1 x C2 + C3

Where,

C1 is Potentially affected population,

C2 is Level of exposure and

C3 is Risk of sensitive receptors.

Maximum Score for this factor is considered as 30.

D) Additional high risk element:

This factor depends on inadequacy of pollution control measures for large scale, medium & small scale industries. It is cumulative of ETPs, CETPs, Air pollution control devices & unorganized waste disposal.

Maximum Score for this factor is considered as 20.

On the above basis score for these factors calculated as

Score = A + B + C +D = 30 + 20 + 30 + 20 = 100

EPI based on above mentioned score is calculated for Air, Water and land.

The aggregated CEPI Score can be calculated as:

$CEPI = i_m+\{(100- i_m)\times(i_2/100)\times(i_3/100)\}$

Where,

i_m- maximum sub-index, and

i_2 and i_3 are sub-indices of other two media.

CEPI calculations for
Industrial Cluster of Ankleshwar, Gujarat

Air

Pollutants	Category
Benzene	C
Benzoapyrene	C
PM2.5	B

A1 = 5.75

R17 **295**
R54 **478**

A2 = 5

A = 5.75 x 5 = 28.75

Pollutants	Average Concentration*	Exceedence Factor
Benzene (ug/m3)	[16.61+(0.0005)x5]/6 = 2.77	0.554
Benzoapyrene	[2.98+1.2+0.21+0.005+0.2+0.16]/6=0.792	0.792
PM2.5	[110.9+54.0+49.9+61.0+80.3+16.6]/6=62	1.04

B1= 2
B2 = 0 (No adverse impact on People on exposure as per the study report submitted by NCTC)
B3 = 0 (No adverse impact on Eco-geological features as per the study report submitted by NCTC)
B = 2

Air...

Population Exposed : 10,000-1,00,000
C1 = 3

Pollutant		Samples Exceeded/ total no. of samples x EF	SNLF
Benzene		1/6 x 0.554	0.092
Benzoapyrene		2/6 x 0.792	0.264
PM2.5		3/6 x 1.04	0.52

C2 = 3 +1.75 = 4.75
C3 = 5 (Risk to sensitive receptors)

C = **19.25**

D = 5

Air CEPI = 28.75 + 2 + 19.25 + 5 = 55

Water (Combination 1)

Pollutant	Category
Total Phosphorous	B
TKN	B
SS	A

A1 = 3

R17 **295**
R54 **478**

A2 = 5
A = 3 x 5 = 15

Pollutants	Average Concentration*	Exceedence Factor
Total Phosphorous	[0.6+1.6+0.5+1.7+0.6]/5=1.0	3.33
TKN	[0.9+0.6+0.9+0.05+0.05]/5=0.5	0.17
SS	[2.0+34.0+10.0+31.0+11.0]/5=17.6	0.18

B1= 6

B2 = 0 (Symptoms of exposure on People)

B3 = 0 (No adverse impact on Eco-geological features as per the study report submitted by NCTC)
B = 6 + 0 + 0 = **6**

Water...1

Pollutant	(Samples Exceeded/ total no. of samples) x EF	SNLF
Total Phosphorous	5/5x 3.33	3.33
TKN	0/5x 0.17	0.0
SS	0/5x 0.18	0.0

Population Exposed: 10,000-1,00,000 **C1 = 3**

C2 = 3

C3 = 3

C = 3 x 3 + 3 = 12

D = 15 (Common facilities for pollution control are inadequate)

Water CEPI = 15+6+12+15= 48

Water (Combination2)

Pollutant	Category
Mercury	C
Total Phosphorous	B
TKN	B

A1 = 4+1.5 = 5.5

R17 295
R54 478

A2 = 5
A = 5.5 x 5 = 27.5

Pollutants	Average Concentration*	Exceedence Factor
Mercury	[0.0005 + 0.0005 + 0.0005 + [0.0005+ 0.004]/5=0.0012	1.2
Total Phosphorous	[0.6+1.6+0.5+1.7+0.6]/5=1.0	3.33
TKN	[0.9+0.6+0.9+0.05+0.05]/5=0.5	0.17

B1= 6+1.75=7.75

B2 = 0 (Symptoms of exposure on People)

B3 = 0 (No adverse impact on Eco-geological features as per the study report submitted by NCTC)
B = B + 0 + 0 = **7.75**

Pollutant	(Samples Exceeded/ total no. of samples) x EF	SNLF
Mercury	1/5x 1.2	0.24
Total Phosphorous	5/5x 3.33	3.33
TKN	0/5x 0.17	0.0

Population Exposed: 10,000-1,00,000 **C1 = 3**

C2 = 3

C3 = 3

C = 3 x 3 + 3 = 12

D = 10 (Common facilities for pollution control are inadequate)

Water CEPI = 27.5+7.75+12+10= 57.25

Water CEPI = Max (48, 57.25)

=57.25

Land

Pollutant	Category
NO2+NO3	B
Total Phosphate	B
Zinc	A

A1 = 3

R17 **295**
R54 **478**

A2 = 5
A = 3 x 5 = 15

Pollutant	Average Concentration*	Exceedence Factor
NO2+NO3	[50+3.4+29+28+27.1+8.6]/6= 24.35	1.62
Total Phosphate	[0+0+0.5+0.06+0.05+0.06]/6=0.11	0.37
Zinc	[0.036+0.005+1.02+0.005+0.005+0.005]=0.179	0.6

B1= 6
B2 = 0 (Symptoms of exposure on People)
B3 = 0 (Impacts on Eco-geological features)

B = 6

Land....

Population Exposed: 10,000-1,00,000 **C1 = 3**

Pollutant	Samples Exceeded/ total no. of samples x EF	SNLF
NO2+NO3	4/6 x 1.62	1.08
Total Phosphate	1/6 x 0.37	0.06
Zinc	1 /6 x 0.6	0.1

C2 = 3

C3 = 5 (Risk to sensitive receptors = YES)

C = 3 x 3 + 5 = 14

D = 5 (Common facilities for pollution control are adequate)

Land CEPI = 15+6+14+5= 40

$$CEPI = 57.25 + (100-57.25) \times (55/100) \times (40/100)$$

$$= 57.25 + 9.405$$

$$= \mathbf{66.655}$$

5.0 Summary and Conclusions

It can be seen that there has been a significant reduction in CEPI value of the Ankleshwar industrial cluster. This shows the environmental action plan has been effectively implemented and there is significant change in the various environmental quality parameters.

References

1. Central Pollution Control Board (2009a), Report on Criteria for Comprehensive Environmental Assessment of Industrial Clusters, CPCB, Ecological Impact Assessment, Series: EIAS/4/2009-10, December 2009.

2. Central Pollution Control Board (2009b), Report on Comprehensive Environmental Assessment of Industrial clusters, CPCB, Ecological Impact Assessment, Series: EIAS/5/2009-10, December 2009.

3. Parirakshana Hyderabad (2011), Report on Health Status of Ankleshwar industrial area in Bharuch Dist. of Gujarat, submitted to NCTC.

ANNUAL AVERAGE OF AMBIENT AIR QUALITY UNDER NAMP

Location	Year	Average values			
		RSPM	**SPM**	**SO_2**	**NOx**
Rallis India Ltd., GIDC, Ankleshwar	2008	107.40	213.70	21.98	27.60
	2009	91.85	183.06	21.31	27.48
	2010	81.00	165.39	18.16	24.68
	2011 (up to May)	108.80	220.87	20.33	29.00
		PM10	**PM2.5**	**SO_2**	**NOx**
	2011 (From June)	88.52	26.31	16.46	25.20
	2012	101.82	33.17	17.44	25.91
	2013 (Till Mar 13)	80.01	27.46	19.55	27.18

Location	Year	Average values			
		RSPM	**SPM**	**SO_2**	**NOx**
Durga Traders, Bhavna Farm, Rajpipla road, Ankleshwar	2008	77.20	154.64	16.08	24.04
	2009	78.79	158.12	17.33	25.28
	2010	71.85	148.73	14.56	22.24
	2011 (up to May)	98.98	199.05	16.21	26.14
		PM10	**PM2.5**	**SO_2**	**NOx**
	2011 (From June)	76.62	22.43	12.36	21.64
	2012	84.19	26.85	14.55	20.94
	2013 (Till Mar 13)	75.60	24.16	16.55	21.91

ANNUAL AVERAGE OF AMBIENT AIR QUALITY UNDER SAMP

Location	Year	Average values			
		RSPM	**SPM**	**SO_2**	**NOx**
Piraman Gram Panchayat, Piraman, Ta. Ankleshwar	2008	75.85	151.17	14.30	22.09
	2009	79.18	159.09	13.70	21.58
	2010	78.52	161.60	13.31	21.85
	2011 (up to April)	85.73	177.63	15.15	24.80
		PM10	**PM2.5**	**SO_2**	**NOx**
	2011 (From May)	77.26	22.56	12.55	21.94
	2012	81.30	25.59	11.89	20.64
	2013 (Till Mar 13)	71.88	19.96	11.53	19.40

Location	Year	Average values			
		RSPM	**SPM**	**SO_2**	**NOx**
Kumkum Bunglows, Valia road, Kosamadi	2008	73.82	147.48	13.35	21.00
	2009	83.59	168.46	14.69	23.07
	2010	87.35	179.74	15.55	23.62
	2011 (up to April)	96.18	198.24	16.54	25.83
		PM10	**PM2.5**	**SO_2**	**NOx**
	2011 (From May)	83.37	25.77	13.53	22.39
	2012	88.93	30.11	13.25	22.14
	2013 (Till Mar 13)	70.46	23.83	13.46	20.47

Annexure I

Progress Report - NEERI

(Upgradation of performance of final effluent treatment plant at Ankleshwar)

Work carried out

- Phase I : Lab scale studies under control condition on tertiary treatment using activated carbon is evaluated and progress report is submitted to NCTL.

- Phase II : Lab scale AOP process with different oxidation and catalyst was evaluated and report regarding the lab scale studies is also submitted to NCTL.

- Biological study formulating different cultures are being used for the development of biomass as well as degradation. The study is also in process.

- Feasibility of the biological treatment is yet to be finalized however, preliminary report is submitted to NCTL.

Work in continuation

1. Column adsorption studies are carried out for the removal of colour as well as degradable and non biodegradable compounds. Identification of adsorbed compounds are carried out through GC-MS

2. The compounds being adsorbed are identified and their degradation and non biodegradation is in process

3. The work is being carried out for different set of samples (composite) collected time to time from treatment plants (CETP and FETP)

4. The exact dose related to flow rate as well as the break through is being carried out through column studies for the tertiary treatment

5. Another study related to the wastewater coming from biological treatment is also being carried out for the adsorption studies to evaluate load reduction

6. Biological studies with different options of seeding are being carried out and the results are encouraging (copy of progress report for biological treatment is enclosed)

7. Further study related to the possibility of enhancement of biomass is in progress

8. For advance oxidation process certain variables are being changed like flow rate of ozone and the time and the results are awaited.

9. Reactor with high power UV is developed and experiments are in process

10. NCTL team comprising of CEO & GM visited NEERI, Nagpur to visualize the progress on 7th & 8th January, 2013 and also observed the continuous flow model.

11. NEERI assured NCTL that work is undertaken as per current scenario at FETP in order to achieve marine discharge norms.

12. NEERI informed NCTL that because of cocktail nature of the inlet effluent and unanticipated variables, more time is

being taken. NEERI shall give an effective and efficient treatment scheme.

13. NCTL requested NEERI to indicate realistic time schedule for completion of the study.

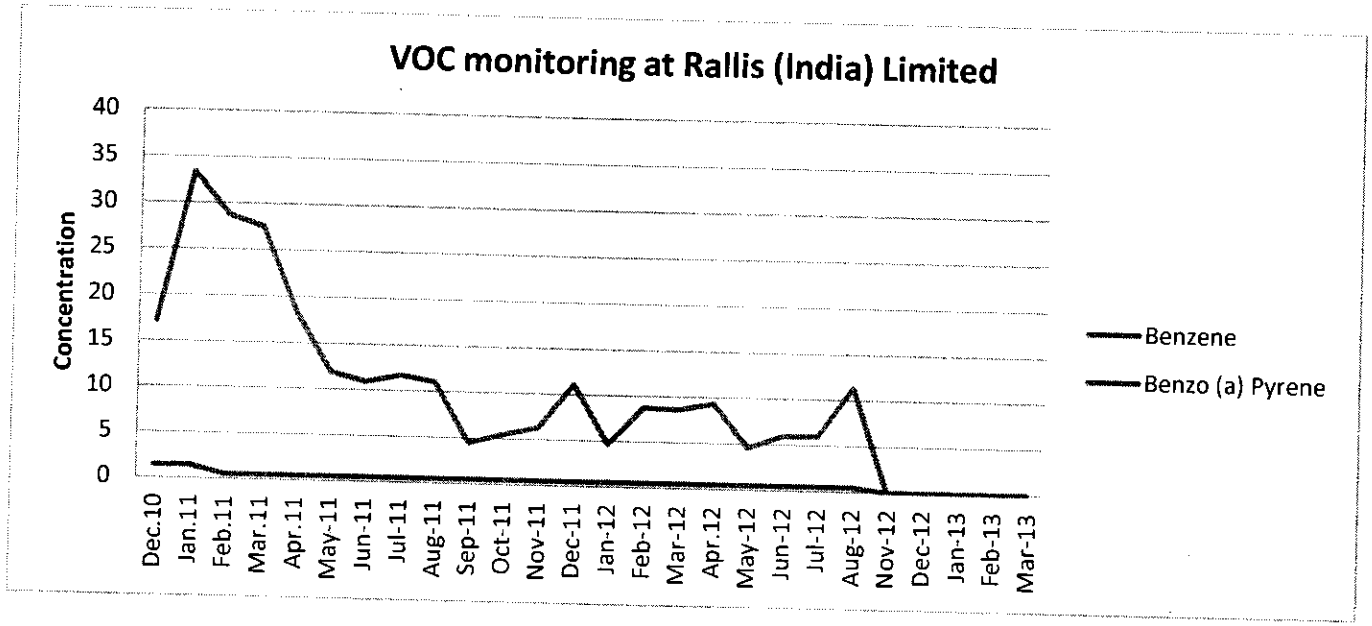
Progress Report – Feb. 2013

As per discussion between NCTL & NEERI in Jan. 2013, changes in treatment by AOP have been effected and treatability studies on continuous lab model are being carried out. Performance of the system would be evaluated after collection and analysis of required data and further treatment would be decided accordingly including any further modification in AOP if required.

Further as per the discussion with NCTL officials future experiments for treatment of wastewater are required for the validation of treatment sequence and therefore lab scale studies would need more sufficient time, about 1 year to arrive at logical conclusion.

VOC Monitoring by GEMI / Siddhi Consultant

Ankleshwar

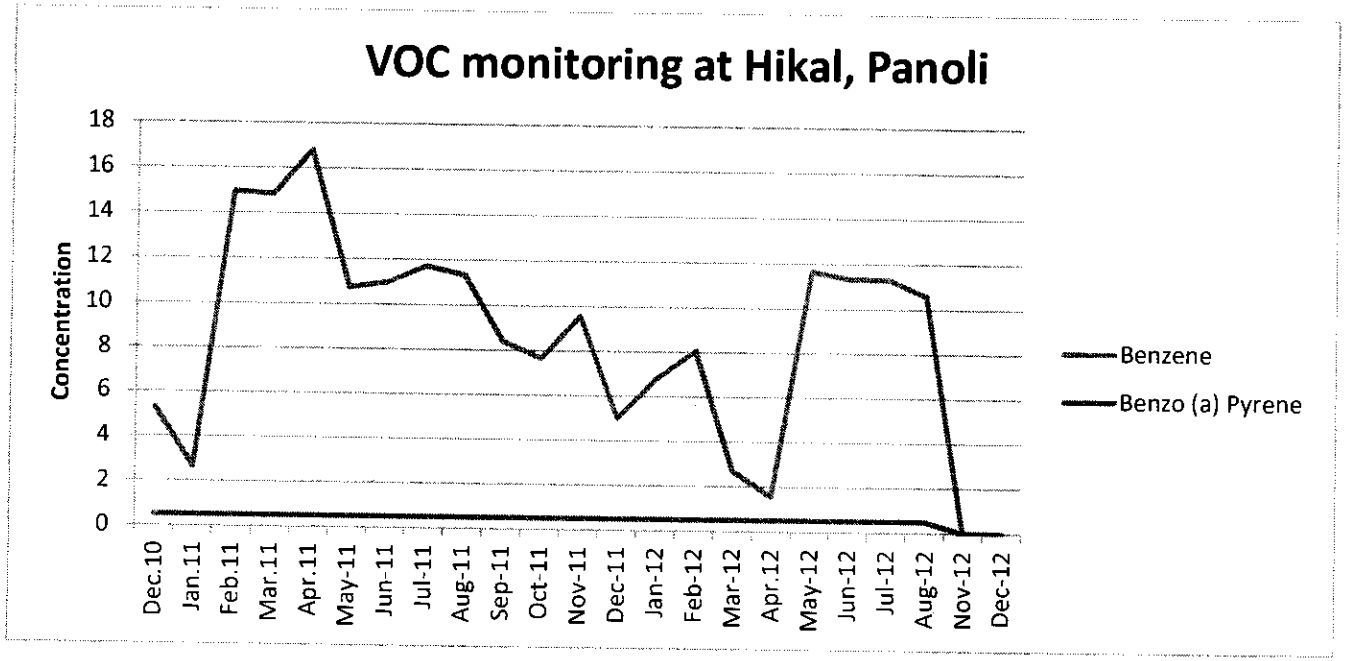


Note : Benzene concentration is expressed in $\mu g/m^3$

Benzo (a) Pyrene is expressed in ng/ m^3

VOC Monitoring by GEMI

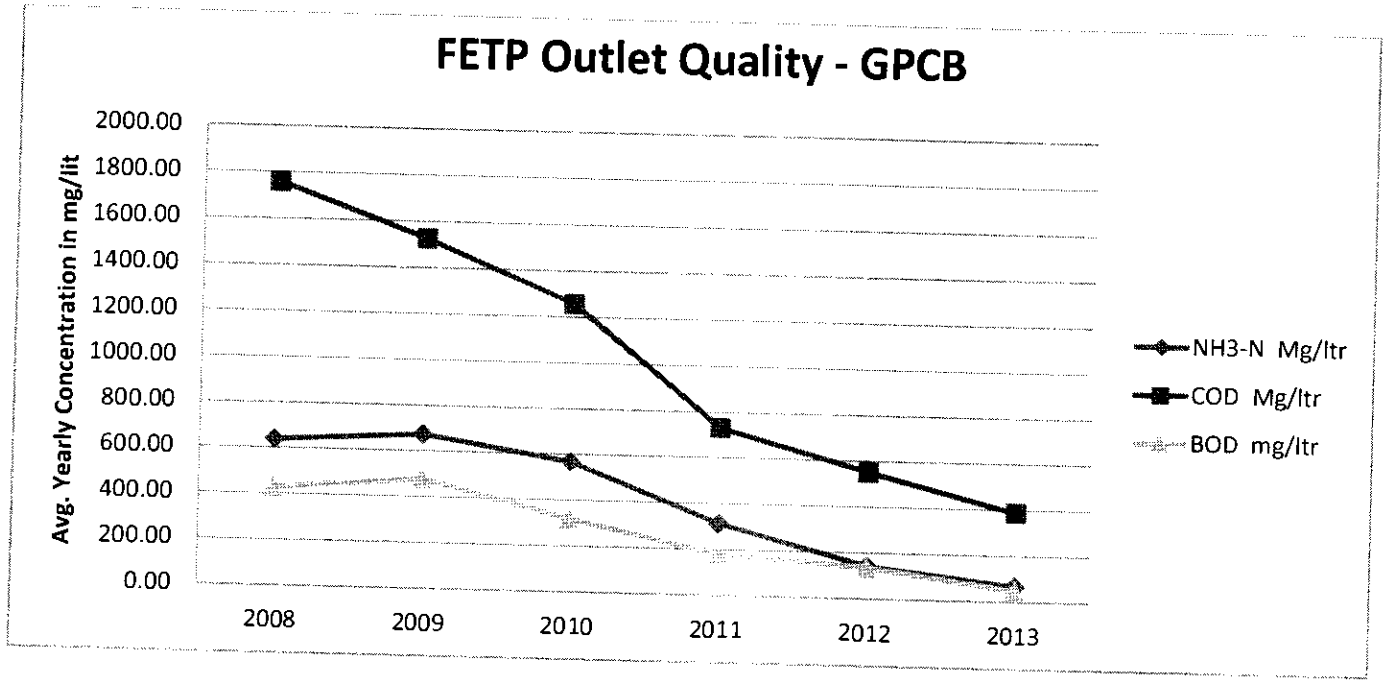
Panoli



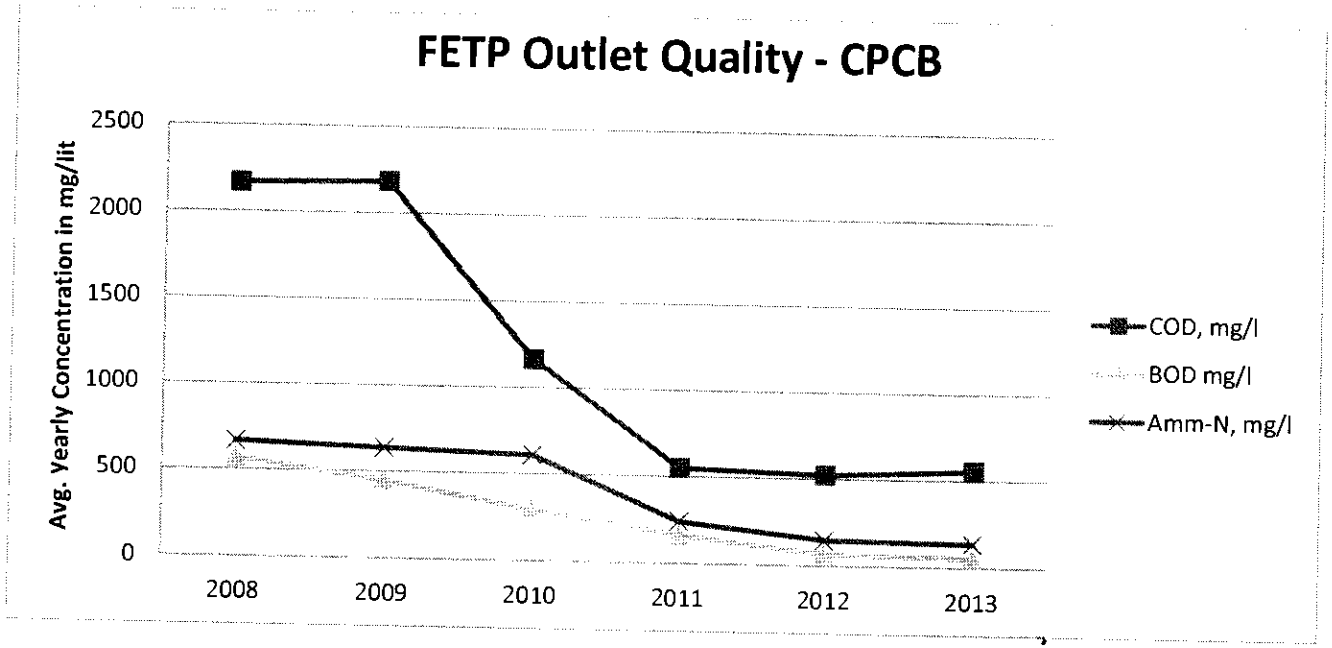
Note : Benzene concentration is expressed in $\mu g/m^3$

Benzo (a) Pyrene is expressed in ng/ m^3

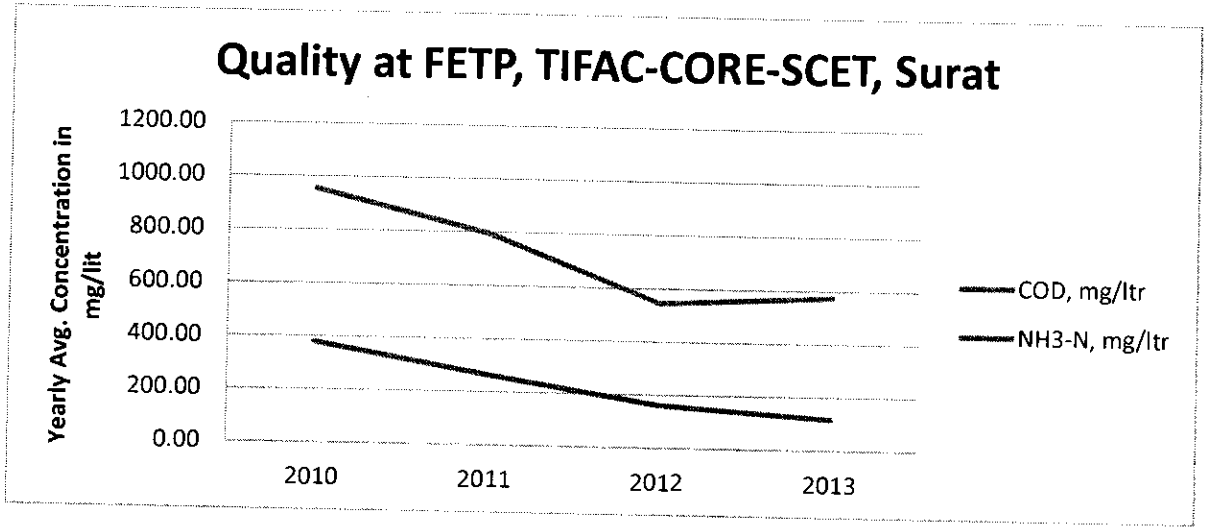
Performance of FETP at Piraman – A Trend Analysis by GPCB

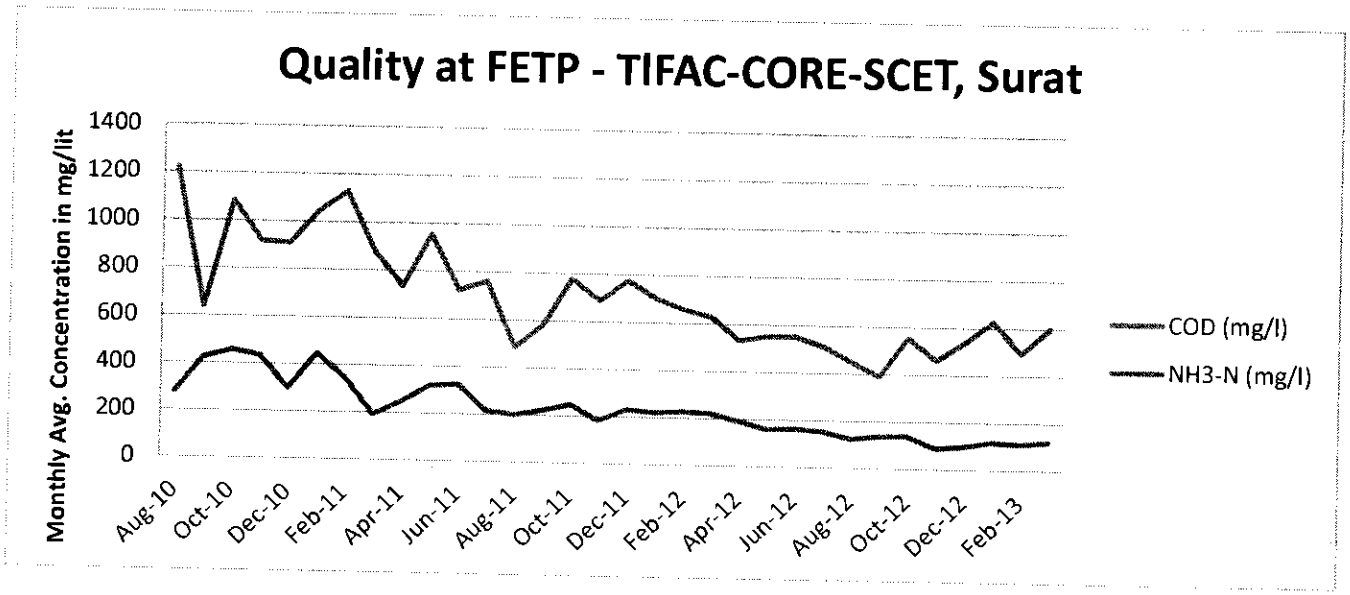


Performance of FETP at Piraman – A Trend Analysis by CPCB

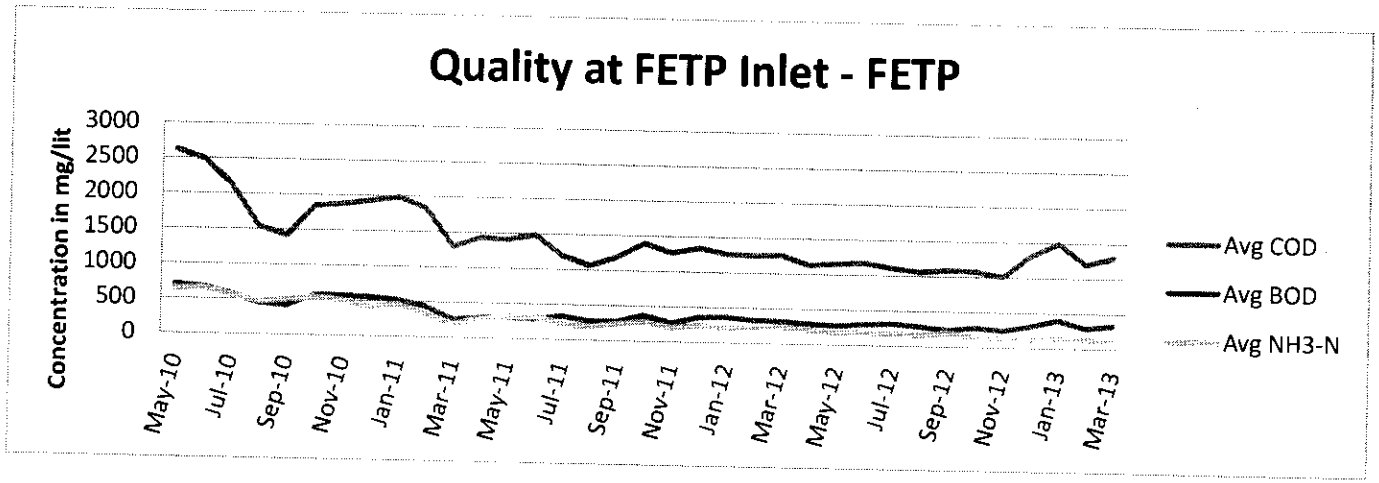


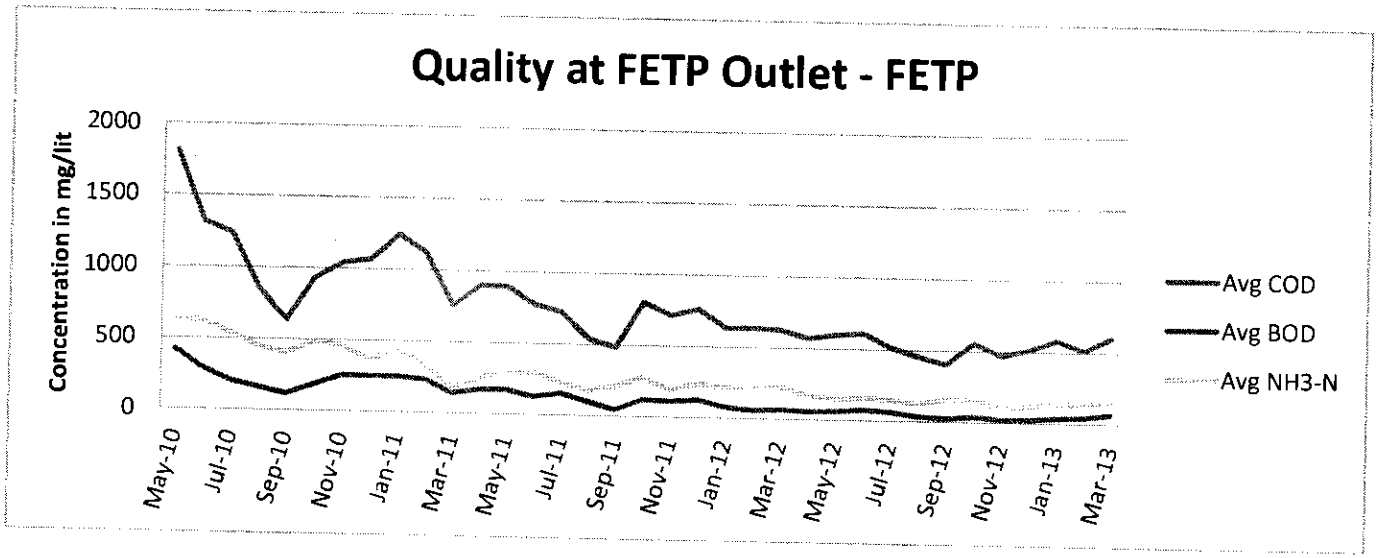
Performance of FETP at Piraman – A Trend Analysis by SCET-TIFAC-CORE



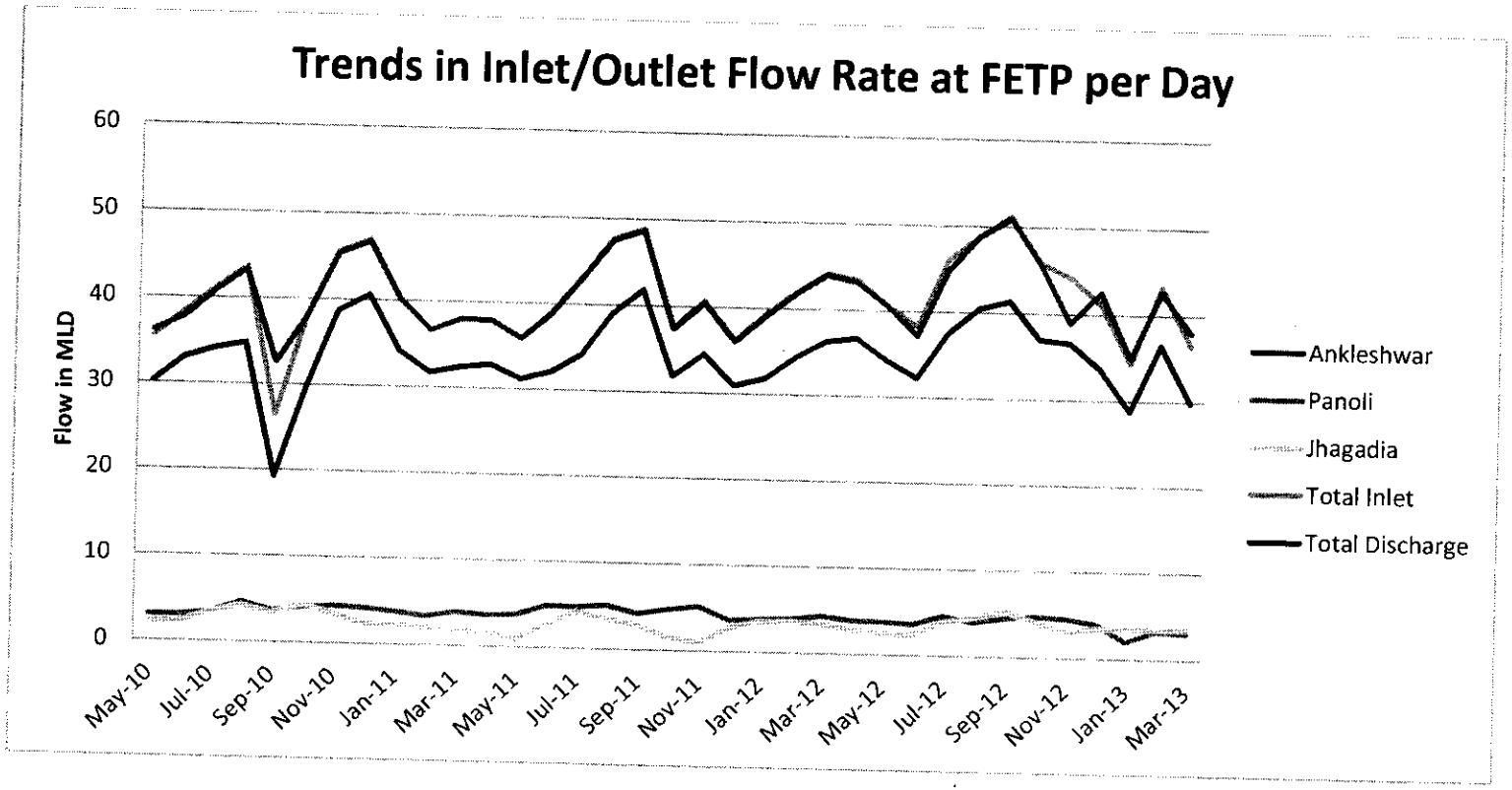


Performance of FETP at Piraman – A Trend Analysis by NCTL

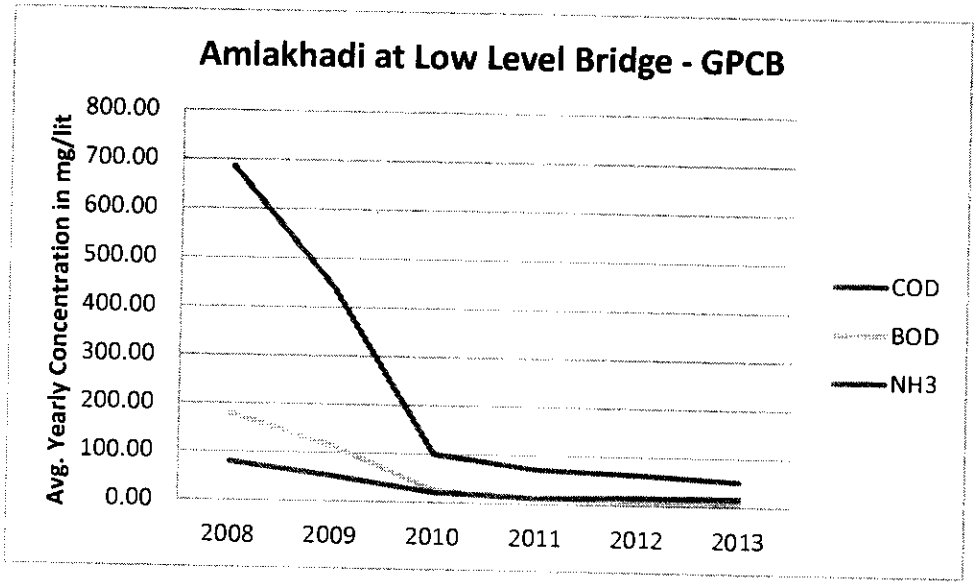


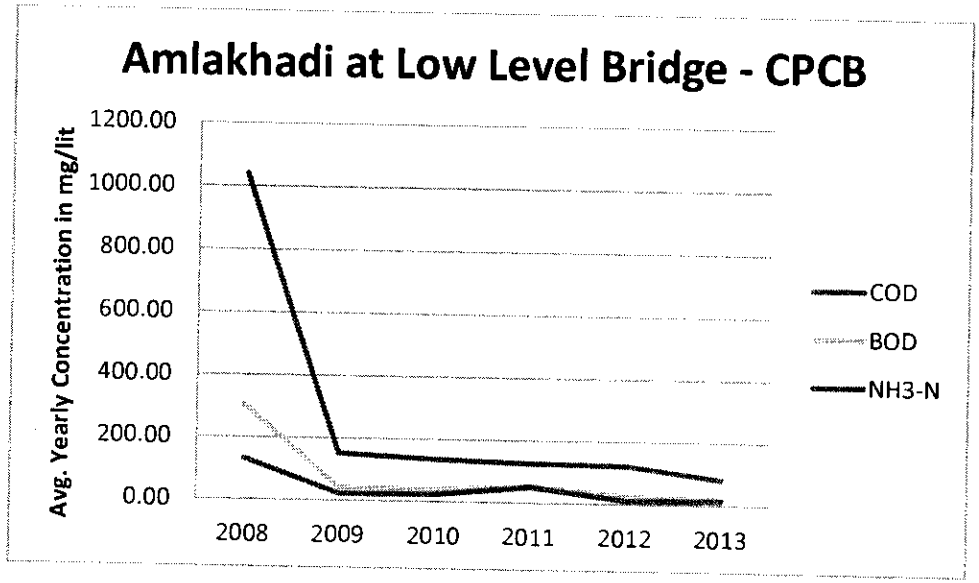


Inlet & Outlet of Effluent at FETP– A Trend Analysis by NCTL



Quality of Amlakhadi at Low Level Bridge – A Trend Analysis by GPCB & CPCB





GPCB Average Values				CPCB Average Values			
Year	COD mg/lit	BOD mg/lit	NH3-N mg/lit	Year	COD mg/lit	BOD mg/lit	NH3-N mg/lit
2008	686.42	178.83	79.36	2008	1041.22	302.89	130.36
2009	441.42	114.75	52.67	2009	151.75	42.75	21.875
2010	99.58	25.18	20.53	2010	135.5	38	23.325
2011	71.33	11.28	11.92	2011	127.175	54.2	50.3
2012	63.17	9.47	16.06	2012	123.0	25.67	11.97
2013 Till Feb	52	8	16.5	2013 1st Qtr	81.9	19.1	13.43

Note : (1) GPCB annual average is based on the monthly results.
(2) CPCB annual average is based on the quarterly results.

CEPI ACTION PLANS

GUJARAT

VATVA

Short Term Compliance As on 31-3-2013

Water 1. Standard flow meter and flow recorder at final outlet of ETP & CETP.

Issue	Time limit	Action taken	Status of compliance of action point
Flow meter to be installed at the final outlet chamber of the units having more than 100 KL/day effluent volume and 25 kl/day	31.10.2010	• **Vatva** -26 units having waste water discharge >100 kl/day-installed MFM (Magnetic Flow Meter) •CETP authority has made arrangement to measure discharge flow through respective sump for the units having waste water discharge >25and < 100 kl/day (35units). •All the sumps are equipped with MFM and at a time only one unit is allowed to discharge waste water. Arrangement is made to note down discharge quantity. •CETP of Vatva (capacity 16 MLD) has installed MFM at the outlet •**Narol-** 60 Textile units having waste water discharge>100 kl/day •28 Textile units having waste water discharge >25and < 100 kl/day installed MFM. •Narol Dye stuff -CETP authority has made arrangement to measure discharge flow of their members. This CETP is for only small scale units and no one has discharge more than 25KL/Day. •CETP has also installed magnetic flow meter.	Complied

2. Water consumption from non permitted sources (e.g. Borewell, tanker etc.) or more than permitted quantity.

Issue	Time limit	Action taken	Status of compliance of action point
Water consumption from non-permitted sources (e.g. bore well, tanker etc) or more than permitted quantity is to be identified	31/08/2010	•**Vatva-** Water supply is managed by separate body named "Vatva Industrial Infrastructure Development Ltd" which also charges water intake for bore well. •In Vatva estate 45 units have their own official bore wells which is generally not operated regularly. New *bore wells* are not permitted without permission of GIDC. •GIDC carries out metering of these bore well & charges accordingly. •**Narol-** In this estate water source is individual bore well. Almost all units in Narol area has installed magnetic flow meter on bore wells and record of the same is maintained. A Special drive is carried out for quantification of water consumption. Verification of the same is done during routine visit also.	Complied

3. Sealing of unauthorized discharge other than regular discharge of effluent.

Issue	Time limit	Action taken	Status of compliance of action point
Sealing of unauthorized discharge other than regular discharge of effluent.	31/08/2010	•**Vatva-** All the units generating waste water are member of CETP. All individual units are discharging w/w into various common sumps (Total 92)which discharge to CETP. There is a single outlet of GIDC Vatva through this CETP outlet which is finally connected to mega pipeline. •No direct discharge into Mega pipeline or any other drain is permitted. •**Narol-** All units are discharging waste water into various Common sump (total 7 sumps) & then it is discharged into river Sabarmati •No direct discharge into Mega pipeline or any other drain is permitted. •A separate effluent conveyance line for textile units of Narol industrial area at the cost of 12 crores is completed & commissioned. Now textile industrial waste water of Narol area is diverted from mega pipeline to new separate conveyance line. However, ultimate disposal is in River Sabarmati through mixing point.	Complied

4. Zero discharge unit – not to have drainage connection or any outside discharge

Issue	Time limit	Action taken	Status of compliance of action point
Zero discharge units – not to have Drainage connection or any outside discharge.	31/08/2010	•**Vatva**-168 nos. of zero discharge units have been identified and they are not given drainage connection or any outside discharges. •Such units mainly are of Engineering, Casting, Formulation, foundry, blending, rolling mills etc. which has no potential of Industrial waste water generation/discharge. •Most of the units are having CCA and compliance is checked during routine monitoring. •**Narol** 44 nos. of zero discharge units have been identified and they are not given drainage connection or any outside discharges. •Such units mainly are of Engineering, Casting,, foundry, blending, weaving, sizing, garment stitching etc. which has no potential of Industrial waste water generation /discharge •Most of the units having CCA and compliance is checked during routine monitoring.	Complied

5. Identification of unauthorized connection to GIDC drainage OR Mega pipeline

Issue	Time limit	Action taken	Status of compliance of action point
Identification of unauthorized connection to GIDC drainage line or discharge to Kharicut canal	Ongoing process	•**Vatva**-Drainage network is maintained, operated and supervised by CETP authority and unauthorized connection if any is disconnected by the authority. No discharge is allowed into Kharicut canal. This is checked during regular monitoring. •Three tier monitoring for identification of unauthorized connection and GIDC drainage line or Kharicut Canal/Mega pipeline is carried out (i) Respective CETP-authority (ii) GPCB (iii) Ahmedabad Municipal Corporation •**Narol**-Drainage network is maintained, operated and supervised by ATPA authority. Kharicut canal is not directly approachable hence no discharge into Kharicut canal. (i.e. about 5 km away through city) •Three tier monitoring for identification of unauthorized connection and GIDC drainage line or Kharicut Canal is carried out (i) Respective ATPA-authority (ii) GPCB (iii) Ahmedabad Municipal Corporation •There is no any other drainage network is available in the area.	Complied

6. Identification of non-biodegradable effluent

Issue	Time limit	Action taken	Status of compliance of action point
Identification of the streams having non-biodegradable effluent containing refractory COD, toxicants like Ammonical nitrogen here treat ability not possible/difficult/ techno economically not viable	31/08/2010	•**Vatva**-Total 95% Small scale industries: Dyes-353, Dyes Intermediates-73 , Herbicide-1, Bulk Drug unit-1 •There is no major source for ammonical nitrogen, only 5 units (manufacturing CPC blue) have such stream. •CPC blue manufacturers are now conditionally permitted on a trial basis to send their ammonium carbonate solution to Bhavnagar based magnesium carbonate manufacturer for their use as a raw material. • The main streams having non bio degradable effluent is mainly from dyes intermediates units.(58)These units have now segregated their conc. Stream and treated separately. •The units manufacturing MPDSA are sending their conc. stream to MEE at GESCSL. (No 7). •The highly acidic stream(spent acid) from dyes intermediates units have also segregated this stream and have became the members of NOVEL and sending it for further management. (26) •The major source for high TDS is due to salting process in dyes manufacturing.(No 353) . Most of the units are now converted to spray drying instead of tray drying.	Complied

continue.....6. Identification of non-biodegradable effluent

Issue	Time limit	Action taken	Status of compliance of action point
Identification of the streams having non-biodegradable effluent containing refractory COD, toxicants like Ammonical nitrogen here treat ability not possible/difficult/tech no economically not viable	31/08/2010	• The list of 103 units which are having high COD have been identified and they have either segregated concentrated streams (mainly intermediates), and sending to NOVEL for further treatment or they have upgraded their treatment facility as per the Action Plan submitted . • Total 11 industrial incinerators are operational. •Total new individual 13 MEE have been commissioned recently. •**Narol**- This is a Textile cluster having bio degradable stream with comparatively low COD but having high hydraulic load. •List of units (70) having high hydraulic load are identified and most of them have now upgraded their ETP as per the Action Plan submitted.	Complied

7. Reduction of pollution load on CETP

Issue	Time limit	Action taken	Status of compliance of action point
All the units have to strengthen individual treatment plant to meet with the CETP inlet norms, so as to reduce inlet pollution load on CETP and thereby improvement in treated effluent quality from CETP	31/03/2011	•**Vatva-** About 103 units (mainly Dyes & dyes intermediates) are identified which required to strengthen their existing ETP. They were asked to submit Action Plan and all the units have now upgraded their ETP. Some have also became the members of NOVEL. •Later on 52 units have also up graded their ETP. Hence total 155 units have now up graded their ETP. •**Narol**-About 70 units (Textiles)are identified which required to strengthen their existing ETP. They were asked to submit Action Plan and all the units have now upgraded their ETP.	Complied

Continue....7- Reduction of pollution load on CETP

Issue	Time limit	Action taken	Status of compliance of action point
Reduction of pollution load on CETP	31/03/2011	•**Vatva-** As efforts have made to up grade ETPs at individual level, there is reduction in pollution load on CETP. Units generating highly acidic stream (Spent acid) are member of Novel Spent Acid Management project and units are sending such streams to Novel which has resulted into stoppage of illegal discharge of highly acidic wastewater. This Novel Project is unique which manages the spent acid generating from units.(Present receipt is about 500MT/day. (Members- 64 of Vatva) •A new company has been firmed in the name of "Society for Clean Earth" with project cost of Rs. 15 Crores for treatment of conc. Effluent stream. The project will consist of multi effect evaporator, pshycometric evaporator and spray dryer having 43 member units. NOC Application of this project is under process. •This has been checked during regular monitoring and stern actions are taken by the board in case of defaulters. •This will also reduce pollution load on CETP.	complied

7-A upgradation of CETP.

Issue	Time limit	Action taken	Status of compliance of action point
Up gradation of CETP	31/03/2011	•**Vatva**-CETP vatva has submitted the EMS up gradation programme which includes installation of clariflocculator prior to equalization tank, installation of multi effect evaporator, installation of additional aeration tank with clarifier. •Pilot plant for multi effect evaporator (capacity 30M^3/Day) is commissioned. (Investment 1.50 Crore) It is now utilized for highly concentrated stream received from individual units. This has reduced inlet load of CETP. • CETP Vatva (16 MLD) is up-graded with additional clarifloculator (2310 M3 capacity with investment of Rs.2.5 crores) , •Based on experience of the pilot plant, it is decided to provide a large capacity of 1000 M^3/day MEE (Two MEE plants each having a capacity of 500 M^3/day).(Investment about 27.10 crore). The construction of 1 MEE is started. Total 164 units have became the members of MEE. •Additionally up gradations of primary and secondary ETP, tertiary treatment FCR, common MEE (2 streams of 300 m3/day),on-line monitoring system at sumps rooms(flow & COD meter)are proposed with investment of @94 crores.	On going Process

Continue.....7-A New proposal for CETP

Issue	Time limit	Action taken	Status of compliance of action point
New CETP	31/12/2011	•**Narol-**ATPA has proposed CETP of 100 MLD (specifically for textile industries)including the drainage network with investment of 150 crores. •ATPA has purchased 11.37 hectare (113720 sq meter) of land for CETP at a cost of Rs.10 Crore. •The technology for CETP is under finalization. •ATPA has now commissioned new internal drainage network and final effluent conveyance pipe line of capacity 150 MLD with investment of Rs.10 crores. This will be provided with new SCADA system. This has avoided overflowing of Mega pipeline into Kharicut canal and overflowing at Sump No.1,2 &3 at Narol. •Total investment for new CETP will be 130 crore.	•Partially Complied •Public hearing for the CETP is completed and EC is under process at MoEF, New Delhi.

Progress Report of CEPI Action Plan-Vatva and Narol

Name of cluster	Direction issued to for CEPI	Total Details received	Investment (Crores)	Compliance status verified	Up gradation completed	Up gradation under progress
Vatva- at individual level	103	155	37.27	155	155	0
CETP Vatva	1	1	56.10	1	-	1
TSDF-Vatva	1	1	47.5	-	-	1
Society for clean earth	1	1	15	-	-	1
Narol-CETP (ATPA)	1	1	160	1	-	1
Narol- at individual level	60	67	29.32	67	67	0
Total	**167**	**226**	**345.19**	**224**	**222**	**6**

8. Checking of illegal discharge of Acidic/ highly polluted effluent

Issue	Time limit	Action taken	Status of compliance of action point
Checking of illegal discharge of Acidic/ highly polluted effluent	Ongoing process	•Units generating highly acidic stream (Spent acid) are member of Novel Spent Acid Management project and units are sending such streams to Novel which has resulted into stoppage of illegal discharge of highly acidic wastewater. This Novel Project is unique which manages the spent acid generating from units.(Present receipt is about 500MT/day. (Members- 64 for Vatva) . • The transportation of spent acid is done through only designated tankers. •This has been checked during regular monitoring and stern actions are taken by the board in case of defaulters. •No incidence of acidic effluent at the inlet of CETP of Vatva noticed in last so many years.	On going process

9. To stop tray drying and salting process

Issue	Time limit	Action taken	Status of compliance of action point
To stop tray drying and salting process	30-06-2011	•**Vatva-** •Some dyes are contributing to high TDS due to salting process. In such case spray drying is advisable instead of salt drying. •There are 446 dyes units in Vatva. •18 spray drying units have been identified which are specifically involved in the job work of spraying of dyes. •The units carrying out tray drying are identified and many units have gone for spray drying. •There are about 75 units which are having their own spray driers. •In view of adequate capacity, There is no need of Common spray drying unit at present. •**Narol-** •There are 24 dyes units and 2 dyes intermediates. (At present both are closed.) in Narol. •There is only one unit having spray drier in this area which is used for captive as well as job works for other. •All the units which were carrying tray drying have now converted to spray drier.	• On going process

10. Upgradation of drainage system.

Issue	Time limit	Action taken	Status of compliance of action point
Upgradation of drainage system	Ongoing process	•**Vatva**-Drainage network within the GIDC is operated and maintained by CETP authority. Any occurrence of such incidence is immediately attended by the contractor. •The authority has spent 90.12 lakhs Rs. For the year 2011-2012 For up gradation and maintenance of drainage network during last year. •**Narol**- Drainage network within the ATPA is installed, operated and maintained by associations. Any occurrence of such incidence is immediately attended by the contractor. •New drainage network is commissioned and SCADA system will be commissioned by June 2013 •The authority has spent Rs.45 lakhs for up gradation and maintenance of drainage network during last year. •Drainage network of small CETP is managed by them selves. •Mega pipeline is regularly cleaned and maintained by the AMC. •Further AMC has now commissioned a new STP at Vinzol with 70 MLD capacity which will reduce unauthorized domestic load on Mega pipeline.	On going Process

11. Monitoring of surface and sub surface water quality

Issue	Time limit	Action taken	Status of compliance of action point
Surface and sub surface water quality	Ongoing process	This office carried out various samples of bore wells (41), pond (5), KCC (12) and rivers (11) in Ahmedabad region.	On going Process

12. To study impact on health within and surrounding population.

Issue	Time limit	Action taken	Status of compliance of action point
To study impact on health within and surrounding population	31-12-2010	•Vatva Industrial Association has requested NIOH to carry out the study on health but there was no response from NIOH due to their constrain. •GESCSL has appointed "Parirakshana-Vapi based NGO" to carry out study regarding health impact on affected population. •As per the information available from the office of the Director of Industrial Safety & Health, Ahmedabad and office of the National Institute of Occupational Health (NIOH), Ahmedabad, they have stated that no incidence of death due to pollution or occupational disease or poisoning is recorded in their office. • As per Rule 68 (t) of factories act all chemical units are required to carry out medical check up of their workers twice in a year. Industrial association is asked to compile these data.	On going Process

13. Disciplinary action against non complying units

Issue	Time limit	Action taken
Disciplinary action against non complying units	Ongoing process	•Direction U/S 33-A & 31 –A issued 01/01/2010 to 25/4/2013, In Vatva-242 and in Narol-122
Bank Guarantee		• Bank guarantee forfeited in Vatva-14 and in Narol-4

AIR

1. Strengthening of air pollution control measures

Issue	Time limit	Action taken	Status of compliance of action point
Strengthening of air pollution control measures	30.12.2010	•**Vatva**- Most of the units are using natural gas as a fuel for the boiler. •Chemical units having process emissions have installed scrubbers. (No.89). •Thee other Air polluting units are foundry units-Cupola furnace (in Vatva 33) having installed APCM as per the design of L.D.Engineering college. . •About 26 Rolling units are providing suction system along with scrubber in their pickling section. •300units are using natural gas as a fuel in the boiler/spray drier. •GESCSL has engaged Schedule I auditor (DDIT-Nadiad) to study the adequacy of APCM for spray drier units. •Recently for visual monitoring of boiler stack of Vatva area, 13 CCTV cameras are installed covering 13 units of this area and it is monitored from the Regional Office as well as Association Office. Instructions are conveyed to respective units in case of heavy smoky emission. All the boilers having steam capacity more than 2 MT are being covered. • The overall solvent consumption in the estate is not high as there is no bulk drug and pesticides unit (one of each only). GEMI has been awarded to the measure VOC content in Ambient Air Quality. Also there is no any specific odour nuisance problem.	complied

AIR

Continue……1. Strengthening of Air pollution control measures.

Issue	Time limit	Action taken	Status of compliance of action point
Strengthening of air pollution control measures	30.12.2010	•**Narol**- All the Textile units having boilers and TFH are equipped with APCM like dust collector/cyclone separator/multi cyclone /scrubber/bag filter/ESP. •Total 58 Bag filters & 8 ESPs had been installed by the Textile industries as APCM. •The other air polluting units are foundry units- Cupola furnace(Narol 3).these units have installed APCM as per the design of L.D. Engineering college. •51 units are using natural gas as a fuel in the boiler/stanter. •Recently for visual monitoring of boiler stacks 57 CCTV cameras are installed covering 88 stacks (74 no. of units) in Narol area, 12 CCTV cameras are installed covering 14 stacks (12 nos. of units) in Vatva and 6 CCTV camera are installed in which 6 units are covered in city area . It is monitored from the Regional Office as well as Association Office. Instructions are conveyed to respective units in case of heavy smoky emission. •Also snapshots are taken on CD and conveyed to the respective industry as Show Cause Notice (SCN)	Ongoing Process

2. Adoption of Cleaner fuel.

Issue	Time limit	Action taken	Status of compliance of action point
Adoption of cleaner fuel	Ongoing process.	•**Vatva-** The infrastructure for gas distribution is available in the estate and most of units are using gas as a fuel for boiler/spray driers. •300 (Total in the area) Nos. of unit has been using Natural gas as a fuel. •**Narol** -The infrastructure for gas distribution is available in the area. •51 Nos. of unit has been using Natural gas as a fuel.	Ongoing process

3. Plantation in the industrial estate.

Issue	Time limit	Action taken	Status of compliance of action point
In the industrial estate	30-09-2010	• Vatva- Massive tree plantation has been taken up in the cluster. During last 2 years about 86,000 seedlings have been planted in GIDC Vatva and their survival ratio is good. • More than 20000 plants to be planted during the year 2012-13 in Green space of Estate. • To encourage massive plantation a competition for best plantation was organized at Vatva during WED last year by Regional Office, GPCB. • Narol- About 5,200 seedlings have been planted in Narol Industrial Area in last two year.	Ongoing process

4. Restriction on using un authorized fuel.

Issue	Time limit	Action taken	Status of compliance of action point
Restriction on using un authorized fuel.	31-12-2010	•Direction has been issued to use only authorized/ consented fuel. • Intensive monitoring has been carrying out for pet coke. •Intensive monitoring is also carried out to discourage units for using unauthorized fuel.	•Complied

5. Control of Fugitive Emissions

Issue	Time limit	Action taken	Status of compliance of action point
Control of fugitive emissions	30-09-2010	•As a part of monitoring program necessary written instructions are given to the units creating fugitive emission. •Awareness program has been organized by the GCPC.	Ongoing process

6. Ambient Air Quality Monitoring.

Issue	Time limit	Action taken	Status of compliance of action point
Concerned agency shall be asked to operate the existing AAQMS regularly and also to increase the number of stations	31-12-2010	•Monitoring for AAQ is being carried out regularly under NAMP and SAMP through GEMI. •In Ahmedabad total 12 AAQMS are operated under NAMP and SAMP and GPCB which covers almost all the area of Ahmedabad. •Out of this one station is within GIDC Vatva and two stations are operated near by Narol. •**Vatva-** AAQM for VOC is started by third party (GEMI) from November 2010. •GESCSL is monitoring Ambient Air Quality within GIDC- Vatva. •Continuous ambient air monitoring station has been commissioned from January 2011 at Maninagar which is near the GIDC Vatva and generated data is linked with CPCB.	Ongoing process

Hazardous waste

1. Checking of illegal transportation and dumping of Hazardous waste.

Issue	Time limit	Action taken	Status of compliance of action point
Vigil check required to be kept on illegal transportation and dumping of hazardous waste.	On going	•Manifest system as specified in the Hazardous Waste rules are strictly adhered to. •Online tracking system is under consideration. • Presently there is no any live illegal hazardous waste dump site. Hazardous waste generated is disposed to TSDF site. •This is an ongoing process and intensive monitoring is carried out to avoid illegal dumping of hazardous waste if any.	•Complied

2. CPCB guidelines for TSDF are to be strictly followed

Issue	Time limit	Action taken	Status of compliance of action point
CPCB guidelines for TSDF are to be strictly followed	30/9/2010	• Regular monitoring has been carried out to check the compliance of CPCB guidelines.	•Complied

3. Adoption of 4- Rs

Issue	Time limit	Action taken	Status of compliance of action point
Adoption of 4- Rs (Reduce, Recover, Reuse, Recycle)	31/12/2010	•Joint venture of three Associations have setup for transportation, Handling, treatment and management (Reuse and recycling) of spent acid named Novel Spent Acid Management. At present about 500 MT/Day of spent acid is received out of which about 40% is segregated for actual users and 60% of low concentration of spent acid is neutralized and Gypsum thus generated is sent to Cement manufacturing units and waste water so generated is treated in provided ETP which is further sent to CETP. •Gypsum, Iron sludge has already been used in Cement Industries. About 63000 MT/year (48000 MT/year from NOVEL and 15000 MT/year from member units) of gypsum is sent to Cement manufacturing units. Around 1000 MT/year of Iron sludge. •CPC blue manufacturers are now conditionally permitted on a trial basis to send their ammonium carbonate solution to Bhavnagar based magnesium carbonate manufacturer for their use as a raw material. •A waste display museum have been setup at Paryavaran Mandir, NEPL to encourage industrial symbiosis and to reduce dumping of waste at TSDF and thus making byproducts (Investment- 6 crores).	•On going process

4. Capacity Up gradation of Existing TSDF

Issue	Time limit	Action taken	Status of compliance of action point
Capacity Up gradation of Existing TSDF	31/12/2010	•Vatva TSDF has proposed new cell at a cost of 47.50 crores of 15 lacs MT. •Applied to Ahmedabad District collector office for allotment of land (App.-6000 M^2) in April 2011. (capacity 15 lac MT).	•Not Complied

CEPI SCORE

Name of GIDC	Declared in January 2010	Declared in February 2011
Vatva (GIDC Vatva & Narol Industrial area) Gujarat	Water- 60 Air- 62 Land- 56	Water- 80 Air- 66.75 Land- 33.00
Overall CEPI	**74.77**	**84.41**
Ahmedabad (GIDC Naroda & GIDC Odhav) Gujarat	Water- 62.75 Air- 58 Land- 58	Water- 62.75 Air- 60.25 Land- 46.00
Overall CEPI	**75.28**	**73.98**

Summary

- CEPI score of Air has been increased by 4.75 points. The trend in both the clusters for Ambient Air Quality may be consider which is almost below the specified norms. It is pertaining to note that all the units having air pollution potential are having APCM.
- CEPI score of water has been increased by 20 points but the efforts being done by both the Associations is considerable.
- The outlet norms of CETP is not meeting with the specified norms, but results at Miroli confluence point is almost meeting the norms.
- CEPI score for land has been decreased by 23 points. All the previous conditions are well maintained and no any live illegal hazardous wastes dumping is noted.
- In nut shell almost compliance in respect of Air and Land while good efforts are undertaken for water compliance.

CEPI ACTION PLANS

GUJARAT

AHMEDABAD

Short Term Compliance as on 31-3-2013

Water

1. Standard flow meter and flow recorder at final outlet of ETP & CETP.

Issue	Time limit	Action taken	Status of compliance of action point
Flow meter to be installed at the final outlet chamber of the units having more than 100 KL/day effluent volume	31.10.2010	•**Naroda** - 5 units having waste water discharge >100 kl/day-installed MFM.) •Units having wastewater discharge >25and < 100 kl/day (6 units) has also provided Magnetic Flow Meter. •CETP of Naroda (capacity 3 MLD) has installed MFM at the outlet. •**Odhav**- 3 units having waste water discharge >100 kl/day-installed MFM. •CETP authority has made arrangement to measure discharge flow through respective sump for the units having wastewater discharge >25and < 100 kl/day (3 units) •CETP of Odhav (OEPL capacity 1.2 MLD) has installed MFM at the outlet. •CETP of Odhav (OGEPL capacity 1 MLD) has installed magnetic flow meter at the outlet.	Complied

2. Water consumption from non permitted sources (e.g. Borewell, tanker etc.) or more than permitted quantity:

Issue	Time limit	Action taken	Status of compliance of action point
Water consumption from non-permitted sources (e.g. borewell, tanker etc) or more than permitted quantity is to be identified	31/08/2010	• In **Naroda** Estate, water supply is managed and charged by "Naroda Utility Service". • In Naroda estate two units have their own bore-wells (Reliance-05 and Prem industry -1). New *bore-wells* are not permitted without permission of GIDC • GIDC carries out metering of these bore-wells & charges accordingly. •Supply of the fresh Water to industry through tankers is uncommon. •**Odhav**- In this estate water source is managed by Odhav Estate Infrastructure Development Limited. New *bore--wells* are not permitted without permission of GIDC. •GIDC carries out metering of these bore-wells & charges accordingly. • Supply of the fresh Water to industry through tankers is uncommon.	Complied

3. Sealing of unauthorized discharge other than regular discharge of effluent.

Issue	Time limit	Action taken	Status of compliance of action point
Sealing of unauthorized discharge other than regular discharge of effluent.	31/08/2010	•**Naroda**- All the units generating industrial waste water are member of the CETP. There is a single outlet of GIDC Naroda i.e. CETP outlet. No direct discharge is allowed into mega pipeline except Reliance Industries (6 MLD). • Reliance Ind. Ltd has its own EMS and outlet in to the Mega pipeline. •No direct discharge into Mega pipeline or any other drain is permitted. •**Odhav-** Two CETPs- (1) OEPL and (2) OGEPL • All the units generating industrial wastewater are member of the CETP and discharging their partially treated industrial waste water into collection sump (total 11 sumps) of internal drainage network leading to CETP-OEPL. It is then discharged into Mega pipeline after its further treatment at CETP of OEPL. • Two textile units are member of OGEPL-CETP are discharging their partially treated industrial waste water into CETP of OGEPL & then it is discharged into Mega pipeline after further treatment. •No direct discharge into Mega pipeline or any other drain is permitted.	Complied

4. Zero discharge unit – not to have drainage connection or any outside discharge

Issue	Time limit	Action taken	Status of compliance of action point
Zero discharge units – not to have Drainage connection or any outside discharge.	31/08/2010	•In **Naroda** Estate, 61 units are identified having zero discharge and they are not given drainage connection or any outside discharge. •Such units mainly are of Engineering, foundry, Formulation, mixing-blending sectors which has no potential of Industrial waste water generation/ discharge. • Most of the units are having CCA and its compliance is checked during routine monitoring • In **Odhav** Estate 60 units are identified having zero discharge and they are not given drainage connection or any outside discharges. •Such units mainly are of Engineering, foundry, Formulation, mixing-blending sectors which has no potential of Industrial waste water generation/ discharge. • Most of the units are having CCA and its compliance is checked during routine monitoring	Complied

5. Identification of unauthorized connection to GIDC drainage OR Mega pipeline

Issue	Time limit	Action taken	Status of compliance of action point
Identification of unauthorized connection to GIDC drainage line or discharge to Kharicut canal	Ongoing process	**Naroda-** •Drainage network is maintained, operated and supervised by CETP authority and unauthorized connection, if any, is disconnected by the authority. No direct industrial discharge is allowed into Kharicut canal. This is checked during regular monitoring. •Three tier monitoring for identification of unauthorized connection into drainage line or Kharicut Canal/mega pipeline is carried out (i) Respective CETP-authority (ii) GPCB (III) AMC •Actions including closure to the industrial unit by the Board and heavy penalty by GIDC / Association is imposed if unauthorized connection is found.	•Complied

5. Identification of unauthorized connection to GIDC drainage OR Mega pipeline Continue

Issue	Time limit	Action taken	Status of compliance of action point
Identification of unauthorized connection to GIDC drainage line or discharge to Kharicut canal	Ongoing process	**•Odhav -** •Drainage network is maintained, operated and supervised by CETP authority and unauthorized connection, if any, is disconnected by the authority. No direct industrial discharge is allowed into Kharicut canal. This is checked during regular monitoring. •Three tier monitoring for identification of unauthorized connection into drainage line or Kharicut Canal/mega pipeline is carried out (i) Respective CETP-authority (ii) GPCB (III) AMC •Actions including closure to the industrial unit by the Board and heavy penalty by GIDC / Association is imposed if unauthorized connection is found.	•Complied

6. Identification of non-biodegradable effluent

Issue	Time limit	Action taken	Status of compliance of action point
Identification of the streams having non-biodegradable effluent containing refractory COD, toxicants like Ammonical nitrogen treat ability not possible/difficult/techno economically not viable	31/08/2010	•**Naroda**-Total 97% Small scale industries. (i.e. only 7 large scale units) Dyes- 85 & Intermediates- 16 - There is only one Bulk Drug manufacturing unit. •There is no major source for Ammonical Nitrogen, only 1 unit (manufacturing CPC blue) has potential . •CPC blue manufacturers are now conditionally permitted on a trial basis to send their ammonium carbonate solution to Bhavnagar based magnesium carbonate manufacturer for its use as a raw material. •Dyes Intermediates manufacturing units have potential to generate highly acidic stream (spent acid) from their process. These units segregate such stream and are the members of NOVEL SPENT ACID MANAGEMENT CO. – A COMMON ENVIRONMENT INFRASTRUCTURE for the management of the spent acid. •The major source for high TDS is due to salting process in dyes manufacturing. Such units are promoted for the spray drying of the dyes to avoid filtration and tray drying. Spray drying units are 11 nos. •Dyes intermediates manufacturing units.(No.-16) have potential to generate the non-biodegradable effluent. These units now segregate their such streams and pre-treatment such as other physico-chemical treatment is carried out prior sending to CETP.	Complied

contiute.....6. Identification of non-biodegradable effluent

Issue	Time limit	Action taken	Status of compliance of action point
Identification of the streams having non-biodegradable effluent containing refractory COD, toxicants like Ammonical nitrogen here treat ability not possible/difficult/techno economically not viable	31/08/2010	• In Naroda estate : The list of 29 units which are having high COD potential have been identified and now they have upgraded their treatment facility as per the Action Plan submitted. • Such units have been the member of Common Multiple Effect Evaporator that has been commissioned at CETP –NEPL site. •Out of 29 units , 10 units have installed their own evaporator and three have provided electro-oxidation treatment facility recently. •10 units are the member of NOVEL SPENT ACID MANANGEMENT CO. LTD.- A COMMON ENVIRONMENT INFRASTRUCTURE For the management of the spent acid. • In **Odhav estate:** Total 98% Small scale industries. (i.e. only 03 large scale units) •36 units manufacture dyes and 2 units are of dyes intermediates and most of them have upgraded their ETP. •3 units are the member of NOVEL SPENT ACID MANANGEMENT CO. LTD.- A COMMON ENVIRONMENT INFRASTRUCTURE For the management of the spent acid. •About 5 units are identified which required to strengthen their existing ETP. They were asked to submit Action Plan and all the units have now upgraded their ETP.	Complied

7. Reduction of pollution load on CETP

Issue	Time limit	Action Taken	Status of compliance of action point
All the units have to strengthen individual treatment plant to meet with the CETP inlet norms, so as to reduce inlet pollution load on CETP and thereby improvement in treated effluent quality from CETP	31/03/2011	**Naroda-** •About 29 units are identified which required to strengthen their existing ETP. They were asked to submit Action Plan. All the units have now upgraded their ETP. Some have also become the members of NOVEL. **Odhav-** •About 5 units are identified which required to strengthen their existing ETP. They were asked to submit Action Plan and all the units have now upgraded their ETP. . Some have also became the members of NOVEL.	•Complied

11

7 A. up gradation of CETP.

Issue	Time limit	Status Of Compliance	Status of compliance of action point
Up-Gradation of CETP	31/03/2011	•**Naroda** -CETP has submitted the EMS up gradation programme which includes installation of multistage (6 stage) evaporator (capacity- 350 KLD with investment of 7.0 crore, electro coagulation plant (5 units) with a capacity 20.0 Kl/hr with investment of and additional aeration tank (capacity- 11 MLD) at a cost of 7.0 crores. •New common multistage (6 stage) evaporator is commissioned.(Total Member-52). This will take care of concentrated industrial effluent from the member units. This will reduce the load on the existing treatment units of CETP. •Six units of electro coagulation plant are installed (20Kl/hr each) .This would make non bio degradable effluent amenable for the further biological treatment . Total capacity will be 300 kl/hr (Total investment 1 crore) •The civil work of new extended aeration and clarifier tank is almost completed. • In addition to this they have modified aeration system in equalization tank by providing new aeration grid of SS 304 in all three equalization tank.(Total investment 30 lac Rs.) •Anaerobic Treatment plant on Pilot scale is commissioned to reduce the COD value in effluent. •**Thus total new investment for up gradation of CETP will be 15.30 crore.**	On going process

12

Cont..... 7 A. upgradation of CETP.

Issue	Time limit	Status Of Compliance	Overall Compliance
Up-Gradation of CETP	31/03/2011	• **Odhav:** • **1. Odhav Enviro Project Limited-(OEPL) CETP-** the performance of this CETP is satisfactory, by and large. •CETP has improve the proper mixing and equalization by installing defused aeration greed in equalization tank and in Flash Mixture for getting better reduction in pollution load at primary stage. • Upgradation Investment- 50 Lacs •**2. Odhav Green Enviro Project Limited (OGEPL)** : At present there are only two members of this CETP. • CETP up gradation - Improved aeration by providing diffused Aeration system, Installed parallel plate pack module incorporated in existing secondary clarifier and Replaced media in PSF and ACF . (Investment- Rs.11 lacs) •Incorporation of special membranes for diffused aeration, blower upgradation for better aeration and upgraded Secondary Clarifier . (Investment- Rs.13 lacs) •Upgradation Investment-24 lacs	Complied

13

Progress Report of CEPI Action Plan- Naroda & Odhav

Name of cluster	Direction issued to	Details received	Investment (Crore)	Compliance status verified	Up gradation completed	Up gradation under progress
Naroda At individual level	27	27	1.78	27	27	--
Naroda CETP	1	1	15.30	1	--	1
Naroda TSDF (Existing)	1	-	2.3	1	1	-
Odhav at individual level	5	5	0.98	5	5	-
Odhav (OEPL)	1	1	0.50	1	1	--
Odhav (OEGPL)	1	1	0.11	1	1	--
Total	36	35	20.97	36	35	1

8.Checking of illegal discharge of Acidic/ highly polluted effluent

Issue	Time limit	Action taken	Overall Compliance
Checking of illegal discharge of Acidic/ highly polluted effluent	Ongoing process	•Units generating highly acidic stream (Spent acid) are member of Novel Spent Acid Management project and units are sending such streams to Novel which has resulted into stoppage of illegal discharge of highly acidic wastewater. (Members for Naroda 10 and for Odhav 3) •The transportation of spent acid is done through only designated tankers. •This has been checked during regular monitoring and stern actions are taken by the Board in case of default. • No incidence of acidic effluent at the inlet of CETP or at the Sump noticed in last few years.	•On Going Process

9. To stop tray drying and salting process

Issue	Time limit	Action taken	Status Of Compliance
To stop tray drying and salting process	30-06-2011	•**Naroda** – • Some dyes units are contributing to high TDS due to salting process. In such case spray Drying is advisable instead of Tray Drying. • There are 85 Dyes Units in Naroda. •10 spray drying units are for captive or carrying out job work for other units also. •Many units carrying out tray drying are identified and many have gone for spray drying now. •In view of adequate capacity, there is no need of Common spray drying unit at present. •10 units has been installed evaporator for conc. Stream. •**Odhav** – •There are 36 Dyes Units in Odhav •03 spray drying units are for captive or carrying out job work for other units also. •Many units carrying out tray drying are identified and many have gone for spray drying now. •In view of adequate capacity, There is no need of Common spray drying unit at present.	Complied

16

10. Upgradation of drainage system.

Issue	Time limit	Action taken	Overall Compliance
Upgradation of drainage system	Ongoing process	•**Naroda** -Drainage network within the GIDC is operated and maintained by CETP Authority. •The drainage network including sumps are in good condition at present. Regular up-keeping of the drainage work is carried out. •The authority has spent Rs. 10 lacs For up gradation and maintenance of drainage network during last year. •**Odhav** - Drainage network within the GIDC is operated and maintained by associations. •The authority has spent Rs. 35 lac For up gradation of HDPE pipeline. •Mega pipeline is regularly cleaned and maintained by the AMC. •Further AMC has now commissioned a new STP with 70 MLD capacity which will reduce domestic load on Mega pipeline.	Ongoing Process

11. Monitoring of surface and sub surface water quality.

Issue	Time limit	Action taken	Status of compliance of action point
Surface and sub surface water quality	Ongoing process	This office carried out various samples of bore wells (41), ponds (5), Rivers (09) and Khari cut Canal (12) in Ahmadabad Region.	On going Process

12. To study impact on health within and surrounding population

Issue	Time limit	Status of compliance	Overall Compliance
To study impact on health within and surrounding population	31-12-2010	•As per the information available from the office of the Director of Industrial Safety & Health, Ahmedabad and office of the National Institute of Occupational Health (NIOH), Ahmedabad, they have stated that no incidence of death due to pollution or occupational disease or poisoning is recorded in their office. •Industrial safety and health department is asked to all the units (falling under Rule 68 (T) Factory Act 1948) to carry out Health survey of their all staff and labour members. Till date no such adverse report is noted in these area (Naroda & Odhav Estate).	On-going Process

13. Disciplinary action against non complying units

Issue	Time limit	Action taken
Disciplinary action against non complying units	Ongoing process	• Direction U/S 33-A and 31-A issued 01/01/2010 to 25/04/2013 Naroda -60and Odhav - 15
Bank Guarantee		• **Bank Guarantee forfeited in Naroda- 1 (Rs. 50,000) and in Odhav-Nil**

20

Compliance summary of Action plan

AIR 1. Strengthening of air pollution control measures

Issue	Time limit	Action taken	Overall compliance
Strengthening of air pollution control measures	30.12.2010	•**Naroda-** Most of the units is using natural gas as a fuel for the boiler. •Chemical units having process emissions have installed scrubbers.(No. 21). •The other Air polluting units are foundry units-cupola furnace (in Naroda 18 having installed APCM as per the design of L.D.Engineering college. •About 09 Rolling units are providing suction system along with scrubber in their pickling section. •Total 3 Bag filters had been installed by the Textile industries as APCM. •145units are using Natural gas as a fuel. •The overall solvent consumption in the estate is not high (only one bulk drug unit) •GEMI has been awarded to measure VOC content in Ambient Air Quality. Also there is no any specific odour nuisance problem	•On-going Process

Compliance summary of Action plan

AIR 1. Strengthening of air pollution control measures

Issue	Time limit	Action taken	Overall compliance
Strengthening of air pollution control measures	30.12.2010	•**Odhav-** Most of the units are using natural gas as a fuel for the boiler Chemical units having process emissions have installed scrubbers.(No. 5) •The other Air polluting units are foundry units-Cupola Furnace (in Odhav 23). These units have also installed APCM as per the design of L.D.Engineering college. •About 04 Rolling units are providing suction system along with scrubber in their pickling section. • Total 3 Bag filters had been installed by the Textile industries as APCM. •76 units are using Natural gas as a fuel. •The overall solvent consumption in the estate is not high as there is no bulk drug and pesticides unit. GEMI has been awarded to the measure VOC content in Ambient Air Quality. Also there is no any specific odour nuisance problem	•On-going Process

22

2. Adoption of cleaner fuel.

Issue	Time limit	Action taken	Overall Compliance
Adoption of cleaner fuel	Ongoing process.	•**Naroda** 145(Total in the area) Nos. of unit has been converted to Natural gas. •**Odhav** 19 Nos. of unit has been converted to Natural gas. as per	•On-going Process

3. Plantation in the industrial estate.

Issue	Time limit	Action taken	Overall Compliance
Plantation in the industrial estate	30-09-2010	•Naroda GIDC has planted 65000 seedings and in current year around 36500 new plantation has been carried out.	•On-going Process

4. Restriction on using un authorized fuel.

Issue	Time limit	Action taken	Overall compliance
Restriction on using un authorized fuel.	31-12-2010	•Direction has been issued to use only authorized/ consented fuel. • Intensive monitoring has been carrying out for pet coke. •Intensive monitoring is also carried out to discourage units for using unauthorized fuel.	• On going Process

5. Control of Fugitive Emissions

Issue	Time limit	Action taken	Overall Compliance
Control of fugitive emissions	30-09-2010	•As a part of monitoring program necessary written instructions are given to the units creating fugitive emission. •Awareness program has been organized recently by the GCPC.	•On-going Process

6. Ambient Air Quality Monitoring.

Issue	Time limit	Action taken	Overall Compliance
Concerned agency shall be asked to operate the existing AAQMS regularly and also to increase the number of stations	31-12-2010	•Monitoring for AAQ is being carried out regularly under NAMP and SAMP through GEMI. •In Ahmedabad total 12 AAQMS are operated under NAMP and SAMP and GPCB which covers almost all the area of Ahmedabad. Out of this two within GIDC Naroda and two station are in Odhav GIDC. Also one AAQMS is operated at Maninagar. •Naroda- AAQM for VOC is started by third party (GEMI) from November 2010.. •GPCB is carrying out AAQM within GIDC area, S.P.Ring Road, Naroda and also Reliance Industries carrying out 1 AAQM in their premises regularly.	•On-going Process

Hazardous waste

1. Checking of illegal transportation and dumping of Hazardous waste.

Issue	Time limit	Action taken	Overall compliance
Vigil check required to be kept on illegal transportation and dumping of hazardous waste.	On going	•Presently no illegal hazardous waste dump site. Hazardous waste generated is disposed to TSDF site. •This is an ongoing process and intensive monitoring is carried out to avoid illegal dumping of hazardous waste.	• On Going Process

2. CPCB guidelines for TSDF are to be strictly followed

Issue	Time limit	Action taken	Overall Compliance
CPCB guidelines for TSDF are to be strictly followed	30/9/2010	•Regular monitoring has been carried out to check the compliance of CPCB guidelines. •There is one TSDF at Naroda (member 1516) including other than Naroda GIDC also.	• On Going process

3. Adoption of 4- Rs

Issue	Time limit	Action taken	Overall Compliance
Adoption of 4- Rs (Reduce, Recover, Reuse, Recycle)	31/12/2010	•Joint venture of three Associations have setup for transportation, Handling, treatment and management (Reuse and recycling) of spent acid named Novel Spent Acid Management. At present about 500 MT/Day of spent acid is received out of which about 40% is segregated for actual users and 60% of low concentration of spent acid is neutralized and Gypsum thus generated is sent to Cement manufacturing units and waste water so generated is treated in provided ETP. •A waste display museum have been setup at Paryavaran Mandir NEPL to encourage industrial symbiosis and to reduce dumping of waste at TSDF and thus making byproducts (Capacity- 7 crores).	•On-going Process

4. Capacity Up gradation of Existing TSDF

Issue	Time limit	Action taken	Overall Compliance
Capacity Up gradation of Existing TSDF	31/12/2010	•Naroda TSDF has proposed new cell Pit-III at a cost of 10 crores .	• Compliance Going On

CEPI SCORE

Name of GIDC	Declared in January 2010	Declared in February 2011
Vatva (GIDC Vatva & Narol Industrial area) Gujarat	Water- 60 Air- 62 Land- 56	Water- 80 Air- 66.75 Land- 33.00
Overall CEPI	**74.77**	**84.41**
Ahmedabad (GIDC Naroda & GIDC Odhav) Gujarat	Water- 62.75 Air- 58 Land- 58	Water- 62.75 Air- 60.25 Land- 46.00
Overall CEPI	**75.28**	**73.98**

•SGS has been engaged by respective Industrial Association for estimation of existing CEPI.

Summary

- CEPI score of Air is not changed.. The trend in both the clusters for Ambient Air Quality may be consider which is almost below the specified norms. It is pertaining to note that all the units having air pollution potential are having APCM.
- CEPI score of water has been increased by 2.25 points but the efforts being done by both the Associations is considerable.
- The outlet norms of CETP is not meeting with the specified norms, but results at Miroli confluence point is almost meeting the norms.
- CEPI score for land has been decreased by 12 points. All the previous conditions are well maintained and no any live illegal hazardous wastes dumping is noted.
- In nut shell almost compliance in respect of Air and Land while good efforts are undertaken for water compliance.

CEPI ACTION PLANS

GUJARAT

VAPI

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

Sr. No.	Action	Time limit	Status as on 31/03/2013.
	WATER		
1	Flow meter to be installed at the final outlet of the units having more than 25 KL/day effluent volume.	31/12/2010	(1)Meeting was held with all the members having more than 25 KL /day discharge. 183 units have already installed the flow meters and maintaining records of daily discharge.(units-8 nos are closed and one unit is Zero discharge)
2	Water consumption from non- permitted sources (e.g. bore well, tanker etc) or more than permitted quantity is to be identified	31/08/2010	This is ongoing process. Consumption more than prescribed limit in Form D is being verified and if deviated, instructions are given in writtiting to bring down water consumption to the tune of prescribed limit.
3	Sealing of unauthorized discharge other than regular discharge of effluent.	31/08/2010	This is ongoing process. Stringent action are being initiated on units when found discharge through unauthorized outlet in to the GIDC drain

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

4	GIDC drainage connection is required to be discontinued to permanently closed and non operative industrial units	30/09/2010	GIDC has disconnect outlet of 69 unit permanently and non operative industrial units
5	Identification of unauthorized connection to GIDC drainage line or discharge to Bill Khadi	Ongoing process	(1)This is ongoing process (2)Now there is no unauthorized discharge into Bilkhadi. Boribandh has been constructed and Industrial effluent has been diverted in to pumping station Ps-1 and Ps-3. At present dragging and lining work of Bill khadi is in progress.
6	Identification of the streams having non-biodegradable effluent containing, toxicants like ammonical nitrogen here treatability not possible/difficult/techno-mically not viable	31/08/2010	(1) 67 units having high ammonical nitrogen and / or Non bio -degradable COD were identified. (2)Multiple effect Evaporators are installed by 17 industrial units in GIDC Vapi cluster
7	Reduction of Pollution load on CETP, up gradation of CETP and efficient operation of CETP.	31/03/2011	(1)VWEMCL has setup technical & Environment cell to evaluate the ETP performance of its member units. (2)A Disciplinary policy is finalized and its implementation has been started. Report of defaulter units identified under the policy is attached herewith.

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

			(3) GIZ is engaged for CETP for further up gradation. (4) One Common MEE will be installed at CETP
8	Installation of FACCO at CETP for small scale industrial unit.	Implemented	FACCO was commissioned in January 2010. 27 units are sending their waste water to CETP for further treatment in to FACCO and 9 units have set up separate FACCO in their own premises. @ 160 KL/day w/w is sent to FACCO at CETP .
8(1)	Identification of high COD and high ammonical nitrogen containing effluent and individual installation of FACCO/other technical advanced system for large scale units having specific very high COD effluent.	31/12/2010	(1)67 units having high ammonical nitrogen and / or Non bio -degradable COD were identified. (2)27 units are sending their waste water to CETP for further treatment in to FACCO and 9 units have set up separate FACCO in their own premises. (3)Multiple effect Evaporators are installed by 17 industrial units in GIDC Vapi cluster
8(2)	CETP authority shall study their treatability of effluent from prominent agency	30/09/2010	NEERI had completed adequacy study in June 2010 and found that CETP Vapi can treat 70 MLD W/W.

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

8(3)	Disciplinary action against non-complying units	On going process	Action is been taken against defaulter units . Also new disciplinary policy has been implemented by VWEMCL.
8(4)	To divert domestic wastewater of Bill Khadi to CETP for treatment.	31/12/2010	(1)Domestic effluent was stopped by construction of Boriband on Bilkhadi and diverting into pumping station PS-1 and PS-3 in the Vapi notified area. (2)GIDC has also setup additional pumping station near Gyandham school for diverting the domestic effluent into GIDC U/G drain for further treatment in CETP. (3)Pumping station is made for diverting 4 MLD domestic waste water from Sulpad, Chanod, and GIDC housing area to CETP inlet near Delta Cosmetic, Phase 1, GIDC Vapi for disposal to CETP inlet for further treatment.
8(5)	Checking of illegal discharge of acidic/ highly polluted effluent	On going	(1)It is ongoing process. GPCB/VWEMCL is doing Continuous monitoring in the Vapi estate. (2)Vigilance cell has been set up for vigorous and surprise monitoring.

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

9	To stop tray drying and salting process in dyes manufacturing units	30/06/2011	Inspections of dyes making units are made for verification of drying process methodology and instructed for adopting alternative drying process from tray driers.
10	Identification and rectification of various leaking manholes,overflowing pumping stations and other bypass systems	31/08/2010	(1)Notified Area Authority has laid HDPE pipeline of enhanced capacity to convey the waste water to pumping station in order to prevent overflow of w/w from manhole. (2)One additional pumping station started near Bill khadi
11	Safe disposal of treated effluent of GIDC, VWEMCL is to lay down pipe line up to deep sea as per NIO recommendation.	31/12/2012	NOC has been issued by the Board to lay down pipeline up to deep sea. Clearance of CRZ and other agencies are awaited.
12	Cleaning of Bill Khadi and dredging to increase carrying capacity.	31/12/2010	GIDC has started work of lining of entire Bilkhadi. Total cost is @ 9.0 crore and will be completed within one year. =
13	Safe disposal of treated effluent of units located outside GIDC.	31/12/2010	NOC has been issued to lay down pipe line up to deep sea for safe disposal of treated w/w of seven industries located

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

			nearby River Kolak as per NIO recommendation. Work for pipe line for 4 kms is completed
14	Monitoring of surface and sub surface water quality		GPCB/ VWEMCL are monitoring surface and sub surface water quality.
		AIR	
	Plantation in the industrial estate		@ 90,000 trees are planted in GIDC clusters for green belt development. Industrial units are motivated to plant trees in open area near their premises.
1	Upgradation of air pollution control measures	31/12/2010	Industries are being monitored and samples of flue gas and process gas emission are collected. Action are initiated against defaulting units , 68 units have installed bag filters, 15 units have installed ESP, CCTV camera has been mounted on Stacks for continuous monitoring At present Ambient air quality monitoring is carried out at 5 NOS. of locations

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

			SVNIT has carried out inspection of industrial units handling volatile solvents/organic materials and has recommended LDAR programme to reduce/curb release of VOC to industrial units through VIA, Vapi.
2	Adoption of Cleaner fuel	15/07/2010	@ 338 industries have adopted cleaner fuel like CNG
3.	Plantation in the industrial estate	On going process	VIA has already spent Rs 1 crore for plantation in the GIDC.
4.	Restriction on using unauthorized fuel	31/10/2010	Industries are being monitored and verified usage of fuel . Action are initiated against defaulting units using unauthorized fuel.
5.	Control of fugitive emission	30/09/2010	Guideline for coal handling is being implemented for control of fugitive emission in GIDC Vapi estate. Sweeping vehicle is utilized by notified area authority in GIDC road side area to minimize fugitive emission.

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

6.	Stengthening of ambient air quality monitoring	31/12/2011	At present Ambient air quality monitoring is carried out at 5 NOS. of locations. Continuous Ambient Air Quality Monitoring Station is proposed at the GIDC estate, Vapi.
7	To prepare guideline for coal handling	31/08/2010	Coal handling guidelines Is prepared and put displayed on GPCB website.
8.	Impact on health of within and surrounding population.	31/12/2011	VIA/VWEMCL had done survey through PARIRAKSHANA and has submitted report regarding the no adverse health impact.
9.	Monitoring of VOC in Cluster.	Ongoing activity once in a year.	SVNIT has carried out inspection of industrial units handling volatile solvents/organic materials and has recommended LDAR programme to reduce/curb release of VOC to industrial units through VIA, Vapi. Pilot plant for evaluation of VOC in Vapi at M/s. Aarti group of industries will be

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

			setup through IIT, Kanpur.
HAZARDOUS WASTE			
1	Vigil check required to be kept on illegal transportation and dumping of hazardous waste.	On going	(1)This is ongoing process. VWEMCL has installed CCTV camera at TSDF site to check irregularity. (2)Illegal hazardous waste transportation/dump site has been identified and stern actions are initiated against defaulters. (on going process)
1(1)	Identified Six illegal hazardous waste dumping sites are to be cleared by lifting and shifting hazardous waste to TSDF and remedified	31/12/2010	Three sites are cleared. Approx. 3400 MT hazardous waste lifted to TSDF site.
2	CPCB guidelines for TSDF are to be strictly followed	30/9/2010	Protocol for TSDF site is followed

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

3	Adoption of 4Rs(Recover,Reduce,Reuse,Recycle)	31/12/2010	All paper mills are sending their plastic waste after bailing for co -processing to the cement industries . Average more than 6000MT/Month plastic waste is being send to Cement Industries for co-processing. Waste Exchange Bank will be set up by VWEMCL and VIA to explore possibility of reuse hazardous Waste of one industry by other industry
4.	Common hazardous waste incinerator is to be installed.	31/08/2011	Techno economic Feasibility to be explored by VIA and VWEMCL for setting up common HAZ Waste incinerator.
5.	Captive facility for destruction of incinerable waste	31/12/2010	Five industrial units are operating incinerators units in GIDC, Vapi cluster.
6.	Transportation of hazardous waste	Ongoing process	On line manifest system for h/w tracking through XGN is being implemented. Industries are being monitored. Action are initiated against defaulting units.
7.	Proper disposal of plastic waste	31/12/2010	Approximately 6000MT/Month plastic waste is being send to Cement Industries for co-processing.

Updated CEPI Action PLAN OF VAPI CLUSTER DIST-VALSAD GUJARAT

8.	To upgrade the Centre for Excellance at Vapi and use its capacity for the purpose of Cleaner Production, Cleaner Technology and Waste Exchange schemes	31/12/2010	Workshop and Training programme for the cleaner production/cleaner technology is being organized by Center for Excellence.
9.	Waste minimization Measures	31/12/2010	Cleaner production initiatives are being implemented by the units to optimize use of raw materials, reduction of waste generation at source

CEPI ACTION PLANS

GUJARAT

BHAVNAGAR

SR.NO	ACTIVITY	ISSUE	STATUS COMPLIANCE
WATER			
1.	Standard flow meter at final outlet of ETP	To control overflowing of CIA pipeline in future, it is necessary to control the discharge of excessive quantity of wastewater from the industrial units. It is necessary to have metering system consisting of Standard Flow Meter. at the final outlet for industries having discharge more than 25 m3/day.	Completed
2.	Identification of users dependent on water supply other than GIDC/ BMC i.e. bore well, tanker supply.	With a view to conserve the water, reducing wastewater generation and preventing disposal mismanagement; it is necessary to restrict water consumption form sources other than regular supply of GIDC/ BMC.	Completed
3.	Collection and conveyance of effluent in to environmentally safe manner	Earlier effluent was discharged through underground drainage and surface drain having operational problems as well, which is ultimate disposal in to creek.	Completed
4.	Identification of unauthorized connection to CIA drainage line OR BMC	Unauthorized connection in drainage line to be checked and disconnected.	New project ongoing Process after

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WATER			
1.	Standard flow meter at final outlet of ETP	To control overflowing of CIA pipeline in future, it is necessary to control the discharge of excessive quantity of wastewater from the industrial units. It is necessary to have metering system consisting of Standard Flow Meter at the final outlet for industries having discharge more than 25 m3/day.	Completed
2.	Identification of users dependent on water supply other than GIDC/ BMC i.e. bore well, tanker supply.	With a view to conserve the water, reducing wastewater generation and preventing disposal mismanagement; it is necessary to restrict water consumption form sources other than regular supply of GIDC/ BMC.	Completed
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4.	Identification of unauthorized connection to CIA drainage line OR BMC	Unauthorized connection in drainage line to be checked and disconnected.	New project ongoing Process after

SR.NO	ACTIVITY	ISSUE	STATUS COMPLIANCE
AIR			
1.	Upgrading of Air Pollution Control Measures (APCM)	The industries either chemical industries with no chemical process emission having utility installation other than SIB, Thermic fluid heaters etc. has major concern for PM, SOx and NOx as pollutant from flue gases. Bentonite based mineral processing industries has process emission from grading and grinding operations. PM is concern parameter from process emission,	Completed.
2.	Adoption of cleaner fuel and cleaner technology	Mineral processing (Bentonite) industrial units required adopting cleaner technology and process	Completed.
3.	Plantation in the industrial estate	Concerned authority shall be asked to provide adequate green belt in the periphery as well as wherever possible within the GIDC.	On Going Process.
4.	Control of fugitive emission	Construction of paved road and maintaining Ambient Air Quality during construction phase are the major source of fugitive emission.	Completed.
5.	Ambient Air Quality Monitoring	Operating the existing AAQMS regularly and also to increase the number of stations	02 No. of station within GIDC, 01 No. of station outside GIDC are being monitored once in a month.

SR.NO	ACTIVITY	ISSUE	STATUS COMPLIANCE
HAZARDOUS WASTE			
1.	Checking of illegal transportation and dumping of Hazardous waste	Illegal dumping of hazardous waste posing problem of surface and ground water pollution. This is not persistent in the Chitra due to inorganic industries in the majority,	This is not persistent in the Chitra due to inorganic industries in the majority, However, it is ongoing process.
2.	Adoption of 4-R's (Reduce, Recover, Reuse, Recycle)	It is required to adopt 4-R"s for better management of Hazardous waste. Industrial units need to be trained towards cleaner fuel and cleaner technology for cleaner production.	Continuous process. GPCB has given permission for utilization of Ammonium Carbonate(Scrubber Solution) from CPC Blue Manufacturing industries used in Magnesium Carbonate mfg. units & Filtrate effluent (Ammonium Chloride) generated from $MGCO_3$ mfg. units utilize in actual soda ash mfg.industries for production of Ammonia.

CEPI ACTION PLANS

GUJARAT

JUNAGADH

Industry wise Compliance Plan RO JUNAGADH AS ON 31-03- 2013

Name & Designation of Unit Head :-R.V.Patel EE

Sr.No	GPCB ID	Name of Industry or Stakeholder*	Detail of directions issued@	Date of direction issued	Directions issued by whom +	Time limit for compliance as per Action Plan	Inspecting officers (Name & Designation)	Status of compliance and date#	Date of compliance completed	Expenditure for EMS in Rs.	Remarks(Date last visit)
1	2	3	4	5	6	7	8	9	10	11	
1	17219	GIRNAR BMW SERVICE	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	A.J.RATHOD, DEE H.K.SHAH SSA	26/7/2011	completed,	Rs. 1.6 lakhs	16/1/2013
2	25283	MARUTI ENTERPRISE	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	M.R.MAKAWANA DEE H.K.SHAH SSA	25/10/2010	completed,	Rs. 1.10 lakhs	17/3/2012
3	17272	PATEL REMEDIES PVT. LTD	1)Plantation 2)house keeping up gradation	14/7/10	RO	30/9/2010	A.J.RATHOD DEE H.K.SHAH	30/9/2010	completed	Rs. 1.80 lakhs	16/1/2013

						SSA				
17280	S.K.INDUSTRIES	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	A.M.GADHIYA RO R.H.JIVANI SO	30/11/2010	Completed,	Rs. 2.4 lakhs	17/7/2012
17199	CREATIVE CASTING LTD	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	A.J.RATHOD DEE H.K.SHAH SSA	14/2/2011	Completed	Rs. 2.5 lakhs	16/1/2013
17196	DIAMOND AUTO ACCESSORIES	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	A.M.GADHIYA RO R.H. JIVANI, S.O.	05/03/2011	completed	Rs. 1.25 lakhs	17/7/2012
17193	CASTECH FOUNDRY PVT LTD	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation &	14/7/10	RO	30/9/2010	A.M.GADHIYA RO R.H.JIVANI SSA	2/2/2011	Completed	Rs. 2.2 lakhs	03/8/2013

		5)plantation								
17267	OZA DYES IND	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	A.M.GADHIYA RD H.K.SHAH SSA	28/4/2011	Completed	Rs. 1.0 lakhs	05/2/2013
25916	JAGDISH EXPORT IND	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	19/2/2011	A.M.GADHIYA RO H.K.SHAH SSA	19/2/2011	Completed	Rs. 2.45 lakhs	04/10/2012
30966	KHIMJI JAMNADAS OIL CAKE	1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	A.M.GADHIYA RO R.H.JIVANI, SO	25/3/2011	3,5 completed but if refinery section start, point 1,2,&4 applicable which are under progress.	Rs. 1.4 lakhs	16/01/2013

	25986	SAURASTRA GAS CO	1)Plantation 2) House keeping upgradation	14/7/10	RO	30/9/2010	A.J.[illegible]HOD DEE R.H.JIVANI SO	20/12/2010	Completed	Rs. 1.1 lakhs	16/10/2012
	25983	MOTAN INDUSTRIES	To control 1)fugitive emission, 2) housekeeping up gradation & 3)plantation & 4)stack height rising	14/7/10	RO	30/9/2010	A.M.GADHIYA RO R.H.JIVANI SO	16/3/2010	completed	Rs. 2.9 lakhs	07/09/2012 unit has dismantled kiln, cement and raw mill for its upgradation and modification and after tha they will reinstall sam
	26036	KUMAR ABRASIVE	To control 1)fugitive emission, 2)housekeeping up gradation & 3)plantation	14/7/10	RO	30/9/2010	R.V.CHAUHAN DEE R.H. JIVANI, S.O.	05/03/2011	completed	Rs. 1.05 lakhs	19/03/2011
	11951	AJANTA CHEMICAL	1)house keeping up gradation & 2)plantation	14/7/10	RO	30/9/2010	A.M.GADHIYA RO R.H.JIVANI SO	30/11/2010	completed	Rs. 1.25 lakhs	07/01/2013
	17279	RELIABLE DYE	1)Flow meter; 2)Energy	14/7/10	RO	30/9/2010	A.M.GADHIYA	21/2/2011	completed	Rs. 15	03/11/2012

		CHEM	meter, 3)house keeping 4)ETP up gradation & 5)plantation				RO R.H.JIVANI SO			lakhs	
	17291	SUN CHEM IND	1)house keeping up gradation & 2)plantation	14/7/10	RO	30/9/2010	M.GADHIYA RO R.H.JIVANI SO	29/9/2010	Completed	Rs. 1.2 lakhs	07/01/2013
	26189	KOHINOOR ACCESSORIES	1)flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation	14/7/10	RO	30/9/2010	M.GADHIYA RO R.H.JIVANI SO	3/2/2013	completed	Rs. 1.3 lakhs	17/7/2012

ails of samples collected by M/S Bhagvathi lab. Hydrabad, AP under CEPI on dated 13/02/2013

QM are carried out at (1) terrace of Kohinoor accessories Pvt. Ltd. GIDC, sabalpur PH.II, Junagadh

(2) terrace of Sunchem Industries,Jay Bhavani Ind. Estate,Sabalpur, Junagadh

ound water sampling carried out at

Borewell water sample of Kohinoor accessories Pvt. Ltd. GIDC, sabalpur PH.II, Junagadh

Hand pump water sample near Ashok Backery, Station Road, Junagadh

ound water sampling carried out at (1) Willington Dam, Junagadh

(2) Hasanapur Dam, Junagadh

Action plan: Junagadh (Gujarat) CRITICALLY POLLUTED AREA BASED ON CEPI:

Industrial cluster /potential impact zone: Sabalpur, Jay Bhavani, Jay Bhuvneshwari, GIDC Junagadh (I-Dolatpara, II_Sabalpur)

Sr No	Activity	Issue	Action	Implementing Agency	Status
WATER					
1	Installation of Magnetic flow meter at final outlet	To control unauthorized discharge of excessive quantity of w/w from the industrial units (i.e. the w/w discharge should be as per CCA condition). To check the quantity of w/w being discharged it is proposed that concerned unit should provide Magnetic Flow Meter (MFM) at the final outlet.	Identification of all such units having ETP with up gradation.	GPCB , Concerned industries, Industries Association	Complied
			Industrial Association will issue the circular to their member to provide the Magnetic flow meter. GPCB will also issue notice to such units.	Concerned , Industries Association, GPCB	Complied

2	Water supply other than GIDC bore well and tanker supply to be identified	It is observed that many industrial units have no proper control over water consumption, which, not only increase the overall w/w generation but also tends to w/w disposal mismanagement. There-fore, it is necessary to direct unit to restrict water consumption as per the quantity mentioned in CCA application and to direct GIDC/concerned department to seal unauthorized bore well.	Identification of source of water i.e. tanker, bore well etc. for its authenticity.	Concerned industries, Industrial Associations , GPCB	Complied
			Issue direction to stop the unauthorized use of water by the industries.	Concerned industries, Industrial Associations , GIDC , GPCB	Complied
			Direction to seal the unauthorized bore well, tankers.	GIDC/ Concerned agency/Industries	Complied

3	Sealing of unauthorized discharge other than regular discharge	All industrial units shall be directed to operate only one outlet through flow meter for effluent disposal so that unauthorized discharge can be checked. Concerned authority shall disconnect / seal such unauthorized discharge.	Concern authority will be asked to identify unauthorized outlet.	Concerned industries, Industries Association , GIDC, GPCB.	Ongoing process and will be made more vigorous
			All industrial units will be asked to submit notarized undertaking to GPCB stating that w/w discharge must be routed through magnetic flow meter only.	Concerned industries	Complied & on going activity
4	Zero discharge units (Recyclable/reuse plastic processing units) – not to have Drainage connection Scrutiny of recycle, reuse and unauthorized discharge unit specifically for the plastic processing units having	GIDC/JMC shall be asked to disconnect the drainage connection (if any) to the industrial units which have issued CCA with zero discharge condition. Careful monitoring shall be carried out to avoid any illegal discharge.	Inventorisation of the units having consent under water Act for zero discharge.	Industries Association , GPCB	Complied
			Review the condition specifically for multi products, V.S. manufacturing unit.	GPCB	Complied

	recycling facility.		Direction to be issued to all zero discharge industrial units as certified by GIDC/JMC and checked by GPCB and will be asked to submit notarized undertaking to GPCB with a copy to respective association stating that there is no unauthorized outlet and complying zero discharge.	Concerned industries	Complied

B) AIR					
1	**Installation /up gradation** of air pollution control measures	The industrial units shall be directed to upgrade APCM, to achieve prescribed norms by the industrial units/ amended Ambient Air Quality Norms, as required. Monitoring and sampling of industrial units having liquid incinerator and common biomedical waste faciliy incinerator i.e there is upgradaiton of such APCM **Note: there is no hazardous waste incinerator in the area**	Industrial units consuming solid fuel like coal, agro waste, etc., required to upgrade air pollution control system by installing bag filters, cyclones so that ambient air in the nearby area meet with the revised norms of PM (Particulate matter).	Concerned industries GPCB & third party Agencies.	Complied
			Carrying out modification and upgradation of installed Bag filters cyclone separators as APCM.	Prominent agency	Complied

2	Plantation in the industrial estate (Green Belt development)	Concerned authority shall be asked to provide adequate green belt in the periphery as well as wherever possible, within the GIDC	Considering the present plantation as baseline datum, five years plan for plantation of industrial estate to be submitted by the GIDC/ association in consultation with Forest department.	Industrial Association, GIDC, Forest dept.	Complied
3	Restriction on using unauthorized fuel.	The industrial units shall be directed to use the fuel as per the consented condition.	units shall use authorized fuel as per consent.	Concerned industries, GPCB	Complied
4	Control of fugitive emission	It is observed that fuel handling, chemical storage, the processes like pickling are the major source of fugitive emission hence the industrial units shall be directed to adopt better housekeeping practices	Good practices like cleaner production and cleaner technology to be adopted in fuel handling system and house keeping.	Concerned industries	Complied

5	Ambient Air Quality Monitoring	Concerned agency shall be asked to operate the existing AAQMS regularly and also to increase the nos. of stations	Existing 1 nos of AAQMS to be strengthened to monitor AAQ as per new notification. New 2 nos of AAQMS stations have already installed since May-2010.	GPCB Industries Association	Complied
C	**Land & soil pollution**				
1	**Hazardous Waste**				
	Checking of illegal transportation and dumping of Hazardous waste (particularly for plastic waste)	TSDF operators/Industries Association shall be asked to keep vigil on their member units regarding timely and regular disposal of HAZ wastes at approved TSDF site	Vigil check required to be kept on illegal transportation as per TREM card and dumping of hazardous waste. Moreover Govt. of Gujarat has carried out Cleaner Production programme in mini Cement Plant industries & outcome of the same should be implemented.	RTO, GPCB Individual, industries, Industrial Association,	On going process

2.	Adoption of 4- R's (Reduce, Recover, Reuse, Recycle)	It is required to adopt 4-R"s for better management of Hazardous waste and Co-incineration of incinerable hazardous wastes in cement kiln.	Inventorisation of the various Hazardous waste generated from the industries	GPCB, Concern industries, Gujarat Cleaner Production Centre	Complied
3	Regular sampling & monitoring of surface /sub surface resources.	Ground water quality in the area shall be studied. (quality, area covered & quantity) from where CPCB authorized officials collected samples as discharge is not permitted outside the premises of industries due to land lock area. Note: Major water intensive unit as well as illegal hazardous waste dumping is not situated in the area.	Assessment of ground water quality in GIDC/Industrial cluster already started since April-10. Board has fixed seven location of this area and regularly operated on monthly basis. The sample collected of ground water since April-10. Analysis Report attached here with.	GPCB	Complied