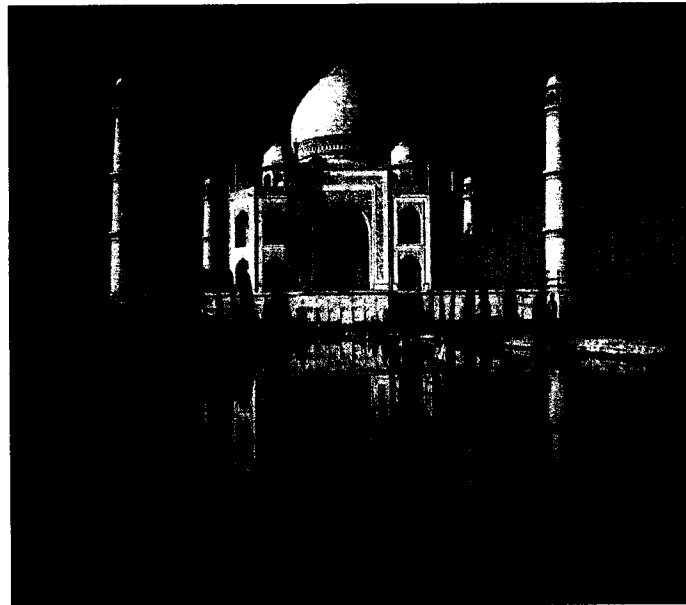


11/11/10

# COMPREHENSIVE ACTION PLAN FOR CRITICALLY POLLUTED INDUSTRIAL CLUSTERS OF AGRA



**U.P. POLLUTION CONTROL BOARD  
PICUP BHAWAN, GOMTI NAGAR, LUCKNOW  
November, 2010**

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# 1. Introduction

## 1.1 Area Details including brief history

Agra is famous as being home to one of the Seven Wonders of the World-the Taj Mahal. Agra located in the State of Uttar Pradesh of northern India is well known for the Taj Mahal, one of the wonders of the world. Emperor Shahjahan built Taj Mahal in 17<sup>th</sup> Century A.D. in the memory of his beloved wife Mumtaz Mahal. Agra can be called as a great city from the history because of its most beautiful monument Taj Mahal and also contains many frequent visiting destinations in Agra like The Taj Mahal, Red Fort Agra, Chini Ka Rauza, Ram Bagh, Sikandra, Itmad-ud-daulah, Mariyam's Tomb, Jama Masjid. Agra once a flourishing capital of ancient Mughal is today the 24<sup>th</sup> largest city in India and 4<sup>th</sup> largest city in Uttar Pradesh. The city of Agra is spread over an area of 120 sq.kms. and has a population about 1.2 million. Industrialization and urban growth in the Agra-Mathura region has endangered the world famous Taj Mahal and other historical monuments which are under constant threat from the ever-increasing environmental pollution.

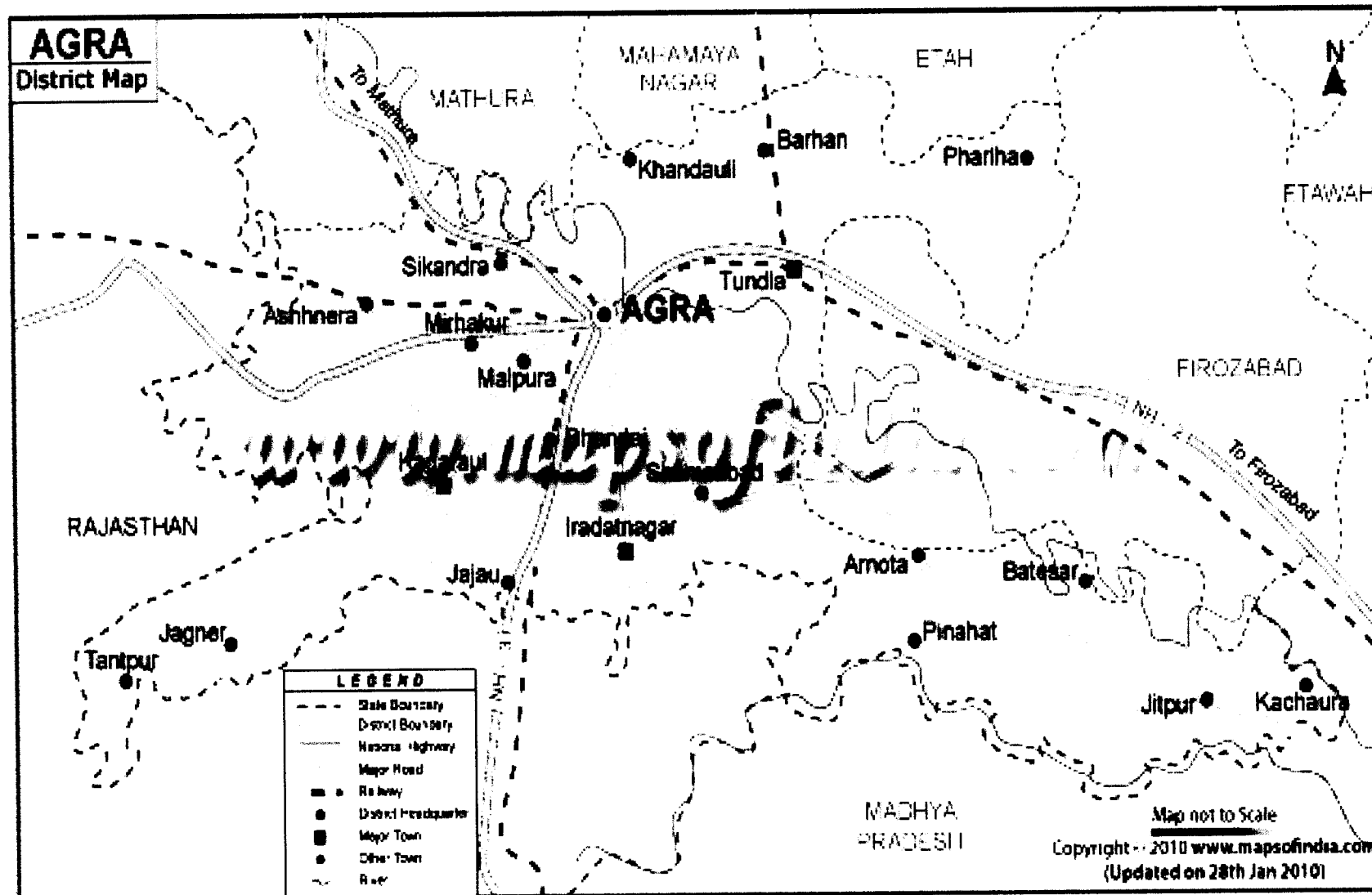
## 1.2 Location

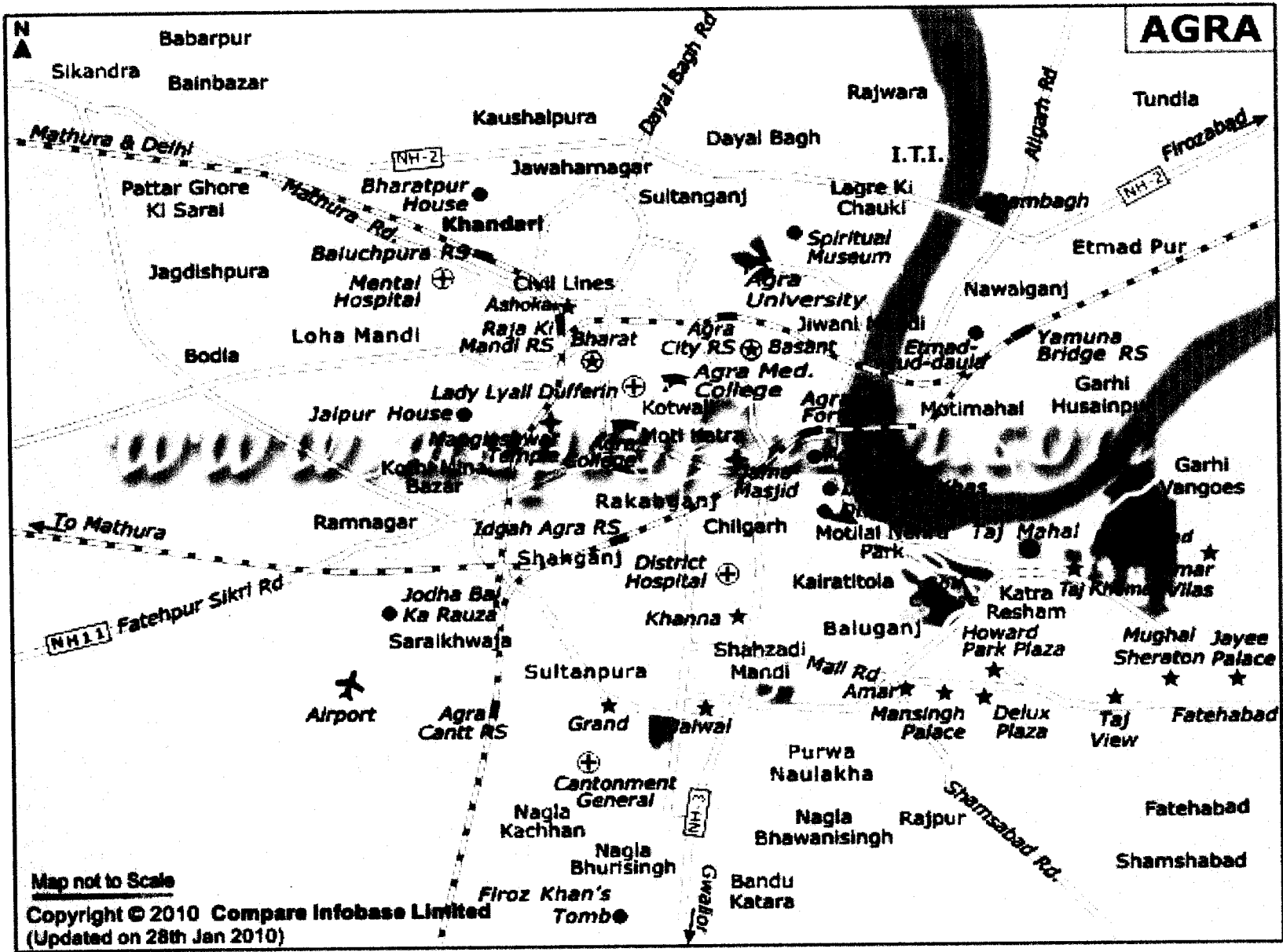
The city of Agra is in Uttar Pradesh, which is a state located in the northern part of India. It is located at a distance of about 200 kilometers from New Delhi, which is the capital city of the Indian Republic. In geographical terms, the exact location of the city of Agra is 27.18° north and 78.02° east.

The city of Agra is built along the banks of the Yamuna, one of the premier rivers in the nation. The city is located at an average altitude of 171 meters or 561 feet above the sea level. The geography of Agra is such that it is surrounded by the city of Mathura on the northern side. To the south of Agra is Dhaulpur. Firozabad is located on the eastern side of the city of Agra. Fatehabad lies on the south-eastern side of Agra city. To the west of Agra lies Bharatpur. The city of Agra forms a part of the great northern plains.

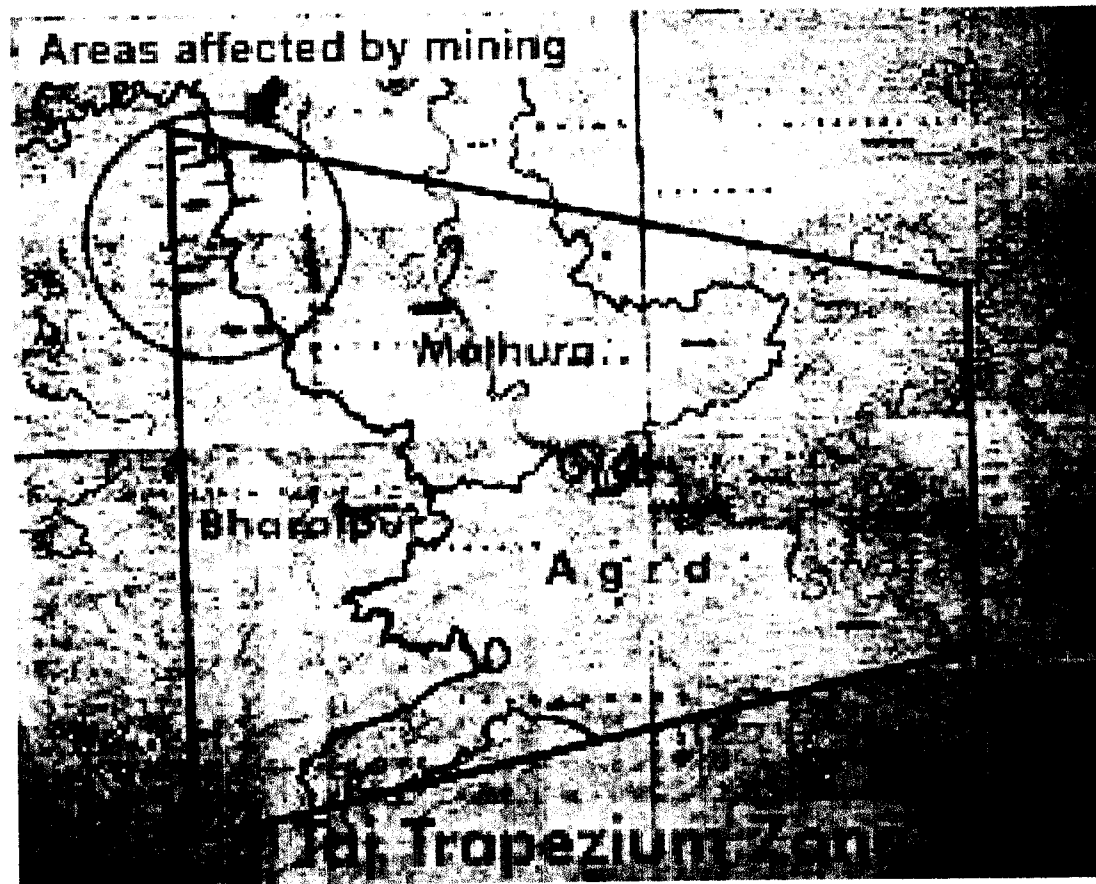
On the basis of landmass, Agra is the third largest city in the state of Uttar Pradesh. The modern city of Agra was founded way back in the 16th century. It was founded by Sikandar Lodhi, who was a king of the Lodhi dynasty. Under the ruling of the Mughal dynasty, Agra was considered to be one of the most powerful and influential cities in India in the medieval period.

### 1.3 Digitized Map with Demarcation of Geographical Boundaries and Impact Zones





# THE MAP OF TAZ TRAPEZIUM ZONE







#### 1.4 CEPI Score (Air, Water, Land and Total)

Central Pollution Control Board in Collaboration with IIT Delhi & 15 other institute had formulated criteria for Comprehensive Environmental Pollution Index (CEPI) and then identified prominent industrial clusters, based on their CEPI Score. The study revealed that CEPI score of 43 industrial clusters is more than 70, thus they have been declared as 'Critically Polluted Industrial Clusters.' As per the report Agra is one of the Critically Polluted Industrial Clusters identified in the state of Uttar Pradesh. The CEPI score foragra for Water, Air and Land are 63.75, 59 and 59.5 respectively and overall score of 76.58. The details are as following:-

S. No.	Sector	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	TOTAL
1	Water	5.5	2.5	13.75	07	00	03	10	05	05	05	30	10	63.75
2	Air	06	2.5	15	08	03	03	14	05	03	05	20	10	59
3	Land	5.5	2.5	13.75	07	00	00	07	05	4.75	05	28.75	10	59.5

- A1 - Presence of toxin
- A2 - Scale of Industrial activities
- A - (A1 x A2)
- B1 - Ambient Pollutant Concentration
- B2 - Evidence of adverse impact on people
- B3 - Reliable evidence of adverse impact on eco-geological features.
- B - (B1+B2+B3)
- C1 - Number of people potentially affected within 2 km. radius from the industrial pollution source.
- C2 - Level of exposure
- C3 - Additional risk to sensitive receptors
- C - (C1 x C2 + C3)
- D - Additional high-risk element
- CEPI - (A+B+C+D)

## 1.5 Total Population and Comprising receptors

### Population

S.No.	DESCRIPTION	NUMBER
1.	Total Population	27,51,021
2.	Male Polulation	15,01,927
3.	Female Population	12,49,094
4.	Rural Population	16,39,935
5.	Urban Population	11,11,086

### Population of the Agra city Block wise

District/Block	Area	No. of Resi. Houses	Population		
			Total	Male	Female
Fatehpur Sikri	310.4	15870	103222	56795	46427
Achhnera	275.5	18361	123026	67739	55287
Akola	164.4	13845	93864	51520	42344
Bichpuri	121.3	12359	87566	47803	39763
Barauli Ahir	238.2	23152	159657	87490	72162
Khandauli	214.6	17901	123995	68146	55849
Etmadpur	223.2	17051	112143	61949	50194
Jagner	319.3	11114	73112	40826	32286
Kheragarh	244.0	15687	106717	59111	47606
Saiyan	229.1	15839	111932	62650	49282

Shamsabad	266.4	20229	135225	75130	60095
Fatehabad	349.4	20053	131971	73376	58595
Pinahat	297.1	12241	85284	46770	38514
Bah	272.4	15653	100658	54911	45747
Jaitpur Kalan	313.4	13968	91563	49248	42315
Total Rural	3836.6	244263	1639935	903464	736471
Total Urban	188.4	164361	1111086	598463	512623
Total District	4027.0	408624	2751021	1501927	1249094

Source : ZSP-1999, Agra

### List of Hospitals

Total Hospitals/Nursing Homes	= 337
Total Clinics	= 21
Total Pathology Labs/Blood Banks	= 78

### 1.6 Eco geological Features

Agra situated in the extreme southwest corner of Uttar Pradesh, Agra stretches across 26° 44' N to 27° 25' N and 77° 26' E to 78° 32' E. Its borders touch Rajasthan to its west and south, the district of Firozabad to its East and the districts of Mathura and Etah to its North. Situated at the banks of River Yamuna, it has limited forest area sporting trees of Babul, Ber, Neem and Peepal. Agra suffers from extremities of climate with scorching hot summers and chilly winters. Monsoons offer some relief but the lanes within the city become very dirty and slippery during this season.

Like most cities of North India, the weather and climate of Agra is extreme and tropical. In Agra and surrounding areas, summers are extremely hot and the maximum temperature goes as high as 45° Celsius, while the weather during winter remains cold and foggy at times. During the Monsoon season, Agra city receives heavy rains and the weather becomes hot and humid.

### 1.6.1 Major water Bodies

Agra city is situated on the banks of the river Yamuna and Yamuna is the only prominent water body. Keetham Lake and Khari River are situated within 20 km radial distance of Taj Mahal and Sikendra. The quality of Yamuna River and Keetham Lake is as follows:

#### Physico chemical and Bacteriological Characteristics of River Yamuna, Agra at different sampling points (June, 2010)

S.No	Location of sampling points	Date of sample collection	Field Determination							Organic Matter		Major Ions	Coliforms	
			pH	EC ( $\mu$ mhos/cm)	DO	Temp. ( $^{\circ}$ C)	Colour	Odour	Turbidity (NTU)	B.O.D	C.O.D	Cl	Total Coliforms MPN/100 ml	Faecal Coliforms MPN/100 ml
1	U/S Kailash Ghat, River Yamuna Agra	02-06-2010	7.93	1602	7.6	30	Slightly Green	Odourless	22	09	20	376	92000	43000
2	U/S Water Works, Jeoni Mandi, River Yamuna Agra	02-06-2010	7.62	1648	6.8	30.5	Slightly Yellowish	Odourless	24	10	24	392	160000	92000
3	D/S Agra, Near Taj, River Yamuna Agra	02-06-2010	7.54	1710	6.0	30.5	Slightly Yellowish	Odourless	27	20	27	409	240000	92000
4	Keetham Lake, Agra	03-06-2010	7.55	1632	6.8	30	Slightly Yellowish	Odourless	25	11	25	388	160000	43000
5	Bateshwar Temple, River Yamuna, Agra	07-06-2010	7.54	1688	6.2	-	Slightly Yellowish	Odourless	26	12	26	381	16000	37000
6	Karvan	09-06-2010	7.51	1576	4.6	28	Slightly Yellowish	Odourless	24	10	22	368	92000	43000
7	U/S Kailash Ghat, River Yamuna Agra	23-06-2010	8.24	1598	6.8	31.5	Slightly Yellowish	Odourless	20	19.5	21	378	92000	17000
8	U/S Water Works, Jeoni Mandi, River Yamuna Agra	23-06-2010	8.25	1631	6.1	32.0	Slightly Yellowish	Odourless	22	11.1	25	394	160000	43000
9	D/S Agra, Near Taj, River Yamuna Agra	23-06-2010	8.05	1704	4.8	32.0	Slightly Yellowish	Odourless	25	22	28	410	240000	92000
10	Bateshwar Temple, River Yamuna, Agra	24-06-2010	7.82	1662	6.7	-	Slightly Yellowish	Odourless	25	11	25	384	92000	37000

Note – All the parameters are expressed in mg/lit. except pH and stated otherwise.

**Physico chemical and Bacteriological Characteristics of Keetham Lake, Panchi Vihar, Agra.**

S.No.	Date	D.O	B.O.D	C.O.D	M.P.N	
					Total	Facal
1	05.03.08	5.8	12	22	-	-
2	04.06.08	9.2	10.2	20	-	-
3	03.09.08	9.7	13.0	32	18000	9000
4	15.12.08	6.7	11.0	20	18000	9000
5	12.03.09	7.9	14.0	24	28000	17000
6	05.06.09	7.8	13.5	30	-	-
7	07.07.09	6.1	14.2	32	-	-
8	17.08.09	5.7	19.5	28	-	-
9	19.08.09	4.8	13.5	28	-	-
10	15.09.09	6.4	14.0	32	-	-
11	14.10.09	6.8	13.5	36	79000	17000
12	07.11.09	6.0	12.0	31	-	-
13	13.01.10	6.7	13.0	35	35000	22000
14	16.02.10	7.1	13.5	24	43000	18000
15	06.03.10	6.8	14.0	22	92000	43000
16	08.04.10	6.8	13.5	36	160000	18000
17	06.05.10	6.7	08.0	20	160000	43000
18	03.06.10	6.8	11	25	160000	43000
19	06.07.10	6.3	09	18	92000	43000

**1.6.2 Ecological Parks, Sanctuaries, flora and fauna or any eco sensitive zones**

Keetham Beer Park, Sikandra Deer Park, Chambal Sanctuary of crocodile Bah Agra etc.,

**1.6.3 Buildings or Monuments of Historical/archaeological/religious importance**

Agra is a major tourist attraction as it contains one of the Seven Wonders of the World – Taj Mahal. Agra can called as great city from the history because of its most beautiful mounment Taj mahal and also contains many frequent visiting destinations in agra like The Taj Mahal, Red Fort Agra, Chini Ka Rauza, Ram Bagh, Sikandra, Itmad-ud-daulah, Mariyam’s Tomb, Jama Masjid.

## 1.7 Industry Classification

### 1.7.1 Grossly Polluting Industries

Total industries : 02

S.No.	Name and Address	Category	TYPE	Scale	Remarks
1	Park Leather Ind. Pvt.Ltd. Runakata, Agra	Tannery	Grossly Polluting in nature	Small	ETP Installed
2	Modern Slaughter House, Kuberpur, Agra	Slaughter House	Grossly Polluting in nature	Small	ETP Installed

### 1.7.2 45 Categories Industries (Water + Air)

Total Industries : 37 (water) + 123 (air) = 160

#### LIST OF OPERATING 37 WATER POLLUTING INDUSTRIES

S.No.	Name and Address	Category	TYPE	Scale	Remarks
1.	Singhal Pesticide, Yamuna Par, Agra	Pesticide	-	Small	Solar Evaporation
2.	Agarwal Inudstries Foundry Nagar, Agra	Pesticide	-	Small	Solar Evaporation
3.	Sunray Chemical Ind., Yamuna Kinara "Road, Jeoni Mandi, Agra	Pesticide	-	Small	Solar Evaporation
4.	Asija Industries, 7th K.M. Mtr Road Agra	Pulp & Paper		Small	ETP Installed
5.	Ajanta Raj Proteins Ltd., Unit-II, Manikpur, Bah, Agra	Milk Processing	Boiler	Small	ETP Installed
6.	ACME Asbestos Pipes Pvt.Ltd., Nunhai, Agra	Asbestos Pipes		Small	ETP Installed
7.	HMA Frozen Food, Ltd. Kuberpur, Agra	Meat Packag.		Small	ETP Installed
8.	Agra Chains Pvt. Ltd. 14 Ind. Area, Nunhai Agra	Silver Jewelry	Electroplating	Small	ETP Installed
9.	Agra Machine tools Pvt. Ltd., Industrial Area, Nunhai Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
10.	Kundan Chains, Freeganj, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
11.	Radha Chains, Bye Pass Road, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
12.	Jai Durga Electroplaters (Madan Lal Agarwal Nickle Plant) 50/74, Shivdasani Nagra, Sahganj, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed

13.	Kaila Electroplaters 50/74 AB, Shivdasani nagar, Shahganj, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
14.	K.D. Chains, Lohiya Nagar, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
15.	Gupta plating works(Tulsi Ram Chain Factory), Adarsh Nagar, Balkeshwar Agra.	Imitation Jewelry	Electroplating	Small	ETP Installed
16.	J.R Electroplating works(Mohammad Harun Nickle Plant) 32/197, Besan ki Basti, Lohamandi, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
17.	Pappu Chains, 7, Mugal Road, Kamla Nagar, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
18.	Shri Krishna Chains (India) Limited, 21/272, Jioni Mandi, agra	Imitation Jewelry	Electroplating	Small	ETP Installed
19.	D.R. Chains, Bye Pass Road, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
20.	Atul Deepwell Hand Pumps, Atul Compund, Nunhai, Agra	Hand Pump	Electroplating	Small	ETP Installed
21.	Abdul Hameed Electroplating Works, 32/206B, Besan Ki Basti, Lohamandi, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
22.	Mohd. Waseem Electroplating Works, 32/197, Besan Ki Basti, Lohamandi, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
23.	Benara Udyog Pvt. Ltd., Bodla Road, Agra	Bearing/Bushes	Electroplating	Small	ETP Installed
24.	Khandelwal Industries Enterprises, 72-80, I.E, Nunhai, Agra	Metal Casting	Electroplating	Small	ETP Installed
25.	Suneeta Chain's, Lohia Nagar Bulkeswar, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
26.	Sangeeta Chain's 37/315, Nagla Padi, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
27.	S.M chains Industries 107 A North Vijay Nagar colony Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
28.	S.K. sale cooperation 32/1/1 Takia Lal Maszid by pass road Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
29.	R.S. chain & company behind of Poliwal Foundary, Rambag, Agra.	Imitation Jewelry	Electroplating	Small	ETP Installed
30.	Vilash Chains, 16, Murari Vihar, Alvatia Road, Agra.	Imitation Jewelry	Electroplating	Small	ETP Installed
31.	Rishab chains Zone Mill No-3, Jeoni Mandi, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
32.	Shree G.Chains, Perthavi Nath Railway Fatak, Nagla Perthavi Nath, Shahganj, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
33.	S.K Chains Industries F-861, A/1 Tej Nagar Kamla Nagar, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
34.	Rajni Chains, 167, Ind. State, Nunhai, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
35.	Bharat Chains manufacturing company 30/10, Nagla dhani, New Vijay Nagar colony, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
36.	Gulab Chand Ameer Chand B/33, Sheetla Road, Khandari, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed
37.	Leela corporation, 20/129, Siltanganj, Agra	Imitation Jewelry	Electroplating	Small	ETP Installed



**LIST OF OPERATING 123 AIR POLLUTING INDUSTRIES**

S.No.	Name and Address	Category	TYPE	Scale	APCS Status	Remarks
1	Singhal Pesticide, Yamuna Par, Agra	Pesticide	-	Small	I.A.	Solar Evaporation
2	Agarwal Inudstries Foundry Nagar, Agra	Pesticide	-	Small	I.A.	Solar Evaporation
3	Sunray Chemical Ind., Yamuna Kinara "Road, Jeoni Mandi, Agra	Pesticide	-	Small	I.A.	Solar Evaporation
4	Sahaj Ceramic Pvt. Ltd., 55 IInd, Nunhai, Agra	Ceramic	-	Small	I.A.	U.G.
5	S.K. Iron Foundry & Engg. Co. Unit-I, Rambagh, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
6	S.K. Iron Foundry & Engg. Co. Unit-II, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
7	S.G. Industries, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
8	Golden Engg. Corpn., 44/45, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	Not Installed	U.G.
9	Castwel Foundry, naraich, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
10	Oswal Foundry, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
11	Suraj Foundry, 11/45, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
12	Parolia Engg. Works, 11/47-C, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
13	Reliable Industries, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	Not Installed	U.G.
14	Shree Ram Iron Foundry & Engg. Works, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
15	Jagdish Industries Corp., Naraich, Hathras Road,	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
16	R.K. Engineers & Founders, Hathras Road, Agra	Foundry	Rotary Fur.	Small	I.A.	U.G.
17	R.R.Iron Foundry, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
18	Kansal Iron Foundry, 11/48/G/C, Naraich, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
19	Goyal Metal Industries, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
20	Ravi Agriculture Industries, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
21	V.K. Enterprises, C-48, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
22	Manik Chand Garg & Co., C-30, Foundry Nagar,	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.

	Agra					
23	Bombay Engg. & Moulding Works, Nagla Kishan Lal, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
24	Bharat Industries Unit-2, B-42, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
25	Techno Industries, 2919, Naraich Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
26	Goyal Iron & Steel Works (India), Nagla Kishan Lal, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
27	K.J. Industries, B-5, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
28	Bajraang Iron Foundry, B-64, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
29	Agra Loh Uddhyog, 1167, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
30	Singhal Industries, B-2, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
31	Raj Iron Foundry, Unit-II, B-3, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
32	Naresh Iron Foundry, D-62, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
33	A.B. And Engg. Works, C-32, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
34	Shree Ram Engg. Co., D-19, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
35	Expert Founders & Engg., C-29, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
36	Bansal Casting Co., D-17, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
37	Maharaja Agensen Iron Foundry, D-15, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
38	Ajanta Industries, D-20, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
39	Accurate Ferro Casting, B-18/B, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
40	Shinning Engg. Works, B-19, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
41	Mittal Iron Founders & Engg., Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
42	Shivam Industries, C-23, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
43	Kamal Engg. Works, Unit-II, C-25, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
44	Narayan Brothers Factory, E-3, Foundry Nagar,	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.

	Agra					
45	Gopal Iron Foundry, D-43, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
46	Bhagwati Iron Foundry, D-2, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
47	Chinar Foundry, E-1,2, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
48	Modern Industries, 11B 76A, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
49	Devi Sahay Gopal Das Iron Foundry, C15, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
50	Mittal Industries, C-18, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
51	B.K.Castings, C-6, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
52	N.K.Iron Foundry, C-3, Foundry Nagar, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
53	Shanti Vrat & Sons, H-7, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
54	B.S.Agriculture Ind. 17/15, Nunhai Road, Nawalganj, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
55	Vijay Iron Foundry, 1250, Nawalganj, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
56	Kaushal Industries, Nawalganj, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
57	Bharat Iron & Steel Foundry, Katra Wazir Khan, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
58	Kumar Steel Udyog, 11/24, Chini Ka Rosa, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
59	G.T.Iron Industries, 11/38A-3, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
60	Metal Cast India, 3, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
61	Amar Enterprises, 2, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
62	Paras Foundry, 68, Industrial Estate, Nuhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
63	Mahavir Iron Foundry, 67, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
64	Maharishi Dayanand Iron Foundry, 71, Indl. Estate, Nunhai,	Foundry	Induction Fur.	Small	I.A.	U.G.
65	Traco International, 56, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
66	Metafeb Engg. Associate, 19 Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
67	Vinay Iron Foundry, Artoni, Mathura Road, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.

68	Samta Trading Corp. 136, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
69	Dewan Chand Suraj Prakash Jain, 11/43, Rambagh, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
70	Devi Enterprises, Hathras Road, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
71	Shri Bankey Bihari Udhyog, 10/9, Katra Wazir Khan, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
72	A.V.Engg. Works, 160, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
73	Paliwal Iron Foundry & Metal Works, Rambagh, Agra	Foundry	Induction Fur.	Small	I.A.	U.G..
74	Ratan Industries P.Ltd., 10/12, Katra Wazir Khan, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
75	Meghdoot Pistons P.Ltd. 7, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
76	Gulab Chand Chotey Lal, Artoni, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
77	Pahuja Engg. , Foundry Nagar, Agra	Foundry	Induction Fur.	Small	I.A.	
78	S.J Steels sahdara, Agra	Foundry	Induction Fur.	Small	I.A.	
79	India Casting Co., D-42 , Foundry Nagar Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
80	Anil Metal Industries (Foundry Div.) Bichouri Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
81	Arbariya Steels, Mathura Road, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
82	Luthra Engineering, 15, K.M.Stone, Mathura Road, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
83	S.B.Iron Foundry, 11/18-B, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
84	Goyal Iron & Steel Works, Naraich, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
85	Shaktiman Industries, E-25, Foundry Nagar, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
86	Metal Product, C-33, Foundry Nagar, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
87	Alfa Engg. Works, 20, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
88	Jagdis Metal works, 24, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
89	Sandeep Auto Industries, 87, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.

90	Suchlam Engg. Work.,165A, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
91	Atul Engg. Udyog, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
92	Accurate Engineers, 11/39B, Sitanagar, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
93	Ashok Metal Work, 8 KM Stone, Shahdra, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
94	Associated Industrial Corpn. 12/146B, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
95	A.K.Enterprises, B-20/1 Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
96	Agra Ispat Udyog, Artoni, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
97	Agra Steel Corporation, Sahadra, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
98	Amar Enterprises Unit -II, 66, Ind Area., Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
99	Anjani Enterprises, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
100	Atul Generators P. Ltd., Nunhai, Agra.	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
101	Automotive Products, 73, I.E., Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
102	Balkeshwarnath Industries, Shayam Nagar, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
103	Brij Iron Foundry, 13/23C, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
104	Goyal Engineering Co., Hathras Road, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
105	India Casting Co.,Navalganj, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
106	India Steel Industries, B-14/2,Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
107	Indu Engg. & Textiles Ltd., 12/16A, Nawalganj, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
108	Khandelwal Industries Enterprises, 72-80 Ind.Estate Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
109	Krishna Engg. Works. 35 Ind. Estate, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
110	Prakesh Iron Foundry, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
111	R. K. Iron Industry, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
112	Vishal Engg. Corp. 4/290 Balooganj Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
113	Novalty Metal & Rubber Indust. 155. Industrial Estate Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.

114	Modern Slaughter House, Kuberpur, Agra	Slaughter House		Small	I.A.	
115	Ajanta Raj Proteins Ltd., Unit-II, Manikpur, Bah, Agra	Milk Processing	Boiler	Small	I.A.	
116	ACME Asbestos Pipes Pvt.Ltd., Nunhai, Agra	Asbestos Pipes		Small	I.A.	
117	HMA Frozen Food, Ltd. Kuberpur, Agra	Meat Packag.		Small	I.A.	
118	Agra Chains Pvt. Ltd. 14 Ind. Area, Nunhai Agra	Silver Jewelry	Electroplating	Small	I.A.	
119	Agra Machine tools Pvt. Ltd., Industrial Area, Nunhai Agra	Imitation Jewelry	Electroplating	Small	I.A.	
120	Benara Udyog Pvt. Ltd., Bodla Road, Agra	Bearing/Bushes	Electroplating	Small	I.A.	
121	M/s Khandelwal Industries Enterprises, 72-80, Industrial Estate, Nunhai, Agra	Metal Casting	Electroplating	Small	I.A.	
122	Atul Deepwell Hand Pumps, Atul Compund, Nunhai, Agra	Hand Pump	Electroplating	Small	I.A.	
123	M/s Bandejjia traders, Laxmi Comple, Bansal Nagar, Fatehabad Road, Agra	Textile	Dyeing	Small	I.A.	
	<b>I.A. - Installed &amp; Adequate</b>					
	<b>U.G. - Using Gas</b>					

### 1.7.3 Other than 45 Categories Industries (Water + Air)

Total Industries : 292

## 2. Water Environment

### 2.1 Present Status of Water Environment

#### 2.1.1 Water bodies/effluent receiving drains in the area important for water quality monitoring

**Yamuna River Water Quality:** River Yamuna is the only prominent water body present in the critical area of concern. The Yamuna is the largest river in northern India. Originating from the Yamunotri Glacier at a height 6,387 mtrs., on the south western slopes of Banderpooch peaks, in the Lower Himalayas.

The water of Yamuna is of "reasonably good quality" through its length from Yamunotri in the Himalayas to Wazirabad in Delhi, about 375 km, where the discharge of waste water through 15 drains between Wazirabad barrage and Okhla barrage renders the river severely polluted after Wazirabad in Delhi. One official describes the river as a "sewage drain" with biochemical oxygen demand (BOD) values ranging from 14 to 28 mg/l and high coliform content. There are three main sources of pollution in the river, namely households and municipal disposal sites, soil erosion resulting from deforestation occurring to make way for agriculture along with resulting chemical wash-off from fertilizers, herbicides, and pesticides and run-off from commercial activity and industrial sites.

Presently UPPCB, Agracarries out sampling and analsis of river water at two sites. Upstream sampling is done at up Kailash and sample from downstream is taken from Kailash, Water Works Jioeni Mandi and down dstream Agra sample collected is analysed for following parameters:

- i) Colour
- ii) Odour
- iii) pH
- iv) Temperature
- v) Solids
- vi) Total Chloride
- vii) Total Hardness
- viii) Conductivity
- ix) B.O.D
- x) C.O.D

### 2.1.2 Present level of pollutants in Yamuna River

Analysis results of samples collected between December-09 to June-10 have been listed detailed hereunder

#### Sampling Point at Kailash Ghat

S.NO.	MONTH	pH	D.O (mg/l)	B.O.D (mg/l)
1	JAN 10	7.6	6.7	12.0
2	FEB 10	7.5	7.8	14.0
3	MAR 10	7.5	6.6	13.0
4	APR 10	7.5	6.6	12.8
5	MAY 10	7.7	6.7	13.5
6	JUN 10	8.85	7.2	9.3
7	JULY 10	7.89	6.7	7.5
8	AUG 10	7.23	6.0	6.1
9	SEP 10	7.54	6.8	5.0
10	OCT 10	7.77	6.7	6.7

#### Sampling Point at Water Works

S.NO.	MONTH	pH	D.O (mg/l)	B.O.D (mg/l)
1	JAN 10	7.6	6.3	12.5
2	FEB 10	7.5	5.4	18.0
3	MAR 10	7.5	5.7	15.0
4	APR 10	7.5	5.8	15.0
5	MAY 10	7.6	6.2	15.0
6	JUN 10	7.93	6.4	10.5
7	JULY 10	7.98	6.2	9.0
8	AUG 10	7.69	5.8	7.0
9	SEP 10	7.69	6.1	6.0
10	OCT 10	7.67	7.7	7.3



### Sampling Point at Agra near Taj Mahal

S.NO.	MONTH	pH	D.O (mg/l)	B.O.D (mg/l)
1	JAN 10	7.5	4.5	23.0
2	FEB 10	7.4	4.5	26.0
3	MAR 10	7.5	4.2	23.0
4	APR 10	7.5	4.5	27.0
5	MAY 10	7.5	4.5	25.0
6	JUN 10	7.79	5.4	21.0
7	JULY 10	7.9	5.25	17.0
8	AUG 10	7.55	5.4	8.5
9	SEP 10	7.64	5.8	8.4
10	OCT 10	7.7	5.7	8.5

#### 2.1.3. Predominant Sources contributing to various pollutants

Municipal waste, effluent from industries, illegal waste dumping and agricultural run off are the major sources contributing to water pollution.

## 2.2 Sources of Water Pollution

### 2.2.1 Industrial Pollution

- The status of 45 categories (with respect to water pollution) in Agra is as follows:
  - Total No. of Units = 39 (02 Grossly + 37 45 Category Industries)
  - Operational Units = 39
  - Units having complete ETP = 39
- It is to be mentioned that there is no any Large and Medium units in Agra. All the units are registered in Small Scale Industry unit.

## 2.2.2 Domestic Pollution

At present about 225 mld sewage is generated in the city. Three Nos. STP of total 90.25 mld capacity were installed under YAP-I. Two Nos. STP of 54 mld capacity are under construction under YAP-II and one No. One STP 12 mld at Deori Road (Bhim Nagari) has been completed in State Sector Programme.

### 03 STPs are Operational:

- Budi Ka Nagla, Agra = 2.25 MLD
- Pilakhar, Agra = 10 MLD
- Dhandupura = 78 MLD

### DATA OF SEWAGE TREATMENT PLANT : BUDI KA NAGLA, AGRA (CAPACITY : 2.25 MLD)

S.No.	Month	pH	B.O.D mg/l	C.O.D. mg/l	S.S. mg/l
1	JAN 10	7.5	37.0	328.0	94.0
2	FEB 10	7.5	31.5	219.0	70.0
3	MAR 10	7.5	29.0	212.0	64.0
4	APR 10	7.6	29.5	280.0	64.5
5	MAY 10	7.6	30.7	284.5	70.7
6	JUN 10	7.59	30.0	281.0	69.5
7	JULY 10	7.39	29.0	232.0	59.0
8	AUG 10	7.55	28	209.0	56.5
9	SEP 10	7.32	27	212	56.0
10	OCT 10	7.24	28	206	56.0

**DATA OF SEWAGE TREATMENT PLANT : PILAKHAR, AGRA (CAPACITY : 10 MLD)**

S.No.	Month	pH	B.O.D mg/l	C.O.D. mg/l	S.S. mg/l
1	JAN 10	7.6	35.0	318.0	72.0
2	FEB 10	7.5	29.0	204.0	56.0
3	MAR 10	7.5	27.0	194.0	56.5
4	APR 10	7.5	29.0	270.0	70.5
5	MAY 10	7.5	29.3	272.5	66.0
6	JUN 10	7.45	29.0	274.7	64.5
7	JULY 10	7.54	27.0	238.0	62.0
8	AUG 10	7.50	27.0	210.0	56.5
9	SEP 10	7.46	33.0	220.0	60.0
10	OCT 10	7.58	30.0	212	59

**DATA OF SEWAGE TREATMENT PLANT : DHANDUPURA, AGRA (CAPACITY : 78 MLD)**

S.No.	Month	pH	B.O.D mg/l	C.O.D. mg/l	S.S. mg/l
1	JAN 10	7.5	33.0	264.0	74.0
2	FEB 10	7.5	23.0	190.0	44.0
3	MAR 10	7.5	24.5	182.5	45.0
4	APR 10	7.4	28.6	255.0	58.0
5	MAY 10	7.4	28.5	260.0	53.0
6	JUN 10	7.28	27.3	256.7	55.5
7	JULY 10	7.13	28.0	222.0	51.0
8	AUG 10	7.50	27.0	210.0	56.5
9	SEP 10	7.15	25.0	198.0	49.0
10	OCT 10	7.27	29.0	192	49.0

### **Proposed STPs in Agra**

- The master plan of city for providing complete sewerage system for the year 2040 requirement has been prepared and approved by State Govt. As per Master Plan STP of 300 mld capacity are required for the year 2025.
- 6 Nos. STP of total 126 mld capacity are proposed in the DPR. The approval of the DPR from State/Central Govt. is under process. The total required capacity of STP of 300 mld is proposed to be constructed upto March, 2015.
- A STP of 24 mld capacity for Tajganj zone is under construction in Agra Sewerage Scheme Phase-I Part-I sanctioned under JNNURM programme. Another 14 mld at Sikandarpur (Dayal Bagh) likely to be commissioned by March, 2011 & the third STP 40 mld at sadarvan (Bichpuri Road) is targeted to be completed by June, 2011. Another 24 mld STP at Dhandupura under JNNURM is targeted to be commissioned by March 2012. Hence the balance about 45 mld sewage will be discharged to river Yamuna without treatment even after completion of the STPs proposed as above.
- Thus total capacity of STP upto March, 2012 shall be 180 mld.

#### **2.2.3 Others**

Agra Nagar Nigam is managing the regular cleaning of the city area. Landfill site & composting plant of 400 TPD at Kuberpur is under construction and expected to be completed by December, 2010.

#### **2.2.4 Impact on surrounding area on water courses/drainage system of area**

Areas surrounding Agra city have well laid down drainage system with efficient water waste carrying capacity and more work on it is being done by local bodies in the region. No ill-effect of pollutants from CEPI region has been identified on surrounding area.

### **2.3 Detail of Water Polluting Industries in the area**

UPPCB, Agra has taken action for industrial water pollution control. All the operational 39 water polluting industries have installed ETP for pollution control. These critical industry areas identified are Nunhai, Foundry Nagar, and Sikandra.

## LIST OF OPERATING 39 WATER POLLUTING INDUSTRIES

S.No.	Name and Address	Category	TYPE	Scale	Remarks
1	Singhal Pesticide, Yamuna Par, Agra	Pesticide	-	Small	Solar Evaporation
2	Agarwal Inudstries Foundry Nagar, Agra	Pesticide	-	Small	Solar Evaporation
3	Sunray Chemical Ind., Yamuna Kinara "Road, Jeoni Mandi, Agra	Pesticide	-	Small	Solar Evaporation
4	Park Leather Ind. Pvt.Ltd. Runakata, Agra	Tannery		Small	ETP installed
5	Asija Industries, 7th K.M. Mtr Road Agra	Pulp & Paper		Small	ETP installed
6	Modern Slaughter House, Kuberpur, Agra	Slaughter Hou		Small	ETP installed
7	Ajanta Raj Proteins Ltd., Unit-II, Manikpur, Bah, Agra	Milk Processing	Boiler	Small	ETP installed
8	ACME Asbestos Pipes Pvt.Ltd., Nunhai, Agra	Asbestos Pipes		Small	ETP installed
9	HMA Frozen Food, Ltd. Kuberpur, Agra	Meat Packag.		Small	ETP installed
10	Agra Chains Pvt. Ltd. 14 Ind. Area, Nunhai Agra	Silver Jewelry	Electroplating	Small	ETP installed
11	Agra Machine tools Pvt. Ltd., Industrial Area, Nunhai Agra	Imitation Jewelry	Electroplating	Small	ETP installed
12	Kundan Chains, Freeganj, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
13	Radha Chains, Bye Pass Road, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
14	Jai Durga Electroplaters (Madan Lal Agarwal Nickle Plant) 50/74, Shivdasani Nagra, Sahganj, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
15	Kaila Electroplaters 50/74 AB, Shivdasani nagra, Shahganj, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
16	K.D. Chains, Lohiya Nagar, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
17	Gupta plating works(Tulsi Ram Chain Factory), Adarsh Nagar, Balkeshwar Agra.	Imitation Jewelry	Electroplating	Small	ETP installed
18	J.R Electroplating works(Mohammad Harun Nickle Plant) 32/197, Besan ki Basti, Lohamandi, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
19	Pappu Chains, 7, Mugal Road, Kamla Nagar, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
20	Shri Krishna Chains (India) Limited, 21/272, Jioni Mandi, agra	Imitation Jewelry	Electroplating	Small	ETP installed

21	D.R. Chains, Bye Pass Road, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
22	Atul Deepwell Hand Pumps, Atul Compund, Nunhai, Agra	Hand Pump	Electroplating	Small	ETP installed
23	Abdul Hameed Electroplating Works, 32/206B, Besan Ki Basti, Lohamandi, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
24	Mohd. Waseem Electroplating Works, 32/197, Besan Ki Basti, Lohamandi, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
25	Benara Udyog Pvt. Ltd., Bodla Road, Agra	Bearing/Bushes	Electroplating	Small	ETP installed
6	M/s Khandelwal Industries Enterprises, 72-80, I.E, Nunhai, Agra	Metal Casting	Electroplating	Small	ETP installed
27	Suneeta Chain's, Lohia Nagar Bulkeshwar, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
28	Sangeeta Chain's 37/315, Nagla Padi, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
29	S.M chains Industries 107 A North Vijay Nagar colony Agra	Imitation Jewelry	Electroplating	Small	ETP installed
30	S.K. sale cooperation 32/1/1 Takia Lal Maszid by pass road Agra	Imitation Jewelry	Electroplating	Small	ETP installed
31	R.S. chain & company behind of Poliwal Foundary, Rambag, Agra.	Imitation Jewelry	Electroplating	Small	ETP installed
32	Vilash Chains, 16, Murari Vihar, Alvatia Road, Agra.	Imitation Jewelry	Electroplating	Small	ETP installed
33	Rishab chains Zone Mill No-3, Jeoni Mandi, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
34	G.Chains, Perthavi Nath Railway Fatak, Nagla Perthavi Nath, Shahganj, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
35	S.K Chains Industries F-861, A/1 Tej Nagar Kamla Nagar, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
36	Rajni Chains, 167, Ind. State, Nunhai, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
37	Bharat Chains manufacturing company 30/10, Nagla dhani, New Vijay Nagar colony, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
38	Gulab chand amar chand B/33, Sheetla Road, Khandari, Agra	Imitation Jewelry	Electroplating	Small	ETP installed
39	Leela corporation, 20/129, Siltanganj, Agra	Imitation Jewelry	Electroplating	Small	ETP installed

## **2.4 Effluent Disposal Methods**

Yamuna Pollution Control Unit, UP Jal Nigam, Agra has installed three sewage treatment plants of total capacity of 90.25 MLD domestic waste water in Yamuna Action Plan, Phase I by tapping the 20 nallas and 14 nallas are untapped the sewage is being discharge without treatment directly falling into river Yamuna.

## **2.5 Quantification of wastewater pollution load and relative contribution by different sources viz industrial/domestic**

Wastewater pollution load has been done in two categories as per requirement, they are:

- i) **Industrial:** In Agra district water polluting industries are very less in quantity. Based on approximate quantity of effluent generation/ETP capacity waste water from industries is 250 KLD (approx.).
- ii) **Domestic:** Total installed and function capacity of STPs in the region is 90.5 MLD. Further 04 STP's of total capacity of 90 MLD are under construction under Yamuna Action Plan Phase II & III. As per UP Jal Nigam information's planning of projects for STPs of 225 MLD for the treatment of sewage keeping in view the Population of year 2040 is under consideration & by the year 2015 no sewage will be discharge to River Yamuna directly.

## **2.6 Action Plan for Compliance and Control of Pollution**

### **2.6.1 Existing infrastructure facilities – water quality monitoring network, ETPs, CETPs, Sewage Treatment Plant of industry (STPs), surface drainage system, effluent conveyance channels/outfalls etc.**

Water quality monitoring in Agra city is done monthly upstream and downstream of Yamuna River, STPs operating at Budi Ka Nagla, Agra Pilakhar, Agra and Dhandupura. Sampling and analysis of water samples from industries under 27 categories is done once in each quarter.

All 39 water polluting Industries have their own ETPs onsite, some industries also have testing laboratories onsite and they do regular sampling and analysis of final outlet. There is no CETPs installed in Agra.

## **2.6.2 Technological Intervention**

### **2.6.2.1 Inventorisation of prominent industries with technological gaps**

Inventorisation of industries with respect to technological gaps has not been done in the region as yet. Agenda shall be made for identifying the industries where technological initiatives have been taken to improve the environment in the region and assessment of gaps in technology shall be done in next two years.

### **2.6.2.2 Identification of low cost and advanced cleaner technology for pollution control cleaner for water**

Most of the industries have been already implemented cleaner technologies improve the quality of water and air onsite.

## **2.6.3 Infrastructure renewal**

### **2.6.3.1 Details of existing infrastructural facilities**

- The Nunhai industrial estate developed by Industries Department and other two industrial areas eg. Foundry Nagar, I.A and Sikandra, I.A have been developed by the UPSIDC.
- The Infrastructural facilities in industrial areas have been provided.
- Infrastructure available for treatment of polluted water in the region is mostly government regulated for domestic and municipal waste water, whereas, industrial effluents is treated by industries themselves as no CETP or other co-processing facility is available in the region.
- New building/malla being constructed with in periphery of industrial area.

### **2.6.3.2 Need of upgradation of existing facilities**

With growing population, upcoming High Rise Buildings, Commercial Project, Educational Institution, Multi Plexes, Town ship & Building Projects the load on sewage system is bound to increase, thus it is need of the hour to update the existing facilities. To ensure that infrastructure is strong enough to accommodate this growth work has already begun for new STPs in the region, details of same have been furnished below. To achieve better results in treatment of industrial effluent it is aimed to convert ETPs of all medium/big scale electroplating industries from conventional treatment technique to ion-exchange based technique within one year.



### **Proposed STPs in Agra**

- The master plan of city for providing complete sewerage system for the year 2040 requirement has been prepared and approved by State Govt. As per Master Plan STP of 300 mld capacity are required for the year 2025.
- 6 Nos. STP of total 126 mld capacity are proposed in this DPR. The approval of this DPR from State/Central Govt. is under process. The total required capacity of STP of 300 mld is proposed to be constructed upto March, 2015.
- One STP 12 mld at Deori Road (Bhim Nagari) has been completed in State Sector Programme. Another 14 mld at Sikandarpur (Dayal Bagh) likely to be commissioned by March, 2011 & the third STP 40 mld at sadarvan (Bichpuri Road) is targeted to be completed by June, 2011. Another 24 mld STP at Dhandupura under JNNURM is targeted to be commissioned by March 2012. Hence the balance about 45 mld sewage will be discharged to river Yamuna without treatment even after completion of the STPs proposed as above.
- Thus total capacity of STP upto March, 2012 shall be 180 mld.

#### **2.6.3.3 De-silting of water tanks, drains, rivulets**

De-silting of water tanks of STPs, drains carrying effluent in and out of the treatment facilities and conveyance channels has not been done for several years. It is proposed to be carried out within one year by the agency/government body looking after the maintenance of the units/plants.

#### **2.6.3.4 Construction of lined drains/connections**

U.P. Jal Nigam, Agra & Nagar Nigam have already begun work on providing proper conveyance channel to carry waste water to treatment facilities and effluent out of it into the nearby water body.

#### **2.6.3.5 Treatment and management of contaminated surface water bodies**

Treatment and management of contaminated surface water bodies is required.

#### **2.6.3.6 Rejuvenation/Management plan for important eco-geological features**

Safety and Preventive measures to control such as rain water harvesting regarding dilution /Betterment of ground water strata is necessary. Several schemes eq. rainwater harvesting, checkdams, recharge pits, medbandhi, wet land etc. projects are being implemented by the concerning departments as SGWB/ADA/Bagar Nigam/UPPCB/Minor Irrigation/Forest Department etc for recharging and diluting the salinity in ground water.

### **2.6.3.7 Carrying of effluent from industrial units located in non-industrial locations to CETP facilities by lined drains/pipelines only and prevention of their disposal into city sewerage/surface drains**

It is ensured that no industrial unit operates in non-industrial area, if any such unit is identified appropriate action is taken against it with the help of District Administration. Thus, there is no need of drains/pipelines dedicated to such industries.

### **2.6.3.8 Installation of Gen sets at CETPs**

CETP is not installed in Agra district.

## **2.6.4 Managerial and Financial Aspects**

To control Yamuna River water construction and control activities such as sewer/drainage/STPs installation and operation is going on progress in Yamuna action plan. Description is given in section 12.1 and 12.2.

### **2.6.4.1 Cost and Time estimates**

The detail of cost and Time estimates is given in section 12.1 and 12.2.

### **2.6.4.2 Identified Private/Public sector potential investors and their contribution/obligation.**

All proposals made are made keeping only government bodies as stakeholders. However, if government bodies are not able to invest and carry out the activities as required association with private sector investor shall be looked in to.

### **2.6.4.3 Government Budgetary support requirement**

River front beautification, Parks, and Rain water harvesting projects in Agra city Project is proposed and DPR is under consideration under the scheme of JNNURM approved by the Govt. of India having amount Rs 64.96 crores Estimated proposed expenditure. The details of installed/proposed projects are as follows:

S.No	NEERI's Recommendation	Implementation of Recommendation	Funds released	Funds utilized	Impact	Further Action Plan
1	2	3	4	5	6	7
2	<b>AGRA SEWRAGE PROJECT</b>					
	NEERI prepared a sewerage master plan of Agra proposing about 850 Km sewer lines and 24 major pumping stations with a cost of Rs. 612.00 crores.	Against NEERI's recommendation DPR amounting Rs. 43.572 crores of only Taj Ganj Zone, surrounding Taj Mahal for laying of 10.20 Km sewer lines and 4 Nos. pumping stations was sanctioned under T.T.Z programme.	Rs. 23.00 Crores	Rs. 23.00 Crores	Due to shortage of funds, all works of this zone proposed in DPR could not be completed and executed works could not be made functional as it require execution of other components of the system proposed under sanctioned DPR.	Agra city has been divided in eight sewerage zone viz-(i) Trans Yamuna Zone (ii) Central Zone (iii) Tajganj Zone (iv) Western Zone (vi) Southern Zone-I (vii) Southern Zone-III. Under Yamuna action Plan Phase-II DPRs amounting Rs. 84.38 crores and under JNNURM programmed amounting Rs. 21.62 crores for part of Northern and Western sewerage zones system are under execution. These schemes are targeted to be completed by 6/2011. A scheme amounting Rs. 53.36 Cr. in pat of Sothern Zone-II under State Sector programme is under execution which is scheduled to be completed by 6/2010. Another sewerage scheme 'Agra Sewerage Scheme Phase-I part-I (Central and Tajganj zones) amounting Rs. 195.92 Cr. have been sanctioned in 8/2009. This scheme is scheduled to be completed by 31-03-2012 and the balance works of Tajganj zone are included in this scheme. Accordingly un-commissioned scheme sanctioned under TTZ programme shall also be commissioned by 31.03.2012. The master plan for providing complete sewerage system for the year 2040 requirement has been prepared and approved by State Govt. As per Master Plan STP of 300 mld capacity are required for the year 2025. Accordingly DPR for 2025 requirement amounting Rs. 955.67 Cr. has been prepared under YAP Phase-III. 5 Nos. STP of 124 mld capacity are proposed in this DPR. The approval of this DPR from State/Central is under process. As present about 210 mld sewage is generated in city. Three Nos. STP of 90.25 mld capacity were installed under YAP-I. Two Nos. STP of 54 mld capacity are under construction under YAP-II and one No. STP of 12 mld capacity is under construction in Sate sector Programme. STP of 24 mld capacity for Tajganj zone is to be constructed under Agra Sewerage Scheme Phase-I Part-I sanctioned under JNNURM programme.

### Installation and functional progress of STPs in Agra District

S.No.	Name of Projects	Sanctioned Cost (In Crores)	Funds Recd. upto 11/09	Expenditure up 11/09	Work Proposed	Present Status	Remarks
1	2	3	4	5	6	7	8
1.	Yamuna Action Plan	84.81	81.57	81.57	Mainly interception and diversion of 20 nalas, 9 Nos. Pumping Station, 25.55 Km Sewer Line and 3 Nos. Sewage Treatment Plants. (78 mld capacity Dhandupura, 10mld Peela Khar and 2.25 mld capacity Bhudi Ka Nagla)	Work completed and are Functional	-
2.	Tajganj Zone Sewerage Project under T.T.Z Programme.	43.572	23.00	23.00	4 Nos. Pumping Station and 10.20 Km Sewer line.	Non Functional	Due to shortage of funds, the sewerage works of this zone could not be completed and executed works could not be made functional as it require execution of other components of the system proposed under sanctioned DPR.
3.	Sewerage Work under Yamuna Action Phase-II in Northern and Western Zone, Agra	84.38	44.67	44.67	(i) 70 Km Sewer Line. (ii) 5 Nos. Pumping Stations (iii) 2 Nos. S.T.P of 14 mld and 40 mld capacity respectively	Work in progress	The Complete work likely to be commissioned in 6/2011. The package wise progress annexed-I.
4.	Branch and Lateral Sewer lines in Northern & Western Zone, Agra under JNNURM Programme.	21.62	9.73	9.73	69 Km branch sewer Lines	Work in progress	52 Km sewer line laid and works in progress. The package wise progress annexure- II.
5.	Sewerage work Sothern zone-II (Bheem Nagri) under State Sector Programme.	53.36	19.50	13.658	(i) 63 Km sewer line (ii) 1 No. S.P.S. (iii) 12 mld capacity STP	Work in progress	Detail progress annexed- III
6.	Agra Sewerage Scheme Phase-I Part-I under JNNURM Programme (Central & Tajganj zones)	195.92	-	-	(i) 133 Km sewer line (ii) 6 No. S.P.S. (iii) 24 mld capacity STP	Tendering in progress	The work of Central zone along with balance work of Tajganj zone have been included in this DPR. The work is scheduled to be completed by 3/2012/

#### **2.6.4.4 Hierarchical and structured managerial system for efficient implementation**

To achieve best results in the project all stakeholders need to work in co-operation with each other and give valuable inputs. Stakeholders identified for the projects who shall form the managerial team are

UP Jal Nigam – GM

Administration – DM

Nagar Nigam – Nagar Ayukt

UPPCB – RO

The quality of Yamuna water at Agra Works does not meet the requirements of CPCB classification of category C, viz. Source of drinking water with complete conventional treatment and disinfection. Upstream of the water works intake, significant pollutional load of domestic origin is discharged adding to the already poor quality of the river water.

#### **2.6.5 Self monitoring system in industries (ETPs etc.)**

UPPCB, Agra has initiated the action for industrial water pollution control. All the operational 39 water polluting industries have installed ETP for pollution control. It is also proposed that each industry will monitor themselves every six months by recognize lab.

#### **2.6.6 Data linkages to SPCB/CPCB (of monitoring devices)**

Data of water analysis is not linked with CPCB databank presently. Once the proper sampling and analysis program for ground water is outlined the proposal shall be sent to incorporate data of water analysis in the CPCB databank available online.

#### **2.6.7 Health Impact Assesment Study**

Health Impact Assesment Studies are carried out through Health Department of State Govt. of UP appointing various NGOs and the remedial measures are adopted for eradication of diseases and improvement of health in affected areas.

### **3. Air Environment**

#### **3.1 Present Status of Air Environment**

##### **3.1.1 Critical Locations for Air Quality Monitoring**

Presently, 08 Ambient Air Quality monitoring (AAQM) Stations are functional in Agra city which are functioning-04 by the CPCB, 02 by UPPCB, 01 by ASI and other one of UPPCB, which is an Automatic Ambient Air quality Monitoring Station presently operated by M/s Envirotech Ltd., installed at Nagar Nigam Building, Agra.

##### **3.1.2 Present Levels of Pollutants**

All the 123 operational air polluting industries including Cupola, induction furnace, rubber, chemical & engineering industries etc. of Agra are using CNG supplied by GAIL and complying with the standards laid down by MoEF.

In 20 Km radial distance of Taj the Coal and Coke burning is prohibited by District Administration in Compliance of Hon'ble Supreme Court Order under W.P 13381/84.

U.P. Pollution Control Board has been monitoring ambient air quality in respect of criteria pollutant at three different stations in Agra. The locations have been categorized on the basis of land use i.e. residential (office building) industrial (Nunhai) and sensitive area (Taj Mahal). The Taj Mahal station has been handed over to Central Pollution Control Board in 2001. SPM, RSPM, SO<sub>2</sub> and NO<sub>x</sub> are the primary parameters in the ambient air, which are of concern.

..4..  
**Central Pollution Control Board**  
 4-Dholpur House, M.G. Road, Agra  
 Annual Average Values of Ambient Air Quality  
 Period: 2002 – 2009

Pollutants→ Years↓	Tajmahal			
	SO <sub>2</sub>	NO <sub>2</sub>	RSPM	SPM
2002	5	22	147	376
2003	4	22	145	352
2004	5	18	133	309
2005	9	22	147	306
2006	6	22	133	316
2007	6	23	167	296
2008	7	22	167	304
2009	6	20	157	334

All values are in µg/m<sup>3</sup>

Pollutants→ Years↓	Itmad-ud-daulah			
	SO <sub>2</sub>	NO <sub>2</sub>	RSPM	SPM
2002	5	25	174	483
2003	5	27	192	457
2004	6	26	179	519
2005	10	25	186	417
2006	7	24	214	401
2007	5	27	203	377
2008	7	29	213	381
2009	5	25	186	428

All values are in µg/m<sup>3</sup>

Pollutants→ Years↓	Rambagh			
	SO <sub>2</sub>	NO <sub>2</sub>	RSPM	SPM
2002	5	27	175	467
2003	4	22	184	468
2004	6	23	198	541
2005	8	25	185	390
2006	7	25	278	431
2007	5	25	203	439
2008	5	25	173	407
2009	5	25	160	427

All values are in µg/m<sup>3</sup>

Pollutants→ Years↓	Nunhal			
	SO <sub>2</sub>	NO <sub>2</sub>	RSPM	SPM
2002	5	33	234	675
2003	4	34	267	614
2004	6	34	279	675
2005	11	34	268	607
2006	7	34	306	637
2007	5	37	274	584
2008	6	38	216	514
2009	5	36	255	662

All values are in µg/m<sup>3</sup>

**Envirotech Online Air Monitoring Station,UPPCB,Agra**  
**Monthly Report of Criteria Pollutants**

**September 2010**

<b>Day</b>	<b>CO mg/m3</b>	<b>SO2 µg/m3</b>	<b>NO µg/m3</b>	<b>NO2 µg/m3</b>	<b>NOx µg/m3</b>	<b>PM µg/m3</b>	<b>O3 µg/m3</b>
01 (Wed)	0.6	10	6	24	31	150	16
02 (Thu)	0.8	10	10	26	39	244	17
03 (Fri)	0.8	18	10	27	40	26	20
04 (Sat)	0.6	17	4	22	27	20	21
05 (Sun)	2.1	48	17	21	45	92	26
06 (Mon)	1.1	15	16	28	49	33	16
07 (Tue)	0.8	18	10	26	39	33	15
08 (Wed)	0.6	15	7	23	32	25	15
09 (Thu)	0.6	11	6	22	30	27	17
10 (Fri)	0.7	13	15	26	46	25	14
11 (Sat)	0.7	11	31	29	74	21	12
12 (Sun)	0.6	10	28	25	64	18	13
13 (Mon)	0.8	14	31	26	71	24	12
14 (Tue)	2.5	45	48	24	93	103	21
15 (Wed)	0.7	12	17	23	47	21	16
16 (Thu)	2.0	42	29	24	66	91	15
17 (Fri)	0.7	9	15	23	44	130	12
18 (Sat)	0.5	7	24	23	58	127	12
19 (Sun)	0.6	8	18	25	51	74	15
20 (Mon)	0.8	7	22	24	55	77	12
21 (Tue)	1.2	13	45	25	90	68	12
22 (Wed)	1.0	10	39	29	85	87	18
23 (Thu)	0.9	13	29	25	66	72	16
24 (Fri)	1.0	10	37	29	82	73	15
25 (Sat)	1.2	8	44	34	97	104	17
26 (Sun)	0.9	11	41	33	92	55	21
27 (Mon)	0.9	11	37	31	84	91	17
28 (Tue)	1.0	8	46	33	98	53	18
29 (Wed)	1.2	10	48	39	108	96	15
30 (Thu)	1.0	10	46	39	104	58	19
<b>Average</b>	1.0	15	26	27	64	71	16
<b>Minimum</b>	0.5	7	4	21	27	18	12
<b>Maximum</b>	2.5	48	48	39	108	244	26
<b>Capture</b>	100.0	100.0	100.0	100	100	100.0	100.0

One day data is computed from one hour average data.  
 01/09/2010 to 20/09/2010 : P.M 2.5 was run.  
 21/09/2010 to 30/09/2010 : P.M 10 was run.



# Envirotech Online Air Monitoring Station,UPPCB,Agra

## Monthly Meteorological Data Report

September 2010

Day	WS m/s	WD Degrees	AT C	RH %	BP mmHg	SR W/m2	RF mm	VWS m/s
01 (Wed)	3.9	98	30.0	72.2	750	266	0.0	-0.3
02 (Thu)	2.8	178	27.3	76.1	750	48	0.0	-0.3
03 (Fri)	2.5	212	27.5	77.4	750	153	20.5	-0.3
04 (Sat)	2.0	118	26.9	77.7	750	171	0.5	-0.3
05 (Sun)	2.5	117	28.0	77.1	750	161	0.5	-0.3
06 (Mon)	2.1	155	28.4	76.9	750	173	0.5	-0.3
07 (Tue)	2.6	125	28.1	77.7	750	190	5.0	-0.3
08 (Wed)	4.4	86	28.6	76.0	750	238	0.0	-0.3
09 (Thu)	5.1	81	28.9	73.9	750	238	0.0	-0.3
10 (Fri)	3.8	116	27.8	77.6	750	191	4.5	-0.2
11 (Sat)	3.6	209	28.1	75.1	750	226	3.5	-0.3
12 (Sun)	3.9	226	28.5	71.0	750	282	0.0	-0.4
13 (Mon)	3.1	225	27.8	74.9	750	210	3.0	-0.3
14 (Tue)	2.9	216	26.9	76.3	750	178	1.0	-0.3
15 (Wed)	3.1	172	27.8	73.3	749	294	0.0	-0.3
16 (Thu)	4.0	244	29.4	65.5	750	399	0.0	-0.3
17 (Fri)	3.5	174	26.9	75.3	750	226	0.0	-0.3
18 (Sat)	3.9	183	26.3	75.9	750	203	0.0	-0.3
19 (Sun)	3.7	144	23.6	84.9	750	83	38.5	-0.3
20 (Mon)	3.5	90	24.0	86.1	750	70	58.0	-0.3
21 (Tue)	2.3	139	25.1	82.7	750	121	25.5	-0.1
22 (Wed)	4.5	189	26.1	66.4	750	294	1.0	-0.1
23 (Thu)	3.1	173	24.0	78.5	750	197	4.0	-0.3
24 (Fri)	2.7	276	26.1	72.0	750	270	0.0	-0.3
25 (Sat)	2.9	274	28.3	64.8	750	303	0.0	-0.3
26 (Sun)	3.3	279	28.5	61.9	750	312	0.0	-0.3
27 (Mon)	4.2	283	28.5	56.9	750	317	0.0	-0.4
28 (Tue)	3.7	270	28.7	50.8	750	323	0.0	-0.3
29 (Wed)	2.9	272	29.5	48.9	750	317	0.0	-0.3
30 (Thu)	2.4	272	29.3	51.0	750	307	0.0	-0.3
<b>Average</b>	3.3	186	27.5	71.8	750	225	166.0	-0.3
<b>Minimum</b>	0.3	81	23.6	48.9	749	48	0.0	-0.4
<b>Maximum</b>	5.1	283	30.0	86.1	750	399	58.0	-0.1
<b>Capture</b>	100.0	100	100.0	100.0	100.0	100.0	100.0	100.0

Rainfall shows the total value of that day

**Envirotech Online Air Monitoring Station,UPPCB, Agra**

**Monthly Report of BTX Data**

**September 2010**

<b>Day</b>	<b>Benzene ppb</b>	<b>Toluene ppb</b>	<b>Xylene ppb</b>
01 (Wed)	0.2	1.1	0.3
02 (Thu)	0.3	2.9	0.6
03 (Fri)	0.3	2.7	0.5
04 (Sat)	0.3	1.6	0.3
05 (Sun)	0.3	1.6	0.4
06 (Mon)	0.3	2.5	0.6
07 (Tue)	0.4	2.3	0.5
08 (Wed)	0.3	1.4	0.3
09 (Thu)	0.4	1.5	0.3
10 (Fri)	0.3	2.1	0.4
11 (Sat)	0.3	2.2	0.5
12 (Sun)	0.2	1.7	0.3
13 (Mon)	0.3	2.0	0.4
14 (Tue)	0.3	3.1	0.5
15 (Wed)	0.2	1.5	0.3
16 (Thu)	0.2	1.5	0.3
17 (Fri)	0.2	1.1	0.2
18 (Sat)	0.2	1.3	0.3
19 (Sun)	0.2	1.4	0.4
20 (Mon)	0.3	1.6	0.4
21 (Tue)	0.3	2.5	0.5
22 (Wed)	0.3	2.1	0.4
23 (Thu)	0.3	1.8	0.4
24 (Fri)	0.3	2.6	0.6
25 (Sat)	0.4	3.9	0.8
26 (Sun)	0.4	3.2	0.6
27 (Mon)	0.3	2.5	0.6
28 (Tue)	0.4	3.2	0.6
29 (Wed)	0.4	3.8	0.8
30 (Thu)	0.4	3.8	0.6
<b>Average</b>	<b>0.3</b>	<b>2.2</b>	<b>0.4</b>
<b>Minimum</b>	<b>0.2</b>	<b>1.1</b>	<b>0.2</b>
<b>Maximum</b>	<b>0.4</b>	<b>3.9</b>	<b>0.8</b>
<b>Capture</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

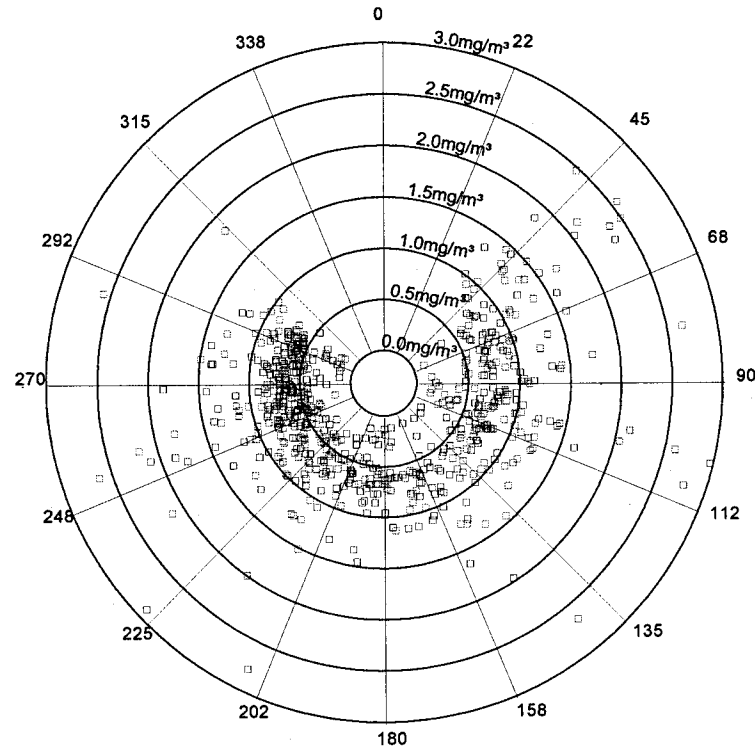
The 24 Hrs average data is computed from every 15 mins. data of BTX.

UPPCB  
CO Polar Plot (Scattered)  
Station: UPPCB,AGRA

Jun 2010

Parameter: Carbon Monoxide

N



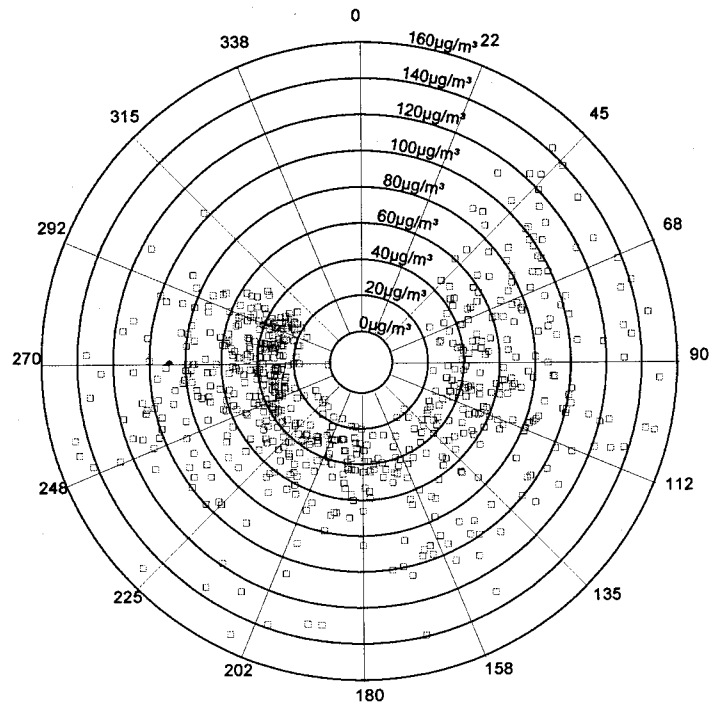
CO concentrations for wind speed between 0 and 12 m/s

92.4% Valid Data present.

UPPCB  
PM10 Polar Plot (Scattered)  
Station: UPPCB,AGRA

Jun 2010

Parameter: Particulate PM 10



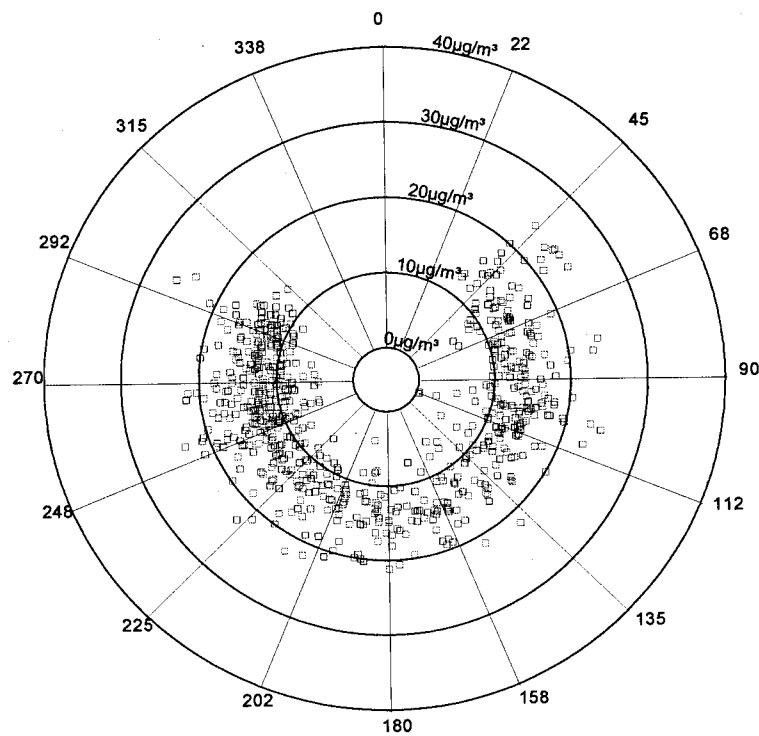
PM 10 concentrations for wind speed between 0 and 12 m/s  
92.2% Valid Data present.

UPPCB  
SO2 Polar Plot (Scattered)  
Station: UPPCB,AGRA

Jun 2010

Parameter: Sulphur Dioxide

N



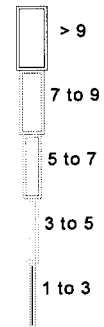
SO2 concentrations for wind speed between 0 and 12 m/s

92.1% Valid Data present.

UPPCB  
Wind Rose for June 2010  
Station: UPPCB,AGRA

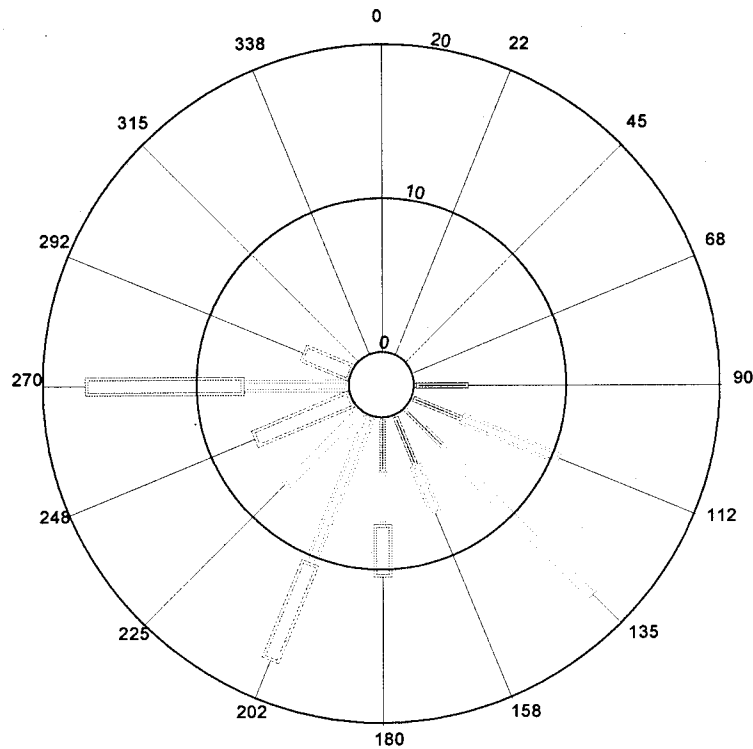
Jun 2010

N



Magnitude(m/s)

0.0% calm  
96.7% Valid Data present.



**MONTHLY ARITHMATIC MEAN VALUES AT AMBIENT AIR QUALITY MONITORING STATION AT REGIONAL OFFICE BUILDING , BODLA (residential Area)**

<b>YEAR</b>	<b>SULPHUR DIOXIDE (SO<sub>2</sub>)</b>	<b>OXIDES OF NITROGEN (NO<sub>x</sub>)</b>	<b>RESPIRABLE SUSPENDED PARTICULATE MATTER (R.S.P.M.)</b>	<b>SUSPENDED PARTICULATE MATTER (S.P.M.)</b>
JAN 10	8.11	10.21	187.29	287.87
FEB 10	9.65	11.93	213.66	331.54
MAR 10	9.97	11.78	207.04	357.58
APR 10	9.20	10.91	215.84	398.48
MAY 10	9.68	11.93	210.30	392.26
JUN 10	8.69	10.42	216.61	372.80
JULY 10	9.00	10.60	162.75	281.00
AUG 10	8.82	10.23	138.16	268.24
SEPT 10	8.65	9.88	149.47	271.00
OCT 10	9.56	10.75	153.84	292.36

**MONTHLY ARITHMETIC MEAN VALUES AT AMBIENT AIR QUALITY MONITORING STATION AT INDUSTRIAL AREA, NUNHAI (Industrial Area)**

<b>YEAR</b>	<b>SULPHUR DIOXIDE (SO<sub>2</sub>)</b>	<b>OXIDES OF NITROGEN (NO<sub>x</sub>)</b>	<b>RESPIRABLE SUSPENDED PARTICULATE MATTER (R.S.P.M.)</b>	<b>SUSPENDED PARTICULATE MATTER (S.P.M.)</b>
JAN 10	8.80	11.14	213.08	348.12
FEB 10	10.48	13.06	230.00	365.71
MAR 10	10.35	12.76	228.74	406.70
APR 10	9.97	11.90	233.81	474.74
MAY 10	10.38	12.73	221.50	452.58
JUN 10	9.90	11.78	224.00	404.12
JULY 10	9.47	11.08	174.57	325.84
AUG 10	9.75	10.92	166.86	308.48
SEPT 10	9.41	10.87	164.85	302.28
OCT 10	9.96	11.37	169.75	342.04

**3.1.3 Predominant sources contributing to various pollutants**

Major Sources of air pollutants in region are SPM, NO<sub>x</sub>, and SO<sub>2</sub>, due to heavy vehicular moments, D.G. Sets operation due to frequent power failure, infrastructure maintenance and development in region and emissions from industries during house keeping and other fugitive emission. Details of same have been attached in the following section.



## Envirotech Online Air Monitoring Station,UPPCB,Agra

### Monthly Report of Criteria Pollutants

September 2010

Day	CO mg/m3	SO2 µg/m3	NO µg/m3	NO2 µg/m3	NOx µg/m3	PM µg/m3	O3 µg/m3
01 (Wed)	0.6	10	6	24	31	150	16
02 (Thu)	0.8	10	10	26	39	244	17
03 (Fri)	0.8	18	10	27	40	26	20
04 (Sat)	0.6	17	4	22	27	20	21
05 (Sun)	2.1	48	17	21	45	92	26
06 (Mon)	1.1	15	16	28	49	33	16
07 (Tue)	0.8	18	10	26	39	33	15
08 (Wed)	0.6	15	7	23	32	25	15
09 (Thu)	0.6	11	6	22	30	27	17
10 (Fri)	0.7	13	15	26	46	25	14
11 (Sat)	0.7	11	31	29	74	21	12
12 (Sun)	0.6	10	28	25	64	18	13
13 (Mon)	0.8	14	31	26	71	24	12
14 (Tue)	2.5	45	48	24	93	103	21
15 (Wed)	0.7	12	17	23	47	21	16
16 (Thu)	2.0	42	29	24	66	91	15
17 (Fri)	0.7	9	15	23	44	130	12
18 (Sat)	0.5	7	24	23	58	127	12
19 (Sun)	0.6	8	18	25	51	74	15
20 (Mon)	0.8	7	22	24	55	77	12
21 (Tue)	1.2	13	45	25	90	68	12
22 (Wed)	1.0	10	39	29	85	87	18
23 (Thu)	0.9	13	29	25	66	72	16
24 (Fri)	1.0	10	37	29	82	73	15
25 (Sat)	1.2	8	44	34	97	104	17
26 (Sun)	0.9	11	41	33	92	55	21
27 (Mon)	0.9	11	37	31	84	91	17
28 (Tue)	1.0	8	46	33	98	53	18
29 (Wed)	1.2	10	48	39	108	96	15
30 (Thu)	1.0	10	46	39	104	58	19
<b>Average</b>	1.0	15	26	27	64	71	16
<b>Minimum</b>	0.5	7	4	21	27	18	12
<b>Maximum</b>	2.5	48	48	39	108	244	26
<b>Capture</b>	100.0	100.0	100.0	100	100	100.0	100.0

One day data is computed from one hour average data.

01/09/2010 to 20/09/2010 : P.M 2.5 was run.

21/09/2010 to 30/09/2010 : P.M 10 was run.

### 3.2. Sources of Air Pollution

This writ Petition was filed by Shri M.C.Mehta, Advocate as a public interest litigation regarding pollution caused to the Taj Mahal in Agra. The sources of air pollution in Agra region were particularly iron foundries, ferro-alloys industries, rubber processing, lime processing, engineering, chemical industries, brick kilns, refractory units and automobiles. The Petitioner also alleged that distant sources of pollution were the Mathura Refinery and Ferozabad bangles and glass industries. It was also stated that the sulphur dioxide emitted by the Mathura Refinery and the industries located in Agra and Ferozabad when combined with moisture in the atmosphere forms sulphuric acid and causes "acid rain" which has a corroding effect on the gleaming white marble. The industrial and refinery emissions from brick kilns, vehicular traffic and generator sets were alleged primarily responsible for polluting the ambient air in and around Taj Trapezium Zone (TTZ) as identified by the Central Pollution Control Board. The Petitioner also referred the "Report on Environmental Impact of Mathura Refinery" (Varadharajan Committee) published by the Government of India in the year 1978. Subsequently, the reports of the Central Pollution Control Board under the title "Inventory and Assessment of Pollution Emission: In and Around Agra-Mathura Region (Abridged)" and the report of the National Environmental Engineering Research Institute (NEERI) entitled "Over-View Report" regarding status of air pollution around the Taj published in the year 1990 were also referred. On the directions of the Hon'ble Supreme Court, the NEERI and the Ministry of Environment & Forests had undertaken an extensive study for re-defining the TTZ (Taj Trapezium Zone) and re-alienating the area management environmental plan.

The NEERI in its report had observed that the industries in the TTZ (Districts of Agra Mathura, Ferozabad and Bharatpur) were the main sources of air pollution in the area and suggested that the air polluting industries in the area be shifted outside the TTZ. The Hon'ble Supreme Court after examining all the reports viz, four reports from NEERI, two reports from Varadarajan and several reports by the Central Pollution Control Board and U.P.Board, on 31.12.1996 directed that the industries in the TTZ were the active contributors to the air pollution in the said area. All the 292 industries were to approach/apply to the GAIL for grant of industrial gas-connection. The industries which were not in a position to obtain gas-connections, to approach UPSIDC/U.P.Government, for allotment of alternative plots in the industrial estates outside TTZ. Those industries, which neither applied for gas-connection nor for alternate industrial plots should stop functioning using coke/coal as fuel in the TTZ w.e.f. 30.4.1997. The supply of coke/coal to these industries shall be stopped forthwith. The GAIL should commence supply of gas to the industries by 30.6.1997, with these directions the issue relating to 292 industries was disposed off.

Other than industries, vehicular pollution is a major contributor to air pollution. Number of vehicles in the region has seen prominent growth in last few years. To support the view, list of vehicular registration data from Regional Transport office (RTO) has been detailed hereunder.

The current status of public transport at 32 routes are as follows (Source: RTO)

Vehicle	Sanctioned	Plying
Bus	318	116
Tempo, Taxi	475	170
Auto Rickshaw	7250	7250

### 3.3. Air Polluting Industries in the Area

The Sulphur dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) in Gaseous emissions may affect the Taj Mahal. But by stopping Coal & Coke in 20 Km radial distance of Taj & use of C.N.G by the industries & vehicles the level of SO<sub>2</sub> & NO<sub>x</sub> has been reduced substantially. Central Pollution Control Board, Project office, Agra is monitoring the ambient air quality at Taj Mahal since 2002.

All the 123 operational air polluting industries including Cupola, induction furnace, rubber, chemical & engineering industries etc. of Agra are using CNG supplied by GAIL and complying with the standards laid down by MoEF. In 20 Km radial distance of Taj the Coal and Coke burning is prohibited by District Administration in Compliance of Hon'ble Supreme Court Order under W.P 13381/84. The list of industries is as follows.

S.No.	Name and Address	Category	TYPE	Scale	APCS Status	Remarks
1	Singhal Pesticide, Yamuna Par, Agra	Pesticide	-	Small	I.A.	Solar Evaporation
2	Agarwal Industries Foundry Nagar, Agra	Pesticide	-	Small	I.A.	Solar Evaporation
3	Sunray Chemical Ind., Yamuna Kinara "Road, Jeoni Mandi, Agra	Pesticide	-	Small	I.A.	Solar Evaporation

4	Sahaj Ceramic Pvt. Ltd., 55 IInd, Nunhai, Agra	Ceramic	-	Small	I.A.	U.G.
5	S.K. Iron Foundry & Engg. Co. Unit-I, Rambagh, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
6	S.K. Iron Foundry & Engg. Co. Unit-II, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
7	S.G. Industries, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
8	Golden Engg. Corpn., 44/45, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	Not Installed	U.G.
9	Castwel Foundry, naraich, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
10	Oswal Foundry, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
11	Suraj Foundry, 11/45, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
12	Parolia Engg. Works, 11/47-C, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
13	Reliable Industries, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	Not Installed	U.G.
14	Shree Ram Iron Foundry & Engg. Works, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
15	Jagdish Industries Corp., Naraich, Hathras Road,	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
16	R.K. Engineers & Founders, Hathras Road, Agra	Foundry	Rotary Fur.	Small	I.A.	U.G.
17	R.R.Iron Foundry, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
18	Kansal Iron Foundry, 11/48/G/C, Naraich, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
19	Goyal Metal Industries, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
20	Ravi Agriculture Industries, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
21	V.K. Enterprises, C-48, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
22	Manik Chand Garg & Co., C-30, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
23	Bombay Engg. & Moulding Works, Nagla Kishan Lal, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
24	Bharat Industries Unit-2, B-42, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
25	Techno Industries, 2919, Naraich Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
26	Goyal Iron & Steel Works (India), Nagla Kishan Lal, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.

27	K.J. Industries, B-5, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
28	Bajraang Iron Foundry, B-64, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
29	Agra Loh Uddhyog, 1167, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
30	Singhal Industries, B-2, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
31	Raj Iron Foundry, Unit-II, B-3, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
32	Naresh Iron Foundry, D-62, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
33	A.B. And Engg. Works, C-32, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
34	Shree Ram Engg. Co., D-19, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
35	Expert Founders & Engg., C-29, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
36	Bansal Casting Co., D-17, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
37	Maharaja Agensen Iron Foundry, D-15, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
38	Ajanta Industries, D-20, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
39	Accurate Ferro Casting, B-18/B, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
40	Shinning Engg. Works, B-19, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
41	Mittal Iron Founders & Engg., Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
42	Shivam Industries, C-23, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
43	Kamal Engg. Works, Unit-II, C-25, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
44	Narayan Brothers Factory, E-3, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
45	Gopal Iron Foundry, D-43, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
46	Bhagwati Iron Foundry, D-2, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
47	Chinar Foundry, E-1,2, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.

48	Modern Industries, 11B 76A, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
49	Devi Sahay Gopal Das Iron Foundry, C15, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
50	Mittal Industries, C-18, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
51	B.K.Castings, C-6, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
52	N.K.Iron Foundry, C-3, Foundry Nagar, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
53	Shanti Vrat & Sons, H-7, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
54	B.S.Agriculture Ind. 17/15, Nunhai Road, Nawalganj, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
55	Vijay Iron Foundry, 1250, Nawalganj, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
56	Kaushal Industries, Nawalganj, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
57	Bharat Iron & Steel Foundry, Katra Wazir Khan, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
58	Kumar Steel Udyog, 11/24, Chini Ka Rosa, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
59	G.T.Iron Industries, 11/38A-3, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
60	Metal Cast India, 3, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
61	Amar Enterprises, 2, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
62	Paras Foundry, 68, Industrial Estate, Nuhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
63	Mahavir Iron Foundry, 67, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
64	Maharishi Dayanand Iron Foundry, 71, Indl. Estate, Nunhai,	Foundry	Induction Fur.	Small	I.A.	U.G.
65	Traco International, 56, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
66	Metafeb Engg. Associate, 19 Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
67	Vinay Iron Foundry, Artoni, Mathura Road, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
68	Samta Trading Corp. 136, Industrial Estate, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.

69	Dewan Chand Suraj Prakash Jain, 11/43, Rambagh, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
70	Devi Enterprises, Hathras Road, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
71	Shri Bankey Bihari Udhyog, 10/9, Katra Wazir Khan, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
72	A.V.Engg. Works, 160, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
73	Paliwal Iron Foundry & Metal Works, Rambagh, Agra	Foundry	Induction Fur.	Small	I.A.	U.G..
74	Ratan Industries P.Ltd., 10/12, Katra Wazir Khan, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
75	Meghdoot Pistons P.Ltd. 7, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
76	Gulab Chand Chotey Lal, Artoni, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
77	Pahuja Engg. , Foundry Nagar, Agra	Foundry	Induction Fur.	Small	I.A.	
78	S.J Steels sahdara, Agra	Foundry	Induction Fur.	Small	I.A.	
79	India Casting Co., D-42 , Foundry Nagar Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
80	Anil Metal Industries (Foundry Div.) Bichouri Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
81	Arbariya Steels, Mathura Road, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
82	Luthra Engineering, 15, K.M.Stone, Mathura Road, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
83	S.B.Iron Foundry, 11/18-B, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
84	Goyal Iron & Steel Works, Naraich, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
85	Shaktiman Industries, E-25, Foundry Nagar, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
86	Metal Product, C-33, Foundry Nagar, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
87	Alfa Engg. Works, 20, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
88	Jagdis Metal works, 24, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
89	Sandeep Auto Industries, 87, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.

90	Suchlam Engg. Work.,165A, Industrial Estate, Nunhai, Agra	Foundry	Pit Fur.	Small	I.A.	U.G.
91	Atul Engg. Udyog, Industrial Estate, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
92	Accurate Engineers, 11/39B, Sitanagar, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
93	Ashok Metal Work, 8 KM Stone, Shahdra, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
94	Associated Industrial Corpn. 12/146B, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
95	A.K.Enterprises, B-20/1 Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
96	Agra Ispat Udyog, Artoni, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
97	Agra Steel Corporation, Sahadra, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
98	Amar Enterprises Unit -II, 66, Ind Area., Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
99	Anjani Enterprises, Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
100	Atul Generators P. Ltd., Nunhai, Agra.	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
101	Automotive Products, 73, I.E., Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
102	Balkeshwarnath Industries, Shayam Nagar, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
103	Brij Iron Foundry, 13/23C, Nunhai, Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
104	Goyal Engineering Co., Hathras Road, Rambagh, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
105	India Casting Co.,Navalganj, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
106	India Steel Industries, B-14/2,Foundry Nagar, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
107	Indu Engg. & Textiles Ltd., 12/16A, Nawalganj, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
108	Khandelwal Industries Enterprises, 72-80 Ind.Estate Agra	Foundry	Induction Fur.	Small	I.A.	U.G.
109	Krishna Engg. Works. 35 Ind. Estate, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
110	Prakesh Iron Foundry, Hathras Road, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
111	R. K. Iron Industry, Nunhai, Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
112	Vishal Engg. Corp. 4/290 Balooganj Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.



113	Novalty Metal & Rubber Indust. 155. Industrial Estate Agra	Foundry	Cup./Rot.Fur	Small	I.A.	U.G.
114	Modern Slaughter House, Kuberpur, Agra	Slaughter Hou		Small	I.A.	
115	Ajanta Raj Proteins Ltd., Unit-II, Manikpur, Bah, Agra	Milk Processing	Boiler	Small	I.A.	
116	ACME Asbestos Pipes Pvt.Ltd., Nunhai, Agra	Asbestos Pipes		Small	I.A.	
117	HMA Frozen Food, Ltd. Kuberpur, Agra	Meat Packag.		Small	I.A.	
118	Agra Chains Pvt. Ltd. 14 Ind. Area, Nunhai Agra	Silver Jewelry	Electroplating	Small	I.A.	
119	Agra Machine tools Pvt. Ltd., Industrial Area, Nunhai Agra	Imitation Jewelry	Electroplating	Small	I.A.	
120	Benara Udyog Pvt. Ltd., Bodla Road, Agra	Bearing/Bushes	Electroplating	Small	I.A.	
121	M/s Khandelwal Industries Enterprises, 72-80, Industrial Estate, Nunhai, Agra	Metal Casting	Electroplating	Small	I.A.	
122	Atul Deepwell Hand Pumps, Atul Compund, Nunhai, Agra	Hand Pump	Electroplating	Small	I.A.	
123	M/s Bandejjia traders, Laxmi Comple, Bansal Nagar, Fatehabad Road, Agra	Textile	Dyeing	Small	I.A.	
	<b>I.A. - Installed &amp; Adequate</b>					
	<b>U.G. - Using Gas</b>					

### 3.4. Impact of activities of nearby area on the CEPI area

A joint venture Company M/s Green Gas Ltd. has been formed by GAIL and IOC Ltd. to establish CNG Station at Agra. Indian Oil Corporation has already setup 3 auto LPG station (Runakata, Madia Katra & NH-II Sikandra, Agra.) GGL has informed as under-

- One mother station at ISBT Transport Nagar & two daughter booster stations (Idgah and Loha Mandi) have been commissioned and gas about 35000 Kg. per day is being dispensed.
- Presently total 7477 vehicles are running with CNG
- A lead time of 8 month is required for opening of CNG station after getting all clearances/ approval and possession of land. In Phase-II another 5 stations are planned in various part of Agra city.

- A EURO-3 standard new vehicle is only allowed.
- RTA Agra has decided to fix age limit of School Buses and other organization buses as below-
  - (1) School Bus-15 Yrs.
  - (2) Other Bus-15 Yrs.
- 15 Years old commercial vehicles are not being permitted to ply on the road within municipal limit. In fact all such vehicles have been phased out. Within the Municipal limit the age of vehicles are as follows.-
  - (a) 3 Wheelers Tempos & Auto Rickshaw 10 years for CNG only from Date of Registration.
  - (b) City buses-10 years for CNG only from Date of registration.
  - (c) Beyond the Municipal Limit area on private bus routes the maximum age limit is 10 years from the date of registration in TTZ.
  - (d) 85 Bus permits have been cancelled till 31.07.2008.
  - (e) Within municipal limit Educational / Commercial institutional buses age limit is 12 years for CNG & rural areas limit is 15 years.
- Vehicular population (list of which has been presented in section 3.2) and infrastructural activities are the two major contributors of air pollution in the region beside industries. However, with introduction of CNG in public transport vehicles the pollution load has been lessened and it is estimated that as more and more vehicles switch to CNG major air pollutants like Carbon monoxide and hydrocarbons will lessen. As for SPM and RSPM, they too will come down as infrastructure development which had gained pace in recent years subsides. Moreover, with new technologies in civil industry minimizing disturbances onsite it is expected that these levels will go down over a period of time.

### **3.5. Quantification of the air pollution load and relative contribution by different sources**

It is difficult to quantify air pollution load from different sources.

Sulphur load approximetly 4.5 MTD which is emiteed by Brick Klin operation and the Brick Klin are situated beyond the 20 km of the Taj Mahal and outside the TTZ in Agra.

It is estimated that vehicular pollution is one of the major sources and rise in air pollution may be considered to be proportional to the rise in number of vehicles to some extent.

### **3.6. Action Plan for compliance and control of pollution**

#### **3.6.1 Existing infrastructure facilities – Ambient Air Quality Monitoring Network**

Ministry of Environment and Forests, Government of India declared Agra-Mathura region as air pollution protected area, namely the Taj Trapezium Zone, which is in the form of trapezium bounded by Longitude 77°15' E. on the West 78°30' E. on the East and lines joining Latitude 27°45' to Latitude 27°30' on the North and Latitude 26°45' to 27°0' N on the South. In 1999, the Ministry of Environment and Forests, Government of India has notified the Taj Trapezium Zone Pollution (Prevention and Control) Authority for protection and improvement of the environment in the Taj Trapezium. Hon'ble Supreme Court in Writ Petition (Civil) No.13381 of 1984 has passed various order time to time, Government of India/State Government/Taj Trapezium Zone Pollution (Prevention & Control) Authority/U.P. Pollution Control Board has taken action to reduce the impact of air pollution on the Taj Mahal and other historical monuments as follows —

- Closure of Thermal Power Generation Plants.
- Dieselisation of Railway Yards.
- Prohibition of establishment / expansion of polluting industries.
- Closure of coal/coke based industries at Agra & closure of polluting industries except those equipped with adequate Pollution Control Systems in TTZ.
- Closure of Approx. 450 Brick Kilns within TTZ.
- Supply of Natural Gas to Mathura Refinery and Industries of Agra & Firozabad phase wise.
- Setting up of Improved Sulphur Recovery Units at Mathura Refinery.
- Supply of ultra low sulphur Diesel to vehicles.
- Restriction of plying of Petrol, diesel driven vehicles around 500 mt. of Taj Mahal.
- Plying of Battery operated Buses and other vehicles within 500 mt. of Taj also in Agra City.
- Fixation of age for public and commercial vehicles.
- No new registration of age barred vehicles.
- Use of Gas/ Eco- friendly fuel by Industries of Agra.
- Supply of CNG started for vehicles at Agra.

Hon'ble Supreme Court has also directed that certain development initiatives be taken in order to improve the environmental condition of the city. Central and State Government have considered an allocation of Rs.600 Crore (50-50

share basis) to implement the scheme for the protection of Taj and improvement of environment. In 1997, the Government of U.P. has constituted a 'Mission Management Board' under the chairmanship of the Chief Secretary, Government of U.P. for overseeing the implementation and for monitoring and review of projects.

08 AAQM Stations are functional in Agra city which are functioning-04 by the CPCB, 02 by UPPCB, 01 by ASI and other one of UPPCB, which is an Automatic Ambient Air quality Monitoring Station presently operated by M/s Envirotech Ltd. installed at Nagar Nigam Building, Agra.

### 3.6.2 Pollution control measures installed by the individual sources of pollution

The Sulphur dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) in Gaseous emissions may affect the Taj Mahal. But by stopping Coal & Coke in 20 Km radial distance of Taj & use of C.N.G by the industries & vechiles the level of SO<sub>2</sub> & NO<sub>x</sub> has been reduced substantially. Central Pollution Control Board, Project office, Agra is monitoring the ambient air quality at Taj Mahal since 2002.

NEERI, Nagpur has studied the problems of TTZ area in detail for several issue based matters such as pollution control in the industries & brick klin matters etc. NEERI was retained by the Ministry of Environment and Forests (MoEF) for conducting post environmental evaluation of the eight schemes, which were either completed or neared completion. Accordingly, post environmental evaluation comment 5 of projects out of 8 schems is as under:

S No.	Project	Objectives	Attainment/Remarks
1.	Improvement in Electric Supply at Agra	Improvement in mbient air quality at Taj Mahal	Objectives attained.
2.	Widening of Agra By-Pass	Improvement in ambient air quality at Taj Mahal	Objectives attained.
3.	Improvement of Master Plan of Roads of Agra City	Improvement in ambient air quality at Taj Mahal	Objectives attained.
4.	Improvement in Electric Supply in and around the rural areas of Agra and Fatehpur Sikri	Improvement in overall ambient air quality	Objectives attained.
5.	Construction of one part of Agra by-Pass	Improvement in ambient air quality at Taj Mahal	Objectives attained.

On the basis of conclusions & recommendations of the NEERI Post Environmental Evaluation report, the concerned departments have been directed to formulate/execute the schemes/projects accordingly.

### **3.6.3 Technological Intervention**

#### **3.6.3.1 Inventorisation of prominent industries with technological gaps**

In Compliance of Hon'ble Supreme Court Order dt. 05.04.02 in W.P No. 13029 of 1985, U.P Pollution Control Board has prepared comprehensive Action Plan which includes city gas network for Vehicles/ domestic sector/hotels/industries etc. Installation of automatic traffic lights & signals at the main crossings of Agra City, massive plantation, phasing pot of old vehicles upgradation of PUC, system bypassing transit traffic, strengthening of air quality monitoring network, management of Municipal solid waste & Bio medical wastes etc and is under implementation & the progress is being reviewed by TTZA/Govt. of U.P/ MoEF.

#### **3.6.3.2 Identification of low cost and advanced cleaner technology for air pollution control**

As vehicular air pollution has been identified as the major cause of air pollution in Agra city. GAIL and Green Gas Limited are supplying CNG in Agra for vehicles as well as industrial use. These companies need to expedite their distribution network for the same and make it available as soon as possible.

#### **3.6.3.3 Introduction and switch over to cleaner fuel**

As per Supreme Court guideline, within TTZ only C.NG/L.P.G based industries and Generators are allowed. Due to this most of the industries has already converted with C.NG/L.P.G. The commercial and residential purposely installed D.G Sets are being operated by Supply of ultra low sulphur Diesel (0.035% sulphur diesel) to vehicles/ industries/ D.G sets in Agra. A Joint venture Company M/s Green Gas Ltd. has been formed by GAIL and IOC Ltd. to establish CNG Station at Agra. In 1<sup>st</sup> Phase three mother stations, three on line stations and four daughter booster stations are to be set up. The selection of sites has been finalized. A lead time of 8 month is required for opening of CNG station after getting all clearances/ approval and possession of land. In Phase-II another 5 stations are planned in various part of Agra city.

### **Installed/Operational**

- One Mother Station at Transport Nagar and two DBS are already functioning at Idgah & Lohamandi & the average dispensing is 30000 kg/day through 7 dispensers.
- At present 21 CNG buses, 126 City Buses (Private), 65 School Buses, 145 Private Buses, 6951 CNG auto & 169 tempo/taxi are plying in Agra.
- CNG is already being supplied in Agra 30,000 Kg/Day. GSPA has been signed between GGL & GAIL (India) for getting 42660 SCMD gas for CNG consumers on 23.10.09.

### **Proposed/under Progress**

- Installed one compressor and three dispensers for the output of 15000 Kg/day. IOCL has already applied for NOC of NHAI Faridabad. Held up due to NHAI Faridabad approval.
- Documents are provided to BPCL to enter in to agreement. Action is awaited from BPCL's end.
- Possession of land taken Topographical, geo Technical Survey & TCP work is completed. Boundry wall constructed, Installation of compressure is in progress. Commissioning expected by Jan, 2011. Civil Lines, Dhoulpur House, Surya Nagar, Nirbhay Nagar, Khandari and Dayal Bag areas have been identified. GGL has deposited Rs. 93 lachs for digging permission. Permission awaited of the permission within 10 days the work shall be started. Together 6000 domestic connection by March, 2011.
- GGL have already surveyed and identified the areas to supply PNG for domestic households.
- Survey of pipeline route has already been done and permissions from Nagar Nigam & ADA have been applied for laying MDPE pipeline in the surveyed areas.
- Survey done to lay the pipeline from Agra CGS to NH-2 via foundary Nagar. Permission for laying pipeline has been applied at ADA and PWD, Aligarh - Granting of permission is awaited.
- GGL is in the process of purchasing land from ADA for setting up DRS at Petha Nagari- The matter has been forwarded by VC, ADA to their Board. Approval is awaited.
- Survey for laying pipeline to supply PNG to Hotel Amarvilas and Hotel Jaypee will be started by March, 2011.
- Indian Oil Corporation has already setup 3 auto LPG station (Runakata, Madia Katra & NH-II Sikandra, Agra).
- Construction of steel pipe line from Rambagh to Taj Nagari is under progress and expected to be completed by Jan, 2011.

- Approval of UP Govt. is awaited for allotment of land at Rambagh and Jeoni Mandi for setting of on line station.
- Gail is ready to give RLNG after a contract to be signed by GGL.
- TTZA meeting dt. 01.07.2010 directed that GGL will resolve/complete CNG Network at the earliest.

### 3.6.4 Need of infrastructure renovation

#### 3.6.4.1 Development of roads

The PWD Agara has already initiated repairing of the internal road and construction of the southern by pass and improvement of 20 city roads and ADA Agara initiated widening of Agra by pass in TTZ projects. The details of running projects are as follows:

DEPTT.	PROJECTS	COST	STATUS OF APPROVAL	TOTAL RELEASED AMOUNT	EXPENDITURE UPTO 31.01.2006	REMARKS
P.W.D.	Construction of Agra Southern Bypass	10.65	CCEA	10.65	8.30	Revised Cost of this project Rs.13.15 Cr. Rs.22.50 lacs surrendered & Release of 2.00 Cr. stayed.
P.W.D.	Improvement of 20 City Roads	27.47	EFC	15.93	7.57	Revised Cost of this project Rs.26.78 Cr. (only 18 roads covered) Rs. 8.36 Cr. surrendered
A.D.A.	Improvement of Parking on Western Gate of Taj	0.94	EFC	0.94	0.94	Completed
A.D.A.	Widening of Agra Bypass	0.76	CCEA	0.76	0.72	Completed Rs.0.04 Cr. Refund.
A.D.A.	Improvement of Master Plan Roads of Agra City	21.22	CCEA	21.22	21.22	

### 3.6.5 Impact on CEPI score after installation/ commissioning of full fledged air pollution control systems

S.No.	Critical Parameter	Proposed Action	Implementing Agency	Predicted Impact On CEPI
1.	Industrial Pollution	The Sulphur dioxide (SO <sub>2</sub> ) and Oxides of Nitrogen (NO <sub>x</sub> ) in Gaseous emissions may affect the Taj Mahal. But by stopping Coal & Coke in 20 Km radial distance of Taj & use of C.N.G by the industries & vechiles the level of SO <sub>2</sub> & NO <sub>x</sub> has been reduced substantially. Central Pollution Control Board, Project office, Agra is monitoring the ambient air quality at Taj Mahal since 2002.	District Administration/ UPPCB	Implementation of proposed actions shall results in lowering of CEPI due to reduction in the values of A1, B1, B2, B3, C1, C2
2.	Introduction of Cleaner fuel like CNG/LPG	<ul style="list-style-type: none"> <li>• A lead time of 8 month is required for opening of CNG station after getting all clearances/ approval and possession of land. In Phase-II another 5 stations are planned in various part of Agra city.</li> <li>• A EURO-3 standard new vehicle is only allowed.</li> </ul>	GAIL/Oil Companies/ Transport Dept.	Implementation of proposed actions shall results in lowering of CEPI due to reduction in the values of B1, B2, B3, C1, C2.
3.	Installation of AAQM Stations (Continuous)	-	CPCB/UPPCB/AS I	Implementation of proposed actions shall results in lowering of CEPI due to reduction in the values of A1, B1, B2, B3, C1, C2
4.	Display of AAQM data.	-	CPCB	Implementation of proposed actions shall results in lowering of CEPI due to reduction in the values of A1, B1, B2, B3, C1, and C2.
5.	The vehicles in this area shall use clean fuel as LPG/CNG	Restriction of plying of Petrol, diesel driven vehicles around 500 meter of Taj Mahal.  Plying of Battery operated Buses and other vehicles within 500 meter of Taj also in Agra City.	RTO Agra/UPPCB	



		Fixation of age for public and commercial vehicles. No new registration of age barred vehicles.		
6.	Development of Green Belt & Garden	Plantation is satisfactory	Forest Deptt./ ADA, Agra	
7.	Repairing of Internal roads & proper maintenance of same	-	ADA/PWD/Nagar Nigam	
8.	Monitoring of D.G Sets	Conversion of fuel is needed. Old D.G. Sets required the canopy/ aquastic enclosure to reduce sound and air pollution.	UPPCB/U.P Power Corporation Ltd.	Implementation of proposed actions shall results in lowering of CEPI due to reduction in the values of B1, B2, B3, C1, and C2
9.	Illegal Set up of Industrial Activities	<ul style="list-style-type: none"> <li>Taj Trapazium Zone Authority in its meeting dt. 14.11.2008 &amp; 22.05.2009 directed Agra Development Authority, Agra to get prepared the DPR for Shifting of these industries from the city area to appropriate sites outside the city.</li> <li>ADA &amp; UPSIDC have been again instructed for initiating the effective measures for shifting of the same by TTZ Authority in its latest meeting dt. 01.07.2010.</li> </ul>	ADA/UPSIDC	Implementation of proposed actions shall results in lowering of CEPI due to reduction in the values of B1, B2, B3, C1, and C2

### 3.6.6 Managerial and Financial aspects

#### 3.6.6.1 Cost and time estimates

DEPTT.	PROJECTS	COST	STATUS OF APPROVAL	TOTAL RELEASED AMOUNT	EXPENDITURE UPTO 31.01.2006	REMARKS
U.P.P.C.L.	Improvement of Electric Supply in Agra	9.11	CCEA	9.11	6.98	Completed
	Improvement of Electric Supply in rural areas of Agra & Fatehpur-Sikri	39.09	CCEA	39.09	34.28	-
Forest	Plantation	9.43	EFC	8.37	8.37	-
Forest	Maintenance of Plantation	2.38	MMB	2.29	2.29	-
C.P.C.B.	Set up of 4 Monitoring Stations	0.71	MMB	0.71	0.61	-

#### 3.6.7 Self monitoring system in industries

Yes, industries do have self monitoring system for air just like water it is either done by in house chemical laboratory or by third party monitoring agency.

#### 3.6.8 Data linkages to SPCB/CPCB

Monitoring of Ambient Air Quality in the region is done twice in a week at two locations, one residential and one industrial. Analysis is done in the lab UPPCB Regional Office Agra and results of same are furnished to CPCB to be incorporated in their databank.

#### 2.6.7 Health Impact Assessment Study

Health Impact Assessment Studies are carried out through Health Department of State Govt. of UP appointing various NGOs and the remedial measures are adopted for eradication of diseases and improvement of health in affected areas.

## **4. Land Environment (Soil and Ground water)**

### **4.1 Soil Contamination**

#### **4.1.1 Present status of land environment supported with minimum one year analytical data**

Not available, study of land/soil parameters is not conducted.

#### **4.1.2 Critical locations for land/soil pollution assessment and ground water monitoring**

Currently Pollution Control Board does not carry out any monitoring for land/soil pollution.

#### **4.1.3 Present levels of pollutants in land/soil and ground water (routine parameters, special parameters and water toxics relevant to the area in three categories – known carcinogens, probable carcinogens and other toxics)**

As mentioned earlier, currently Pollution Control Board does not carry out any monitoring for land/soil pollution.

#### **4.1.4 Predominant sources contributing to or posing danger of pollution of land and ground water such as hazardous/toxic wastes or chemical dumps/storage etc.**

26 Industries are located which are generating the Hazardous Waste. The 11 industries is lying closed due to its own and 15 industries are functional with membership for proper collection treatment and disposal of Transportation to Government Approved TSDF situated at Kanpur Dehat.

Strict vigilance & monitoring will be maintained for compliance of the provisions of Hazardous Waste Rules, 2003. All the functional Hazardous Waste generating industries are operational with authorization of the UPPCB as per Hazardous waste Rule, 2003 shall send the Hazardous Waste to TSDF Every three Months.

#### **4.1.5 Sources of Soil Contamination**

Soil contamination is mainly caused due to presence of chemicals or other alteration in the natural soil environment. This type of contamination may arise from the rupture of underground storage tanks, application of pesticides, percolation of contaminated surface water to subsurface strata, leaching of wastes from landfills or may be few direct discharge of industrial wastes to the soil.

#### **4.1.6 Remedies for abatement, treatment and restoration of normal soil quality**

Specific remedies for abatement, treatment and restoration of contaminated sites can only be proposed once the data is available to quantify the type and concentration of pollutant and its type in soil in any region. As there is no background data for same with the board as of now specific proposals cannot be made.

Some of the general remediation techniques which the Board plans to implement on contaminated sites are:

- Excavate soil and take it to a disposal site away from ready pathways for human or sensitive ecosystem contact. This method is proposed for sites containing toxins beyond critical concentrations.
- Aeration of soils at the contaminated site (with attendant risk of creating air pollution)
- Thermal remediation by introduction of heat to raise subsurface temperatures sufficiently high to volatilize chemical contaminants out of the soil for vapour extraction.
- Bioremediation, involving microbial digestion of certain organic chemicals. Techniques used in bioremediation include landfarming, biostimulation and bioaugmentation of soil biota with commercially available microflora.
- Containment of the soil contaminants by capping or paving over in place.
- Phytoremediation, or using plants to extract heavy metals.

## **4.2 Ground water contamination**

### **4.2.1 Present Status/quality of ground water**

The Ground Water of Agra is Saline Water having contents of salts. No industry discharge its effluent into ground water strata.

#### 4.2.2 Source Identification

Source for ground water monitoring programme proposed under current action plan has been earmarked on basis of different clusters in the region. Ground water sampling in Agra shall be carried out at one location in each cluster from residential and industrial areas.

#### 4.2.3 Ground water quality monitoring program

Besides carrying out sampling and analysis of groundwater in its own laboratory, UPPCB also proposes to get exhaustive ground water testing done in the region by Central Ground Water Board on a regular basis.

#### Physico chemical and Bacteriological Characteristics of Drinking Water at different Sampling Points in Agra

S.No	Location of sampling points	Date of sample collection	Field Determination				Major Ions		Hardness	Organic Matter		Heavy Metals				
			pH	EC (µmhos/cm)	Colour	Odour	Cl <sup>-</sup>	F <sup>-</sup>		B.O.D	C.O.D	Cu	Cr	Fe	Cd	Ni
1	Hand Pump (India Mark) at STP Burhi Ka Nagla premises, Agra	28.02.08	7.0	1894	Clear	Not Specific	425	0.0412	290	1.5	2.5	ND	ND	0.29	ND	ND
2	Submersible at STP Burhi Ka Nagla premises, Agra	28.02.08	7.5	1796	Clear	Not Specific	436	0.108	422	1.0	2.0	ND	ND	0.04	ND	ND
3	Submersible at Anandi Bhairo mandir premises, Agra	28.02.08	8.0	2180	Clear	Not Specific	551	0.0538	452	1.5	2.0	ND	ND	ND	ND	ND
4	Hand Pump (Desi) at Bhurey Singh residence, Burhi ka Nagla, Agra	28.02.08	7.0	2640	Straw	Not Specific	892	0.114	616	1.0	2.0	0.07	ND	0.39	ND	ND
5	Hand Pump (Desi) at Giriraj residence, Burhi ka Nagla, Agra	28.02.08	7.5	1370	Slightly Yellowish	Not Specific	271	0.0747	368	1.0	2.0	ND	ND	0.91	ND	ND
6	Submersible at Phulwar Singh residence, Burhi ka Nagla, Agra	28.02.08	7.5	1704	Clear	Not Specific	414	0.0714	724	1.0	2.0	ND	ND	ND	ND	ND
7	Hand Pump (India Mark) at Anandi Bhairo Mandir premises, Burhi ka Nagla, Agra	28.02.08	7.5	1353	Slightly Yellowish	Not Specific	234	0.209	304	1.0	2.0	ND	ND	0.90	ND	ND

Note – All the parameters are expressed in mg/lit. except pH and stated otherwise.

#### **4.2.4 Action Plan for control of pollution including cost/time aspects**

Safety and Preventive measures to control such as rain water harvesting regarding dilution /Betterment of ground water strata is necessary. Several scheme eg. rainwater harvesting, chuckdams, recharge pits, medbandhi, wet land etc. projects are being implemented by the concerning departments as SGWB/ADA/Nagar Nigam/UPPCB/Minor Irrigation/Forest Department etc for recharging and diluting the salinity in ground water.

#### **4.2.5 Treatment and management of contaminated ground water bodies**

Management of groundwater level in the region is achieved by implementing rain water harvesting in industries in all the clusters. In future, it is also proposed to implement rain water harvesting in residential areas as well with the help of authorities concerned. This will help not only in maintaining ground water levels but also reduce the problem faced due to heavy run off during rains.

#### **4.2.6 Impact on CEPI score after abatement of pollution**

Proper management of groundwater in the region will help in lowering the overall CEPI score as it will have positive impact on A1, B2, B3, C1, C2, C3 and D.

### **4.3 Solid Waste Generation and Management**

#### **4.3.1 Waste Classification and Quantification**

##### **4.3.1.1 Hazardous waste**

26 Industries are located which are generating the Hazardous Waste. The 11 industries is lying closed due to its own and 15 industries are functional with membership for proper collection treatment and disposal of Transportation to Government Approved TSDF situated at Kanpur Dehat. Strict vigilance & monitoring is maintained for compliance of the provisions of Hazardous Waste Rules, 2003. All the functional Hazardous Waste generating industries are operational with authorization of the UPPCB as per Hazardous waste Rule, 2003. The list of operation and closed industries as follows:

S.No.	Name & Address of the Unit	Products manufactured (MTA)	Hazardous Waste (HW) generating Process as per Schedule-I	HW generating streams as per		HW generating in MTA as per		Total quantity of HW Generation in MTA	Quantity of HW in MTA			Member of T.S.D.F	Remarks
				Schedule-I	Schedule-II	Schedule-I	Schedule-II		Disposal to land fills	Recyclable	Incinerable		
1	<b>CLOSED UNITS</b>												
1	Imperial Leather Industries Mathura, Road Agra	Finished Leather	Leather Tanneries-30	Chromium bearing residue and sludge-30.1	-	-	-	-	-	-	-	-	Unit Closed /Dismanteld
2	Wason & Co. Bodla, Agra	Finished Leather	Leather Tanneries-30	Chromium bearing residue and sludge-30.1	-	-	-	-	-	-	-	-	Tanning section closed at present on its own since last 5 years
3	Agra Engineering Mathura Road, Agra	Electric Ceiling Fan. Table Fan	-	-	-	-	-	-	-	-	-	-	Closed on its own since last 5 years
4	Sunray Agrochem Industries, Runkata, Agra		-	-	-	-	-	-	-	-	-	-	Unit Closed /Dismanteld
5	Mahajan Tanners Pvt. Ltd Bharatpur Road, Agra		-	-	-	-	-	-	-	-	-	-	Unit Closed Building Dismanteld
6	IOCL Bulk Depot. Idgah, Agra	Storage of Petroleum Products	-	-	-	-	-	-	-	-	-	-	Closed /Dismanteld & Shifted to Etmadpur
7	United Pulverizers, Bichpuri road, Agra	Technical Pesticides	-	-	-	-	-	-	-	-	-	-	Unit Closed /Dismanteld
8	Fateh Sahgal & Sons, Chan Agra	Lead Recovery unit	-	-	-	-	-	-	-	-	-	-	Unit Closed /Dismanteld

9	Bharat Petroleum Corporation Ltd. Idgah, Agra	Storage of Petroleum Products	-	-	-	-	-	-	-	-	-	-	Closed /Dismanteld & Shifted to Mathura
10	Benara Motors Artoni, Agra	Maintenance of repair of vehicle 15-20 vehicle per day	-	-	-	-	-	-	-	-	-	-	Closed for Last 02 Years
11	Singhal Pesticides Ltd., Agra	Pesticides Formulation 35 TPA	Formulation of pesticides 29	-	-	-	-	-	-	-	-	-	(1) H.W recycled in the process as filler (2) Unit is closed since last 02 Years

**Sub :- Inventory of H.W. generation District Agra**

S. No.	Name & Address of the Unit	Products manufactured (MTA)	Hazardous Waste (HW) generating Process as per Schedule-I	HW generating streams as per		HW generating in MTA as per		Total quantity of HW Generation in MTA	Quantity of HW in MTA			Member of T.S.D.F	Remarks
				Schedule-I	Schedule-II	Schedule -I	Schedule -II		Disposal to land fills	Recyclable	Incinerable		
1	FUNCTIONAL UNITS												
1	Park Leather Industries Ltd., Mathura Road, Agra.	Finished Leather	Leathers Tanneries – 30.1	Chromium bearing residue- 30.1	-	0.6 MTA	-	0.6 MTA	0.6 MTA	-	-	M/S U.P Waste Management Pvt. Ltd Kanpur, Dehat M-Ship No- 0603	T.S.D.F Reg. No.- 6146, H.W Qty- 2.245 MT sent to T.S.D.F dt. 15.03.10
2	Seema Oil Mills, Foundry Nagar, Agra.	Black Oil Refining	Re Refining of used Oil-4.1	Spent clay containing oil	-	30 MTA	-	30 MTA	-	-	30 MTA	M/S U.P Waste Management Pvt. Ltd Kanpur, Dehat M-Ship	T.S.D.F Reg. No.- 0197, H.W Qty- 8.05 MT sent to T.S.D.F dt.



												No- 0197	11.08.09
3	Kundan Chains, 21/13, Chiman lal ganj, Free Ganj, Agra	Imitation Jewelry	Electroplating-12.9	Chemical sludge from ETP 12.9	-	0.18 MTA	-	0.18 MTA	0.18 MTA	-	-	Bharat Oil Waste Management Project Kanpur Dehat	T.S.D.F Reg. No.- 1027, H.W Qty- 0.78 MT sent to T.S.D.F dt. 03.03.2010
4	Khandelwal Industries, Industrial Estate 72 - 80, Nunhai, Agra	Electroplating of Hardware	Electroplating-12.9	Chemical sludge from ETP 12.9	-	3.0 MTA	-	3.0 MTA	3.0 MTA	-	-	M/S U.P Waste Management Pvt. Ltd Kanpur, Dehat M-Ship No- 0 481	T.S.D.F Reg. No.- 0481, H.W Qty- 2.45 MT sent to T.S.D.F dt. 25.08.2010
5	Benara udyog Ltd, Bodla, Agra	Bearing & Bushes	Electroplating-12.9	Chemical sludge from ETP 12.9	-	3.0 MTA	-	3.0 MTA	3.0 MTA	-	-	M/S U.P Waste Management Pvt. Ltd Kanpur, Dehat M-Ship No- 0 560	Temporary Storage of H.W found safely
6	M/s Agra Machine Tools Pvt. Ltd. Nunihai Agra	Silver Ornaments	Electroplating-12.9	Chemical sludge from ETP 12.9	-	0.6 MTA	-	0.6 MTA	0.6 MTA	-	-	Bharat Oil Waste Management Project Kanpur Dehat	Hazardous Waste is being Incinerate in own industry premisses by common Incenirator and incenirator ash is H.W waste.
7	Agra Chains Pvt. Ltd. Agra	Silver Chain Ton/Month	Electroplating-12.9	Chemical sludge from ETP -12.9	-	0.6 MTA	-	0.6 MTA	0.6 MTA	-	-	Bharat Oil Waste Management Project Kanpur Dehat Membership	Hazardous Waste is being Incenirate in own industry

												is under progress	premises by common Incinerator and incinerator ash is H.W waste.
8	Atul Deep Well & Pumps, Atul Compound Nunhai, Agra	Galvanizing	Galvanizing/Electroplating	Chemical sludge from ETP -12.9	-	1.0 MTA	-	1.0 MTA	1.0 MTA	-	-	M/S U.P Waste Management Pvt. Ltd Kanpur, Dehat M-Ship No- 0561	T.S.D.F Reg. No.- 0561, H.W Qty- 0.35 MT sent to T.S.D.F dt. 06.02.2010
9	IOC Air Force Station, Agra	Storage of petroleum products 450 KL	Cleaning emptying and maintenance petroleum oil storage tanks-3.1	Oil containing cargo residue, washing water and sludge - 3.1	-	1.2 MTA	-	1.2 MTA	-	1.2 MTA	-	Bharat Oil Company Gaziabad	T.S.D.F Reg. No.- 670/10
10	IOCL Bulk Depot, Etmadpur, Agra.	Storage of Petroleum products 34556 KL	Cleaning emptying and maintenance petroleum oil storage tanks-3.1	Oil containing cargo residue, washing water and sludge -3.1	-	1.0 MTA	-	1.0 MTA	-	1.0 MTA	-	Bharat Oil Waste Management Project Kanpur Dehat	T.S.D.F Reg. No.- 669/10
11	Hotel Taj View, Fatehabad Road, Agra	Hotel	Used Lubricant oil generated from Machineries and Power generators-5.1	Slurry 210Lts/annum Used Lubricant oil generated from Machineries and power generators-5.1	-	200 lts/annum	-	200 lts/annum	-	200 lts/annum	-	Bharat Oil Waste Management Project Kanpur Dehat	-

12	Welcome Hotel Mugal Shereton, Fethabad Road, Agra	Hotel	Used Lubricant oil generated from Machineries and Power generators- 5.1	Slurry 210Lts/annum Used Lubricant oil generated from Machineries and power generators- 5.1	-	210 lts/annum	-	210 lts/annum	-	210 lts/annum	-	Bharat Oil Waste Management Project Kanpur Dehat	T.S.D.F Reg. No.- 1378, H.W Qty- 50 Litt. Lube Oil sent to T.S.D.F dt. 17-03-10
13	Veckmet Packaging, U.P.S.I.D.C, Sikandra Industrial Area, Agra	Metalized and lacquered Plastic Film=60MT/M	Spilage of Solvent Oil & Lubricant - 5.1	5.1	-	400 KG/annum	400 KG/annum	400 KG/annum	-	400 KG/annum	-	Bharat Oil Company Gaziabad	-
14	Agrawal Industries (Old address, Katra Wazir Khan, Agra) E-65, Foundry Nagar, Agra	Pesticides BHC Dust	Formulation of Pesticides 29	Waste/ residues containing Pesticides- 29.1	-	0.5 MTA	-	0.5 MTA	-	0.5 MTA	-	Not Required	H.W recycled/re used in manufacturing process as filler
15	Sunray Chemicals Industries, Yamuna Kinara, Agra.	Pesticides formulation	Formulation of pesticides -29	Wastes /residues containing pesticides - 29.1	-	0.5 MTA	-	0.5 MTA	-	0.5 MTA	-	Not Required	H.W recycled/re used in manufacturing process as filler

#### 4.3.1.2 Bio-medical Waste

A common Bio- medical Waste Treatment Facility M/s Datt Enterprises, Kuberpur, Agra is installed & in operation and 433 out of total 436 hospitals/ Nursing homes etc are associated to this facility and the BMW is being treated & disposed off properly. The present status of hospitals/ Nursing homes etc of agra city are as follows:

S.No.	Capacity of hospitals on the basis of no. of beds	No of identified hospitals	Total no of beds	Waste generated (kg/day)	Treatment of waste generated (kg/day)
1	No of beds > 500	02	1694	225	181
2	500 < no of beds >200	01	280	70	35
3	200 < no of beds >50	14	1058	200	160
4	no of beds <50	322	3448	1800	1670
5	Other organisation	97	00	325	285
<b>Total</b>		<b>436</b>	<b>6480</b>	<b>2620</b>	<b>2331</b>

#### 4.3.1.3 Electronic Waste

Not applicable

#### 4.3.1.4 MSW/Domestic waste/ sludges from ETPs/CETPs/STPs and other industrial sources

Agra Nagar Nigam is managing the regular cleaning of the city area. Landfill site & composting plant of 400 TPD at Kuberpur is under construction and expected to be completed by Sept, 2010.

#### 4.3.1.5 Quantification of wastes and relative contribution from different sources

Quantification of solid wastes is done/proposed to be done as per following plan:

**Hazardous Waste:** Hazardous waste quantification may be done based on Form 4 submitted by industries handling, storing and transporting hazardous waste

**Bio medical Waste:** A common Bio- medical Waste Treatment Facility M/s Datt Enterprises, Kuberpur, Agra is installed & in operation and 433 out of total 436 hospitals/ Nursing homes etc are associated to this facility

and the BMW is being treated & disposed off properly. Strict vigilance & monitoring is maintained for compliance of the provisions of BMW Rules, 2000.

**MSW and other solid waste:** It is difficult to quantify MSW as of now due to lack of proper collection and disposal chain. However, Agra Nagar Nigam is managing the regular cleaning of the city area. Landfill site & composting plant of 400 TPD at Kuberpur is under construction and expected to be completed by Dec, 2010.

#### **4.3.2 Identification of waste minimization and waste exchange options**

Looking at the growing amount of solid waste due to rise in population, increase in number of industries, upcoming high rise localities and malls, the pressure on current waste handling infrastructure will be immense in future. In order to maintain equilibrium with this growth it is important that more research is done on probable waste exchange and minimization programs in which industries, corporate houses, residential welfare associations and government bodies responsible for waste management can work in sync with each other and cope up with growing pressure.

It is also advisable that waste hierarchy (Reduce, Reuse, Recover, Recycle) is implemented in industries on a large scale and a MoU be signed by industries which can sustain symbiotically, i.e. waste material of one industry shall be taken up by another industry using it as a raw material. This understanding between industries will reduce the overall waste coming out of industries.

UPPCB has also prepared a “Waste to Wealth” directory having details of all the waste in Uttar Pradesh which may be used elsewhere.

#### **4.3.3 Reduction/Reuse/Recovery/Recycle options in the co-processing of wastes**

As mentioned elsewhere, due to presence of industries of different types, waste characteristics and processes in same region/area/cluster co-processing of waste is not viable to industries as they need to manage the waste on their site till transportation. However, with advent of technology and new waste treatment processes whereby wastes of different types can be handled simultaneously co-processing option shall be looked into.

For best results it is advisable, that a separate unit be setup in regions where industries can register themselves for willingly incorporating Reduce, Reuse, Recover, Recycle in their processes and get their site inspected for the same by experts. Based on the report the industry should incorporate the necessary infrastructural, operational and functional

changes over a period of time to do co-processing of their own waste in their process. Once successful this can be implemented between different industries and clusters in following phases.

#### **4.3.4 Infrastructure facilities**

##### **4.3.4.1 Existing TSDF/ Incineration facilities including capacities**

Currently, there is no TSDF facility in the Agra. Industries generating hazardous waste have been directed to become a member of two TSDF facilities in Kanpur Dehat. These are the only two TSDF facilities in the state as of now and are managed by Ramky Enviro Engineers group and Bharat Oil and Waste Management Ltd.

Landfill site run by Ramky is build over an area of 7 hectares and has been operational since 2007, whereas, site run by Bharat Oil and Waste Management Ltd. is build over an area of around 3 hectares and has been operational since 2009. Other than these two sites Bharat Oil and Waste Management Ltd. also runs an incinerator for waste oil covered under hazardous waste category.

##### **4.3.4.2 Present status/ performance and need of upgradation of existing facilities including enhancement capacities**

Agra Nagar Nigam is managing the regular cleaning of the city area. Landfill site & composting plant of 400 TPD at Kuberpur is under construction and expected to be completed by Sept, 2010.

##### **4.3.4.3 Treatment and management of contaminated waste disposal sites**

These sites are being and in future will be managed by private players who have expertise in landfill siting and handling, it is their responsibility to ensure the management of their site so that there are no issues with wastes dumped on site after the site is exhausted. However, the site is also monitored by State Pollution Control Board from time to time in order to ensure that there is no degradation in quality of ground water from leachate from these sites.

##### **4.3.4.4 Impact on CEPI score after proper management of solid wastes.**

Apart from proposed landfill sites, authority has taken an initiative and build different waste collection centres in various sectors of the region. Waste from nearby localities is collected and managed in these centres before being sent to the waste dumping site, also it is proposed that in future projects must ensure setting up of in house MSW disposal facilities as per MSW Rules & ensure compliance of the conditions of the Environment Clearance and NOC from UPPCB.

In order to curb solid waste pollution in industries they have to be directed to properly store, handle and dispose hazardous and their MSW within the campus till it is not sent to TSDF so that it does not create litter in surrounding areas.

Implementation of proposed actions shall result in lowering of CEPI due to reduction in the values of A1, B1, B2, B3, C1, C2, D due to reduction in air, water and land pollution issues related with waste storage, handling and disposal.

## **5. PPP Model**

### **5.1 Identification of project proposals (for both the options i.e. technology intervention and infrastructure renewal) for implementation under the PPP mode under the Action Plan**

As of now no project under PPP model has been identified. All the projects proposed are in party with other Government bodies only.

### **5.2 Identification of stakeholders/agencies to be involved and to evolve financial and managerial mechanisms for implementation of PPP projects**

Details of projects/proposals and stakeholders involved in the projects to be undertaken have been incorporated in the last table summarizing long term plans. (See sec. 12)

## **6. Other Infrastructural Renewal measures**

### **6.1 Green Belts**

Agra Development Authority/Forest Department/Nagar Nigam/UPPCB has laid emphasis on developing Agra as a Green City. To fulfil this aim authorities have developed number of green belts, gardens and parks, green wet lands, roadside and central verge plantations so that pollution free environment can be maintained.

As per Forest Department information a project of 75.3 crores has proposed for 1270 hectare plantation. In this projects ravine areas such as Fathepur to Jaitpur Kala belt, Kirawali, Kheragarh and Etadmapur have targeted for plantation of 44000 trees.

### **6.2 Development of Industrial Estate (s)**

The TTZ authority has directed to UPSIDC Agra and District industry center (DIC) Agra to development of new industrial areas regarding shifting of industries which are located inside the residential area such as Electroplating units, Minor Tanneries, petha and shoe manufacturers.

### **6.3 Development/shifting of industries located in the non-industrial areas to the existing/new industrial estates**

Agra city is facing acute problem of industrial activities in residential area. Approx 70 Electroplating units, 60- Small Tanneries of Khatik para, 117 Petha industries, 60 Shoe units, 50 Dairies & others are installed & in working & creating Water/Air/Noise Pollution.

Taj Trapazium Zone Authority in its meeting dt. 14.11.2008 & 22.05.2009 directed Agra Development Authority, Agra to get prepared the DPR for Shifting of these industries from the city area to appropriate sites outside the city.

ADA & UPSIDC have been again instructed for initiating the effective measures for shifting of the same by TTZ Authority in its latest meeting dt. 01.07.2010.



## 7. Specific Schemes

### 7.1 GIS-GPS system for pollution sources monitoring

State board is a member of National Hazardous Waste Information System (NHWIS), a joint program of Ministry of Environment and Forest and National Information Centre (NIC). Under this project NIC is committed to cover all the industries of state in its data base and upload it on its GIS-GPS system which can then be located on its website. Almost all the hazardous waste industries of the subject area of this report are present on the NHWIS site.

### 7.2 Hydro-geological fracturing for water bodies rejuvenation

District administration of Agra initiated to control the encroachment and leveling of ponds/pokhrajs/wells/lakes by the public people and newly construction of deep wells and rain water recharging pits and vacant lands of government and agriculture land.

### 7.3 In-situ remediation of sewage

In the matter of sewage treatment work is going on progress in Yamuna action plan. Description of schemes is as follows:

S.No	NEERI's Recommendation	Implementation of Recommendation	Funds released	Funds utilized	Impact	Further Action Plan
1	2	3	4	5	6	7
2	<b>AGRA SEWRAGE PROJECT</b>					
	NEERI prepared a sewerage master plan of Agra proposing about 850 Km sewer lines and 24 major pumping stations with a cost of Rs. 612.00 crores.	Against NEERI's recommendation DPR amounting Rs. 43.572 crores of only Taj Ganj Zone, surrounding Taj Mahal for laying of 10.20 Km sewer lines and 4 Nos. pumping stations was sanctioned under T.T.Z programme.	Rs. 23.00 Crores	Rs. 23.00 Crores	Due to shortage of funds, all works of this zone proposed in DPR could not be completed and executed works could not be made functional as it require execution of other components of the system proposed under sanctioned DPR.	Agra city has been divided in eight sewerage zone viz-(i) Trans Yamuna Zone (ii) Central Zone (iii) Tajganj Zone (iv) Western Zone (vi) Southern Zone-I (vii) Southern Zone-III. Under Yamuna action Plan Phase-II DPRs amounting Rs. 84.38 crores and under JNNURM programmed amounting Rs. 21.62 crores for <b>part of Northern and Western sewerage zones</b> system are under execution. These schemes are targeted to be completed by 6/2011. A scheme amounting Rs. 53.36 Cr. in pat of Sothern Zone-II under State Sector programme is under execution which is scheduled to be completed by 6/2010. Another sewerage scheme 'Agra Sewerage Scheme Phase-I part-I (Central and Tajganj zones) amounting Rs. 195.92 Cr. have been sanctioned in 8/2009. This scheme is scheduled to be completed by 31-03-2012 and the balance works of

						<p>Tajganj zone are included in this scheme. Accordingly un-commissioned scheme sanctioned under TTZ programme shall also be commissioned by 31.03.2012.</p> <p>The master plan for providing complete sewerage system for the year 2040 requirement has been prepared and approved by State Govt. As per Master Plan STP of 300 mld capacity are required for the year 2025. Accordingly DPR for 2025 requirement amounting Rs. 955.67 Cr. has been prepared under YAP Phase-III. 5 Nos. STP of 124 mld capacity are proposed in this DPR. The approval of this DPR from State/Central is under process.</p> <p>As present about 210 mld sewage is generated in city. Three Nos. STP of 90.25 mld capacity were installed under YAP-I. Two Nos. STP of 54 mld capacity are under construction under YAP-II and one No. STP of 12 mld capacity is under construction in Sate sector Programme. STP of 24 mld capacity for Tajganj zone is to be constructed under Agra Sewerage Scheme Phase-I Part-I sanctioned under JNNURM programme.</p>
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#### **7.4 Utilization of MSW inert by gas based brick kilns**

At present, Kuberpur Agra land fill site is under construction and it shall be started function of composting by September 2010.

#### **7.5 Co-processing of wastes in cement industries**

Not applicable

### **8. Public awareness and training Programmes**

UPPCB Agra and Nagar Nigam are working together to control and use of polythene. As on date, regional offices of state board also conduct competitions, seminars, public presentation in schools and other significant places on Environment Day every year to generate awareness about the environmental problems and their solutions. However, it is proposed that such activities should be carried out more frequently; in order to develop a comprehensive training and awareness program schedule at regional level

Directorate of Environment should be made a stake holder in such activities and conduct public awareness programs simultaneously at all regional offices.

## 9. Overall impact of installation/commissioning of pollution control equipments/measures on the CEPI score

State Pollution has proposed steps in that will have a positive impact on its CEPI score and bring it down considerably. List of steps proposed/taken with regard to water, air and land pollution that are expected to have a positive impact on CEPI have been enlisted in the table below. Further, the overall quantitative change in the CEPI score post installation/commissioning of pollution control equipments/measures taken under Action plan in water, air and land environment have also been presented in the tables below.

### Impacts of Action Plan of water

S.No.	Critical Parameter	Proposed Action	Implementing Agency & Time Frame	Predicted Impact On CEPI
<b>WATER POLLUTION</b>				
1	Industrial Pollution	Proper Vigilance and monitoring/ action against the industry are in progress by the UPPCB. All industry is of small scale.	UPPCB Every three month	CPPI will be reduced
2	Ground Water Pollution	Safety and Preventive measures to control such as rain water harvesting regarding dilution /Betterment of ground water strata is necessary	Ground Water Source Department and minor irrigation	CPPI will be reduced
3	Domestic Waste Water (Sewage)	Further 04 STP's of total capacity of 90 MLD are under construction under Yamuna Action Plan Phase II & III. As per UP Jal Nigam information's planning of projects for STPs of 225 MLD for the treatment of sewage keeping in view the Population of year 2040 is under consideration & by the year 2015 no sewage will be discharge to River Yamuna directly.	U.P. Jal Nigam/ Yamuna Pollution control Unit, Agra	CPPI will be reduced
4	Infrastructural facilities in industrial areas	Strengthening of infrastructural facilities such as	ADA/UPSIDC/N	CPPI will be

		Roads, Power/Water Supply & regular cleaning of internal drainage  Monitoring of NOC/environmental clearance and setting of required E.T.P	agar Nigam & UPPCL cleaning every month  Individual Builders & UPPCB	reduced
<b>AIR POLLUTION</b>				
1.	Industrial Pollution	The Sulphur dioxide (SO <sub>2</sub> ) and Oxides of Nitrogen (NO <sub>x</sub> ) in Gaseous emissions may affect the Taj Mahal. But by stopping Coal & Coke in 20 Km radial distance of Taj & use of C.N.G by the industries & vechiles the level of SO <sub>2</sub> & NOx has been reduced substantially.  Central Pollution Control Board, Project office, Agra is monitoring the ambient air quality at Taj Mahal since 2002.	CPCB/UPPCB	CPPI will be reduced
2.	Introduction of Cleaner fuel like CNG/LPG	Inspection of Industries <ul style="list-style-type: none"> <li>• A lead time of 8 month is required for opening of CNG station after getting all clearances/ approval and possession of land. In Phase-II another 5 stations are planned in various part of Agra city.</li> <li>• A EURO-3 standard new vehicle is only allowed.</li> <li>• Age limit of commercial vehicles in city is to be decided.</li> </ul>	GAIL/Oil Companies / Transport Dept.	CPPI will be reduced
3.	Installation of AAQM Stations (Continuous)	-	UPPCB	CPPI will be reduced
4.	Display of AAQM data.	-	UPPCB	CPPI will be reduced
5.	The vehicles in this area shall use clean	Restriction of plying of Petrol, diesel driven	RTO	CPPI will be

	fuel as LPG/CNG	vehicles around 500 meter of Taj Mahal. Plying of Battery operated Buses and other vehicles within 500 meter of Taj also in Agra City. Fixation of age for public and commercial vehicles. No new registration of age barred vehicles.		reduced
6.	Development of Green Belt & Garden	Plantation is satisfactory	Forest Deptt./ ADA, Agra	CPPI will be reduced
7.	Repairing of Internal roads & proper maintenance of same	-	ADA/PWD/Nagar Nigam	CPPI will be reduced
8.	Monitoring of D.G Sets	Conversion of fuel is needed. Old D.G. Sets require the canopy/ aquatic enclosure to reduce sound and air pollution. a. Inventory of old D.G. Sets in industrial area b. Installation of canopy & scrubber	UPPCB/U.P Power Corporation Ltd.	CPPI will be reduced
9.	Illegal Set up of Industrial Activities	<ul style="list-style-type: none"> <li>Taj Trapazium Zone Authority in its meeting dt. 14.11.2008 &amp; 22.05.2009 directed Agra Development Authority, Agra to get prepared the DPR for Shifting of these industries from the city area to appropriate sites outside the city.</li> <li>ADA &amp; UPSIDC have been again instructed for initiating the effective measures for shifting of the same by TTZ Authority in its latest meeting dt. 01.07.2010.</li> </ul>	ADA/UPSIDC	CPPI will be reduced
<b>HAZARDOUS WASTE</b>				
1.	Proper Storage & Disposal of Hazardous Waste & Solid Waste.	<ul style="list-style-type: none"> <li>Strict vigilance &amp; monitoring will be</li> </ul>	i. UPPCB Industrial	CPPI will be reduced

		<p>maintained for compliance of the provisions of Hazardous Waste Rules, 2003.</p> <ul style="list-style-type: none"> <li>All the functional Hazardous Waste generating industries are operational with authorization of the UPPCB as per Hazardous waste Rule, 2003 shall send the Hazardous Waste to TSDF Every three Months.</li> </ul>	<p>Inspection- Every Three Months</p> <ul style="list-style-type: none"> <li>Individual Industries</li> </ul>	
2.	Municipal solid waste Disposal by Agra Authority in Industrial Area as well as in residential area.	-	ADA/UPSIDC/ Nagar Nigam /District Administration	CPPI will be reduced
3.	Bio-Medical Waste Disposal by Hospitals & Health Care Facilities.	Strict vigilance & monitoring is maintained for compliance of the provisions of BMW Rules, 2000.	Nagar Nigam/C.M.O/ UPPCB Inspection- Every Three Months	CPPI will be reduced
4.	Illegal Set up of Industrial Activities	<ul style="list-style-type: none"> <li>Taj Trapazium Zone Authority in its meeting dt. 14.11.2008 &amp; 22.05.2009 directed Agra Development Authority, Agra to get prepared the DPR for Shifting of these industries from the city area to appropriate sites outside the city.</li> <li>ADA &amp; UPSIDC have been again instructed for initiating the effective measures for shifting of the same by TTZ Authority in its latest meeting dt. 01.07.2010.</li> </ul>	ADA/UPSIDC/ Nagar Nigam /District Administration	CPPI will be reduced

### Comprehensive Environmental Pollution Index for Water Environment

	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	CEPI
<b>Existing</b>	5.5	2.5	13.75	7	0	3	10	5	5	5	30	10	<b>63.75</b>
<b>Post Action Plan</b>	3	2.5	7.5	3	0	0	3	5	3	0	15	10	<b>35.5</b>

### Comprehensive Environmental Pollution Index for Air Environment

	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	CEPI
<b>Existing</b>	6	2.5	15		8	3	3	14	5	3	5	10	<b>59</b>
<b>Post Action Plan</b>	3	2.5	7.5		7	0	0	7	5	3	0	5	<b>34.5</b>

### Comprehensive Environmental Pollution Index for Land Environment

	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	CEPI
<b>Existing</b>	5.5	2.5	13.75	7	0	0	7	5	4.75	5	28.75	10	<b>59</b>
<b>Post Action Plan</b>	3	2.5	7.5	3	0	0	3	5	3	0	15	10	<b>31.5</b>

## **10. Assessment of Techno-economical feasibility of pollution control systems in clusters of small/medium scale industries.**

The Nunhai industrial estate developed by Industries Department and other two industrial areas eg. Foundry Nagar, I.A and Sikandra, I.A have been developed by the UPSIDC. The Infrastructural facilities in industrial areas have been provided.

Most of the operational industries of Agra has been shifted in three indetified industrial areas Nunhai, Foundary Nagar and Sikendara. Most of the operational industries has already converted with CNG and installed their own ETPs..

Agra city is facing acute problem of industrial activities in residential area. Approx 70 Electroplating units, 60- Small Tanneries of Khatik para, 117 Petha industries, 60 Shoe units, 50 Dairies & others are installed & in working & creating Water/Air/Noise Pollution.

- Taj Trapazium Zone Authority in its meeting dt. 14.11.2008 & 22.05.2009 directed Agra Development Authority, Agra to get prepared the DPR for Shifting of these industries from the city area to appropriate sites outside the city. ADA & UPSIDC have been again instructed for initiating the effective measures for shifting of the same by TTZ Authority in its latest meeting dt. 01.07.2010.

## 11. Summary of Proposed Action Points

### 11.1 Short Term Action Points (upto 1 year, including continuous activities)

S. No.	Action Points (Source and Mitigation)	Responsible Holders	Stake	Time Limit	Cost
1.	<b>Water Pollution</b>				
a)	<b>Industrial Source - Proposed Action Plan for effective control of Water Pollution:</b> <ul style="list-style-type: none"> <li>• Proper Vigilance and monitoring/ action against the industry are in progress by the UPPCB. All ndustry of small scale. There is no large/medium water polluting industry in Agra.</li> <li>• Installation of separate energy meter for ETP is required for the evaluation of ETP.</li> </ul>	UPPCB		All the operating water pollution industries belong to SSI sector. Hence monitoring is proposed on 6 monthly basis	20 lacs
b)	<b>Groundwater Pollution</b> <ul style="list-style-type: none"> <li>• Safety and Preventive measures to control such as rain water harvesting regarding dilution /Betterment of ground water strata is necessary. Several scheme eq. rainwater harvesting, checkdams, recharge pits, medbandhi, wet land etc. projects are being implemented by the concerning departments as SGWB/ADA/Nagar Nigam/UPPCB/Minor Irrigation/Forest Department etc for recharging and diluting the salinity in ground water.</li> </ul>	SGWB/ADA/Nagar Nigam/UPPCB/Minor Irrigation/Forest Department		Monitoring of ground water level every 6 months (UPPCB) proposed & on yearly basis by CGWB/sgwb and construction activities by other stake holders Ongoing for 1 year (CGWB)	25 lacs
c)	<b>Domestic Waste Water (Sewage)</b>  <b>03 STPs are Operational:</b>				



<ul style="list-style-type: none"> <li>• Budi Ka Nagla, Agra – 2.25 MLD (2001)</li> <li>• Pilakhar, Agra – 10 MLD (2001)</li> <li>• Dhandupura – 78 MLD (2001)</li> </ul>	<p>Nagar Nigam/UPPCB/UP Jal Nigam (Yamuna Pollution Control Unit)</p>	<p>Operational/satisfactory monitoring by UPPCB monthly basis</p>	<p>85 crores</p>
<ul style="list-style-type: none"> <li>• At present about 225 mld sewage is generated in the city. Three Numbers STPs (Dhandupura 78 mld, Pilakhar 10 mld &amp; Buri ka Nagla 2.25 mld) of total 90.25 mld are operational.</li> </ul>	<p>Nagar Nigam/UPPCB</p>	<p>Ongoing projects</p>	<p>350 crores</p>
<p><b>Proposed</b></p>			
<ul style="list-style-type: none"> <li>• The master plan of city for providing complete sewerage system for the year 2040 requirement has been prepared and approved by State Govt. As per Master Plan STP of 300 mld capacity are required for the year 2025.</li> </ul>	<p>UP Jal Nigam (Yamuna Pollution Control Unit)</p>	<p>Ongoing</p>	<p>1375.65</p>
<ul style="list-style-type: none"> <li>• 6 Nos. STP of total 126 mld capacity are proposed in this DPR. The approval of this DPR from State/Central Govt. is under process. The total required capacity of STP of 300 mld is proposed to be constructed upto March, 2015.</li> </ul>	<p>UP Jal Nigam (Yamuna Pollution Control Unit)</p>	<p>Every 3 months</p>	
<ul style="list-style-type: none"> <li>• One STP 12 mld at Deori Road (Bhim Nagari) has been completed in State Sector Programme. Another 14 mld at Sikandarpur (Dayal Bagh) likely to be commissioned by March, 2011 &amp; the third STP 40 mld at sadarvan (Bichpuri Road) is targeted to be completed by June, 2011. Another 24 mld STP at Dhandupura under JNNURM is targeted to be commissioned by March 2012. Hence the balance about 45 mld sewage will be discharged to river Yamuna without treatment even after completion of the STPs proposed as above.</li> </ul>	<p>UP Jal Nigam (Yamuna Pollution Control Unit)</p>	<p>Report every 03 months to UPPCB.</p>	
<ul style="list-style-type: none"> <li>• Thus total capacity of STP upto March, 2012 shall be 180 mld.</li> </ul>	<p>UP Jal Nigam (Yamuna Pollution Control Unit)/UPPCB</p>		
<ul style="list-style-type: none"> <li>• Effective operation, up gradation &amp; maintenance of installed STP.</li> </ul>			
<ul style="list-style-type: none"> <li>• Inspection of STPs</li> </ul>			
<ul style="list-style-type: none"> <li>• Upcoming High Rise Buildings, Commercial Project, Educational Institution, Multi Plexes, Town ship &amp; Building Projects are major source of sewage generation</li> </ul>	<p>UP Jal Nigam (Yamuna Pollution Control Unit)</p>		

	<p>and Municipal Solid Waste.</p> <p>Such projects must ensure setting up of STPs, recirculation of treated water for flushing/gardening regarding purpose &amp; ensure compliance of the conditions of the Environment Clearance and NOC from PCB</p>			
d)	<p><b>Infrastructural facilities:</b> Strengthening of infrastructural facilities such as Roads, Power/Water Supply &amp; drainage is required.</p> <ul style="list-style-type: none"> <li>• Authority is advised to regularly clean drainage system to avoid water stagnation / over flowing.</li> <li>• Monitoring of NOC/environmental clearance and setting required ETPs.</li> </ul>	ADA/UPSIDC/Nagar Nigam & UPPCL	Every month	5 crores
2.	<p><b>Air Pollution</b></p> <p>a) <b>Industrial:</b> Proposed Action Plan for effective control of Air Pollution:</p> <ul style="list-style-type: none"> <li>• UPPCB, Agra is monitoring ambient air quality of Agra in industrial and residential area. The data reveals that SO<sub>2</sub> &amp; NO<sub>x</sub> are within limits &amp; SPM is beyond the limits. The main reason of high values of SPM is vehicular pollution.</li> <li>• Induction Furnace - Such industries are marked with generation of substantial amount of process Emission.</li> <li>• Provision of secondary hoods &amp; additional ID Fan etc. for collection of untrapped Air Emission in all the Induction Furnaces.</li> <li>• Restriction of plying of Petrol, diesel driven vehicles around 500 meter of Taj Mahal.</li> <li>• Plying of Battery operated Buses and other vehicles within 500 meter of Taj also in Agra City. Open Car - 12 (Running) Mini Bus - 24 (Running) Open Car - 20 (Proposed)</li> </ul>	<p>UPPCB</p> <p>Inspection - UPPCB. Monitoring – UPPCB</p> <p>C.O. Traffic/ RTO</p>	<p>All the operating water pollution industries belong to SSI sector. Hence monitoring is proposed on 6 monthly basis</p> <p>Six monthly basis</p> <p>Already monitored on regular basis.</p>	



<p>opening of CNG station after getting all clearances/ approval and possession of land. In Phase-II another 5 stations are planned in various part of Agra city.</p>			
<p><b><u>Installed/Operational</u></b></p> <ul style="list-style-type: none"> <li>• One Mother Station at Transport Nagar and two DBS are already functioning at Idgah &amp; Lohamandi &amp; the average dispensing is 30000 kg/day through 7 dispensers.</li> <li>• At present 21 CNG buses, 126 City Buses (Private), 65 School Buses, 145 Private Buses, 6951 CNG auto &amp; 169 tempo/taxi are plying in Agra.</li> <li>• CNG is already being supplied in Agra 30,000 Kg/Day. GSPA has been signed between GGL &amp; GAIL (India) for getting 42660 SCMD gas for CNG consumers on 23.10.09.</li> </ul>			20 crores
<p><b><u>Proposed/under Progress</u></b></p> <ul style="list-style-type: none"> <li>• Installed one compressor and three dispensers for the output of 15000 Kg/day. IOCL has already applied for NOC of NHAI Faridabad. Held up due to NHAI Faridabad approval.</li> <li>• Documents are provided to BPCL to enter in to agreement. Action is awaited from BPCL's end.</li> <li>• Possession of land taken Topographical, geo Technical Survey &amp; TCP work is completed. Boundry wall constructed, Installation of compressure is in progress. Commissioning expected by Jan, 2011. Civil Lines, Dhoulpur House, Surya Nagar, Nirbhay Nagar, Khandari and Dayal Bag areas have been identified. GGL has deposited Rs. 93 lachs for diging permission. Permission awaited of the permission within 10 days the work shall be started. Together 6000 domestic connection by March, 2011.</li> <li>• GGL have already surveyed and identified the areas to supply PNG for domestic households.</li> <li>• Survey of pipeline route has already been done and permissions from Nagar Nigam &amp; ADA have been applied for laying MDPE pipeline in the surveyed areas.</li> <li>• Survey done to lay the pipeline from Agra CGS to NH-2 via</li> </ul>			5 crores
			15 crores
			10 crores

	<p>foundary Nagar. Permission for laying pipeline has been applied at ADA and PWD, Aligarh - Granting of permission is awaited.</p> <ul style="list-style-type: none"> <li>• GGL is in the process of purchasing land from ADA for setting up DRS at Petha Nagari- The matter has been forwarded by VC, ADA to their Board. Approval is awaited.</li> <li>• Survey for laying pipeline to supply PNG to Hotel Amarvilas and Hotel Jaypee will be started by March, 2011.</li> <li>• Indian Oil Corporation has already setup 3 auto LPG station (Runakata, Madia Katra &amp; NH-II Sikandra, Agra).</li> <li>• Construction of steel pipe line from Rambagh to Taj Nagari is under progress and expected to be completed by Jan, 2011.</li> <li>• Approval of UP Govt. is awaited for allotment of land at Rambagh and Jeoni Mandi for setting of on line station.</li> <li>• Gail is ready to give RLNG after a contract to be signed by GGL.</li> <li>• TTZA meeting dt. 01.07.2010 directed that GGL will resolve/complete CNG Network at the earliest.</li> </ul>			
c)	<p><b>Traffic and transport management:</b></p> <ul style="list-style-type: none"> <li>• Formation and implementation of parking policy</li> </ul> <p>During the sanction of the building map the provision for parking place for the vehicles is considered according to the Govt. policy by ADA.</p> <p>Some parking places have been developed on main road(s) for use of tempos/auto rickshaws. Provision of parking areas have been made in CDP under JNNURM for which DPR is being prepaed.</p> <ul style="list-style-type: none"> <li>• Current status of public in terms of number of buses. Load factor etc and proposed plans to augment the fleet.</li> </ul> <p>The current status of public transport at 32 routes are as</p>	<p>ADA/Nagar Nigam/ Distt.Administration/ Police/ Traffic Police</p> <p>RTA/GGL</p>		

follows.

Veh.	Sanctioned	Plying
Bus	318	116
Tempo, Taxi	475	170
Auto Rickshaw	7250	7250

- Plans to move public transport to run on clean fuels.

RTA UP has ordered to give preference for the registration of new vehicles based on gaseous. (CNG/LPG) fuels.

- Any other form of public transport planned: Metro bus rapid transit or any other. Plan, scale and schedule of implementation.

Purchase of Bus for public transport has been done by UPSRTC. Provision of Marcopolo bus in Agra have been provided in CDP under JNNURM. The bus service is satisfactory in Agra.

- Formulation of transport policy to induce a model shift from private to public modes to transport and implementation including fiscal measures.
- Planning and construction bye-pass roads

One part of southern bye pass constructed under TTZ project is partially in use NHAI has a plan to join. NH-2, NH-11 and NH-3 by constructing four lane Agra bye pass to avoid congestion in the city. The project of construction of new Agra Bypass connecting NH-2 and NH-3 via NH 11 and SH 39 has commenced on 16.10.07. The permission for

RTA/GGL

RTA/Nagar Nigam/ADA

PWD/NHAI

Nagar Nigam/ADA

	<p>tree cutting, Land Acquisition and works of utility sifting are in process of completion. Contractor has been instructed to take necessary measures in respect of controlling air pollution.</p> <ul style="list-style-type: none"> <li>● Removal of encroachment of roads, promote non-motorised transport pedestrian station etc.</li> </ul> <p>Nagar Nigam, ADA, P.W.D with the help of district administration and police removes the road side encroachments. Periodic encroachment removing drive takes place with the help of Distt./Police Administration in congested areas of the same where traffice flow is hindered.</p> <ul style="list-style-type: none"> <li>● Traffic signaling system</li> </ul> <p>Automatic Traffic light signal system has been installed at 8 main crossings. Installation of solar traffic signals has been done at four intersections on MG Road on BOOT basis and 3 signals at TDI Mall, Rambagh and Taj View. This has resulted in reduction of traffic congestion and promotes use of non-conventional energy.</p> <ul style="list-style-type: none"> <li>● Penalties for traffic rule violations</li> </ul> <p>Tempo/Auto Rickshaw are playing from parking places situated at 50 mt. distance far from different crossing of the city. Those vehicles which do not follow the traffic rules, action has been taken against them as per rules. In year 2007-08 total challan of auto rickshaw dune by enforcement teams were 1672 and the amount of penalty recovered was Rs. 18.83 lakh.</p>	<p>Traffic/Police Deptt. and Nagr Nigam</p> <p>Traffic/Police Deptt. and Nagr Nigam</p>		
d)	<p><b>Monitoring of D.G Sets:</b></p> <ul style="list-style-type: none"> <li>● Within TTZ only C.NG/L.P.G Generators are allowed most of the industries have converted previously installed D.G.</li> </ul>	UPPCB	06 Months.	20 lakhs

	<p>Sets into Gas fired generators.</p> <ul style="list-style-type: none"> <li>• The commercial and residential purposes D.G Sets are being operated is on ultra low sulphur Diesel (0.035% sulphur diesel) in Agra.</li> <li>• M/s Green Gas Ltd. Is developing the CNG network in the city to cater the needs of domestic/commercial &amp; industrial requirements including DG sets.</li> <li>• Conversion of fuel is needed. Old D.G. Sets required the canopy/ aquastic enclosure to reduce sound and air pollution.</li> </ul>			
3.	<p><b>Land Pollution</b></p> <p>a) <b>Proper Storage &amp; Disposal of Hazardous Waste &amp; Solid Waste.</b></p> <p>26 Industries are located which are generating the Hazardous Waste. The 11 industries is lying closed due to its own and 15 industries are functional with membership for proper collection treatment and disposal of Transportation to Government Approved TSDF situated at Kanpur Dehat.</p> <ul style="list-style-type: none"> <li>• Strict vigilance &amp; monitoring is maintained for compliance of the provisions of Hazardous Waste Rules, 2003.</li> </ul> <p>All the functional Hazardous Waste generating industries, which are operational with authorization of the UPPCB as per Hazardous waste Rule, 2003, shall send the Hazardous waste to TSDF every three months.</p>	Individual Industry	every 06 months	-
	<p>b) <b>Municipal solid waste Disposal</b></p> <p>Agra Nagar Nigam is managing the regular cleaning of the city area. Landfill site &amp; composting plant of 750TPD at Kuberpur is under construction and expected to be completed by Dec, 2010.</p> <ul style="list-style-type: none"> <li>• 57 Acre Land has been transferred to U.P. Jal Nigam by ANN. Rest 18 acre of land is in process of acquiring by ADA. Construction work of processing &amp; treatment is in progress at site. Jal Nigam has purchased some of the</li> </ul>	UP Jal Nigam (C & DS) Nagar Nigam/ADA  Project proponent to given compliance report to UPPCB.	Montering proposed Every 3 months	15.42 Crores



equipments and handed over to ANN. Rest are in process of purchasing.

- As per the decision taken in the meeting of Chief Secretary UP on 26.12.08, SWM work has to be done on integrated basis i.e. from door to door collection to disposal by one firm only. Tender for integrated approach has been awarded to Ms. Ultra Urban Infratech, NOIDA. Letter of Award (LOA) has been issued to the firm by C&DS, Jal Nigam, Lucknow on 3.08.10 in which rates are quoted as Rs. 517.00 per MT per day. An agreement has to be signed with ANN depositing a Bank Guarantee of Rs. 4.25 crores to start the work of collection and transportation by the firm. The time for completion of the project was extended to 30-06-10 by C & DS. Now the firm has requested to extend the completion time of the project till 31-12-10.

S. No.	Name of the work	Progress (%)
1.	Wind Rows (Construction & Fabrication work)	95
2.	Tipping floor (Construction & Fabrication work)	95
3.	Sand Machine building (Construction & Fabrication work)	70
4.	Utility (Power House)	80
5.	Segregation Machine (Construction & Fabrication work)	90
6.	Fuel-I Tipping floor (Construction & Fabrication work)	80
7.	Fuel-II Tipping floor (Construction & Fabrication work)	60
8.	Compost Machine building (Construction & Fabrication work)	70
9.	Sanitary Landfill site	50
10.	Internal Roads	70
11.	Purchase of Plant & Machinery	50

	<b>Collection, -Storage &amp; Transportation</b> Metal Bin (1100 l.) - 400 Metal Bin (600 l.) - 400 Twin Ltr. Bin (150 l.) - 100 Cycle Ricksaw with 06 Nos. Plastic Container - 300 Hand Carts with 04 No. Plastic Container - 300 RC Vehicle (8 cum) - 3 RC Vehicle (14 cum) - 3 Cattle Lifting Vehicle - 2			14.1233 Crores
c)	<b>Bio-Medical Waste Disposal</b> A common Bio- medical Waste Treatment Facility M/s Datt Enterprises, Kuberpur, Agra is installed & in operation and 433 out of total 436 hospitals/ Nursing homes etc are associated to this facility and the BMW is being treated & disposed off properly.  Details of the facility available in the M/s Datt Enterprises, Kuberpur, Agra: Incinerator capacity : 200 kg/hr Autoclave : 100 kg/hr Hydroclave : 100 kg/hr Sheredor : 100 kg/hr ETP- 2KLD, APCS -Venturi Scrubber, Droplet Seprator & Disester Fuel -L.P.G Gas manifold 112X35 Kg Installed  Strict vigilance & monitoring is maintained for compliance of the provisions of BMW Rules, 2000.	UPPCB	every 03 months Small Hospitals every 06 months	1 Crore
d)	<b>Illegal setup of Industrial activities</b> Agra city is facing acute problem of industrial activities in residential area. Approx 70 Electroplating units, 60- Small Tanneries of Khatik para, 117 Petha industries, 60 Shoe units, 50 Dairies & others are installed & in working & creating Water/Air/Noise Pollution.	ADA/UPSIDC	02 years	

<ul style="list-style-type: none"> <li>• Taj Trapazium Zone Authority in its meeting dt. 14.11.2008 &amp; 22.05.2009 directed Agra Development Authority, Agra to get prepared the DPR for Shifting of these industries from the city area to appropriate sites outside the city.</li> <li>• ADA &amp; UPSIDC have been again instructed for initiating the effective measures for shifting of the same by TTZ Authority in its latest meeting dt. 01.07.2010.</li> </ul>			
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### 11.2 Long Term Action Points (more than 1 year)

## STATUS OF TTZ PROJECTS APPROVED BY CABINET COMMITTEE ON ECONOMIC AFFAIRS (C.C.E.A.)

(Upto June 2010)

Rs. in Crores

DEPTT.	SL. NO.	PROJECTS	COST	TOTAL RELEAS ED AMOUNT	EXP. UPTO 31.12.09	DATE OF STARTI NG	PHYSICAL PROGRESS	Status of Post Evaluation by 'NEERI'	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
U.P.P.C. L.	1-	Improvement of Electric Supply in Agra	9.11	9.11	6.98	09/2000	<ul style="list-style-type: none"> <li>▪ 315 MVA Transformer installed at 400 KV S/S at Pilipokhar. Work completed.</li> </ul>	D.P.R. and information on required format submitted to 'NEERI'.	The scheme for improvement of electricity is sent to the Govt. of India for utilization of rest amt., i.e. Rs. 2.13 Cr.
	2-	Improvement of Electric Supply in rural areas of Agra & Fatehpur-Sikri	39.09	39.09	38.51	07/1999	<ul style="list-style-type: none"> <li>▪ 10 new 33/11 KV S/S construction completed against 11 S/S. Remaining work of 33/11 KV S/S Jalesar is held due to non availability of fund.</li> <li>▪ Enhancement of transformer capacity of all 19 Nos. 33/11 KV S/S completed.</li> <li>▪ Electrification of 178 coded villages and 494 hamlets completed.</li> <li>▪ Construction of new 132 KV S/S at Bodla</li> </ul>	D.P.R. and information on required format submitted to 'NEERI'.	The work is still under progress.

						completed. Increase in capacity of transmission of S/S at Bah, Gokul and Shamsabad completed.				
Jal Nigam	3-	Water Supply Agra	72.80	72.80	68.28	1997-98	<p><b>PROJECT COMPLETION STATUS</b></p> <ul style="list-style-type: none"> <li>468.46 Km. of distribution pipes</li> <li>13 Clear Water Reservoirs</li> <li>25 Over Head Tanks</li> <li>10 Zonal Pump Houses</li> <li>77 Pumping Plants</li> <li>2 Nos. Repairing of Filter beds</li> <li>Completed</li> <li>80 M Retaining Wall</li> <li>Completed</li> </ul>	<p><b>COMPONENTS</b></p> <ul style="list-style-type: none"> <li>456.63 Km.</li> <li>11 completed</li> <li>10 completed</li> <li>10 completed</li> <li>61 (1 have been inst.)</li> <li>2 Nos.</li> <li>80 M.</li> </ul>	<p>D.P.R. and information on required format submitted to 'NEERI'.</p>	<p>The project has been revised and all remaining works have been included in "Gangajal Project". No account has been given for the balance amt. of Rs.4.52 Cr.</p>
	4-	Water Supply Mathura-Vrindavan (Phase I & II)	42.00	41.99	41.99	1996-97	<p><b>PROJECT COMPLETION STATUS</b></p> <ul style="list-style-type: none"> <li>01 Intake well and Water (101 MLD) Treatment Plant</li> <li>36.02 Km. Feeder Main</li> <li>13 Over Head Tanks</li> <li>05 Tubewells</li> <li>08 Clear Water Reservoirs and Pump House</li> <li>completed</li> </ul>	<p><b>COMPONENTS</b></p> <ul style="list-style-type: none"> <li>Completed</li> <li>25.42 Km. laid (18.13</li> <li>07 Nos.</li> <li>04 Nos.</li> <li>05 Nos.</li> <li>3 Nos.</li> </ul>	<p>D.P.R. and information on required format submitted to 'NEERI'.</p>	<p>The project cost has been revised to Rs.83.31 Cr. and the proposal has been sent to Deptt. of Urban Development, Govt. of U.P.</p>
	5-	Gokul Barrage	30.70	30.70	30.07	1990	<p><b>Completed</b></p>	<p>D.P.R. and information on required format submitted to 'NEERI'.</p>		
	6-	Solid Waste Management	7.49	7.49	7.14	08/1998	<ul style="list-style-type: none"> <li>Vehicles and implements purchased for containerized handling and transportation of solid wastes to improve the system efficiency.</li> <li>Ten covered tipper trucks with stainless steel lining purchased for safe handling of wastes.</li> <li>Construction of new workshop shed.</li> <li>Construction of twenty new community toilets.</li> <li>Trenching grounds work is in progress.</li> </ul>	<p>D.P.R. and information on required format submitted to 'NEERI'.</p>	<p>Balance of Rs.34.64 lac refunded to the Govt. Work is completed.</p>	
Jal Nigam	7-	Storm Water Drainage								

& Nagar Nigam	(i) Jal Nigam	5.65	5.65	4.50	1997-98	<ul style="list-style-type: none"> <li>▪ Bhim Nagar Area Drain-3900M completed against 6250M.</li> <li>▪ Naval Ganj Area Drain-4730 M. Completed against 4730 M. (Wok Completed).</li> <li>▪ Sikandra Area Drain-2200 M. Completed against 2300 M. (Work Completed)</li> <li>▪ Mustfa Qtr.Area Drain-1250 M.Completed against 1350 M. (Work Completed)</li> <li>▪ Sump Well (7M dia) cum Pump House is completed.</li> <li>▪ All pumping plants installed &amp; commissioned.</li> <li>▪ Desilting, cleaning and strengthening of drains in Paliwal Park, Mantola, Bhairon Ganj and Taj Ganj. Total length 4.5 Km. completed.</li> </ul>	D.P.R. and information on required format submitted to 'NEERI'.	Rs.31.95 lacs are to be adjusted. Work is completed but the balance amt. has not been refunded.	
	(ii) Nagar Nigam	0.95	0.95	0.95	03/1999		D.P.R. and information on required format submitted to 'NEERI'.	Work Completed.	
P.W.D.	8-	Construction of Agra Southern Bypass	10.65	10.65	8.43	1997-98	Completed.	D.P.R. and information on required format submitted to 'NEERI'.	Rs.22.50 lacs Surrendered & Release of Rs.2.00 Cr. stayed.
A.D.A.	9-	Widening of Agra Bypass	0.76	0.76	0.72	29.01.99	Existing Canal Patri Road which stretches for a length of about 19.90 km.was widened by 01 mtr. i.e. from 3.72 mtr. To 4.72 mtr.on one side.	D.P.R. and information on required format submitted to 'NEERI'.	Balance of Rs.0.04 Cr. refunded to the Govt. Completed
	10-	Improvement of Master Plan Roads of Agra City	21.22	21.22	21.22	01.01.99	<ul style="list-style-type: none"> <li>▪ 7.62 Km. Master Plan roads completed against 10.185 Km.</li> <li>▪ 7.40 Km. Missing links completed against 8.46 Km.</li> <li>▪ 02 newly approved roads of 4.63 Km. completed.</li> </ul>	D.P.R. and information on required format submitted to 'NEERI'.	The project is completed. Entire amt. has been utilized. The balance work is completed using own sources.

Note : The physical progress and financial expenditure is as per information provided by the concerned executing departments.

**STATUS OF TTZ PROJECTS APPROVED BY EXPENDITURE FINANCE COMMITTEE  
(E.F.C.)**

*Rs. in Crores*

DEPTT.	SL. NO.	PROJECTS	COST	TOTAL RELEASE D AMOUNT	EXP. UOTO 31.12.09	DATE OF STARTING	PHYSICAL PROGRESS	Status of Post Evaluation by 'NEERI'	REMARKS																						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)																						
Forest	11-	Plantation	9.43	8.37	8.37	02/2000	<ul style="list-style-type: none"> <li>▪ Plantation completed</li> </ul> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>CATEGORY</u> (in hect.)</th> <th style="text-align: right;"><u>PLANTATION</u></th> </tr> </thead> <tbody> <tr> <td>1- Around monuments</td> <td style="text-align: right;">38</td> </tr> <tr> <td>2- City roads</td> <td style="text-align: right;">60</td> </tr> <tr> <td>3- Industrial Area</td> <td style="text-align: right;">190</td> </tr> <tr> <td>4- Ravines</td> <td style="text-align: right;">550</td> </tr> <tr> <td>5- Usar</td> <td style="text-align: right;">204</td> </tr> <tr> <td>6- Normal Block Plantation</td> <td style="text-align: right;">748</td> </tr> <tr> <td>7- Other roads</td> <td style="text-align: right;">598</td> </tr> <tr> <td></td> <td style="text-align: right;">-----</td> </tr> <tr> <td></td> <td style="text-align: right;"><b>2388</b></td> </tr> <tr> <td></td> <td style="text-align: right;">-----</td> </tr> </tbody> </table>	<u>CATEGORY</u> (in hect.)	<u>PLANTATION</u>	1- Around monuments	38	2- City roads	60	3- Industrial Area	190	4- Ravines	550	5- Usar	204	6- Normal Block Plantation	748	7- Other roads	598		-----		<b>2388</b>		-----	D.P.R. and information on required format submitted to 'NEERI'.	The project is completed.
<u>CATEGORY</u> (in hect.)	<u>PLANTATION</u>																														
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5- Usar	204																														
6- Normal Block Plantation	748																														
7- Other roads	598																														
	-----																														
	<b>2388</b>																														
	-----																														
P.W.D.	12-	Improvement of 20 City Roads	27.47	15.93	7.57	08/2000	<ul style="list-style-type: none"> <li>▪ Improvement work of three important city roads Mahatma Gandhi Marg, Yamuna Kinara Marg and Paliwal Park to Gadha Para Marg completed. After March 2002 any amt. has not been allotted for the above remaining works.</li> <li>▪ NH-2 to Ghatiya via Paliwal Park (Moti Lal Nehru Marg) road done by the A.D.A.</li> <li>▪ Chandousi-Agra-Tantpur road converted in NH.</li> <li>▪ Now the above works carried out by the Agra Development Authority.</li> </ul>	D.P.R. and information on required format submitted to 'NEERI'.	Rs.8.36 Cr. has been surrendered to the Govt.																						
A.D.A.	13-	Improvement of Parking on Western Gate of Taj	0.94	0.94	0.94	10.06.2000	Completed	D.P.R. and information on required format submitted to 'NEERI'.	Completed																						
Jal Nigam	14-	Agra Sewerage	43.57	23.00	23.00	8/2000	<ul style="list-style-type: none"> <li>▪ 89.127 Km. of sewer lines have been laid against target of laying of 112.347 kms.</li> </ul>	D.P.R. and information	Due to non-availability of																						

							Vertical walls of all sump wells of MPS Nagla Mewati, IPS Shaheed Nagar, IPS Dhandupura and IPS Kolhai completed.	on required format submitted to 'NEERI'.	funds from TTZ, all remaining works included in 'Yamuna Action Plan'. The cost for the project has been revised (Rs.52.50 Cr.).
Irrigation	15-	Agra Barrage	120.47	16.00	4.84	2001-02	Rs.1.00 Cr.Lapse & Rs.10.16 Cr.Refunded.	D.P.R. and information on required format submitted to 'NEERI'.	Project not to be implemented under TTZ.

Note : 1- 'Agra Barrage' and 'Gokul Barrage' escalated cost projects have been deleted as per Ministry of Environment & Forests, Govt. of India L.No.Q-7012/2/03-CPA, Dt. 23.2.2004.

2-: The physical progress and financial expenditure is as per information provided by the concerned executing departments.

### STATUS OF TTZ PROJECTS APPROVED BY MISSION MANAGEMENT BOARD (M.M.B.)

*Rs. in Crores*

DEPTT.	SL. NO.	PROJECTS	COST	TOTAL RELEASED AMOUNT	EXP. UOTO 31.12.09	DATE OF STARTING	PHYSICAL PROGRESS	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Jal Nigam	16-	Water Supply Mathura-Vrindavan (Phase III)	19.69	6.00	6.00	1996-97	Projected population of Mathura in 2031 year : 4.09 lacs. Projected population of Vrindavan in 2031 year : 1.2 lacs. Distribution system - Detailed established appr. for zone M-I, M-4, M-5, M-6, M-8, M-9A, M-9B, V-1A, V-2 & V-3 & 104 km. pipe line laid in zone M-I, M-4, M-5, M-9A, M-9B, V-1A, V-2 and V-3 zones.	Due to non-availability of funds from TTZ, the balance works have been included in 'JNNURM'.
Forest	17-	Maintenance of Plantation	2.38	2.29	2.29	2000	As per direction of the Hon'ble Supreme Court on 14.12.2000 an additional amount of Rs.218.787 lacs	As per the information provided by Forest Deptt., the

							has been released for Agra Forest Division for the maintenance of the plants.	plants are properly maintained.
C.P.C.B.	18-	Set up of 04 Monitoring Stations	0.71	0.71	0.61	11/2001	In compliance of the Hon'ble Supreme Court's order dated 04.05.2001, 04 Ambient Air Quality Monitoring Stations (AAQMS) and 01 Central Laboratory have been established/commissioned. The data is submitted to the Hon'ble Court.	Rs.9,84,175/- refunded. Project Completed.
ENVIRONM ENT	19-	TTZ Auth. Environmental & Administration Centre	---	1.00	1.00		Project not to be implemented.	In pursuance of the decisions of 'M.M.B.' meeting dated 19.8.2004, the project not to be implemented and released amt. Rs.1.00 Crore have to be recovered from executing agency.
	20-	TTZ Heritage Corridor	175.00	17.00	17.00		Work stopped as per Hon'ble Supreme Court orders.	Work stopped in compliance of the Hon'ble Supreme Court order dated 01.05.2003.
		<b>TOTAL</b>	<b>640.08</b>	<b>331.65</b>	<b>305.85</b>			

**Note : The physical progress and financial expenditure is as per information provided by the concerned executing departments.**



# INDEX PLAN OF SEWERAGE ZONES , AGRA



# आवस्य महार्योजना

वर्ष-2001-2021

पैमाना:-



## संकेतिका

आवस्य	यावस्यत एव परिचयन
राजीव आवस्य	राजकीय नगर, एक-आवस्य
विश्वविद्यालय आवस्य (उच्च शिक्षण)	बस आवस्य
आवस्य (कम घनत्व)	अर्ध-वाण्य बस आवस्य
आवस्य (कम घनत्व)	कृषिगत मार्ग
आवस्य (कम घनत्व)	पर्यटन मार्ग
आवस्य (कम घनत्व)	रेलवेवाहन/रेलवे परिसर
बाजार स्ट्रीट	श्रीधर हेड स्ट्रीट
जिल्हा अस्पताल केन्द्र	मनोरंजन एवं सुखी हवाल
वोक व्यवस्थित केन्द्र	सेक्टर पार्क
उद्योग	वैदिक पार्क
उद्योग (उद्योग क्षेत्र)	जेनल पार्क
कारखाने	मनोरंजन पार्क
कारखाने	राष्ट्रीय पार्क
पर्यटन	अन्य
पर्यटन	वन क्षेत्र
राज्यवायिक सुविधायें	हरित पट्टिका
हॉटेल	बन्धा
हॉटेल काउन्स	तालाब, जलशय्या
संस्कृत, स्वतंत्रतेतर पर्यटन	नदी
प्राथमिक सरकाये	नाला, नहर
विश्वविद्यालय	रमराना/कवि प्रतिष्ठान
स्वतंत्र	सरकील रथल
जिल्हा विद्यालय	कुकि म्मि
मैट्रिक कालेज	पौधवाण्य
विश्वविद्यालय	व्यावसायिक क्षेत्र
उपयोगिताये एव सेवाये	अपरिभाषित क्षेत्र (अज्ञात)
धाम	अपरिभाषित क्षेत्र (अज्ञात)
आमिनामन केन्द्र	विश्विद क्षेत्र
आवस्य	खम सीमा
वृत्तवाय केन्द्र	नगर निगम सीमा
विद्युत गृह	विद्युत क्षेत्र
जलपान संस्थान	मिनिट क्षेत्र
धार्मिक	मिनिट क्षेत्र
मिनिट क्षेत्र	मिनिट क्षेत्र