

**REPORT ON
ENVIRONMENTAL QUALITY MONITORING
FOR ASSESSMENT OF
COMPREHENSIVE ENVIRONMENTAL
POLLUTION INDEX (CEPI)
FOR
CRITICALLY POLLUTED AREA-ANKLESHWAR
IN GUJARAT**

REPORT PREPARED BY



**CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment, Forests and Climate Change)
Zonal Office (West), Vadodara
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REPORT ON ENVIRONMENTAL QUALITY MONITORING FOR ASSESSMENT OF COMPREHENSIVE ENVIRONMENTAL POLLUTION INDEX (CEPI) FOR CRITICALLY POLLUTED AREA-ANKLESHWAR IN GUJARAT

1.0 BACKGROUND:

A total of 88 industrial clusters/areas were studied to calculate Comprehensive Environmental Pollution Index (CEPI) by the Central Pollution Control Board (CPCB) in consultation with the Ministry of Environment & Forests (MoEF). The CEPI is calculated by CPCB with the help of Indian Institute of Technology (IIT), Delhi using information/data provided by State Pollution Control Boards/ Pollution Control Committees, Zonal Offices of CPCB published information etc. The main objective of the study was to identify polluted industrial clusters/areas in order to take concreted action and to monitor them at national level to improve the current status of environmental components.

Based on CEPI, it is suggested that areas having aggregated CEPI scores of 70 and above should be considered as Critically Polluted Areas (CPAs), whereas the areas having CEPI between 60-70 should be considered as Severally Polluted Areas (SPAs). It was suggested to keep SPAs under surveillance and pollution control measures should be efficiently implemented whereas the CPAs need formulation of appropriate remedial action plan.

The Ministry of Environment & Forests, New Delhi vide office memorandum dated 13.01.2010 had imposed a temporary moratorium on consideration of development projects for Environmental Clearance (EC) for the period of 08 months up to August, 2010 in 43 Critically Polluted Areas (CPAs)/industrial clusters all over India including **06 in Gujarat: Ankleshwar, Vapi, Ahmedabad, Vatva, Bhavnagar & Junagadh**, identified by Central Pollution Control Board (CPCB). Further, it was asked to CPCB along with the respective State Pollution Control Boards/Pollution Control Committees to finalize the time bound action plan for improving the environmental quality in these identified industrial clusters/areas.

Subsequently, time bound action plans were prepared by the respective SPCBs/PCCs for improving the environmental quality in these industrial clusters/areas. The action plans so prepared were finalized by CPCB and appraised to MoEF. Further, the period of moratorium was extended beyond 31.8.2010 from time to time by MoEF.

Thereafter, the status of action plans were reviewed by a Technical Committee constituted at CPCB Delhi. In accordance with the information received from CPCB that the respective SPCBs/PCCs and the local stakeholders initiated some work on implementation of the submitted action plans in respect of the industrial areas the MoEF lifted the moratorium on consideration of projects for environmental clearance in some areas.

Moratorium lifted for the CPAs-Vapi, Bhavnagar in February, 2011, Junagadh in March, 2011 and Ahmedabad in Sept 2013. Further, moratorium re-imposed for CPA-Vapi in vide OM dated 17.09.2013 and subsequently, this OM kept in abeyance until further orders with some stipulations vide OM dated 10.06.2014.

Presently, moratorium exists at two CPAs-Ankleshwar, Vatva and moratorium kept in abeyance with stipulations at Vapi.

The CEPI scores are given at following table:

CEPI SCORE –GUJARAT

Year	Ankleshwar	Vapi	Ahmedabad	Vatva	Bhavnagar	Junagarh
2009	88.50	88.09	75.28	74.77	70.99	70.82
2011	85.75	90.75	78.09	87.46	69.73	67.85
2013	80.93	85.31	69.54	83.44	62.79	52.75

CPCB issued (dated 26.04.2016) direction u/s 18 (1) (b) of the Water (P & CP) Act & the Air (P & CP) Act to undertake environmental quality monitoring and for installations of CAAQMS and real time WQMS in critically polluted areas. Accordingly, GPCB got carried out monitoring in all three CPAs (Ankleshwar, Vatva and Vapi) as pre-monsoon sampling in June 2016 and submitted reports to CPCB, Delhi.

CPCB, West Zone Office, Vadodara received a letter from the Member Secretary, CPCB vide no. MSCB/05/2016, dated 17.09.2016. This was in response to communication received from Joint Secretary, MoEF & CC, New Delhi for undertaking Environment Quality monitoring in the three critically polluted areas-Ankleshwar, Vatva and Vapi in Gujarat.

Accordingly, monitoring carried out in these areas. The report of monitoring in CPA-Ankleshwar is given in following sections.

2.0 MONITORING-CPA-ANKLESHWAR:

2.1 Monitoring Period & Team:

Monitoring for assessment of CEPI carried out at critically polluted area- Ankleshwar as detailed below:

Area	Date(s)	Team(s)
Ankleshwar	14.10.2016- 19.10.2016	Dr. D. B Brahmaiah, Sc D, Shri S Pradeep Raj-Sc C, Shri Kishan Kumar-Jr Technician, Shri Sushil Kumar-JRF

2.2 Parameters:

Sampling and analysis for most of the water parameters are carried out by CPCB, West Zone office. EPA approved and NABL accredited laboratory M/s Pollucon Laboratories Pvt Ltd, Surat was engaged for ambient air quality monitoring and sampling & analysis of some specific water parameters.

The air and water parameter as directed by CPCB HO for which the sampling is carried out in three rounds is given in table:

	Parameter(s)
Ambient Air Quality	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, Lead(Pb), Nickel (Ni), Arsenic (As), Ozone (O ₃), Ammonia (NH ₃), Benzene (C ₆ H ₆), Benzo-a-Pyrene) (12 parameters)
Water Quality (Ground & Surface)	<p>Simple Parameter- General Appearance (Turbidity), Color,</p> <p>Regular parameters- pH, O & G, TSS, DO, COD, BOD, Electrical Conductivity, TDS, Nitrite-Nitrogen, Nitrate-Nitrogen, Total Nitrogen (NO₂+NO₃), Free Ammonia, Total Residual Chlorine, Cyanide, Fluoride, Chloride, Sulphate, Sulphide, Total hardness, dissolved phosphate, SAR,TC, FC (MPN/100 ml)</p> <p>Special Parameters: Total Phosphorous, TKN, Total Ammonia (NH₄+NH₃) Nitrogen, Phenols, Surface Active Reagent, Anionic Detergents, Organo-chlorine pesticide, PAH, PCB,</p> <p>Zinc, Nickel, Copper, Hexavalent chromium, chromium total, , Lead, Cadmium, Manganese, Iron, Boron ,Vanadium, Selenium, Arsenic total, Mercury</p> <p>Bio-Assay test (not for ground water)</p>

2.3 Monitoring Locations and Period:

The details of number of monitoring locations are given in following table:

Critically Polluted Area	No of location(s)		
	AAQM	Surface water	Ground water
Ankleshwar (Ankleshwar & Panoli)	6	8	6

Three rounds of sampling at each location are carried out for ambient air, surface water and ground water.

Monitoring locations –CPA- Ankleshwar along with longitude & latitude and period is given in following tables:

AAQ Monitoring:

(First Round: 14.10.2016 to 15.10.2016, Second Round: 16.10.2016 to 17.10.2016, Third Round: 18.10.2016 to 19.10.2016)

Sr No.	Location Code	Name of the location(s)	Latitude	Longitude
1	AAQ-1	Asian paints colony, residential area, GIDC, Ankleshwar	N 21°36'29.2"	E 073°01'02.2"
2	AAQ-2	BASF Unit II, GIDC, Ankleshwar	N 21°37'32.8"	E 073°02'50.8"
3	AAQ-3	Meghamani organics, GIDC, Ankleshwar	N 21°36'54.9"	E 073°01'59.9"
4	AAQ-4	Durga Traders, near ONGC colony, Ankleshwar	N 21°38'08.9"	E 073°01'01.2"
5	AAQ-5	Solvay Speciality Ltd, GIDC, Panoli	N 21°32'32.89"	E 072°59'03.34"
6	AAQ-6	Hikal Chemical Ltd, GIDC, panoli	N 21°34'40.6"	E 072°59'34.74"

Surface water sampling locations

(First Round: 14.10.2016, Second Round: 16.10.2016 Third Round: 18.10.2016)

Sr. No.	Location Code	Name of the location(s)	Latitude	Longitude
1	ASW-1	Sanjali village Lake	N 21°33'18.29"	E 072°59'32.15"
2	ASW-2	Amla khadi, NH-8, Ankleshwar	N 21°36'53.05"	E 072°59'59.07"
3	ASW-3	Van khadi, Umarwada Village road,	N 21°34'17.70"	E 072°58'25.70"
4	ASW-4	Amravathi river, Rajpipla Road,	N 21°38'12.00"	E 073°03'54.80"
5	ASW-5	Chapra khadi, on road to Chhapara village, near Bharuch-ankleshwar road	N 21°40'38.00"	E 073°00'58.45"
6	ASW-6	Narmada River, Golden Bridge, Bharuch-Ankleshwar road	N 21°41'26.0"	E 073°00'23.87"
7	ASW-7	GNFC Pond, Ankleshwar	N 21°38'53.97"	E 073°00'43.01"
8	ASW-8	FETP Outlet	N 21°37'10.00"	E 072°59'04.00"

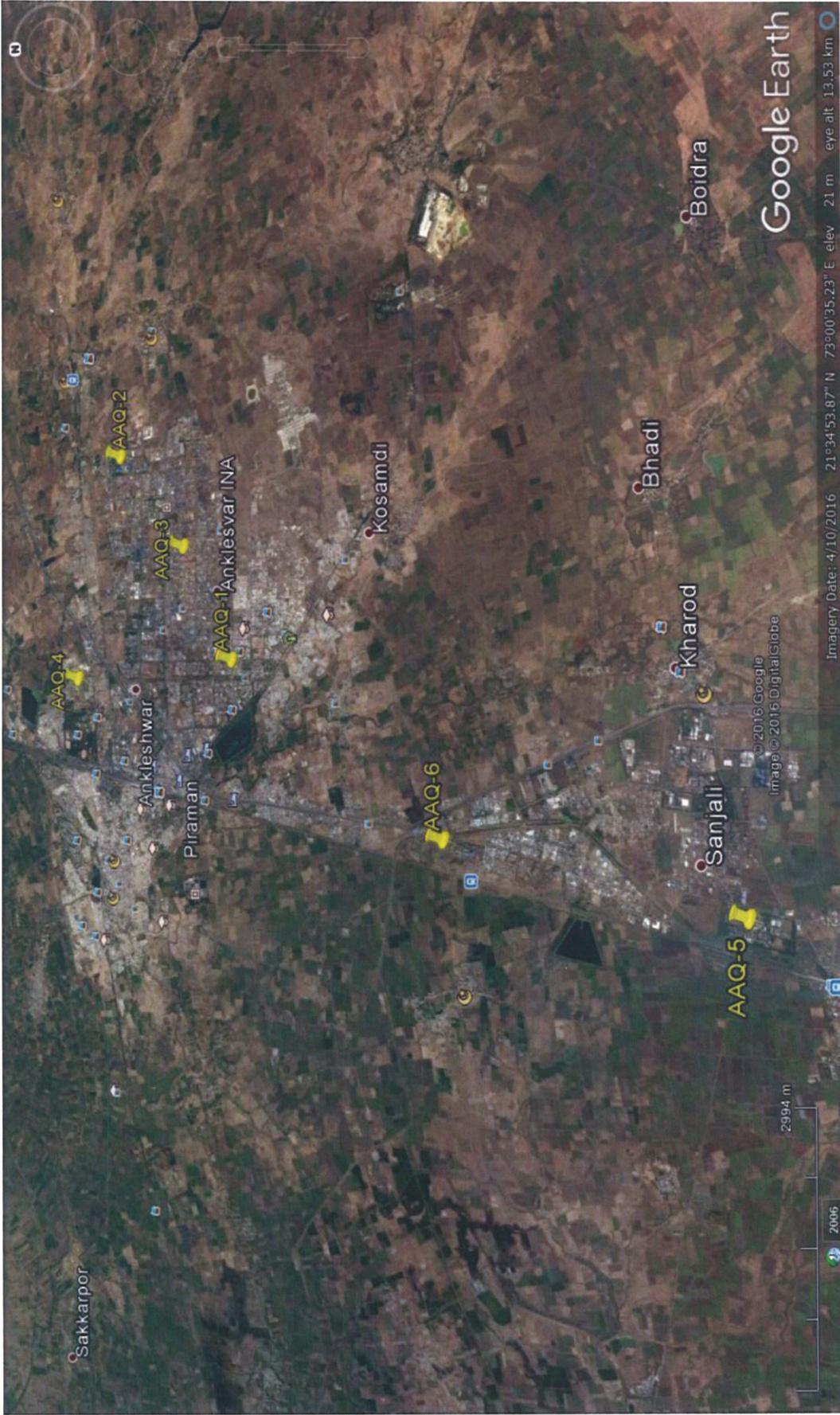
Ground water sampling

(First Round: 07.10.2016, Second Round: 16.10.2016, Third Round: 18.10.2016)

Sr. No.	Location Code	Name of the location(s)	Latitude	Longitude
1	AGW-1	Bore well of Sanjali village water works	N21°33'18.0"	E 072°59'38.0"
2	AGW-2	Borwell in Gujarat Gas compound, Umarwada Road, Surati Bhagol, Ankleshwar	N 21°37'29.0"	E 072°59'07.0"
3	AGW-3	Well of Gram Panchayat, Panoli village	N 21°32'04.45"	E 072°58'10.97"
4	AGW-4	Bore well of Jeetali village water works	N 21°37'10.0"	E 073°03'51.88"
5	AGW-5	Hand pump in front of Shri Rameshbhai Limbhachia's residence, Andada village	N 21°39'08.40"	E 073°01'22.30"
6	AGW-6	Bore well of Old Pungam village	N 21°38'13.2"	E 072°56'02.0"

FETP Inlet: 18.10.2016

AMBIENT AIR QUALITY MONITORING LOCATION – CPA ANKLESHWAR (MARKED ON GOOGLE IMAGE)



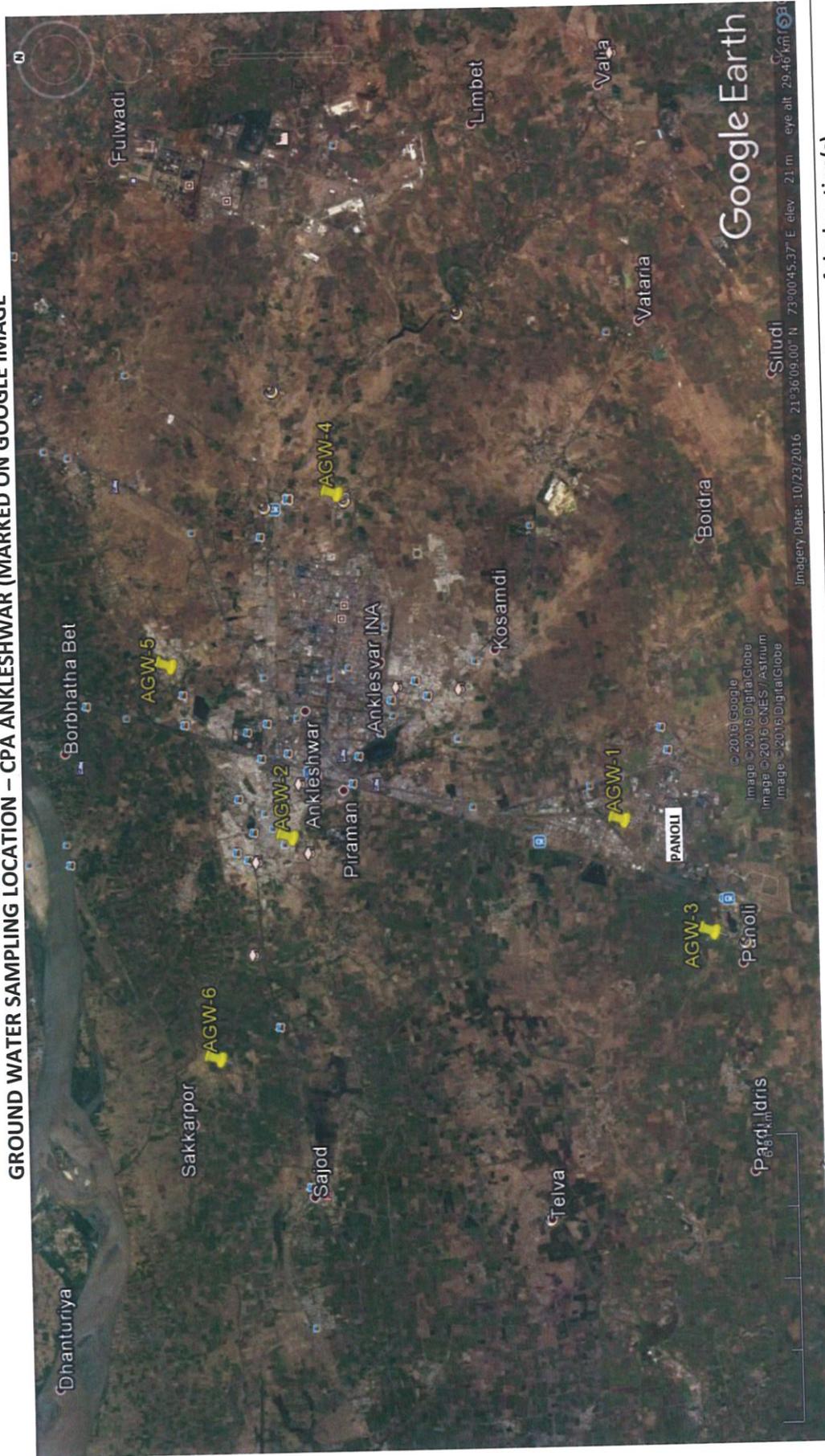
Location Code	Name of the location(s)	Location Code	Name of the location(s)
AAQ-1	Asian paints colony, residential area, GIDC, Ankleśhwar	AAQ-4	Durga Traders, near ONGC colony, Ankleśhwar
AAQ-2	BASF Unit II, GIDC, Ankleśhwar	AAQ-5	Solvay Speciality Ltd, GIDC, Panoli
AAQ-3	Meghamani organics, GIDC, Ankleśhwar	AAQ-6	Hikal Chemical Ltd, GIDC, panoli

SURFACE WATER SAMPLING LOCATION – CPA ANKLESHWAR (MARKED ON GOOGLE IMAGE)



Location Code	Name of the location(s)	Location Code	Name of the location(s)
ASW-1	Sanjali village Lake	ASW-5	Chapra khadi, on road to Chhapara village, near Bharuch-ankleshwar road
ASW-2	Amla khadi, NH-8, Ankleshwar	ASW-6	Narmada River, Golden Bridge, Bharuch-Ankleshwar road
ASW-3	Van khadi, Umarwada Village road,	ASW-7	GNFC Pond, Ankleshwar
ASW-4	Amravathi river, Rajpipla Road,	ASW-8	FETP Outlet

GROUND WATER SAMPLING LOCATION – CPA ANKLESHWAR (MARKED ON GOOGLE IMAGE



Location Code	Name of the location(s)	Location Code	Name of the location(s)
AGW-1	Bore well of Sanjali village water works	AGW-4	Bore well of Jeetali village water works
AGW-2	Borwell in Gujarat Gas compound, Umarvada Road, Ankleshwar	AGW-5	Hand pump in front of Shri Rameshbhai Limbhachia's residence, Andada village
AGW-3	Well of Gram Panchayat, Panoli village	AGW-6	Bore well of Old Pungam village

3.0 RESULTS:

The results of ambient air quality monitoring are given in **Annexure-I** and surface water and groundwater quality monitoring are given in **Annexure-II** and **III** respectively. The results of FETP Inlet quality is given in **Annexure-IV**. The Minimum Deduction Limits for the analysis of Water/ Wastewater and ambient air are given in **Annexure-IV A**.

4.0 OTHER INFORMATION:

The information related to total area falling under the critically polluted area, details of R-17 & R-54 red category industries, wind rose diagram, adequate/inadequate status of large, medium/small scale industries in the area, and health data received from GPCB are given in **Annexure-V**.

RESULTS OF AMBIENT AIR QUALITY MONITORING –CPA-ANKLESHWAR

TEST PARAMETER	UNIT	Asian Paint Colony, Ankleshwar (AAQ-1)			BASF Unit - 2, Ankleshwar (AAQ-2)			Meghmani Organics, Ankleshwar (AAQ-3)			Durga Traders, Ankleshwar (AAQ-4)		
		14- 15.10.2016	16- 17.2016	18- 19.10.2016	14- 15.10.2016	16- 17.2016	18- 19.10.2016	14- 15.10.2016	16- 17.2016	18- 19.10.2016	14- 15.10.2016	16- 17.2016	18- 19.10.2016
Particulate Matter (PM ₁₀)	µg/m ³	104.3	122.7	89.4	116.5	142.3	158.2	148.4	162.5	175.1	120.1	148.7	167.4
Particulate Matter (PM _{2.5})	µg/m ³	44.3	65.2	40.6	52.4	70.6	57.8	70.1	65.4	75.6	57.6	68.1	54.5
Lead as Pb	µg/m ³	BDL	0.79	BDL	0.88	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (a) Pyrene (BaP)- particulate phase only	ng/m ³	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.10	BDL	BDL	BDL	BDL
Arsenic as As	ng/m ³	BDL	BDL	BDL	BDL	BDL	BDL	2.80	2.20	BDL	BDL	BDL	BDL
Nickel as Ni	ng/m ³	12.57	12.80	13.27	15.63	12.67	14.57	15.37	18.00	17.53	12.20	14.27	14.87
Carbon Monoxide as CO (TW Avg. – 8 Hrs)	mg/m ³	0.8	1.0	1.1	1.3	1.5	1.5	1.4	1.6	1.8	0.9	0.8	1.0
Benzene as C ₆ H ₆	µg/m ³	BDL	BDL	BDL	BDL	BDL	BDL	2.90	3.20	BDL	BDL	BDL	BDL
Ammonia (NH ₃)	µg/m ³	40.5	56.1	30.9	55.1	36.8	47.1	64.6	84.7	104.7	58.9	43.7	51.9
Sulphur Dioxide (SO ₂)	µg/m ³	19.5	25.0	28.2	32.4	39.9	30.6	30.2	36.8	37.6	16.3	28.6	34.8
Oxides of Nitrogen (NO ₂)	µg/m ³	24.6	28.4	36.4	39.1	40.2	35.7	39.2	43.3	46.8	24.3	37.1	46.6
Ozone (O ₃) (TW Avg. – 1 Hr)	µg/m ³	17.3	20.4	23.6	24.2	18.7	21.9	23.2	25.4	21.0	19.4	21.9	20.6

TEST PARAMETER	UNIT	Solve Specialty, Panoli (AAQ-5)			Hikal Chemicals, Panoli (AAQ-6)		
		14-15.10.2016	16-17.2016	18-19.10.2016	14-15.10.2016	16-17.2016	18-19.10.2016
Particulate Matter (PM ₁₀)	µg/m ³	142.4	109.6	126.3	164.60	126.30	148.60
Particulate Matter (PM _{2.5})	µg/m ³	76.60	52.70	68.20	92.40	72.80	86.50
Lead as Pb	µg/m ³	0.64	BDL	BDL	0.84	BDL	BDL
Benzo (a) Pyrene (BaP)- particulate phase only	ng/m ³	BDL	BDL	BDL	BDL	BDL	BDL
Arsenic as As	ng/m ³	2.2	BDL	BDL	3.1	BDL	BDL
Nickel as Ni	ng/m ³	13.4	10.2	11.6	15.6	10.8	12.6
Carbon Monoxide as CO (TW Avg. – 8 Hrs)	mg/m ³	0.98	1.42	1.66	1.22	1.56	1.82
Benzene as C ₆ H ₆	µg/m ³	2.6	BDL	2.2	3.6	BDL	2.6
Ammonia (NH ₃)	µg/m ³	92.4	62.6	116.2	122.30	94.6	154.60
Sulphur Dioxide (SO ₂)	µg/m ³	18.70	34.60	26.70	25.30	40.80	32.40
Oxides of Nitrogen (NO ₂)	µg/m ³	30.6	42.7	35.4	36.30	48.60	41.20
Ozone (O ₃) (TW Avg. – 1 Hr)	µg/m ³	34.5	19.6	26.3	39.60	24.30	32.70

AAQM MINIMUM DETECTION LIMIT

SR. NO.	PARAMETER	UNIT	MINIMUM DETECTION LIMIT
1	Lead as Pb	µg/m ³	< 0.5
2	Benzo (a) Pyrene (BaP)- particulate phase only	ng/m ³	< 0.5
3	Arsenic as As	ng/m ³	< 2.0
4	Nickel as Ni	ng/m ³	< 1.0
5	Benzene as C ₆ H ₆	µg/m ³	< 2.0

RESULTS OF SURFACE WATER QUALITY MONITORING-CPA-ANKLESHWAR

Location-ASW-1: Sanjali village Lake

Sr. No.	Test Parameters	Unit of Measurement	Results		
			14.10.2016	16.10.2016	18.10.2016
1	pH	-	7.23	6.63	7.28
2	Cond	µS/cm	485	456	432
3	Turbidity	N.T.U.	10.2	24.6	17.3
4	Colour	Hazen	80	40	75
5	TSS	mg/L	252	274	76
6	TDS	mg/L	296	343	293
7	D.O.	mg/L	4.70	0.51	0.5
8	COD	mg/L	63.96	67.51	40
9	BOD	mg/L	18	19.8	6.2
10	NH ₃ -N	mg/L	0.27	1.2	0.543
11	T. Ammonia	mg/L	0.542	2.410	1.090
12	Free NH ₃	mg/L	0.008	0.008	0.002
13	TKN	mg/L	4.1	3.26	0.93
14	NO ₂ -N	mg/L	BDL	BDL	BDL
15	NO ₃ -N	mg/L	0.347	0.67	0.95
16	T. Nitrogen	mg/L	4.447	3.93	1.88
17	O-PO ₄ -P	mg/L	0.19	0.33	0.16
18	T. Phos.	mg/L	0.40	0.64	0.31
19	T. Hardness	mg/L	133	136	132
20	Cl ⁻	mg/L	37	36.2	35
21	SO ₄ ⁻²	mg/L	103	72	48
22	SAR	-	1.40	1.19	1.28
23	B	mg/L	0.160	0.179	0.812
24	Cr ⁺⁶	mg/L	BDL	BDL	0.016
25	F ⁻	mg/L	0.22	0.23	0.20
26	S ⁻²	mg/L	0.36	BDL	0.40
27	CN ⁻	mg/L	0.021	BDL	0.056
28	Phenols	mg/L	0.023	0.233	0.49
29	Res.Cl ₂	mg/L	BDL	BDL	BDL
30	O&G	mg/L	2.1	1.8	5.52
31	Chromium (Cr)	mg/L	0.029	0.032	BDL
32	Manganese (Mn)	mg/L	1.07	1.916	0.038
33	Iron (Fe)	mg/L	0.181	0.200	BDL
34	Nickel (Ni)	mg/L	0.030	0.063	BDL
35	Copper (Cu)	mg/L	0.029	0.038	BDL
36	Zinc (Zn)	mg/L	0.152	1.323	0.042
37	Cadmium (Cd)	mg/L	BDL	BDL	BDL
38	Lead (Pb)	mg/L	0.022	0.021	BDL
39	Vanadium as V	mg/L	0.112	0.175	0.129
40	Selenium as Se	mg/L	< 0.01	0.12	< 0.01
41	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001

42	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
43	Surfactants as MBAS	mg/L	0.225	0.233	0.198
44	Organo Chlorine Pesticide	mg/L	0.008	< 0.0001	< 0.0001
45	PAH	mg/L	< 0.001	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	>1600	1600	>1600
48	Fecal Coliform	MPN/100 ml	240	280	430
49	Bio-assay Test	%	80 % survival of fish after 96 hours in 100 % effluent	80 % survival of fish after 96 hours in 100 % effluent	80 % survival of fish after 96 hours in 100 % effluent

Location- ASW-2: Amla khadi, NH-8, Ankleshwar

Sr. No.	Test Parameters	Unit of Measurement	Results		
			14.10.2016	16.10.2016	18.10.2016
1	pH	-	7.25	6.98	7.09
2	Cond	µS/cm	1661	1030	1166
3	Turbidity	N.T.U.	5.5	27.4	22.2
4	Colour	Hazen	30	20	75
5	TSS	mg/L	23	51	53
6	TDS	mg/L	853	579	709
7	D.O.	mg/L	0.8	1.74	1.5
8	COD	mg/L	76.44	71.20	92
9	BOD	mg/L	45	30.2	51
10	NH ₃ -N	mg/L	11.0	6.45	7.33
11	T. Ammonia	mg/L	22.09	12.952	14.719
12	Free NH ₃	mg/L	0.206	0.092	0.126
13	TKN	mg/L	14.4	9.91	11.4
14	NO ₂ -N	mg/L	BDL	BDL	BDL
15	NO ₃ -N	mg/L	0.447	0.24	0.18
16	T. Nitrogen	mg/L	14.847	10.15	11.58
17	O-PO ₄ -P	mg/L	0.75	0.56	0.62
18	T. Phos.	mg/L	1.33	1.24	1.10
19	T. Hardness	mg/L	255	232	210
20	Cl ⁻	mg/L	290	146	179
21	SO ₄ ⁻²	mg/L	147	130	127
22	SAR	-	5.40	3.67	3.91
23	B	mg/L	0.511	0.302	0.679
24	Cr ⁺⁶	mg/L	BDL	BDL	BDL
25	F ⁻	mg/L	0.65	0.53	0.38
26	S ⁻²	mg/L	0.43	0.40	0.38
27	CN ⁻	mg/L	0.028	BDL	0.035
28	Phenols	mg/L	0.13	0.12	BDL
29	Res.Cl ₂	mg/L	BDL	BDL	BDL
30	O&G	mg/L	3.2	3.1	4.3

31	Chromium (Cr)	mg/L	BDL	BDL	BDL
32	Manganese (Mn)	mg/L	0.246	0.186	0.555
33	Iron (Fe)	mg/L	BDL	BDL	BDL
34	Nickel (Ni)	mg/L	BDL	BDL	BDL
35	Copper (Cu)	mg/L	0.034	BDL	0.041
36	Zinc (Zn)	mg/L	0.218	0.830	1.281
37	Cadmium (Cd)	mg/L	BDL	BDL	BDL
38	Lead (Pb)	mg/L	BDL	BDL	BDL
39	Vanadium as V	mg/L	0.114	0.157	0.152
40	Selenium as Se	mg/L	0.06	< 0.01	< 0.01
41	Mercury as Hg	mg/L	0.008	0.035	< 0.001
42	Total Arsenic as As	mg/L	0.024	0.01	0.016
43	Surfactants as MBAS	mg/L	0.83	0.934	3.45
44	Organo Chlorine Pesticide	mg/L	0.003	0.006	< 0.0001
45	PAH	mg/L	< 0.001	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	>1600	920	>1600
48	Fecal Coliform	MPN/100 ml	920	240	240
49	Bio-assay Test	%	No survival of fish after 96 hours in 100 % effluent	60 % survival of fish after 96 hours in 100 % effluent	60 % survival of fish after 96 hours in 100 % effluent

Location- ASW-3: Van khadi, Umarwada Village road

Sr. No.	Test Parameters	Unit of Measurement	Results		
			14.10.2016	16.10.2016	18.10.2016
1	pH	-	6.93	6.81	7.34
2	Cond	µS/cm	4072	796	664
3	Turbidity	N.T.U.	17.5	8.3	15.5
4	Colour	Hazen	50	150	60
5	TSS	mg/L	54	18	41
6	TDS	mg/L	2170	457	391
7	D.O.	mg/L	BDL	4.6	6.7
8	COD	mg/L	239	56	16
9	BOD	mg/L	120	23.6	8.9
10	NH ₃ -N	mg/L	44.7	6.45	3.53
11	T. Ammonia	mg/L	89.76	12.952	7.088
12	Free NH ₃	mg/L	0.799	0.067	0.121
13	TKN	mg/L	52.8	7.6	5.05
14	NO ₂ -N	mg/L	BDL	BDL	0.089
15	NO ₃ -N	mg/L	0.281	0.76	1.32
16	T. Nitrogen	mg/L	53.081	8.36	6.459
17	O-PO ₄ -P	mg/L	7.61	0.19	3.93
18	T. Phos.	mg/L	10.57	0.45	6.91
19	T. Hardness	mg/L	478	166	156

2 m/p
2 m/p

20	Cl ⁻	mg/L	921	96.3	84
21	SO ₄ ⁻²	mg/L	610	193	113
22	SAR	-	9.94	2.92	2.86
23	B	mg/L	0.812	0.196	0.435
24	Cr ⁺⁶	mg/L	0.002	BDL	BDL
25	F ⁻	mg/L	1.31	0.61	0.42
26	S ⁻²	mg/L	0.80	BDL	0.21
27	CN ⁻	mg/L	BDL	0.056	0.048
28	Phenols	mg/L	0.78	0.17	0.015
29	Res.Cl ₂	mg/L	BDL	BDL	BDL
30	O&G	mg/L	1.7	1.4	2.17
31	Chromium (Cr)	mg/L	BDL	BDL	BDL
32	Manganese (Mn)	mg/L	7.566	BDL	0.514
33	Iron (Fe)	mg/L	0.031	BDL	BDL
34	Nickel (Ni)	mg/L	0.021	BDL	BDL
35	Copper (Cu)	mg/L	0.030	BDL	BDL
36	Zinc (Zn)	mg/L	0.758	BDL	0.749
37	Cadmium (Cd)	mg/L	BDL	BDL	BDL
38	Lead (Pb)	mg/L	0.029	BDL	BDL
39	Vanadium as V	mg/L	0.129	0.141	0.211
40	Selenium as Se	mg/L	0.18	< 0.01	0.06
41	Mercury as Hg	mg/L	0.012	< 0.001	< 0.001
42	Total Arsenic as As	mg/L	0.018	< 0.01	0.012
43	Surfactants as MBAS	mg/L	2.4	0.425	0.461
44	Organo Chlorine Pesticide	mg/L	0.008	< 0.0001	< 0.0001
45	PAH	mg/L	< 0.001	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	>1600	>1600	>1600
48	Fecal Coliform	MPN/100 ml	920	540	220
49	Bio-assay Test	%	No survival of fish after 96 hours in 100 % effluent	80 % survival of fish after 96 hours in 100 % effluent	60 % survival of fish after 96 hours in 100 % effluent

Location- ASW-4: Amravathi river, Rajpipla Road

Sr. No.	Test Parameters	Unit of Measurement	Results		
			14.10.2016	16.10.2016	18.10.2016
1	pH	-	8.26	7.87	8.08
2	Cond	μS/cm	688	660	627
3	Turbidity	N.T.U.	7.4	7.2	6.4
4	Colour	Hazen	BDL	10	20
5	TSS	mg/L	14	13	7.0
6	TDS	mg/L	378	413	361
7	D.O.	mg/L	10.3	8.9	8.8
8	COD	mg/L	7.8	12.55	18

9	BOD	mg/L	1.1	1.8	0.7
10	NH ₃ -N	mg/L	0.38	BDL	BDL
11	T. Ammonia	mg/L	0.763	BDL	BDL
12	Free NH ₃	mg/L	0.110	BDL	BDL
13	TKN	mg/L	0.41	0.14	0.14
14	NO ₂ -N	mg/L	0.468	0.512	0.411
15	NO ₃ -N	mg/L	3.815	2.84	3.53
16	T. Nitrogen	mg/L	4.693	3.492	4.081
17	O-PO ₄ -P	mg/L	BDL	BDL	BDL
18	T. Phos.	mg/L	0.08	0.04	0.08
19	T. Hardness	mg/L	208	220	218
20	Cl ⁻	mg/L	70.2	81.4	63
21	SO ₄ ⁻²	mg/L	41	41	41
22	SAR	-	1.35	1.30	1.42
23	B	mg/L	0.168	0.170	1.005
24	Cr ⁺⁶	mg/L	0.002	BDL	0.005
25	F ⁻	mg/L	0.36	0.26	0.42
26	S ⁻²	mg/L	0.38	BDL	0.26
27	CN ⁻	mg/L	0.014	0.056	0.048
28	Phenols	mg/L	0.040	0.12	0.064
29	Res.CL ₂	mg/L	BDL	BDL	BDL
30	O&G	mg/L	3.4	1.4	3.5
31	Chromium (Cr)	mg/L	BDL	BDL	BDL
32	Manganese (Mn)	mg/L	0.066	0.044	0.037
33	Iron (Fe)	mg/L	BDL	BDL	BDL
34	Nickel (Ni)	mg/L	BDL	BDL	BDL
35	Copper (Cu)	mg/L	BDL	BDL	BDL
36	Zinc (Zn)	mg/L	0.204	1.085	1.246
37	Cadmium (Cd)	mg/L	BDL	BDL	BDL
38	Lead (Pb)	mg/L	0.046	BDL	BDL
39	Vanadium as V	mg/L	0.2	0.147	0.155
40	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
41	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
42	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
43	Surfactants as MBAS	mg/L	0.342	0.269	0.296
44	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
45	PAH	mg/L	< 0.001	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	540	>1600	>1600
48	Fecal Coliform	MPN/100 ml	350	920	350
49	Bio-assay Test	%	100 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent

Location- ASW-5: Chapra khadi, on road to Chhapara village, near Bharuch-ankleshwar road

Sr. No.	Test Parameters	Unit of Measurement	Results		
			14.10.2016	16.10.2016	18.10.2016
1	pH	-	7.54	7.28	7.60
2	Cond	µS/cm	3258	2010	3016
3	Turbidity	N.T.U.	7.3	9.2	10.4
4	Colour	Hazen	150	75	75
5	TSS	mg/L	30	22	67
6	TDS	mg/L	1720	1715	1623
7	D.O.	mg/L	BDL	BDL	0.8
8	COD	mg/L	150	129.5	95
9	BOD	mg/L	35	29.3	26.3
10	NH ₃ -N	mg/L	18.38	16.4	13.44
11	T. Ammonia	mg/L	36.91	32.931	26.988
12	Free NH ₃	mg/L	0.938	0.509	0.734
13	TKN	mg/L	21.1	17.9	16.1
14	NO ₂ -N	mg/L	BDL	0.841	1.06
15	NO ₃ -N	mg/L	0.137	3.64	5.89
16	T. Nitrogen	mg/L	21.237	22.381	23.05
17	O-PO ₄ -P	mg/L	1.21	1.20	0.93
18	T. Phos.	mg/L	2.48	2.77	1.68
19	T. Hardness	mg/L	463	508	490
20	Cl ⁻	mg/L	785	770	759
21	SO ₄ ⁻²	mg/L	275	295	296
22	SAR	-	7.15	8.21	7.47
23	B	mg/L	0.733	0.822	1.50
24	Cr ⁺⁶	mg/L	BDL	BDL	BDL
25	F ⁻	mg/L	0.46	0.37	0.49
26	S ⁻²	mg/L	0.32	BDL	0.80
27	CN ⁻	mg/L	0.028	0.083	0.077
28	Phenols	mg/L	0.096	0.17	0.031
29	Res.CL ₂	mg/L	BDL	BDL	BDL
30	O&G	mg/L	1.6	3.0	3
31	Chromium (Cr)	mg/L	BDL	BDL	BDL
32	Manganese (Mn)	mg/L	BDL	1.175	0.221
33	Iron (Fe)	mg/L	BDL	BDL	BDL
34	Nickel (Ni)	mg/L	BDL	BDL	BDL
35	Copper (Cu)	mg/L	BDL	BDL	BDL
36	Zinc (Zn)	mg/L	BDL	0.894	0.142
37	Cadmium (Cd)	mg/L	BDL	BDL	BDL
38	Lead (Pb)	mg/L	BDL	0.021	BDL
39	Vanadium as V	mg/L	0.138	0.133	0.153
40	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
41	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
42	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
43	Surfactants as MBAS	mg/L	0.67	0.972	0.596
44	Organo Chlorine	mg/L	< 0.0001	< 0.0001	< 0.0001

→ 2 up
→ 2 up

	Pesticide				
45	PAH	mg/L	< 0.001	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	>1600	>1600	>1600
48	Fecal Coliform	MPN/100 ml	540	430	63
49	Bio-assay Test	%	100 % survival of fish after 96 hours in 100 % effluent	80 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent

Location-ASW-6: Narmada River, Golden Bridge, Bharuch-Ankleshwar road

Sr. No.	Test Parameters	Unit of Measurement	Results		
			14.10.2016	16.10.2016	18.10.2016
1	pH	-	8.50	8.36	8.36
2	Cond	µS/cm	353	404	365
3	Turbidity	N.T.U.	7.4	34.3	38.2
4	Colour	Hazen	BDL	10	10
5	TSS	mg/L	27	93	338
6	TDS	mg/L	210	208	205
7	D.O.	mg/L	9.1	9.55	9.2
8	COD	mg/L	12.48	14.77	17
9	BOD	mg/L	0.7	2.5	3.4
10	NH ₃ -N	mg/L	0.28	0.137	BDL
11	T. Ammonia	mg/L	0.532	0.275	BDL
12	Free NH ₃	mg/L	0.102	0.038	BDL
13	TKN	mg/L	0.95	0.27	0.14
14	NO ₂ -N	mg/L	0.702	0.09	0.35
15	NO ₃ -N	mg/L	4.17	1.59	6.96
16	T. Nitrogen	mg/L	5.822	1.95	7.45
17	O-PO ₄ -P	mg/L	0.08	0.05	0.05
18	T. Phos.	mg/L	0.26	0.20	0.14
19	T. Hardness	mg/L	114	130	116
20	Cl ⁻	mg/L	24.6	22.2	19.3
21	SO ₄ ⁻²	mg/L	36	36	36
22	SAR	-	0.79	1.00	1.21
23	B	mg/L	0.057	0.113	0.461
24	Cr ⁺⁶	mg/L	BDL	BDL	BDL
25	F ⁻	mg/L	0.19	0.25	0.29
26	S ⁻²	mg/L	BDL	BDL	0.54
27	CN ⁻	mg/L	0.056	0.035	0.042
28	Phenols	mg/L	0.015	0.12	BDL
29	Res.Cl ₂	mg/L	BDL	BDL	BDL
30	O&G	mg/L	1.4	2.0	3.9
31	Chromium (Cr)	mg/L	BDL	BDL	BDL
32	Manganese (Mn)	mg/L	0.051	0.321	0.168

33	Iron (Fe)	mg/L	BDL	0.112	0.081
34	Nickel (Ni)	mg/L	BDL	BDL	BDL
35	Copper (Cu)	mg/L	BDL	0.050	0.025
36	Zinc (Zn)	mg/L	0.207	1.361	0.418
37	Cadmium (Cd)	mg/L	BDL	BDL	BDL
38	Lead (Pb)	mg/L	0.067	BDL	BDL
39	Vanadium as V	mg/L	0.153	0.141	0.161
40	Selenium as Se	mg/L	0.08	< 0.01	< 0.01
41	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
42	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
43	Surfactants as MBAS	mg/L	0.772	0.549	0.69
44	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
45	PAH	mg/L	< 0.001	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	>1600	>1600	>1600
48	Fecal Coliform	MPN/100 ml	240	130	70
49	Bio-assay Test	%	100 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent

Location-ASW-7: GNFC Pond, Ankleshwar

Sr. No.	Test Parameters	Results		
		Unit of Measurement	16.10.2016	18.10.2016
		-	8.49	8.64
2	Cond	µS/cm	290	171
3	Turbidity	N.T.U.	1.9	4.6
4	Colour	Hazen	BDL	BDL
5	TSS	mg/L	3.0	12
6	TDS	mg/L	233	165
7	D.O.	mg/L	9.72	10.5
8	COD	mg/L	10.96	8.0
9	BOD	mg/L	2.8	2.0
10	NH ₃ -N	mg/L	0.133	0.12
11	T. Ammonia	mg/L	0.267	0.241
12	Free NH ₃	mg/L	0.056	0.066
13	TKN	mg/L	0.14	0.14
14	NO ₂ -N	mg/L	BDL	BDL
15	NO ₃ -N	mg/L	0.36	0.896
16	T. Nitrogen	mg/L	0.5	1.036
17	O-PO ₄ -P	mg/L	BDL	BDL
18	T. Phos.	mg/L	0.05	0.10
19	T. Hardness	mg/L	96	120
20	Cl ⁻	mg/L	19.1	19.0

21	SO ₄ ⁻²	mg/L	26	27
22	SAR	-	0.84	0.91
23	B	mg/L	0.087	0.418
24	Cr ⁺⁶	mg/L	BDL	BDL
25	F ⁻	mg/L	0.26	0.25
26	S ⁻²	mg/L	BDL	0.14
27	CN ⁻	mg/L	BDL	0.056
28	Phenols	mg/L	0.12	1.43
29	Res.CL ₂	mg/L	BDL	BDL
30	O&G	mg/L	3.1	1.89
31	Chromium (Cr)	mg/L	BDL	BDL
32	Manganese (Mn)	mg/L	0.040	0.024
33	Iron (Fe)	mg/L	BDL	BDL
34	Nickel (Ni)	mg/L	BDL	BDL
35	Copper (Cu)	mg/L	BDL	BDL
36	Zinc (Zn)	mg/L	0.390	1.226
37	Cadmium (Cd)	mg/L	BDL	BDL
38	Lead (Pb)	mg/L	0.085	BDL
39	Vanadium as V	mg/L	0.208	0.139
40	Selenium as Se	mg/L	< 0.01	< 0.01
41	Mercury as Hg	mg/L	< 0.001	< 0.001
42	Total Arsenic as As	mg/L	< 0.01	< 0.01
43	Surfactants as MBAS	mg/L	0.505	0.311
44	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001
45	PAH	mg/L	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	1600	>1600
48	Fecal Coliform	MPN/100 ml	40	210
49	Bio-assay Test	%	100 % survival of fish after 96 hours in 100 % effluent	100 % survival of fish after 96 hours in 100 % effluent

Location-ASW-8: FETP Outlet

Sr. No.	Test Parameters	Unit of Measurement	Results	
			16.10.2016	18.10.2016
1	pH	-	6.35	6.63
2	Cond	µS/cm	8499	8765
3	Turbidity	N.T.U.	6.2	4.3
4	Colour	Hazen	1200	2000
5	TSS	mg/L	90	93
6	TDS	mg/L	7815	7841
7	D.O.	mg/L	1.2	4.8
8	COD	mg/L	472	388
9	BOD	mg/L	87	79.2

10	NH ₃ -N	mg/L	121	76.6
11	T. Ammonia	mg/L	242.968	153.813
12	Free NH ₃	mg/L	0.501	0.642
13	TKN	mg/L	135	79.7
14	NO ₂ -N	mg/L	BDL	BDL
15	NO ₃ -N	mg/L	2.73	3.12
16	T. Nitrogen	mg/L	137.73	82.82
17	O-PO ₄ -P	mg/L	0.09	BDL
18	T. Phos.	mg/L	1.52	0.68
19	T. Hardness	mg/L	1540	1640
20	Cl ⁻	mg/L	4167	4226
21	SO ₄ ⁻²	mg/L	2878	2907
22	SAR	-	22.74	21.93
23	B	mg/L	1.197	1.449
24	Cr ⁺⁶	mg/L	0.008	0.0128
25	F ⁻	mg/L	2.88	3.06
26	S ⁻²	mg/L	BDL	BDL
27	CN ⁻	mg/L	0.063	0.098
28	Phenols	mg/L	0.87	0.61
29	Res.CL ₂	mg/L	BDL	BDL
30	O&G	mg/L	13.0	3.2
31	Chromium (Cr)	mg/L	BDL	BDL
32	Manganese (Mn)	mg/L	0.655	0.636
33	Iron (Fe)	mg/L	BDL	BDL
34	Nickel (Ni)	mg/L	0.073	0.061
35	Copper (Cu)	mg/L	0.376	0.285
36	Zinc (Zn)	mg/L	0.319	0.644
37	Cadmium (Cd)	mg/L	BDL	BDL
38	Lead (Pb)	mg/L	0.027	BDL
39	Vanadium as V	mg/L	0.214	0.219
40	Selenium as Se	mg/L	< 0.01	0.18
41	Mercury as Hg	mg/L	0.0014	< 0.001
42	Total Arsenic as As	mg/L	< 0.01	< 0.01
43	Surfactants as MBAS	mg/L	2.48	1.1
44	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001
45	PAH	mg/L	< 0.001	< 0.001
46	PCB	mg/L	< 0.0001	< 0.0001
47	Total Coliform	MPN/100 ml	>1600	>1600
48	Fecal Coliform	MPN/100 ml	920	920
49	Bio-assay Test	%	No survival of fish after 96 hours in 100 % effluent	80 % survival of fish after 96 hours in 100 % effluent

RESULTS OF GROUND WATER QUALITY MONITORING-CPA-ANKLESHWAR

Location-AGW-1: Bore well of Sanjali village water works, panoli

Sr. No.	Test Parameters	Unit of Measurement	Results		
			07.10.2016	16.10.2016	18.10.2016
1	pH	-	7.14	7.20	7.14
2	Cond	µS/cm	1983	1843	1694
3	Turb	N.T.U.	1.4	1.2	0.4
4	Colour	Hazen	BDL	BDL	BDL
5	TSS	mg/L	3.2	14	3.0
6	TDS	mg/L	1176	988	1025
7	COD	mg/L	1.96	2.10	1.0
8	BOD	mg/L	BDL	BDL	BDL
9	NH ₃ -N	mg/L	0.068	0.103	BDL
10	T.Amm.	mg/L	0.137	0.207	BDL
11	Free NH ₃	mg/L	0.0013	0.0024	BDL
12	TKN	mg/L	0.137	0.14	BDL
13	NO ₂ -N	mg/L	BDL	BDL	BDL
14	NO ₃ -N	mg/L	44.61	42.1	42.75
15	T.Nitrogen	mg/L	44.747	42.24	42.75
16	O-PO ₄ -P	mg/L	BDL	BDL	BDL
17	T.Phos.	mg/L	0.03	0.04	0.04
18	T.Hardness	mg/L	176	172	168
19	Cl ⁻	mg/L	261	245	249
20	SO ₄ ⁻²	mg/L	181	196	190
21	SAR	mg/L	12.20	12.30	12.35
22	B	-	1.406	1.031	1.011
23	Cr ⁺⁶	mg/L	BDL	BDL	BDL
24	F ⁻	mg/L	1.0	0.97	0.99
25	S ⁻²	mg/L	BDL	0.256	BDL
26	CN ⁻	mg/L	BDL	0.028	0.027
27	Phenols	mg/L	BDL	BDL	BDL
28	Res.CL ₂	mg/L	BDL	BDL	BDL
29	Chromium (Cr)	mg/L	BDL	BDL	BDL
30	Manganese (Mn)	mg/L	0.037	BDL	0.192
31	Iron (Fe)	mg/L	BDL	BDL	BDL
32	Nickel (Ni)	mg/L	BDL	BDL	BDL
33	Copper (Cu)	mg/L	BDL	0.034	BDL
34	Zinc (Zn)	mg/L	0.123	0.239	0.535
35	Cadmium (Cd)	mg/L	BDL	BDL	BDL
36	Lead (Pb)	mg/L	BDL	BDL	0.021
37	Vanadium as V	mg/L	< 0.01	< 0.01	< 0.01
38	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
39	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001

40	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
41	Surfactants as MBAS	mg/L	< 0.05	< 0.05	< 0.05
42	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
43	PAH	mg/L	< 0.001	< 0.001	< 0.001
44	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
45	Total Coliform	MPN/100 ml	47	>1600	920
46	Fecal Coliform	MPN/100 ml	17	300	350

Location-VGW-2: Bore well in Gujarat Gas compound, Umarvada Road, Surati Bhagol, Ankleshwar

Sr. No.	Test Parameters	Unit of Measurement	Results		
			07.10.2016	16.10.2016	18.10.2016
1	pH	-	7.79	7.33	7.59
2	Cond	µS/cm	3959	3490	3169
3	Turb	N.T.U.	4.8	5.2	1.8
4	Colour	Hazen	10	BDL	BDL
5	TSS	mg/L	13.0	24	14.0
6	TDS	mg/L	3621	3022	3040
7	COD	mg/L	21.56	20.80	22
8	BOD	mg/L	1.4	1.7	BDL
9	NH ₃ -N	mg/L	BDL	0.377	BDL
10	T.Amm.	mg/L	BDL	0.757	BDL
11	Free NH ₃	mg/L	BDL	0.0128	BDL
12	TKN	mg/L	0.549	0.54	0.27
13	NO ₂ -N	mg/L	BDL	BDL	BDL
14	NO ₃ -N	mg/L	4.69	4.69	4.42
15	T.Nitrogen	mg/L	5.239	5.23	4.69
16	O-PO ₄ -P	mg/L	BDL	BDL	BDL
17	T.Phos.	mg/L	0.02	0.03	0.03
18	T.Hardness	mg/L	900	880	900
19	Cl ⁻	mg/L	1290	1276	1270
20	SO ₄ ⁻²	mg/L	312	326	320
21	SAR	-	11.43	11.56	11.24
22	B	mg/L	0.922	0.770	0.972
23	Cr ⁺⁶	mg/L	BDL	BDL	BDL
24	F ⁻	mg/L	0.19	0.14	0.14
25	S ⁻²	mg/L	BDL	BDL	0.40
26	CN ⁻	mg/L	BDL	0.049	0.042
27	Phenols	mg/L	BDL	BDL	0.015
28	Res.CL ₂	mg/L	BDL	BDL	BDL
29	Chromium (Cr)	mg/L	BDL	BDL	BDL
30	Manganese (Mn)	mg/L	0.229	0.515	0.618
31	Iron (Fe)	mg/L	BDL	BDL	BDL
32	Nickel (Ni)	mg/L	BDL	BDL	BDL
33	Copper (Cu)	mg/L	BDL	0.028	BDL
34	Zinc (Zn)	mg/L	0.071	0.584	0.124

35	Cadmium (Cd)	mg/L	BDL	BDL	BDL
36	Lead (Pb)	mg/L	BDL	0.034	BDL
37	Vanadium as V	mg/L	< 0.01	< 0.01	< 0.01
38	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
39	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
40	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
41	Surfactants as MBAS	mg/L	0.09	0.18	0.13
42	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
43	PAH	mg/L	< 0.001	< 0.001	< 0.001
44	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
45	Total Coliform	MPN/100 ml	540	920	>1600
46	Fecal Coliform	MPN/100 ml	150	170	280

Location-AGW-3: Well of Gram Panchayat, Panoli village

Sr. No.	Test Parameters	Unit of Measurement	Results		
			07.10.2016	16.10.2016	18.10.2016
1	pH	-	7.96	7.82	7.89
2	Cond	µS/cm	1850	1716	1611
3	Turb	N.T.U.	1.7	0.5	0.5
4	Colour	Hazen	BDL	BDL	BDL
5	TSS	mg/L	5.0	5.0	2.0
6	TDS	mg/L	1033	936	910
7	COD	mg/L	1.96	1.43	1.2
8	BOD	mg/L	BDL	BDL	BDL
9	NH ₃ -N	mg/L	0.175	0.097	0.151
10	T.Amm.	mg/L	0.351	0.195	0.303
11	Free NH ₃	mg/L	0.0198	0.01	0.0167
12	TKN	mg/L	0.412	0.38	0.27
13	NO ₂ -N	mg/L	BDL	BDL	BDL
14	NO ₃ -N	mg/L	15.28	16.1	15.91
15	T.Nitrogen	mg/L	15.692	16.48	16.18
16	O-PO ₄ -P	mg/L	BDL	BDL	BDL
17	T.Phos.	mg/L	0.05	0.06	0.07
18	T.Hardness	mg/L	192	188	184
19	Cl ⁻	mg/L	318	307	309
20	SO ₄ ⁻²	mg/L	88	94	93
21	SAR	-	8.35	8.41	8.34
22	B	mg/L	1.113	0.915	1.091
23	Cr ⁺⁶	mg/L	BDL	BDL	0.0065
24	F ⁻	mg/L	1.08	0.96	0.97
25	S ⁻²	mg/L	BDL	0.34	0.25
26	CN ⁻	mg/L	BDL	BDL	BDL
27	Phenols	mg/L	BDL	BDL	BDL
28	Res.CL ₂	mg/L	BDL	BDL	BDL
29	Chromium (Cr)	mg/L	BDL	BDL	BDL

30	Manganese (Mn)	mg/L	0.033	BDL	0.101
31	Iron (Fe)	mg/L	BDL	BDL	BDL
32	Nickel (Ni)	mg/L	BDL	BDL	BDL
33	Copper (Cu)	mg/L	BDL	BDL	BDL
34	Zinc (Zn)	mg/L	0.181	0.134	0.903
35	Cadmium (Cd)	mg/L	BDL	BDL	BDL
36	Lead (Pb)	mg/L	0.039	0.034	BDL
37	Vanadium as V	mg/L	< 0.01	< 0.01	< 0.01
38	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
39	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
40	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
41	Surfactants as MBAS	mg/L	< 0.05	< 0.05	< 0.05
42	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
43	PAH	mg/L	< 0.001	< 0.001	< 0.001
44	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
45	Total Coliform	MPN/100 ml	920	>1600	>1600
46	Fecal Coliform	MPN/100 ml	430	240	170

Location-AGW-4: Bore well of Jeetali Village Water Works

Sr. No.	Test Parameters	Unit of Measurement	Results		
			07.10.2016	16.10.2016	18.10.2016
1	pH	-	7.0	6.82	7.37
2	Cond	µS/cm	2370	2275	1274
3	Turb .	N.T.U.	0.6	0.4	0.3
4	Colour	Hazen	10	BDL	BDL
5	TSS	mg/L	5.0	5.63	4.0
6	TDS	mg/L	1220	1172	1137
7	COD	mg/L	15.68	14.40	12
8	BOD	mg/L	0.7	BDL	BDL
9	NH ₃ -N	mg/L	BDL	BDL	BDL
10	T.Amm.	mg/L	BDL	BDL	BDL
11	Free NH ₃	mg/L	BDL	BDL	BDL
12	TKN	mg/L	BDL	BDL	0.14
13	NO ₂ -N	mg/L	BDL	BDL	BDL
14	NO ₃ -N	mg/L	32.44	31.6	31.27
15	T.Nitrogen	mg/L	32.44	31.6	31.41
16	O-PO ₄ -P	mg/L	BDL	BDL	BDL
17	T.Phos.	mg/L	0.07	0.06	0.06
18	T.Hardness	mg/L	540	548	546
19	Cl ⁻	mg/L	579	568	568
20	SO ₄ ⁻²	mg/L	92	100	97
21	SAR	-	3.56	3.56	3.63
22	B	mg/L	0.528	0.670	0.935
23	Cr ⁺⁶	mg/L	BDL	BDL	BDL
24	F ⁻	mg/L	0.37	0.38	0.35

25	S ²⁻	mg/L	BDL	BDL	0.67
26	CN ⁻	mg/L	BDL	0.042	0.035
27	Phenols	mg/L	BDL	BDL	0.048
28	Res.CL ₂	mg/L	BDL	BDL	BDL
29	Chromium (Cr)	mg/L	BDL	BDL	BDL
30	Manganese (Mn)	mg/L	0.024	BDL	BDL
31	Iron (Fe)	mg/L	BDL	BDL	BDL
32	Nickel (Ni)	mg/L	BDL	BDL	BDL
33	Copper (Cu)	mg/L	BDL	BDL	BDL
34	Zinc (Zn)	mg/L	0.058	0.084	0.622
35	Cadmium (Cd)	mg/L	BDL	BDL	BDL
36	Lead (Pb)	mg/L	BDL	BDL	BDL
37	Vanadium as V	mg/L	< 0.01	< 0.01	< 0.01
38	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
39	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
40	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
41	Surfactants as MBAS	mg/L	0.1	0.08	0.11
42	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
43	PAH	mg/L	< 0.001	< 0.001	< 0.001
44	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
45	Total Coliform	MPN/100 ml	430	>1600	>1600
46	Fecal Coliform	MPN/100 ml	23	350	430

Location-AGW-5: Hand pump in front of Shri Rameshbhai Limbhachia's residence, Andada village

Sr. No.	Test Parameters	Unit of Measurement	Results		
			07.10.2016	16.10.2016	18.10.2016
1	pH	-	7.13	6.87	6.99
2	Cond	µS/cm	2210	2059	1390
3	Turb	N.T.U.	12.1	6.2	1.6
4	Colour	Hazen	20	BDL	BDL
5	TSS	mg/L	8.0	13	8.0
6	TDS	mg/L	1219	1203	1164
7	COD	mg/L	5.88	8.0	7.0
8	BOD	mg/L	BDL	BDL	BDL
9	NH ₃ -N	mg/L	0.17	BDL	BDL
10	T.Amm.	mg/L	0.341	BDL	BDL
11	Free NH ₃	mg/L	0.0032	BDL	BDL
12	TKN	mg/L	0.412	0.14	0.41
13	NO ₂ -N	mg/L	BDL	BDL	BDL
14	NO ₃ -N	mg/L	34.57	34.9	33.79
15	T.Nitrogen	mg/L	34.982	35.04	34.2
16	O-PO ₄ -P	mg/L	BDL	BDL	BDL
17	T.Phos.	mg/L	0.06	0.04	0.07
18	T.Hardness	mg/L	640	650	640
19	Cl ⁻	mg/L	475	476	466

20	SO ₄ ⁻²	mg/L	138	149	146
21	SAR	-	3.84	3.76	3.84
22	B	mg/L	0.597	0.627	0.985
23	Cr ⁺⁶	mg/L	BDL	BDL	0.027
24	F ⁻	mg/L	0.17	0.19	0.18
25	S ⁻²	mg/L	BDL	BDL	0.35
26	CN ⁻	mg/L	BDL	BDL	0.048
27	Phenols	mg/L	BDL	BDL	BDL
28	Res.CL ₂	mg/L	BDL	BDL	BDL
29	Chromium (Cr)	mg/L	BDL	BDL	BDL
30	Manganese (Mn)	mg/L	0.037	BDL	BDL
31	Iron (Fe)	mg/L	0.039	BDL	BDL
32	Nickel (Ni)	mg/L	BDL	BDL	BDL
33	Copper (Cu)	mg/L	0.027	0.027	BDL
34	Zinc (Zn)	mg/L	1.658	0.822	BDL
35	Cadmium (Cd)	mg/L	BDL	BDL	BDL
36	Lead (Pb)	mg/L	0.025	BDL	BDL
37	Vanadium as V	mg/L	< 0.01	< 0.01	< 0.01
38	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
39	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
40	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
41	Surfactants as MBAS	mg/L	< 0.05	< 0.05	< 0.05
42	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
43	PAH	mg/L	< 0.001	< 0.001	< 0.001
44	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
45	Total Coliform	MPN/100 ml	540	920	70
46	Fecal Coliform	MPN/100 ml	40	170	43

Location-AGW-6: Bore well of Old Pungam village

Sr. No.	Test Parameters	Unit of Measurement	Results		
			07.10.2016	16.10.2016	18.10.2016
1	pH	-	7.94	7.76	7.92
2	Cond	µS/cm	924	926	887
3	Turb	N.T.U.	BDL	BDL	0.1
4	Colour	Hazen	BDL	10	BDL
5	TSS	mg/L	1.7	3.0	2.0
6	TDS	mg/L	522	528	525
7	COD	mg/L	3.92	4.8	4.4
8	BOD	mg/L	BDL	BDL	BDL
9	NH ₃ -N	mg/L	0.05	0.383	0.40
10	T.Amm.	mg/L	0.100	0.769	0.803
11	Free NH ₃	mg/L	0.0051	0.0299	0.043
12	TKN	mg/L	0.412	0.41	0.41
13	NO ₂ -N	mg/L	BDL	BDL	BDL
14	NO ₃ -N	mg/L	0.68	0.61	0.71

15	T.Nitrogen	mg/L	1.092	1.02	1.12
16	O-PO ₄ -P	mg/L	0.11	0.10	0.13
17	T.Phos.	mg/L	0.33	0.31	0.40
18	T.Hardness	mg/L	228	236	232
19	Cl ⁻	mg/L	50.3	49.2	54
20	SO ₄ ⁻²	mg/L	41	39	41
21	SAR	-	2.36	2.35	2.40
22	B	mg/L	0.219	0.378	0.567
23	Cr ⁺⁶	mg/L	BDL	BDL	BDL
24	F ⁻	mg/L	0.52	0.53	0.22
25	S ⁻²	mg/L	BDL	0.13	1.30
26	CN ⁻	mg/L	BDL	BDL	0.042
27	Phenols	mg/L	BDL	BDL	BDL
28	Res.Cl ₂	mg/L	BDL	BDL	BDL
29	Chromium (Cr)	mg/L	BDL	BDL	BDL
30	Manganese (Mn)	mg/L	0.134	0.119	BDL
31	Iron (Fe)	mg/L	BDL	BDL	BDL
32	Nickel (Ni)	mg/L	BDL	BDL	BDL
33	Copper (Cu)	mg/L	BDL	BDL	BDL
34	Zinc (Zn)	mg/L	0.888	0.270	0.055
35	Cadmium (Cd)	mg/L	BDL	BDL	BDL
36	Lead (Pb)	mg/L	BDL	BDL	BDL
37	Vanadium as V	mg/L	< 0.01	< 0.01	< 0.01
38	Selenium as Se	mg/L	< 0.01	< 0.01	< 0.01
39	Mercury as Hg	mg/L	< 0.001	< 0.001	< 0.001
40	Total Arsenic as As	mg/L	< 0.01	< 0.01	< 0.01
41	Surfactants as MBAS	mg/L	< 0.05	< 0.05	< 0.05
42	Organo Chlorine Pesticide	mg/L	< 0.0001	< 0.0001	< 0.0001
43	PAH	mg/L	< 0.001	< 0.001	< 0.001
44	PCB	mg/L	< 0.0001	< 0.0001	< 0.0001
45	Total Coliform	MPN/100 ml	120	210	170
46	Fecal Coliform	MPN/100 ml	49	79	17

ANALYSIS RESULTS OF FETP, ANKLESHWAR- INLET QUALITY

Location- Inlet to FETP, Ankleshwar

Sr. No.	Test Parameters	18.10.2016
1	pH	7.29
2	Colour	1000
3	TSS	227
4	TDS	8116
6	COD	1158
7	BOD	443
8	NH ₃ -N	42.0
9	T.Amm.	84.336
10	TKN	59.6
11	Phenols	2.20

(Note: concentration are expressed in mg/l)

WATER & WASTEWATER ANALYSIS BDL VALUES (Minimum Detection Limit)

Sr. No.	Test Parameters	Unit of Measurement	BDL
1	pH	-	0.2
2	Cond	$\mu\text{S/cm}$	0.5
3	Turbidity	N.T.U.	0.5
4	Colour	Hazen	5.0
5	TSS	mg/L	10
6	TDS	mg/L	10
7	D.O.	mg/L	0.5
8	COD	mg/L	2.0
9	BOD	mg/L	0.5
10	NH ₃ -N	mg/L	0.04
11	T. Ammonia	mg/L	0.04
12	Free NH ₃	mg/L	--
13	TKN	mg/L	0.5
14	NO ₂ -N	mg/L	0.01
15	NO ₃ -N	mg/L	0.01
16	T. Nitrogen	mg/L	--
17	O-PO ₄ -P	mg/L	0.005
18	T. Phos.	mg/L	0.005
19	T. Hardness	mg/L	1.0
20	Cl ⁻	mg/L	1.0
21	SO ₄ ⁻²	mg/L	1.0
22	SAR	-	--
23	B	mg/L	0.05
24	Cr ⁺⁶	mg/L	0.005
25	F ⁻	mg/L	0.02
26	S ⁻²	mg/L	0.10
27	CN ⁻	mg/L	0.05
28	Phenols	mg/L	0.001
29	Res.CL ₂	mg/L	0.04
30	O&G	mg/L	10
31	Chromium (Cr)	mg/L	0.02 (20 ppb)
32	Manganese (Mn)	mg/L	0.02 (20 ppb)
33	Iron (Fe)	mg/L	0.02 (20 ppb)
34	Nickel (Ni)	mg/L	0.02 (20 ppb)
35	Copper (Cu)	mg/L	0.02 (20 ppb)
36	Zinc (Zn)	mg/L	0.02 (20 ppb)
37	Cadmium (Cd)	mg/L	0.02 (20 ppb)
38	Lead (Pb)	mg/L	0.02 (20 ppb)
39	Vanadium as V	mg/L	<0.01
40	Selenium as Se	mg/L	<0.01
41	Mercury as Hg	mg/L	<0.001
42	Total Arsenic as As	mg/L	<0.01
43	Surfactants as MBAS	mg/L	<0.05
44	Organo Chlorine Pesticide	mg/L	<0.0001
45	PAH	mg/L	<0.001
46	PCB	mg/L	<0.0001
47	Total Coliform	MPN/100 ml	<1.8
48	Fecal Coliform	MPN/100 ml	<1.8

**AMBIENT AIR QUALITY MONITORING–BDL VALUES
MINIMUM DETECTION LIMIT**

SR. NO.	PARAMETER	UNIT	MINIMUM DETECTION LIMIT
1	Particulate Matter (PM ₁₀)	µg/m ³	10
2	Particulate Matter (PM _{2.5})	µg/m ³	10
3	Lead as Pb	µg/m ³	0.5
4	Benzo (a) Pyrene (BaP)- particulate phase only	ng/m ³	0.5
5	Arsenic as As	ng/m ³	2.0
6	Nickel as Ni	ng/m ³	10
7	Carbon Monoxide as CO	mg/m ³	0.1
8	Benzene as C ₆ H ₆	µg/m ³	2.0
9	Ammonia (NH ₃)	µg/m ³	10
10	Sulphur Dioxide (SO ₂)	µg/m ³	10
11	Oxides of Nitrogen (NO ₂)	µg/m ³	10
12	Ozone (O ₃)	µg/m ³	10

Updated Environmental Data of Ankleshwar

(1&2) Digitalized map / Toposheet through BISAG & Details of potential impact zones are included in this digitalized map / Toposheet.

✓ Please refer Annexure - A

(3) Details of total area falling under the critically polluted industrial cluster Ankleshwar Estate: 1635 ha; Panoli Estate 1006 ha

(4) Details of R17 (Seventeen categories of highly polluting industries) and R54 (Red category of industries) operating in CPA are as under.

➤ **R 54 (Red category of industries) operating in CPA are as under:**

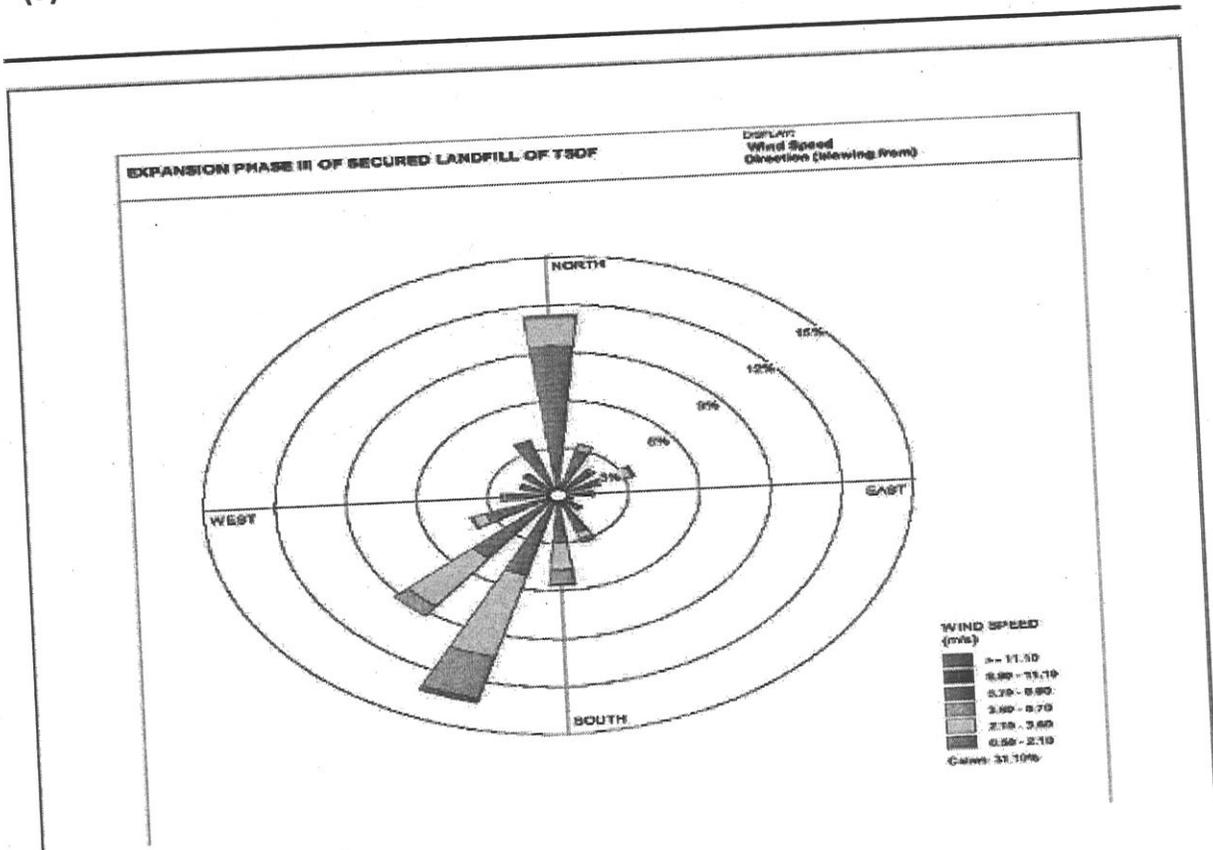
ANKLESHWAR GIDC				
Category	Small	Medium	Large	Total
Red	574	16	55	645

PANOLI GIDC				
Category	Small	Medium	Large	Total
Red	208	12	24	244

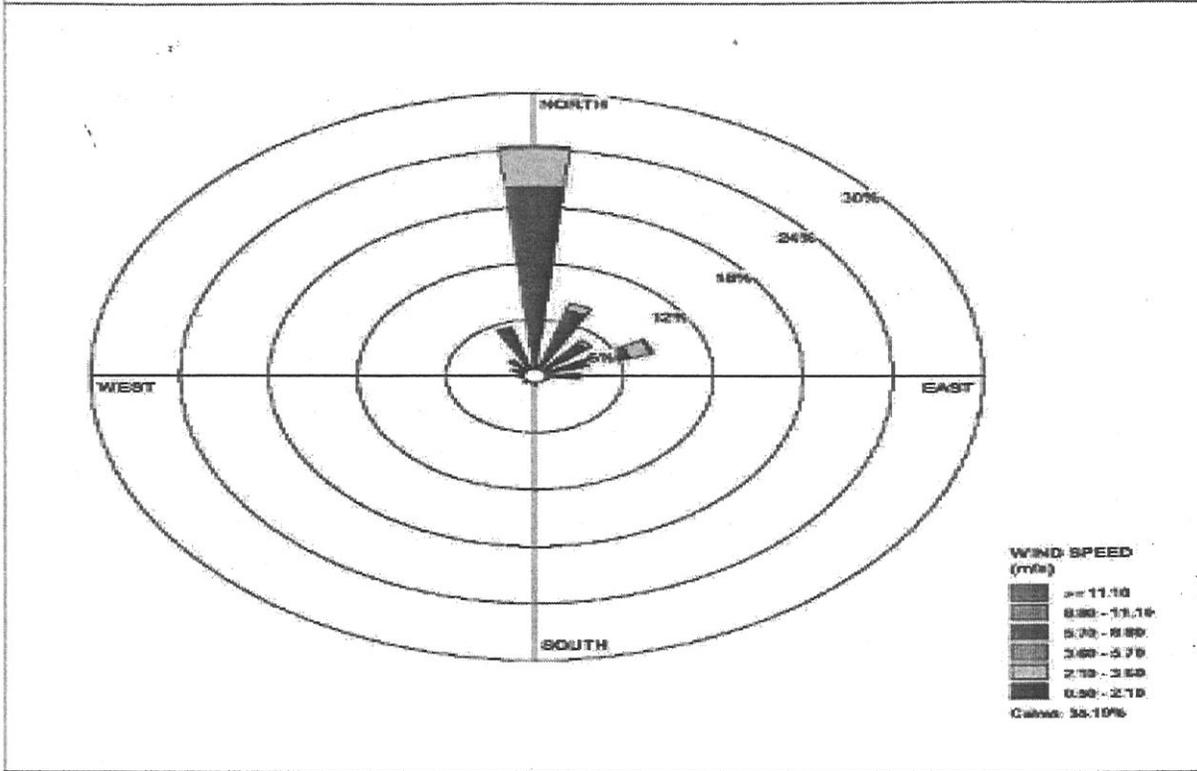
➤ **R 17 (seventeen categories of highly polluting industries) in CPA are as under:**

Sr.No.	Category	No. of Industries
1	D & I-Dyes & Intermediates	10
2	Pes- Pesticides	14
3	PAP-Pulp & Paper	3
4	PHA-Pharmaceuticals	24
5	FER-Fertilizers	1
6	PCH-Petrochemicals	1

(5) Wind rose diagram of the area.



Source: BEIL, Ankleshwar



Source: BEIL, Ankleshwar

(6) Updated compliance status of large scale, medium, small scale industries in the area:

Scale of the Industry	Air	Surface Water	Land (Ground Water)
Large	Adequate	Adequate	Adequate
Small / Medium	Inadequate	Inadequate	Inadequate
Common Facilities	Adequate	Inadequate	Adequate

(7) To facilitate the evaluation of health component of CEPI, the previous 5 years records of 3-5 major hospitals of the area w.r.t to following area as under.

- For Air Environment, total no. cases related to Asthma , bronchitis, Cancer, Acute respiratory infections etc
- For surface water/ground water Environment cases related to Gastroenteritis, Diarrhea, and Renal (Kidney) Malfunction etc

(1) Hospital Name: Primary Health Centre – Jitali.

Address: At Post: Jitali, Ta. Ankleshwar. Dist: Bharuch.

Number of Patients examined during the financial Year							
Sr. No.	Diseases	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
By Air act							
1	Asthma	-	293	270	308	257	288
2	Bronchitis	0	---	---	---	---	---
3	Cancer	0	---	---	---	---	---
4	Acute respiratory infections	-	1436	1521	1456	1628	1554
	Total	0	1729	1791	1764	1885	1842
By water act							
1	Gastroenteritis	0	---	---	---	---	---
2	Diarrhea	-	363	418	441	375	415
3	Renal (Kidney)Malfunction	0	---	---	---	---	---
4	Cancer	0	---	---	---	---	---
	Total	-	363	418	441	375	415
	Total OPD received during the year	12130	10478	10673	10220	11585	9353

Source: Medical Officer, PHC, Jitali.

(2) Hospital Name: Primary Health Centre-Kharod.

Address: At Post: Kharod, Ta. Ankleshwar, Dist: Bharuch.

Number of Patients examined during the financial Year							
Sr. No.	Diseases	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
By Air act							
1	Asthma	5	8	6	8	7	9
2	Bronchitis	2	3	5	3	2	7
3	Cancer	---	---	---	---	---	---
4	Acute respiratory infections	425	520	555	671	923	760
	Total	432	531	566	682	932	776
By water act							
1	Gastroenteritis	3	5	7	6	7	9
2	Diarrhea	219	257	223	418	366	515
3	Renal (Kidney)Malfunction	---	---	---	---	---	---
4	Cancer	---	---	---	---	---	---
	Total	222	256	230	424	373	524
	Total OPD received during the year	10085	12305	12376	11883	14669	15053

Source: Medical Officer, PHC, Jitali

(3) Hospital Name: Shrimati Jayaben Modi Hospital

Address: Valia Road, GIDC, Ankleshwar, Dist: Bharuch

Number of Patients examined during the financial Year							
Sr. No.	Diseases	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
By Air act							
1	Asthma	36	46	42	41	40	39
2	Bronchitis	55	59	69	86	79	80
3	Cancer	03	09	06	03	02	04
4	Acute respiratory infections	68	72	75	79	80	79
	Total	162	186	192	209	201	202
By water act							
1	Gastroenteritis	140	129	110	84	90	116
2	Diarrhea	86	92	36	49	68	72
3	Renal (Kidney)Malfunction	04	09	06	02	01	05
4	Cancer	03	02	04	02	01	03
	Total	233	232	156	137	160	196
	Total OPD received during the year	74923	81600	84924	91111	91347	89243

(4) Hospital Name: (1) C P C Municipal Dispensary

(2) C P C Metarnity Home

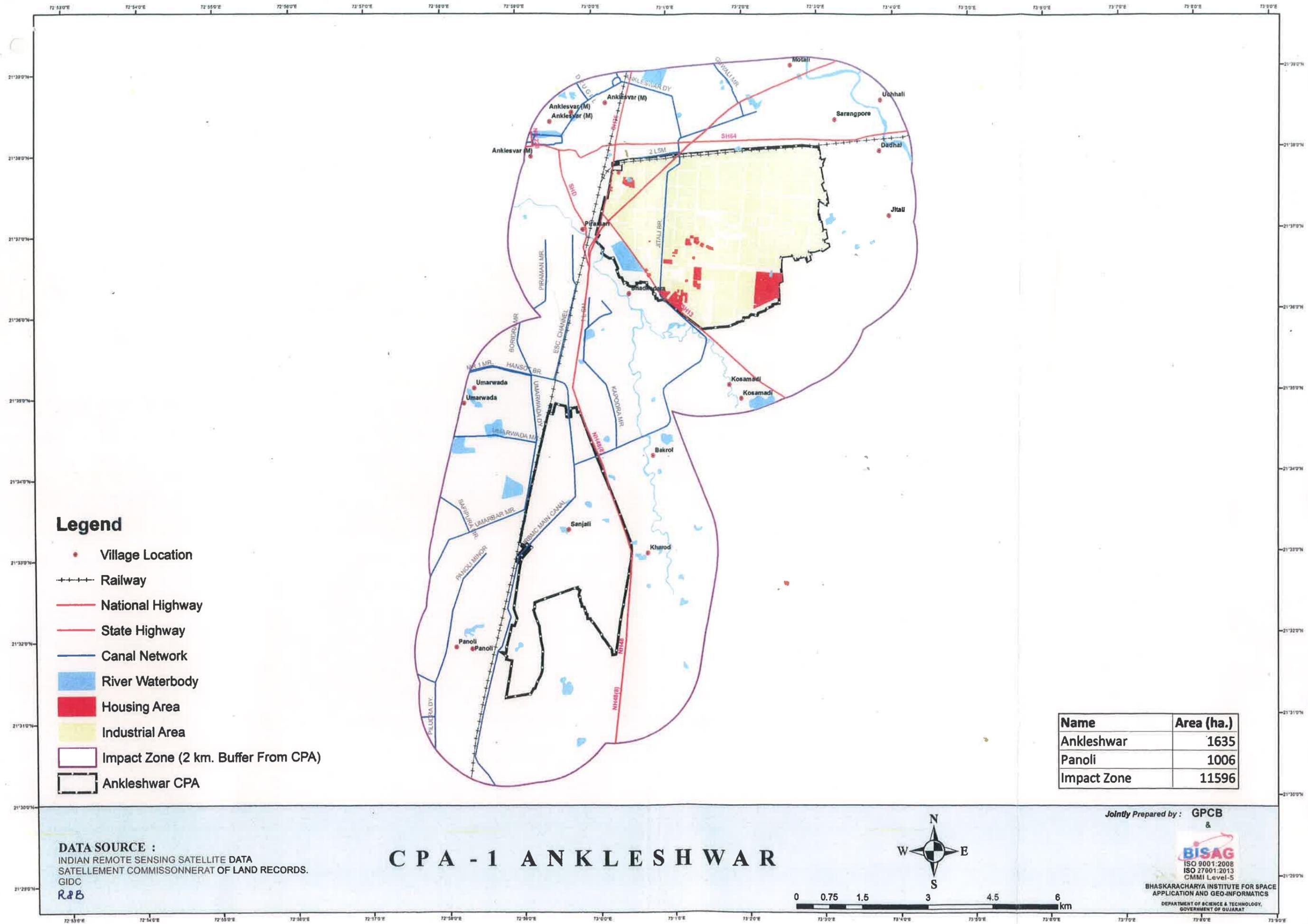
Address: Near Javahar Baugh, Hansot Road, Ankleshwar

Number of Patients examined during the financial Year							
Sr. No.	Diseases	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
	By Air act						
1	Asthma	260	238	230	258	303	292
2	Bronchitis	86	89	92	98	132	128
3	Cancer	00	00	00	00	00	01
4	Acute respiratory infections	347	318	337	435	396	402
	Total	793	645	659	791	831	823
	By water act						
5	Gastroenteritis	156	190	168	193	245	164
6	Diarrhea	34	31	26	32	38	36
7	Renal (Kidney)Malfunction	00	00	00	00	00	00
8	Cancer	00	00	00	00	00	00
	Total	190	221	194	225	283	200
	Total OPD received during the year	17352	15191	15352	16121	18864	18278

Source: Medical Officer, C P C Municipal Dispensary, Ankleshwar

		Air										Average
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16			2015-16	Average	
Hospital		0	1729	1791	1764	1885	1842			1842		
PHC Jitali			#DIV/0!	-3.585888	1.507538	-6.85941	2.281167			2.281167	-1.66415	
	% Increase/decrease											
PHC Kharod		432	531	566	682	932	776			776		
	% Increase/decrease		-22.9167	-6.591337	-20.4947	-36.6569	16.7382			16.7382	-13.9843	
Jayaben Modi, GIDC Ankleshwar		162	186	192	209	201	202			202		
	% Increase/decrease		-14.8148	-3.225806	-8.85417	3.827751	-0.49751			-0.49751	-4.71291	
CPC Municipal Dispensary, Ankleshwar Town		793	645	659	791	831	823			823		
	% Increase/decrease		18.6633	-2.170543	-20.0303	-5.05689	0.962696			0.962696	-1.52636	
Average % increase of Cases related to Air											-4.3775	

		Water										Average
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16			2015-16	Average	
Hospital		0	363	418	441	375	415			415		
PHC Jitali			#DIV/0!	-15.15152	-5.50239	14.96599	-10.6667			-10.6667	-4.08865	
	% Increase/decrease											
PHC Kharod		222	256	230	424	373	524			524		
	% Increase/decrease		-15.3153	10.15625	-84.3478	12.0283	-40.4826			-40.4826	-23.5922	
Jayaben Modi, GIDC Ankleshwar		233	232	156	137	160	196			196		
	% Increase/decrease		0.42918	32.758621	12.17949	-16.7883	-22.5			-22.5	1.215794	
CPC Municipal Dispensary, Ankleshwar Town		190	221	194	225	283	200			200		
	% Increase/decrease		-16.3158	12.217195	-15.9794	-25.7778	29.32862			29.32862	-3.30543	
Average % increase of Cases related to Water											-5.9541	



Legend

- Village Location
- +---+--- Railway
- National Highway
- State Highway
- Canal Network
- River Waterbody
- Housing Area
- Industrial Area
- Impact Zone (2 km. Buffer From CPA)
- Ankleshwar CPA

Name	Area (ha.)
Ankleshwar	1635
Panoli	1006
Impact Zone	11596

DATA SOURCE :
 INDIAN REMOTE SENSING SATELLITE DATA
 SATELLEMENT COMISSONNERAT OF LAND RECORDS.
 GIDC
 R&B

CPA - 1 ANKLESHWAR



Jointly Prepared by : GPCB &



BHASKARACHARYA INSTITUTE FOR SPACE APPLICATION AND GEO-INFORMATICS
 DEPARTMENT OF SCIENCE & TECHNOLOGY,
 GOVERNMENT OF GUJARAT



SHRIMATI JAYABEN MODY HOSPITAL

REGD.No. F/106/BHARUCH

MANAGED BY :

Ankleshwar Industrial Development Society, Ankleshwar

VALIA ROAD, GIDC, ANKLESHWAR - 393 002.

PHONE : 222220, 224550

15/10/16

To whom so ever it may concern

This is to certify that
Approximate Number of cases of
following mentioned diseases for the
Period of April 1/2016 to 30/09/16 are.

	By <u>air</u> <u>act</u>
Asthma -	44
Brunchitis -	54
Cancer -	0
Acute Respiratory Infection -	46
Total.	<u>144</u>

	By <u>water</u> <u>act</u>
Gastroenteritis -	30
Diarrhoea. -	26
Renal malfunction -	0
Cancer. -	0
Total.	<u>56</u>

Total OPD NO. 37562.

Sign

&

Nirav Patel

SMT. JAYABEN MODY HOSPITAL
Valia Road, GIDC, Ankleshwar

Neeraj Singh

Neeraj Singh

Hospital Name: Shrimati Jayaben Modi Hospital
Address: Valia Road, GIDC, Ankleshwar, Dist: Bharuch

Number of Patients examined during the financial Year								
Sr. No.	Diseses	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Current year up to 30.09.2016
By Air act								
1	Asthma	36	46	42	41	40	39	44
2	Bronchitis	55	59	69	86	79	80	54
3	Cancer	03	09	06	03	02	04	0
4	Acute respiratory infections	68	72	75	79	80	79	46
	Total	162	186	192	209	201	202	144
By water act								
1	Gastroenteritis	140	129	110	84	90	116	30
2	Diarrhea	86	92	36	49	68	72	26
3	Renal (Kidney)Malfunction	04	09	06	02	01	05	0
4	Cancer	03	02	04	02	01	03	0
	Total	233	232	156	137	160	196	56
	Total OPD received during the year	74923	81600	84924	91111	91347	89243	37562

DR.  PATEL
M.D. (MEDICINE)
CONSULTANT PHYSICIAN & CARDIOLOGIST
MEDICAL SUPERINTENDENT
SMT. JAYABEN MODY HOSPITAL
GIDC, ANKLESHWAR - 2.
Reg. No. G-24724

Hospital Name: (1) C P C Municipal Dispensary-Ankleshwar
(2) C P C Maternity Home-Ankleshwar

Number of Patients examined during the financial Year								
Sr. No.	Diseses	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Current year up to 30.09.16
By Air act								
1	Asthma	260	238	230	258	303	292	131
2	Bronchitis	86	89	92	98	132	128	169
3	Cancer	00	00	00	00	00	01	000
4	Acute respiratory infections	347	318	337	435	396	402	204
	Total	793	645	659	791	831	823	504
By water act								
5	Gastroenteritis	156	190	168	193	245	164	76
6	Diarrhea	34	31	26	32	38	36	22
7	Renal (Kidney)Malfunction	00	00	00	00	00	00	00
8	Cancer	00	00	00	00	00	00	01
	Total	190	221	194	225	283	200	99
	Total OPD received during the year	17352	15191	15352	16121	18864	18278	8299


 Medical Officer
 C P C Municipal Dispensary
 Ankleshwar

Name: Primary Health Centre-Kharod.

Address: At Post: Kharod, Ta. Ankleshwar, Dist: Bharuch.

Number of Patients examined during the financial Year								
Sr. No.	Diseases	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Current year up to 30.09.2016
By Air act								
1	Asthma	5	8	6	8	7	9	5
2	Bronchitis	2	3	5	3	2	7	4
3	Cancer	---	---	---	---	---	---	0
4	Acute respiratory infections	425	520	555	671	923	760	645
	Total	432	531	566	682	932	776	654
By water act								
1	Gastroenteritis	3	5	7	6	7	9	5
2	Diarrhea	219	257	223	418	366	515	364
3	Renal (Kidney)Malfunction	---	---	---	---	---	---	0
4	Cancer	---	---	---	---	---	---	0
	Total	222	256	230	424	373	524	369
	Total OPD received during the year	10085	12305	12376	11883	14669	15053	9457


[Faint official stamp and text, including the date 30.09.2016]

Hospital Name: Primary Health Centre – Jitali.

Address: At Post: Jitali, Ta. Ankleshwar. Dist: Bharuch.

Number of Patients examined during the financial Year								
Sr. No.	Diseases	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Current year up to 30.09.2016
By Air act								
1	Asthma	-	293	270	308	257	288	294
2	Bronchitis	0	---	---	---	---	---	-
3	Cancer	0	---	---	---	---	---	-
4	Acute respiratory infections	-	1436	1521	1456	1628	1554	410
	Total	0	1729	1791	1764	1885	1842	704
By water act								
1	Gastroenteritis	0	---	---	---	---	---	-
2	Diarrhea	-	363	418	441	375	415	166
3	Renal (Kidney)Malfunction	0	---	---	---	---	---	-
4	Cancer	0	---	---	---	---	---	-
	Total	-	363	418	441	375	415	166
	Total OPD received during the year	12130	10478	10673	10220	11585	9353	7287


Medical Officer
PRIMARY HEALTH CENTER
Jitali, Ta. Ankleshwar