

**ACTION PLAN
FOR
RESTORATION OF POLLUTED STRETCH
OF
RIVER KALI (EAST)
FROM
KHATUALI (DISTRICT MUZAFFARNAGAR)
TO
GULAOTHI (DISTRICT BULANDSHAHR)**



**UTTAR PRADESH POLLUTION CONTROL BOARD
TC - 12V, VIBHUTI KHAND, GOMTINAGAR,
LUCKNOW (UP)**

INDEX

1. Introduction	1-3
• 1.1 Polluted stretch of river Kali East from Muzaffarnagar to Bulandshahar along with drains.	4-5
2. Objective of the Action Plan	6
3. Pollution Inventory	7
• 3.1 Details of drains contributing the pollution	7-9
▪ a – b Drains (A –G)	10-17
• 3.2 Details of Sewage Pollution Sources	18-22
• 3.3 Details of Waste Management	23
▪ 3.3 (a) Municipal Solid Waste	23-25
▪ 3.3 (b) Bio- Medical Waste	26-27
▪ 3.3 (c) Hazardous Waste	28
▪ 3.3 (d) E-Waste	29
4. Details of Industrial Pollution Sources	30-34
• 4.1 Details of Industrial Units	35
• 4.2 Gap Analysis of Industries Situated in the catchment of River Kali (East)	36-38
5. Status of Ground Water	39-40
6. Monitoring of Pollution Sources	41
• 6.1 Monitoring of Drains	41
• 6.2 Monitoring of River	42
• 6.3 Monitoring of Water Polluting Industries	42
• 6.4 Establishment of River Kali (East) Pollution Control Room	43
7. Polluted River Stretch Rejuvenation Action Plan	44-57
Appendices	
Appendix-1 Pollution Source Mapping of River Kali (East) from Muzaffarnagar to Gulaothi (Bulandshahar)	59
Appendix-2 Details of Cities & Towns	61
Appendix-3 Details of Industries	62
Appendix-3A GAP Analysis of Industries Situated in the Polluted Stretch of River Kali (East)	71
Appendix-3B Action Points for Slaughter Houses	93
Appendix-3C Action Points for Textile Industries	95
Appendix-3D Action Points for Electroplating Industries	96
Appendix-3E Action Plan for Distillery & Fermentation Sector for Mitigation of Pollution to ensure ZLD	98
Appendix-3F Monitoring Data of CETP Pilakhua, Hapur	99
Appendix-4 Details of Gram Panchayats & Revenue Villages on the banks of River	100
Appendix-5 Wet Lands / Water Bodies Along The River Kali (East)	103
Appendix-6 Status of E-waste Management	107
Appendix-7 River Water Quality Data	111
Appendix-8 MSW improvement action plan time-line for the ULBs of Department of Urban Development, UP	117

1. INTRODUCTION

The Kali (East) is an intermittent river, flowing during the monsoon season. It originates near Antwara in Muzaffarnagar district of Uttar Pradesh and flows through the districts of Meerut, Hapur, Bulandshahar, Aligarh, Kasganj and finally joins with river Ganga in district Kannauj (Uttar Pradesh). The area under study is a part of the Indo-Gangetic Plains, which lies between the latitude $29^{\circ}9'34.29''\text{N}$ to $27^{\circ}1'321.34''\text{N}$ and the longitude $77^{\circ}45'15.10''\text{E}$ to $77^{\circ}58'14.03''\text{E}$ in various districts of Uttar Pradesh.

River Kali before meeting Khatauli drain is dry, it originates in village Antwara, Tehsil Jansath, District Muzaffarnagar, but at present it has no natural water.

River Kali receives water only after its confluence with Khatauli drain which carries industrial as well as domestic sewage.



Fig : 1.1, Kali East River Upstream of Khatauli Drain

As per the last year monitoring of river water quality in the identified polluted stretch of river Kali East, water of River Kali East is neither fit for Drinking water nor for Outdoor bathing and Fish Culture etc. It can only be used for

irrigation, industrial cooling or controlled waste disposal (Class – E, specified as per IS – 2296-1982).

The climate of the area is characterized by a moderate type of subtropical monsoon. The average annual rainfall in the area is about 1000 mm, out of which the main part is received during the monsoon period. The major land use is agriculture and there is no significant forest cover. The soil of the area is loam to silty loam and is free of carbonates. River Kali has a total length of 550 km (approximately). Originates in Antwara (district Muzaffarnagar, Uttar Pradesh) and joins River Ganga near Kannauj district of Uttar Pradesh. Though, it is a seasonal river that gets flow during monsoon season through rainwater and groundwater recharge. Presently, groundwater recharge is minimal and maximum percentage of flow in the river is of industrial & domestic wastewaters.

The river receives considerable amounts of wastewater every day from the industries and sewage system flow from different municipal area of Meerut city, Hapur, Gulaothi Town (Bulandshahar) which leads to deterioration of its water quality.

There are 94 industries in district Muzaffarnagar, Meerut ,Hapur and Gulaothi Town of district Bulandshahar. Mainly sugar mills, paper mills, textile, distilleries, slaughter houses and other industries along with villages situated along the course of River Kali East discharges their effluent/sewage into the river.



Fig:1.2: Google Earth image showing stretch of River Kali from Gulaothi to Kannauj alongwith the polluted stretch from Khatauli to Gulaothi

1.1 POLLUTED STRETCH OF KALI RIVER FROM MUZAFFAR NAGAR TO (GULAOTHI) BULANDHSHAHAR

Polluted Stretch of River Kali East begins from Antwara (in Khatauli Town) district Muzaffarnagar and flows South, South east coursing through Meerut city, Hapur, Gulaothi Town (Bulandshahar).

During its course from origin to its confluence in River Ganga at Kannauj, it traverses a distance of about 550 Kms, out of which polluted stretch is about 120 kilometres which lies in districts Muzaffarnagar to Bulandshahar, Uttar Pradesh.

There are 28 villages located on the banks of this Priority-1- polluted stretch of river Kali (East). The total population of these villages is 93126 which generates 10.057 MLD of sewage.

There are 94 water polluting industries located in the catchment area of the present stretch of Kali (East) river Appendix -3. These industries have effluent treatment plants and their treated effluent is discharged through 08 drains, of which 01 is entirely industrial drain and remaining 07 drains are mixed drains where treated industrial effluent is mixed with the sewage. The industries are grossly polluting in nature which includes Sugar, Pulp & Paper, Distillery, Textile, Slaughter House etc.

Out of 94 industries, 85 units are complying the norms, 4 units are non-complying. Out of these non complying units, 03 units have been closed by UPPCB and an environmental compensation of Rs 2.0 lakh has been imposed on 01 unit . 03 units have been dismantled and 01 unit closed itself and the remaining 1 unit is not in operation due to own reasons.

There is a textile industrial cluster in Pilakhua known as textile centre which has been developed by Hapur- Pilakhua Development Authority (HPDA) having 13 units till date. The effluent of these textile units is treated in Common Effluent Treatment Plant of capacity 2.1 MLD located in the industrial cluster and treated effluent is discharged in to Kali river through Kadrabad Drain.

2. OBJECTIVE OF THE ACTION PLAN

The objective of the Action Plans is to restore the quality of this priority -1 polluted stretch of River Kali (East) to be fit for at least bathing purposes within 06 months from the date of action plan gets approved, as directed by Hon'ble National Green Tribunal vide its order dated 20th September 2018 passed in the original Application No 673/2018 in the matter of NEWS ITEM PUBLISHED IN ***'THE HINDU' AUTHORED BY SHRI JACOB KOSHY titled "*** More river stretches are now critically polluted: CPCB.

3. POLLUTION

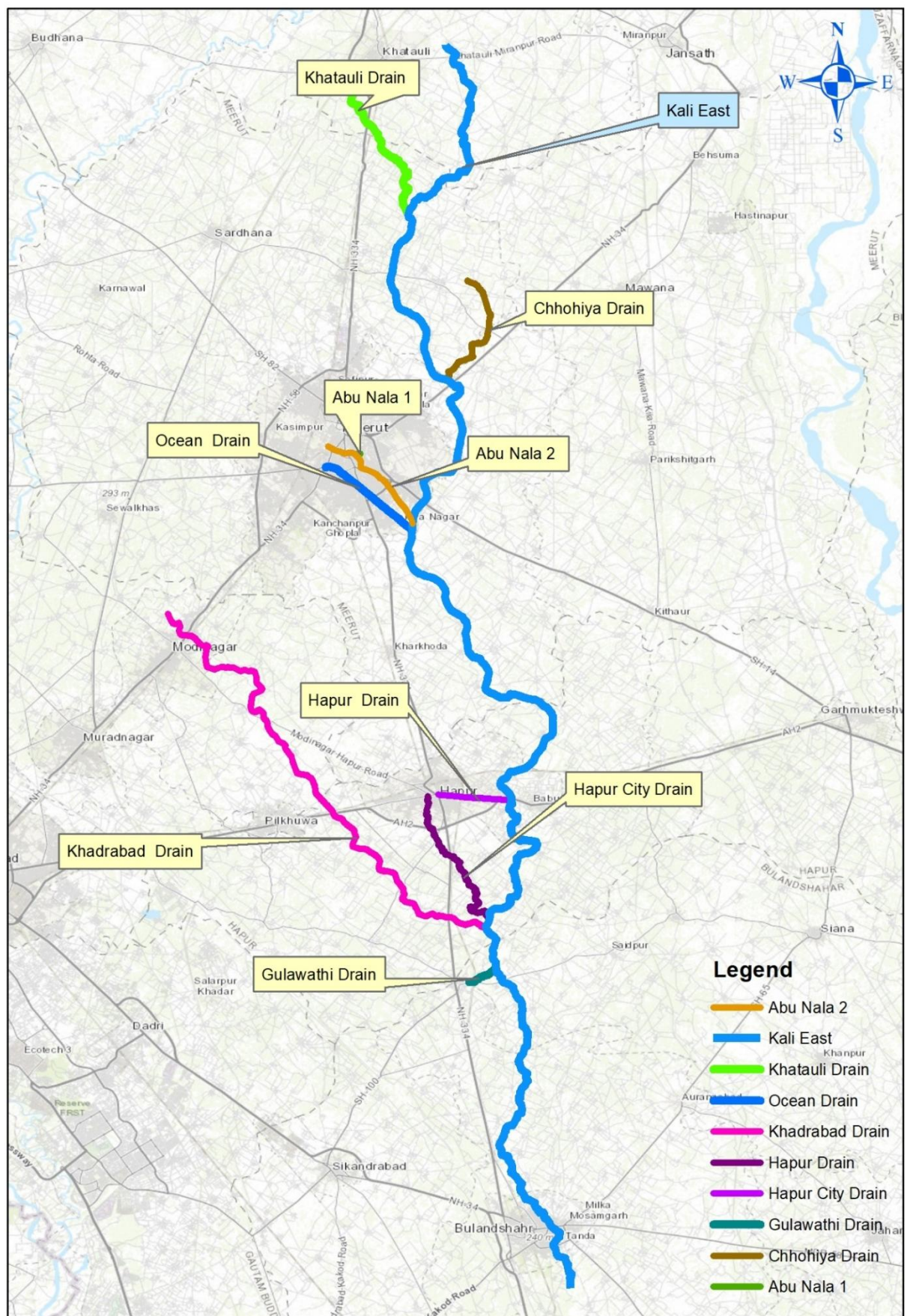
3.1 DETAILS OF DRAINS POLLUTING RIVER KALI (EAST)

In the polluted stretch under question of River Kali (East), total discharge of 589.113 MLD is estimated in the form of sewage and industrial effluent through 09 drains and direct discharge of 08 industries in the river. As per desk inventory, about 555.61 MLD of sewage and 26.624 MLD of industrial effluent are being currently discharged into the river. Industrial effluent from 08 industries in Meerut in total discharge 6.879 MLD directly into the River Kali (East) after treatment. The treatment of sewage is a major area of concern as out of total estimated sewage discharge of 555.61 MLD, only 94.9 MLD of sewage is being treated. The estimates of industrial effluent are based upon the consented discharge quantity from the units but actual industrial effluent may be more than the estimates owing to over discharge by consented industries and discharge from illegal units operating in non-conforming areas. A detailed drain wise data regarding sewage, industrial effluent, number of industries discharging into drain, status of tapping and status of installing of bar meshes etc. is given in Appendix – 1.

Summary of drains polluting River Kali (East)

S No.	District	No. of Drains	Type of Drains			Status of Drains			Industries		Sewage Discharge (MLD)			Total Discharge in the River (MLD)
			Domestic	Industrial	Mixed	Tapped	Untapped	Partially Tapped	Number	Treated Effluent (MLD)	Treated	Untreated	Total	
1	Muzaffarnagar (Khatauli)	01	-	-	01	-	01	-	01	1.65	-	3.00	3.00	4.65
2	Meerut	03	-	-	03	-	03	-	22	9.369	84.7	394.30	479.00	488.369
	Meerut(Choiya Nala) meeting in Hapur	01	-	01	-	-	01	-	05	5.350	-	-	-	5.350
3	Hapur Drain	01	-	-	01	-	01	-	05	0.455	-	25.84	25.84	26.295
	Hapur Drain - 1 (City Drain)	01	01	-	-	-	01	-	-	-	-	5.00	5.00	5.00
4	Meerut, Ghaziabad (Modi Nagar) & Hapur	01	-	-	01	-	01	-	51	9.1	10.20	26.77	36.97	46.07
5	Bulandshahar (Gulaothi)	01	-	-	01	-	01	-	02	0.7	-	5.80	5.80	6.5
	Total	09	01	01	07		09	-	86	26.624	94.90	460.71	555.61	582.234

Source: Joint Verification report submitted in Hon'ble NGT in OA No. 200/2014 and desk inventory of UPPCB



A. KHATAULI DRAIN (MUZAFFARNAGAR)

a. Origin

Khatauli Drain originates from Khatauli Town in Muzaffarnagar district, Uttar Pradesh. Coordinates of its origin point are: Latitude: 29°17'20.26" N & Longitude: 77°43'44.17"E.

Khatauli drain joins Kali River at Village Ambarpur. Coordinates of its meeting point in River Kali (East) are Latitude: 29°18'22.24"N & Longitude: 77°40'23.25"E.

b. Length covered

Distance covered by Khatauli drain from Khatauli town to its meeting point to River Kali East in Village Ambarpur is approx.: 15.9 km.

c. Details of industries & discharge of their effluent into the drain

Khatauli Drain carries domestic waste water of Khatauli town as well as treated effluent from Triveni Engineering & Industries Limited (Sugar Unit). Total Discharge from Khatauli Drain to River Kali East is 4.65 MLD, out of which 1.65 MLD is treated effluent from Triveni Engineering & Industries Limited (Sugar Unit) and rest is untreated sewage of Khatauli Town.

Parameters	Results
pH	7.1
BOD (mg/l)	38.0
COD (mg/l)	1120
TSS (mg/l)	424
Total Coliform (MPN/100 ml)	6 X 10 ⁵
Date of Sampling	26.04.19

Confluence Point of Khatauli Drain at Kali River



B. Abu Nala-1, Abu Nala-2, Odean Drain (Meerut)

a. Origin

Abu Nala-1 Drain originates in Meerut City. Coordinates of its origin point are Latitude: 28°59'0.22"N & Longitude: 77°43'44.17"E. Abu Nala 1 joins Abu Nala 2 drain at Vikaspuri Colony, Meerut. Coordinates of the end point of Abu Nala-1 drain are Latitude: 28°59'1.45"N & Longitude: 77°43'3.07"E.

Abu Nala -2 Coordinates of origin point of Abu Nala 2 drain are Latitude: 28°59'21.75" N & Longitude: 77°41'35.87"E. Abu Nala- 2 meets Kali River at revenue Village Kamalpur. Coordinates of the end point of the Abu Nala- 2 drain are Latitude: 28°55'58.82"N & Longitude: 77°45'24.68"E.

Odean Drain: Coordinates of its origin point are Latitude: 28°58'25.01" N & Longitude: 77°41'29.15"E. Odean Drain meets Kali River at revenue Village Jalalpur. Coordinates of the end point of the Odean Drain are Latitude: 28°55'36.29"N & Longitude: 77°45'22.32"E.

b. Length covered

Distance covered by **Abu Nala-1** drain is approx. 0.36 km. It originates in town area of Meerut carries domestic wastewater of the town and joins the Abu Nala 2.

Distance covered by **Abu Nala-2** is approx. 9.60 km. It originates in town area of Meerut carries domestic wastewater of town Meerut and treated industrial effluent of 5 industries.

Distance covered by **Odean Drain** is approx. 8.35 km.

c. Details of effluent discharge & water quality of Abu Nala-1, Abu Nala- 2 & Odean Drain

22 industries discharge their effluent into the **Abu Nala 1, Abu Nala 2** and **Odean Drain**. 100 % treated industrial effluent (9.369 MLD) is

being discharged into River Kali East. Total Mixed effluent discharge from Abu Nala-1 , Abu Nala-2 and Odean drain to River Kali East is 488.369 MLD, Out of which 84.7 KLD is treated effluent and rest is untreated sewage approx. 394.30 MLD.

WATER QUALITY AT MEETING POINT OF ABU NALA – 1

Parameters	Results
pH	7.6
BOD (mg/l)	62
COD (mg/l)	336
TSS (mg/l)	1230
Total Coliform (MPN/100 ml)	1.7x 10 ⁵
Date of Sampling	26.04.19



WATER QUALITY AT MEETING POINT OF ABU NALA – 2

Parameters	Results
pH	7.8
BOD (mg/l)	68
COD (mg/l)	360
TSS (mg/l)	1280
Total Coliform (MPN/100 ml)	2.1x 10 ⁵
Date of Sampling	26.04.19



WATER QUALITY AT MEETING POINT OF ODEAN DRAIN

Parameters	Results
pH	7.5
BOD (mg/l)	56
COD (mg/l)	312
TSS (mg/l)	1100
Total Coliform (MPN/100 ml)	1.4x 10 ⁵
Date of Sampling	26.04.19



C. Details of Chhoiya Drain Kali River

a. Origin

Chhoiya Drain originates in Lawar Town. Coordinates of its origin point are Latitude: 29° 6'44.04"N & longitude: 77°47'52.64"E. Chhoiya drain meets Kali River at Village Saini, Muzaffarnagar. Coordinate of the end point of the Chhoiya Drain drain are Latitude: 29° 2'18.33"N & Longitude: 77°47'1.67"E.

b. Length covered

Distance covered by Chhoiya Drain is approx. 11.4 km.

c. Details of effluent discharge & water quality of Chhoiya Drain

5 industries discharge their effluent into the Chhoiya Drain. Chhoyia is an industrial drain. Total industrial effluent discharge from Chhoiya to River Kali East is 5.350 MLD. 100% Industrial effluent is being treated before discharging into the Kali east river .

WATER QUALITY AT MEETING POINT OF CHHOIYA

Parameters	Results
pH	7.3
BOD (mg/l)	41
COD (mg/l)	284
TSS (mg/l)	980
Total Coliform (MPN/100 ml)	1.2x 10 ⁵
Date of Sampling	26.04.19



D. Kadrabad Drain

a. Origin

Kadrabad Drain originates from Village Makarmatpur Sikhera, Kadrabad. Coordinates of origin point of Kadrabad Drain starting are Latitude: 28°51'52.36"N & longitude: 77°34'22.09"E. Kadrabad Drain meets Kali River near Akbarpur Village. Coordinate of the end point of the Kadrabad drain are Latitude: 28°37'52.15"N & Longitude: 77°48'42.00"E.

b. Length covered

Distance covered by Kadrabad drain is approx.: 43.45 km.

c. Details of effluent discharge & water quality of Kadrabad Drain

51 industries discharge their effluent into the Kadrabad Drain. Kadrabad carries mixed effluent. Total industrial effluent discharge from Kadrabad to Kali East is 9.1MLD. 100% industrial effluent is being treated before discharging into the Kali east river. Treated Domestic effluent 10.20 MLD and remaining is discharge without treatment.

WATER QUALITY AT MEETING POINT OF KADRABAD

Parameters	Results
pH	7.4
BOD (mg/l)	56
COD (mg/l)	98
TSS (mg/l)	182
T. Coli (MPN /100ml)	3.5×10^6
Date of Sampling	29-04-2019



E. Hapur Drain

a. Origin

Hapur Drain originates from Teachers Colony, Hapur. Coordinates of origin point of Hapur Drain are Latitude: 28°43'44.24"N & longitude: 77°46'6.16"E. Hapur Drain meets Kali River near Mushrapur Village. Coordinate of the end point of the Hapur drain is Latitude: 28°38'16.79"N & Longitude: 77°48'53.08"E.

b. Length covered

Distance covered by Hapur drain is approx.: 16.3 km.

c. Details of effluent discharge & water quality of Hapur Drain

05 industries discharge their effluent into the Hapur Drain. Hapur Drain carries mixed effluent. Total industrial effluent discharge from Hapur drain to River Kali East is 0.455 MLD. 100% industrial effluent is being treated before discharging into the Kali east river . Total mixed effluent is 26.295 MLD. Domestic wastewater which is being discharged into river Kali East through Hapur drain is untreated.

WATER QUALITY AT MEETING POINT OF HAPUR DRAIN

Parameters	Results
pH	7.6
BOD (mg/l)	69
COD (mg/l)	200
TSS (mg/l)	160
T. Coli (MPN /100ml)	2.1×10^6
Date of Sampling	29-04-2019

Confluence Point of Hapur Drain on Kali River



F. HAPUR DRAIN 1

Hapur Drain 1 (City Drain) covers approx. 5.42 km before its confluence to River Kali east. It is a domestic drain. Approximately 5.0 MLD domestic wastewater is being discharged into Kali East river without any treatment.

WATER QUALITY AT MEETING POINT OF HAPUR DRAIN-1

Parameters	Results
pH	7.4
BOD (mg/l)	67.5
COD (mg/l)	150
TSS (mg/l)	178
T. Coli (MPN /100ml)	2.4×10^4
Date of Sampling	29-04-2019

Confluence Point of Hapur City Drain on Kali River



G. Gulaothi Drain

a. Origin

Coordinates of origin point of Gulaothi Drain are Latitude: 28°35'27.33"N & longitude: 77°47'57.68"E. Coordinates of meeting point of Gulaothi Drain to the Kali River are Latitude: 28°35'59.21"N & Longitude: 77°49'11.18"E.

b. Length covered

Distance covered by Gulaothi drain is approx. 1.46 km.

c. Details of discharge & quality of water of Gulaothi Drain

02 industries discharge their effluent into the Gulaothi Drain. It carries mixed effluent. Total industrial effluent discharge from Hapur drain into Gulaothi Drain is 0.7 MLD. 100% Industrial effluent is being treated before discharging into the Kali east river. Total mixed effluent is 6.5 MLD and remaining domestic wastewater which is being discharged into river Kali East through Gulaothi drain is untreated.

WATER QUALITY AT MEETING POINT OF GULAOTHI DRAIN

Parameters	Results
pH	7.8
BOD (mg/l)	68
COD (mg/l)	288
TSS (mg/l)	482
T. Coli (MPN /100ml)	-
Date of Sampling	29-04-2019



3.2 DETAILS OF SEWAGE POLLUTION SOURCES

As mentioned above, total sewage discharged into Kali river through 08 major drains is approximately 555.61 MLD. There are 05 town areas namely Meerut, Hapur, Khatauli, Modi Nagar and Gulaothi located in the catchment area of the river **(Appendix – 2)**. The sewage and other effluent generated from these cities contribute to the organic load of the river. As mentioned earlier, the treatment of sewage is a major issue of concern as the total installed capacity of the 12 Sewage Treatment Plants is 168 MLD of which only 84.7 MLD is being utilized for its treatment. All the 12 STPs in Meerut are complying the prescribed standard; this indicates that total treatment facility available is not fully utilized owing to incomplete household sewer connections and connectivity of conveyance channel to the Sewage Treatment Plants. The details of Sewage Treatment Plants along with installed capacity, utilized capacity, operating agency and discharge points are given in the table below:-

Details of STPs

S. No.	District	Name of STP	Installed Capacity (MLD)	Utilized Capacity (MLD)	Capacity Utilized (%)	Operating Govt. Agency	Compliance	Discharge Drain
							(Yes/ NO)	
1	Meerut	03MLD (Pandav Nagar)	03	2.50	83.3%	Meerut Development Authority	Yes	Abu Nala 2
2	Meerut	11 MLD (Pallavpur am-2)	11	7.40	67.3%	Meerut Development Authority	Yes	Abu Nala 1
3	Meerut	10 MLD (Lohia Nagar)	10	5.20	52%	Meerut Development Authority	Yes	Odean Drain
4	Meerut	15 MLD (Shatabdi Nagar)	15	4.0	26.7%	Meerut Development Authority	Yes	Khadauli Drain to Khadraba Drain
5	Meerut	07 MLD (Pallavpur am-1)	07	6.70	95.7%	Meerut Development Authority	Yes	Abu Nala 1
6	Meerut	15 MLD (Vedvyaspuri)	15	4.20	28%	Meerut Development Authority	Yes	Khadauli Drain to Khadraba Drain

7	Meerut	06 MLD (Rakshapuram)	06	4.40	73.3%	Meerut Development Authority	Yes	Abu Nala 1
8	Meerut	06 MLD (Shraddha puri-1)	06	6.0	100%	Meerut Development Authority	Yes	Abu Nala 2
9	Meerut	07 MLD (Sport Complex)	07	2.0	28.6%	Meerut Development Authority	Yes	Khadauli Drain to Khadraba Drain
10	Meerut	10 MLD (Ganga Nagar)	10	4.50	45%	Meerut Development Authority	Yes	Abu Nala 1
11	Meerut	06 MLD (Shraddha puri-2)	06	5.80	96.7%	Meerut Development Authority	Yes	Abu Nala 2
12	Meerut	72 MLD (Garh Road)	72	32.0	44.4%	Jal Nigam	Yes	Kali (East)
			168	84.7	50.4%			

Source: Desk Inventory of UPPCB

The details of proposed STPs as well as those which are under construction in Meerut, Modinagar (Ghaziabad), Hapur & Bulandshahar for the treatment of gap generated in the sewage in the identified stretch of River Kali (East) is shown in table:-

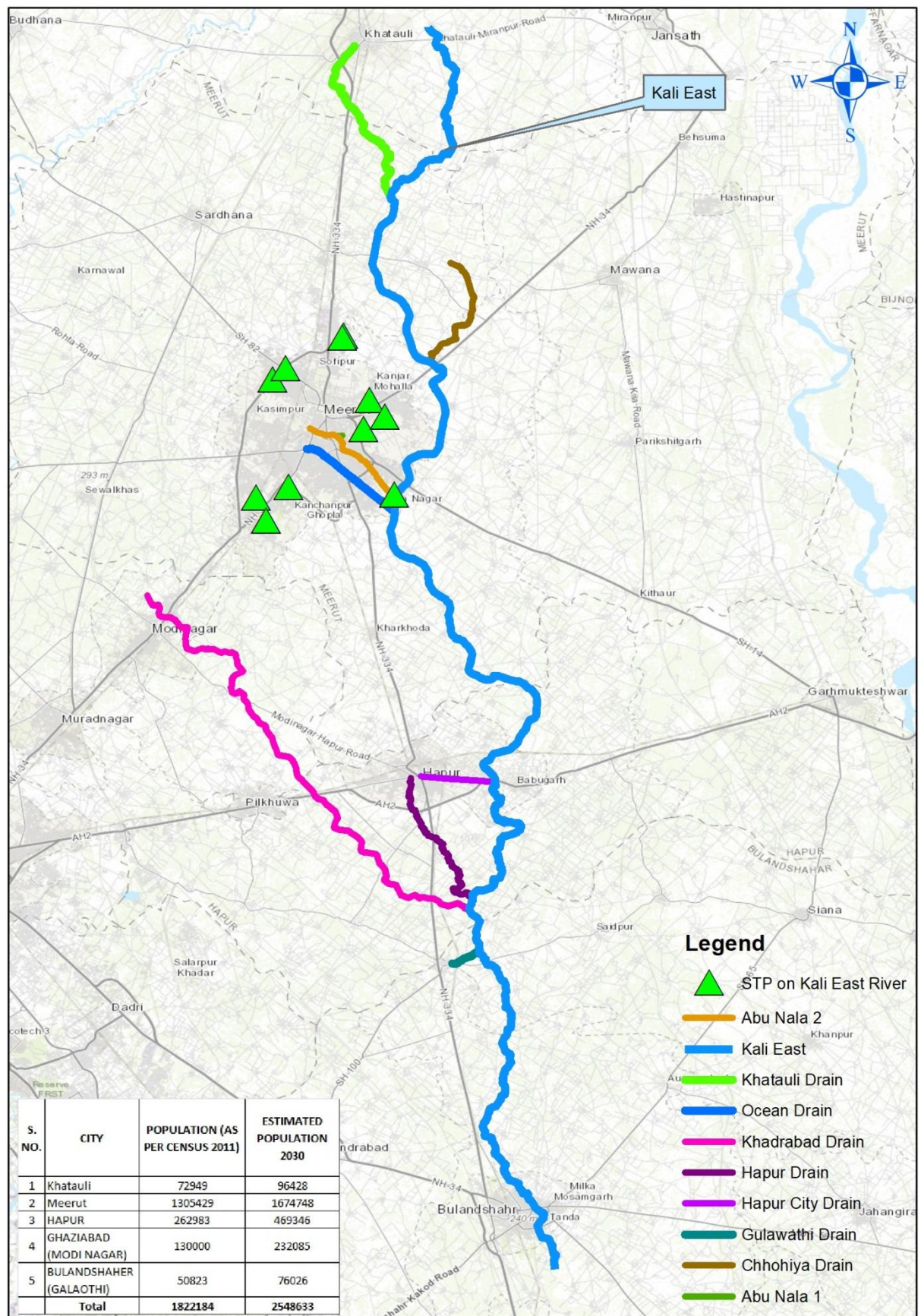


Fig : 3.2, GIS map showing STPs and drain

**Details of Plan for Treatment of Sewage Gap in River Kali (East) Priority-1 Stretch from
Khatauli, Muzaffarnagar to Gulaoti (Bulandshahar)**

Sl. No.	District	Name of Drain (City)	Details of STPs proposed		Details of DPR				Expected date of completion
			Name	Capacity (in MLD)	Status (under preparation/ prepared)	Amount of DPR (Rs. In crore)	Status of approval (submitted/ approved)	Funding Agency	
1.	Meerut	Abu Nala-2 & Odean Drain (Meerut)	Meerut	200	Prepared	671.78	Approved dated 02.01.2019	NMCG	Jan-2021
2.	Ghaziabad	Modinagar	Modinagar	20	Prepared	86.07	Approved & under construction	AMRUT Project	Jan-2020
3.	Hapur	Hapur Drain	Hapur	30	Prepared	84.46	Sanctioned	AMRUT Project	24 Months
4.	Hapur	Hapur Drain-1 (City drain)	Hapur	50	Prepared	35.95	Submitted	NMCG	30 Months after approval
5.	Bulandshahr	Gulaoti drain		07	Not Prepared	-	-	-	-

There are 28 villages located on the banks of this Priority-1 polluted stretch of river Kali (East). The total population of these villages is 93126 which generate 10.057 MLD of sewage which needs to be treated in-situ through traditional techniques. The Panchayati Raj Department of Government of Uttar Pradesh may be given responsibility of treatment of this sewage under Rashtriya Swachhata Mission-Gramin.

Analysis of gap generated in Sewage Treatment based on projection of Population for Year 2030 in the catchment of River Kali East

S. NO.	CITY	POPULATION (AS PER CENSUS 2011)	ESTIMATED POPULATION 2030	WATER CONSUMPTION (MLD) (@135)	SEWAGE GENERATION (MLD)	INSTALLED CAPACITY OF EXISTING STP (MLD)	PROPOSED STP CAPACITY (MLD)	GAP IN STP CAPACITY UTILIZATION BASED ON POPULATION YEAR 2030 (MLD)
1	Khatauli	72949	96428	13.02	10.41	N/A	N/A	10.41
2	Meerut	1305429	1674748	226.09	180.87	168	200	N/A
3	HAPUR	262983	469346	63.36	50.69	N/A	80	N/A
4	GHAZIABAD (MODI NAGAR)	130000	232085	31.33	25.07	N/A	20	5.07
5	BULANDSHAHER (GALAOTHI)	50823	76026	10.26	8.21	N/A	7	1.21
	Total	1822184	2548633	344.07	275.25	168	307	16.69

There are 5 Cities and Towns situated in the catchment area of Polluted Stretch of River Kali (East). Estimated Sewer Generation on the basis of Census 2011 is 275.25 MLD. The installed capacity of existing STPs is 168 MLD and 307 MLD capacity STPs are proposed to be installed in Hapur, Modi Nagar (Ghaziabad) & Meerut but there is a gap in the treatment of Sewage Generated and STPs to be installed at Khatauli, Modi Nagar & Gulaothi, Bulandshahar.

3.3 DETAILS OF WASTE MANAGEMENT

3.3 (a) Municipal Solid Waste

In 05 Towns located in the catchment area of River Kali (East) from Khatauli (Muzaffarnagar) to Gulaothi (Bulandshahar), total 1368.22 TPD Solid Waste is generated. All the cities/ULBs- Merrut/Hapur/Gulaothi/Modinagar/Khatauli have been declared ODF by QCI. Although, the ULBs have been practicing door to door collection of MSW, however, there has been lack of processing facility and it is required that ULBs establish Municipal Solid Waste Treatment & Disposal Facility as early as possible for restoring and maintaining the water quality of the river stretch under consideration. The city wise details of municipal solid waste generation are given below:

S.No.	District	Waste generated (TPD)	Waste Collected (TPD)	Door to Door Collection)	Remarks
1	Khatauli (Muzaffarnagar)	28.0	22.4	80%	As of now the MSW processing facility is not established /functional in the ULBs. For city of Meerut/Ghaziabad and Muzaffarnagar, the department has issued a LoA for setting up of WTE plants, however, it is required to work on decentralized processing of waste till the WTE plants are established.
2	Meerut	1120.00	1120.00	100%	
3	Hapur	151.22	151.22	100%	
4	Modi Nagar (Ghaziabad)	50.0	50.0	100%	
5	Gulaothi (Bulandshahar)	19.0	19.0	100%	
	Total	1368.22	1362.62		

There is a legacy waste dumping site within 500 meter of Kali (East) river in Meerut and the estimated quantity of waste in this dumping site is approximately 50000 MT.

There are 28 villages located on the banks of this Priority-1 polluted stretch of river Kali (East). The total population of these villages is 93126 which generate 23.281 TPD of un-segregated solid waste. This un-segregated solid waste is dumped in open plots or ponds/low lying areas in the villages which contribute to air and groundwater pollution. Details of villages, their location, population etc. is given in **Appendix -4**. The details of existing wetlands are given in **Appendix - 5**.

Details of Dumping Site 500 Meters from the edge of the River

S N	Dist	Name of Dumping site	Location		Area (Ha)	Legacy / Current	Estimated quantity of MSW (MT)	Name of ULB/ Panchayat	Disposal Plan (Yes /No)
			Latitude	Longitude					
1	Meer ut	Village- Ganwadi	28°53' 25.3"N	77°35' 31.3"E	8	Legacy	50000	Nagar Nigam, Meerut	No

Gap Analysis of Municipal Solid Waste Treatment based on Year 2030 Population in the catchment of River Kali East

S. NO.	CITY	POPULATION (AS PER CENSUS 2011)	ESTIMATED POPULATION 2030	MSW GENERATION ESTIMATED (TPD) (@350 gm/capita/day)	AVAILABLE PROCESSING FACILITY (TPD)	GAP (TPD)	PROPOSED PROCESSING FACILITY & TIMELINE
1	Khatauli	72949	96428	33.75	NO	33.75	1 YEAR AS PER APENDIX-8
2	Meerut	1305429	1674748	586.16	NO	586.16	
3	HAPUR	262983	469346	164.27	NO	164.27	
4	GHAZIABAD (MODI NAGAR)	130000	232085	81.23	NO	81.23	
5	BULANDSHAHER (GALAOTHI)	50823	76026	26.61	NO	26.61	
	Total	1822184	2548633	892.02		892.02	

There are 5 Cities and Towns situated at the catchment area of Polluted Stretch of River Kali (East). Estimated MSW Generation on the basis of Census 2011 is 892.02 TPD. There is no processing facility available in these towns. Therefore, gap of 892.02 TPD exists in the catchment area of polluted River Stretch.

3.3 (b) Bio-Medical Waste

In 05 cities and towns located in the catchment of polluted stretch of river Kali (East), there are 2619 Health Care Facilities which generate 4314 Kg/Day of Bio-Medical Waste. All the Health Care Facilities have valid agreements with 02 Common Bio-Medical Waste Treatment Facilities situated in Meerut and Ghaziabad for collection, transportation and disposal of Bio-Medical Waste. The segregation of Bio-Medical Waste and disposal in the CBWTFs as per the provisions of Bio-Medical Waste Management Rules, 2016 is a major area of concern. The mixing of Bio-Medical Waste with Municipal Solid Waste is also observed which also needs to be addressed. The details of Bio-Medical Waste generated in the Cities/Towns and details of Common Bio-Medical Waste Treatment Facilities are given below:

S.No.	District	Total No. Of H.C.Fs	Bio Medical Waste generated (Kg/Day)	Bio Medical Waste Treated (Kg/Day)	No. Of H.C.Fs attached with CBWTF	No. Of H.C.Fs having captive treatment facility	Gap between waste generated & treatment capacity available (Kg/Day)	Remarks
1	Muzaffar-nagar	157	260.0	260.0	157	NIL	NIL	All the HCFs are Members of CBWTF
2	Meerut	440	764.0	764.0	440	NIL	NIL	All the HCFs are Members of CBWTF
3	Hapur	87	484.0	484.0	87	NIL	NIL	All the HCFs are Members of CBWTF
4	Ghaziabad	1661	2361.0	2361.0	1661	NIL	NIL	All the HCFs are Members of CBWTF
5	Buland-shahar	274	445.0	445.0	274	NIL	NIL	All the HCFs are Members of CBWTF
		2619	4314	4314	2619	NIL	NIL	

Source: Desk Inventory of UPPCB

Details of Bio-Medical Waste Treatment Facilities

S.N.	Name of the CBWTF operator connect No. & Address	Total No. Of HCFs Being Covered	Coverd District	Treatment facility available			BMW Treatment capacity Kg/day	Number of Vehicles	Status of On Line Continuous Emission Monitoring System & Connectivity	Validity of issued Authorization
				Incinerator	Auto Clave	Shredder				
1	2	3	4	5	6	7	8	9	10	11
1	M/s Semb Remky. Environmental Management Pvt. Ltd. C-21 Phas-1 Masuri Gulowthi Road, UPSIDC, Ghaziabad, Phone no.- 91203250674, Fax no- 0120 2678917	875	Gaziabad, Noida Hapur, Moradabad, Meerut, J.P. Nagar, Chandausi, Sambhal	150 kg/hr	430 ltr/shift	50 kg/hr	4500	13 (GPS in 13 vehicles)	Installed & Connected	31.12.2023
2	M/s Synergy Waste Management (p) Ltd. 011-26933371 Subharti Medical College, Subharti Puram, Meerut	1537	G.B. Nagar Gaziabad Hapur Bulandshaher Bijnor Meerut Shamli Bagpat Muzaffarnagar Saharanpur	300 kg/hr	300 kg/batch	300 kg/hr	4000	20 with GPS & hologram	Installed & Connected	31.12.2019

Source: Desk Inventory of UPPCB

3.3 (c) Hazardous Waste

The total hazardous waste generation in the catchment area of the stretch from 646 industrial units is 73278.733 Ton/Annum which is collected, treated and disposed by 02 Common Facilities located near Kanpur Dehat. The details of Hazardous Waste generated and the treatment facilities are given below.

S.No.	District	Total No. Of Hazardous Waste Generating Units	Hazardous Waste Generated (TPA)				Facility for Treatment & Disposal of Hazardous Waste	Gap between waste generated & treatment capacity available (TPA)
			Incinerable	Landfillable	Recyclable	Total		
1	Muzaffarnagar	80	22.50	3281.25	3.50	3307.25	The Incinerable & Landfillable Hazardous waste is disposed to authorized TSDFs 1-U.P. Waste Management Project, Kanpur Dehat. 2- Bharat Oil & Waste Management, Kanpur Dehat	There is no gap between generation & disposal of Hazardous Waste
2	Meerut	96	358.781	1935.809	1057.50	3352.09		
3	Hapur	32	547.50	1825.238	10784.95	13157.688		
4	Ghaziabad	357	3934.90	7120.504	39662.961	50718.365		
5	Bulandshahar	81	2384.00	343.80	15.54	2743.34		
	Total	646	7247.681	14506.601	51524.451	73278.733		

Source :Desk Inventory of UPPCB

3.3 (d) E-Waste

In the State, total 43 Common E- Waste Disposal Facilities are operational. Out of these, 10 units are collection center, 16 have the facility of collection & dismantling whereas remaining 17 are collection, dismantling and recycling centers. The cumulative capacity of these plants- 2,48,000/annum. The quantum of E-Waste generated in the State is approximately 86,000 TPA. Hence, there is no gap in the generation and treatment infrastructure for safe E-Waste handling as per the provisions of E-Waste Rules, 2016. The status report of E-Waste disposal facilities in the State is enclosed at **Appendix-6**.

4. DETAILS OF INDUSTRIAL POLLUTION SOURCES:

There are 94 water polluting industries located in the catchment area of the present stretch of Kali (East) river **Appendix -3**. These industries have effluent treatment plants and their treated effluent is discharged through 08 drains, of which 01 is entirely industrial drain and remaining 07 drains are mixed drains where treated industrial effluent is mixed with the sewage. The industries are grossly polluting in nature which belong to Sugar, Pulp & Paper, Distillery, Textile, Slaughter House etc. There is a textile industrial cluster in Hapur-Pilkhua Development Authority industrial area of UPSIDC having about 13 units. The effluent of these textile units is treated in Common Effluent Treatment Plant of capacity 2.1 MLD located in the industrial cluster and treated effluent is discharged in to Kali river through Kadrabad Drain. The drain wise and sector wise distribution of industries and their GIS Mapping is shown below in Fig 4.1,4.2,4.3,4.4 estimated treated effluent discharge and details of CETP is given in the tables below:

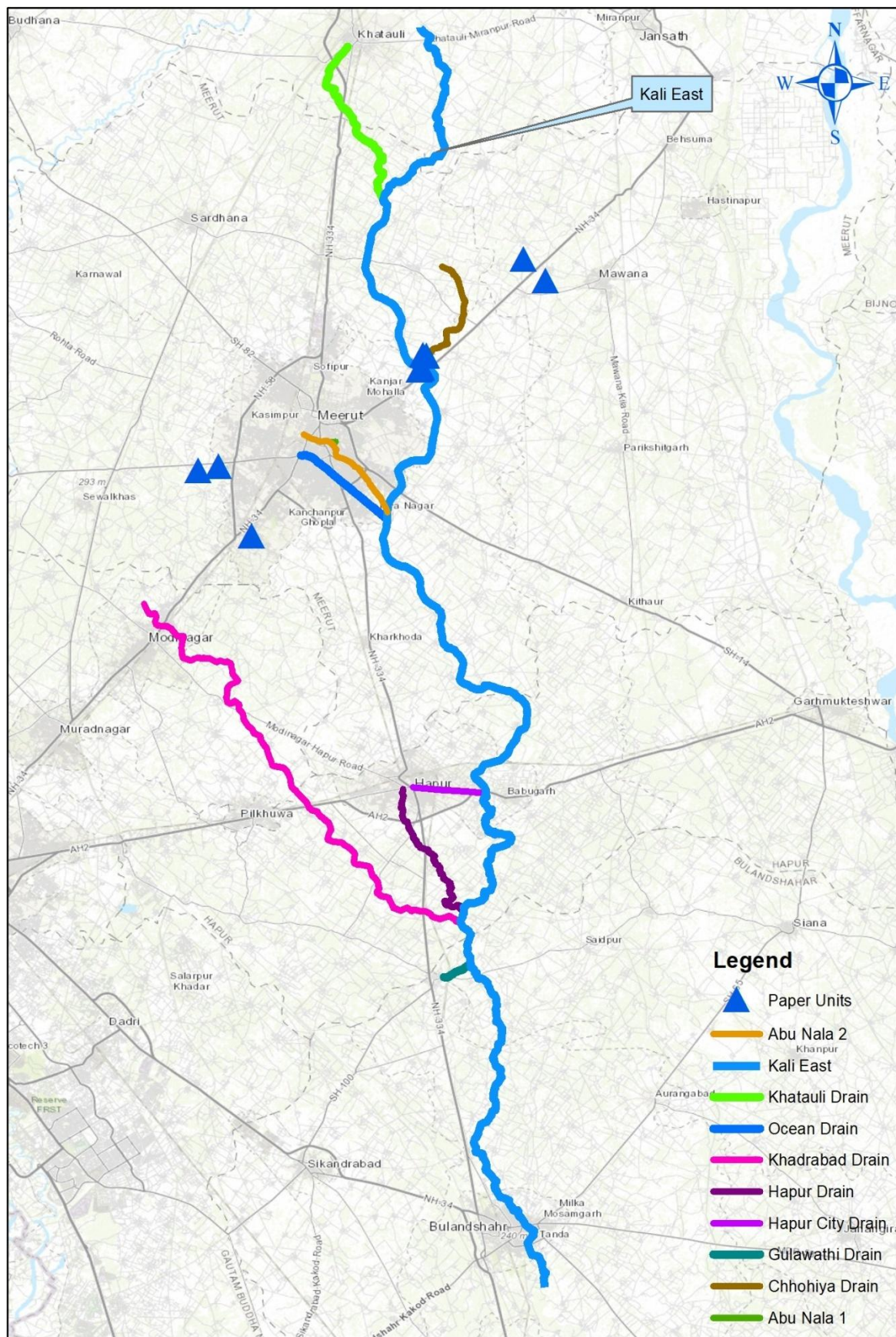


Fig : 4.1: GIS map showing Paper Industries and drains

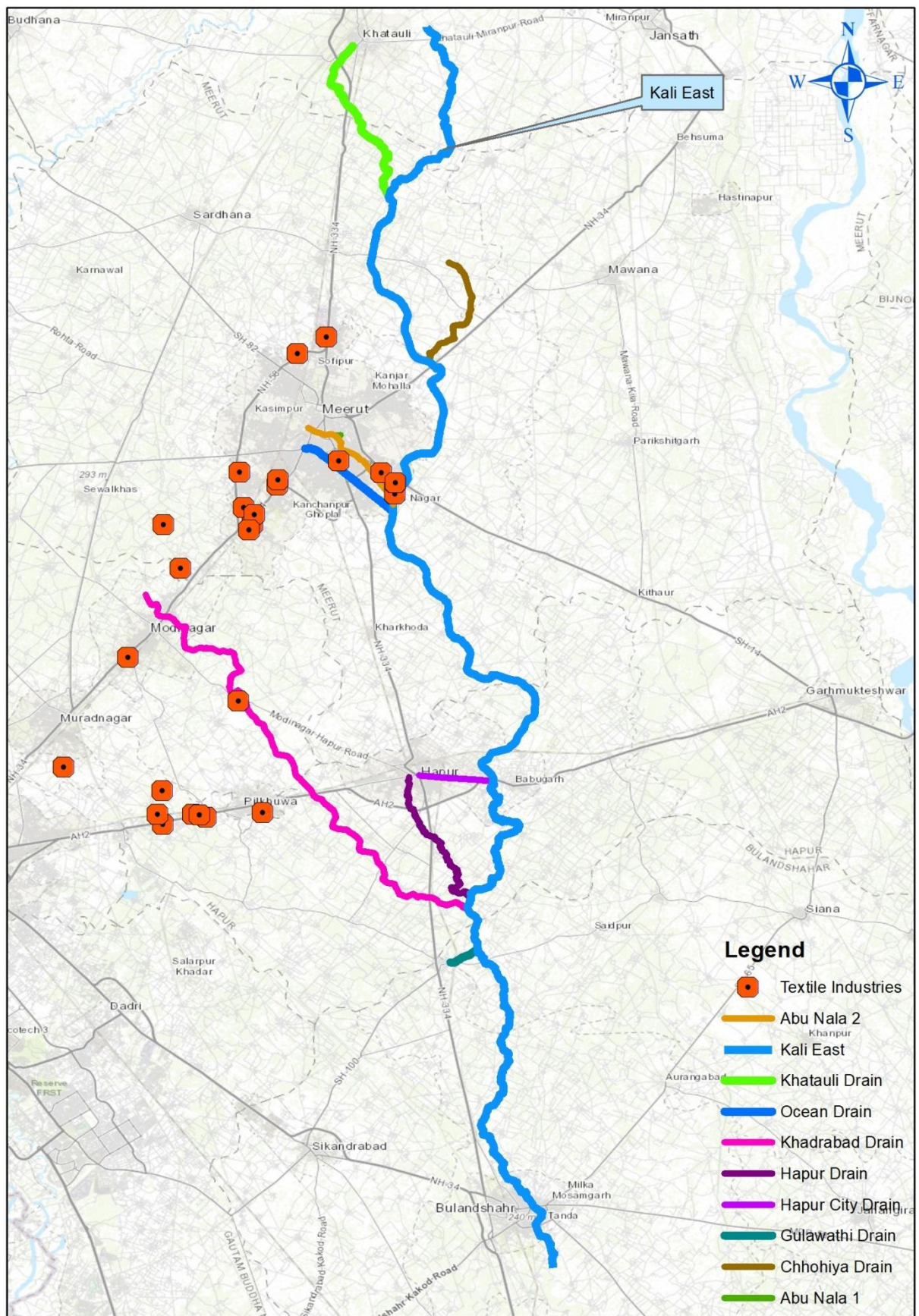


Fig : 4.2: GIS map showing Textiles Industries and drains

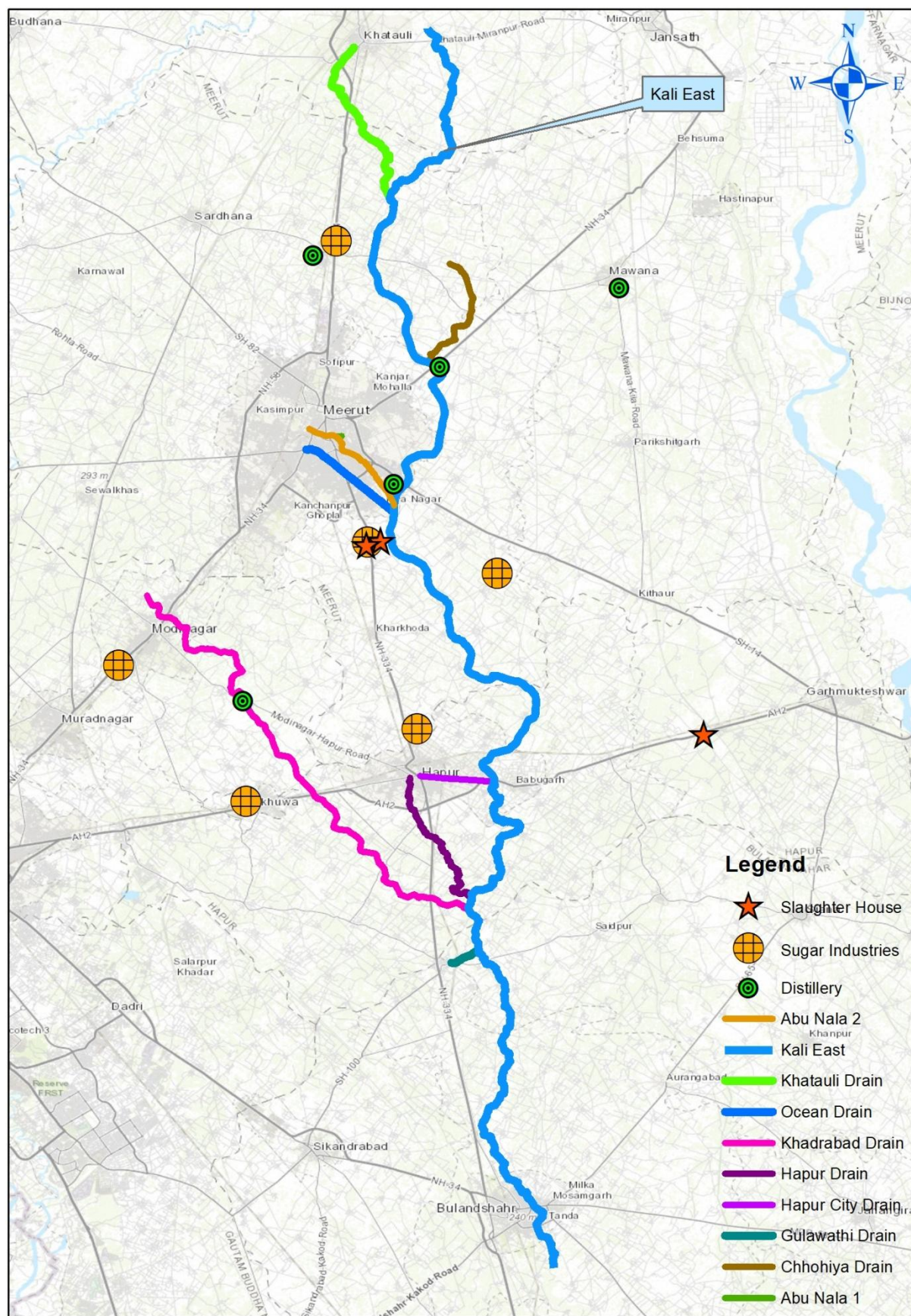


Fig : 4.3: GIS map showing Slaughter Houses, Sugar & Distillery Industries and drains

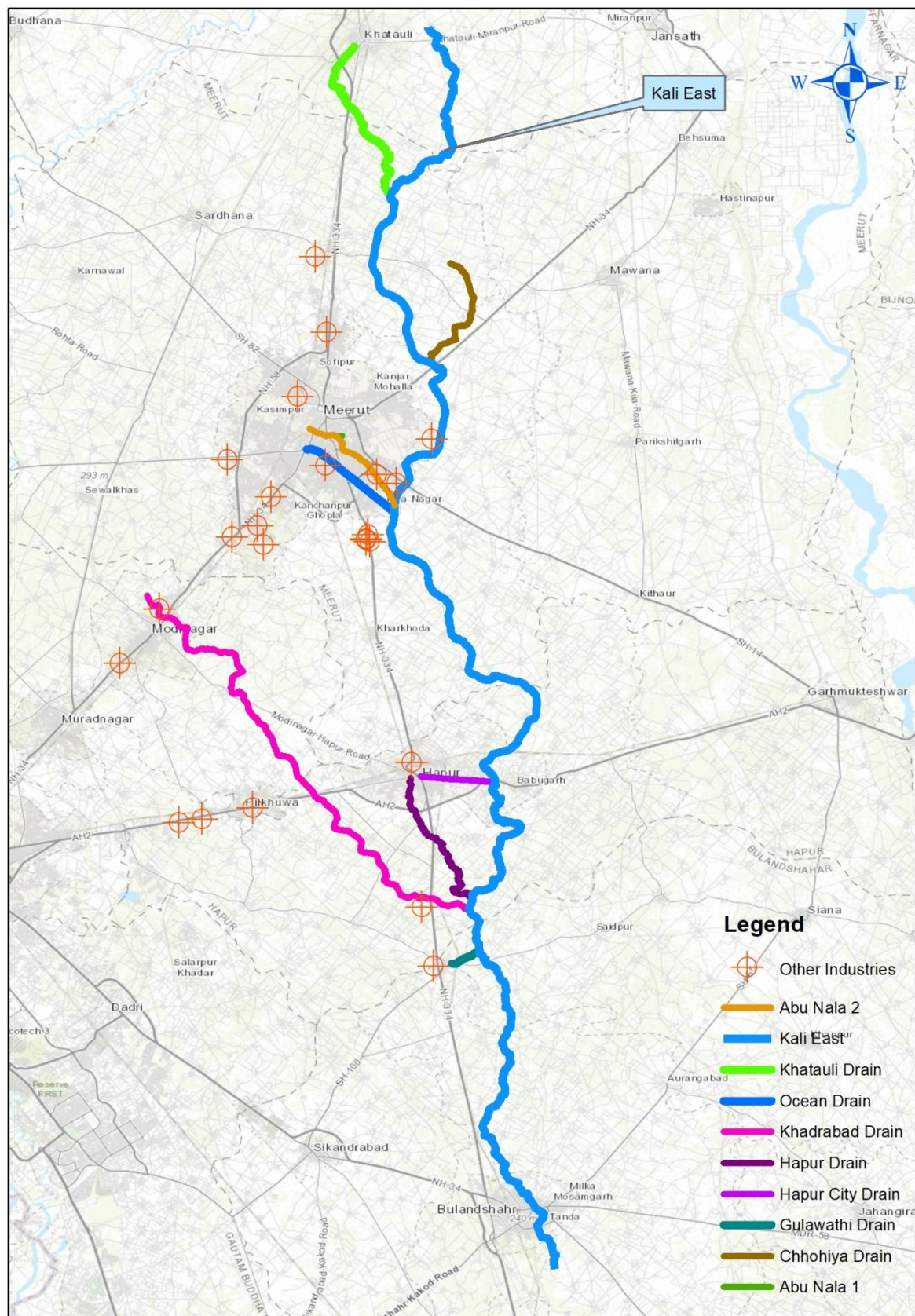


Fig : 4.4: GIS map showing Other industries and drain

4.1 DETAILS OF INDUSTRIAL UNITS

The drain wise and sector wise distribution of industries and their discharge & the details of CETP, Pilkhuwa, Hapur is also given in the tables below:

Summary of Industrial Units

S N	District	Drain	Type of Industry * The Type of Industry may be changed as per local conditions							Total Effluent Discharge (MLD)
			Sugar	Pulp & Paper	Distillery	Textile	Slaughter House	Others	Total	
1	Muzaffar-nagar	Khatauli Drain	01	-	-	-	-	-	01	1.65
2	Meerut	Abu Nala-1	02	-	01	01	-	05	09	7.61
		Abu Nala-2	-	-	01	03	-	01	05	0.38
		Odean Drain-1	-	-	-	01	03	04	08	1.374
		Chhoiya Drain Kali River	02	02	01	-	-	-	05	5.350
		Kadrabad Drain	01	05	-	13	-	08	27	4.946
		Direct to River Kali (East)	-	08	-	-	-	-	08	6.879
3	Ghaziabad	Kadrabad Drain	01	01	02	02	-	02	08	1.705
4	Hapur	Kadrabad Drain	01	01	01	07	01	05	16	2.4495
	Hapur	Hapur Drain	-	01	-	-	01	03	05	0.455
5	Bulandshahar	Gulawathi Drain	-	-	-	-	-	02	02	0.70

Details of CETPs

S N	District	Name of CETP	Location		Installed Capacity (MLD)	Utilized Capacity (MLD)	Operating Govt. Agency/ SPV	Discharge Drain
			Latitude	Longitude				
1	Hapur	CETP Textile Center Pilkhuwa	28.700577	77.672197	2.1	1.9	Hapur Pilkhuwa Development Authority	Hawal Drain to Kadrabad Drain

4.2 GAP ANALYSIS OF INDUSTRIES SITUATED IN THE CATCHMENT OF RIVER KALI (EAST)

Presently polluted stretch of River Kali-East receives approximately 33.5 MLD treated industrial effluent. The industries situated in the catchment of the polluted river stretch utilize ground water needed for their processes. Total estimated water extraction by the industries is approximately 58.768 MLD against the discharge of 33.5 MLD by the industries. This indicates that about 20-25 per cent of the treated effluent is recycled in the processes and rest accounts for the evaporation losses and consumption in the products.

Sector wise Gap analysis is given below: -

- I. **Sugar:-** There are 08 Sugar industries in the catchment of polluted river stretch which consume 16.94 MLD groundwater and 8.08 MLD treated effluent is discharged. Sugar industries as mentioned at **S.No. 57, 58, 59, 60, 61 & 62** of **Appendix -3A** have gaps related to improvement of ETPs and utilization of treated effluent in irrigation. The detail gap analysis may be referred to in **Appendix 3A**. These gaps are to be fulfilled within 06 months. This will help in reducing the water consumption, improving the quality of treated effluent and reuse of water in irrigation.
- II. **Paper:-** There are 18 Paper industries in the catchment of polluted river stretch which consume 18.97 MLD groundwater and 10.18 MLD treated effluent is discharged. Paper industries as mentioned at **S.No. 35, 36 & 46** of **Appendix -3A** have gaps related in their treatment systems. These gaps regarding improvement in ETPs as detailed in **Appendix -3A** are to be fulfilled within 06 months. It will help in improving the quality of treated effluent of Paper industries.
- III. **Slaughter house :-** There are 05 slaughter houses in the catchment of polluted river stretch which consume 1.5 MLD of groundwater & 1.28

MLD treated effluent is discharged. For reduction of water consumption & strengthening of Pollution control system as per guidelines of CPCB have to be taken up as per the action points prescribed with time line given in **Appendix -3 B.**

- IV. **Textile :** - There are 27 textile/yarn dyeing industries in the catchment of polluted river stretch which consume 2.5 MLD groundwater & 1.98 MLD treated effluent is discharged. For reduction of water consumption & strengthening of Pollution control system as per charter prepared by CPCB, the action points with timeline are given in **Appendix -3C.**
- V. **Electroplating:-** There are only 02 Electroplating industries in the catchment of polluted river stretch which consume 07 KLD ground water & 07 KLD treated effluent is discharged. For reduction of water consumption & strengthening of Pollution control system as per guidelines of CPCB, the action points with time line are given in **Appendix -3D.**
- VI. **Distillery :-** There are 05 distillery units in the catchment of polluted river stretch which consume 3.6 MLD ground water. Although, all the distilleries are maintaining zero liquid discharge (ZLD) but improvements are required with respect to establishment of Condensate Polishing Units and safe storage of Molasses as per CPCB guidelines. Action points with time line are given in **Appendix -3E.**
- VII. Remaining industries are Dairy, Chemical units, Pharmaceutical formulation units, Metal surface treatment units, Meat Processing units, Vegetable oil units etc. All these units are having adequate ETPs & regular monitoring is done by U.P. Pollution Control Board.
- VIII. **CETP, Pilkhuwa:-** Only one CETP is situated in Pilkhuwa for treatment of effluent generated from Textile Centre, Pilkhuwa which has been developed by Hapur Pilkhuwa Development Authority. The installed capacity of the CETP is only 2.1 MLD & presently capacity utilization is 1.9 MLD. The present capacity is not sufficient for industries to be

established in future in this industrial cluster. Moreover, the CETP performance is also not consistent. The summary of monitoring reports of this CETP are enclosed in **Appendix -3F**. The CETP was inspected by the team of CPCB and UPPCB and installation of tertiary treatment for colour removal and capacity enhancement of CETP is needed. This gap in functioning of CETP may be fulfilled as per the prescription and time line given in the Action Plan.

5. STATUS OF GROUND WATER

The Priority-1 polluted stretch of Kali (East) river from Muzaffarnagar to Gulaothi in Bulandshahar lies in Doab region of Ganga and Yamuna rivers. The river flows through 08 Development Blocks in the districts of Muzaffarnagar, Meerut, Hapur and Bulandshahar. The status of Groundwater in these blocks is given below :

River Kali (East), Stretch from Khatauli Muzaffarnagar to Gulaothi, Bulandshahar Ground Water Status

S. N.	Name of District	Name of Block	Pre Monsoon / Post Monsoon water level (Meters)				Status of Exploitation
			May-15	Aug-15	Nov-15	Jan-16	
1	Muzaffarnagar	Khatauli	3.43	2.77	2.6	4.96	Semi-critical
		Kamalpur	11.46	10.97	11.4	8.53	Safe
2	Meerut	Mawana	9.47	9	8.9	10.2	Critical
		Meerut	17.17*	18.64	19.2		Critical
3	Hapur	Hapur	16.28	16.43	16.65	15.85	Semi-critical
4	Ghaziabad	Bhojpur	8.45	8.25	8.25	6.54	Safe
		Modinagar	6.12		5.5	6.3	Safe
5	Bulandshahar	Gulaoti*	9.52				Safe

* Pre Monsoon Data of 2014.

** Data Gulaoti is of the Year 2012 : Pre Monsoon – May 2012 – 8.77 Mtr., Post Monsoon – Nov., 2012 – 8.92 Mtr.

http://cgwb.gov.in/District_Profile/UP/MuzzafarNagar.pdf

http://cgwb.gov.in/District_Profile/UP/Bulandshahar.pdf

http://cgwb.gov.in/District_Profile/UP/Ghaziabad.pdf

**CHEMICALS ANALYSIS DATA OF SAMPLES COLLECTED FROM
GROUND WATER MONITORING WELLS IN UTTAR PRADESH 2015 -2016
River Kali (East), Stretch from Khatauli Muzaffarnagar to Gulaoti, Bulandshahar**

Sl. No.	District	Block	pH	E.C.µ S/cm at 25°C	CO ₃	HCO ₃	Cl	F	NO ₃	SO ₄	TH	Ca	Mg	Na	k	SiO ₂	PO ₄	TDS	RSC	SAR
1	Muzaffarnagar	Khatauli	8	494	NIL	244	21	0.17	0.04	21	170	48	12	30	5.5	27	ND	321.1	0.67	1
		Kamalpur	7.8	871	NIL	354	28	0.63	49	43	290	68	29	62	6.4	28	ND	566.15	0.1	1.58
2	Meerut	Mawana	8	455	NIL	220	14	0.68	0.24	42	180	44	17	22	5.6	29	ND	295.75	0.6	0.71
		Meerut	8.1	1300	NIL	476	78	0.64	58	110	310	72	32	157	7.7	29	ND	845	1.73	3.88
3	Hapur	Hapur	7.9	825	NIL	476	14	0.45	3.5	13	200	52	17	100	6.2	36	ND	536.25	3.93	3.07
4	Ghaziabad	Bhojpur	7.8	955	NIL	537	7.1	76	21	20	220	56	19	114	6.3	32	ND	620.75	4.55	3.34
5	Bulandshahar	Gulaothi	8.1	688	NIL	250	42	1.14	4.4	43	290	64	31	40	4.23	24	ND	447.2	- 1.63	1.02

ND – Not Detectable

RSC – Residual Sodium Carbonate

SAR – Sodium Absorption Ratio

Source : GWYB – NR – 2015 -16

6. MONITORING OF POLLUTION SOURCES

6.1 MONITORING OF DRAINS

All the 09 drains will be monitored on weekly basis and the sampling points are selected near the confluence of the drains with the Kali (East) River. Proper Care has been taken to avoid backwater effect of the river at the sampling point and no source of pollution joins the drain after the sampling point. The details of drain sampling points are given below:

Drain Sampling Points

S N	District	Name of Drain	Monitoring Point			Monitoring Frequency	Controlling Regional Office
			Place	Latitude	Longitude		
1	Muzaffar-nagar	Khatauli Drain	Near Village-Bhud	29°17'42.67"N	77°43'11.08"E	Weekly	Muzaffar-nagar
2	Meerut	Abu Drain-1	Near Ashoka Handloom	28°59'0.66"N	77°43'4.13"E	Weekly	Meerut
		Abu Drain-2	Near 72 MLD STP	28°57'58.57"N	77°43'53.10"E	Weekly	Meerut
		Odean Drain	Near 220 KVA Power House	28°55'56.00"N	77°45'23.00"E	Weekly	Meerut
		Chhoiya Drain	NH-24 Road	28°43'39.00"N	77°52'19.00"E	Weekly	Ghaziabad
3	Ghaziabad	Kadriabad Drain	NH-24 Road	28°37'52.15"N	77°48'42.00"E	Weekly	Ghaziabad
4	Hapur	Hapur Drain		28°41'05.00"N	77°47'07.00"E	Weekly	Ghaziabad
		Hapur Drain - 1 (City Drain)		28°43'33.00"N	77°49'49.00"E	Weekly	Ghaziabad
5	Buland-shahar	Gulaothi Drain	Near Village-Jhanda Musharapur	28°35'59.18"N	77°49'10.62"E	Weekly	Buland-shahar

6.2 MONITORING OF RIVER

The priority-1 polluted stretch of river Kali (East) will be monitored at 07 places so as to ascertain adverse effect of pollution by various sources in the river. The details of sampling points are given below:

River Sampling Points

S.No.	District	Monitoring Point			Monitoring Frequency	Controlling Regional Office
		Place	Latitude	Longitude		
1	Muzaffar-nagar	Near Village-Rasoolpur Kailora	29° 16'35.6"N	77° 42'51.6"E	Biweekly	Muzaffar-nagar
2	Meerut	Garh Road			Weekly	Meerut
3	Meerut	Kharkhoda Parikshit Road			Weekly	Meerut
4	Meerut	Village- Saini	29°2'7.81"N	77°47'12.57"E	Biweekly	Meerut
5	Ghaziabad	Babugarh			Daily	Ghaziabad
6	Ghaziabad	Near Village-Jhanda Musharafpur	28°38'3.74"N	77°48'51.80"E	Daily	Ghaziabad
7	Buland-shahar	Near Village-Akbarpur	28°37'14.40"N	77°48'42.17"E	Daily	Buland-shahar

The monitoring data for the last three years is available at [Appendix-7](#)

6.3 MONITORING OF WATER POLLUTING INDUSTRIES

All the water polluting industries will be monitored regularly by 03 agencies namely UPPCB, District Ganga Committee/Zila Paryavaran Samiti and Third Party Institutions of repute. GPIs will be monitored quarterly and other industries will be monitored randomly by District Ganga Committee/Zila Paryavaran Samiti. Third Party Institutions shall also be entrusted with the responsibility of comprehensive monitoring by CPCB and NMCG. Besides this the drive for identification and closure of illegal industries operating in non-

conforming areas shall also be carried out by District Ganga Committees/Zila Paryavaran Samitis with appropriate Magisterial and Police support.

6.4 ESTABLISHMENT OF KALI(EAST) POLLUTION CONTROL ROOM

A Control Room for monitoring and centralized reporting of various pollution sources shall be established in Meerut with appropriate infrastructure and human resource. This control room will be under overall supervision of Commissioner, Meerut and will be run by UP Pollution Control Board with the help of District Ganga Committees/Zila Paryavaran Samitis. For monitoring purpose, District Ganga Committees/Zila Paryavaran Samitis will be employing JRFs/Monitoring Assistants on contractual basis with the financial support of District Ganga Committees/Zila Paryavaran Samitis. Educational/Technical Institutions and Colleges will also be identified for taking their help in monitoring and remediation of pollution sources. Capacity building for monitoring of pollution sources of the students of such identified institutions and colleges will also be done by Pollution Control Board. For monitoring exercise 'The Control Room' with adequate infrastructure viz. LED Monitor, Desktop, Printer, Wi-Fi facility, Room rent including electricity charges etc. shall be established by UP Pollution Control Board with financial support from National Mission for Clean Ganga (NMCG). The monitoring will be done from the Control Room with the help of Web Portal on which monitoring data from field shall be uploaded. The Web Portal will be developed by UP Pollution Control Board and login ID and Password will be provided to District Ganga Committees/Zila Paryavaran Samitis for access to the portal and uploading of monitoring data of various pollution sources.

7. POLLUTED RIVER STRETCH REJUVENATION ACTION PLAN

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
A. SEWAGE MANAGEMENT				
(a) Short Term Action Point				
1	Estimation of total sewage generation from City/Towns where sewage treatment facility does not exist and preparation of DPR for treatment of sewage	02 Months	U.P. Jal Nigam & Concerned ULBs	
2	Measurement of flow & load of all the drains contributing pollution load in River Kali (East)	02 Months	U.P. Jal Nigam & Concerned ULBs	
3	Installation of Bar-meshes in the drains & regular cleaning & disposal of Solid Waste from them	03 Months	Concerned ULBs	The ULBs will ensure compliance in the prescribed time line as informed by Urban Development Department.
4	Untapped drains to be provided with modular treatment facilities/ In-Situ bio-remediation or Phytoremediation-SWAB (CSIR-NEERI) based treatment	06 Months	U.P. Jal Nigam & Concerned ULBs	The ULBs/Urban Development Department will ensure compliance in the prescribed time line as informed by Urban Development Department.
5	Completion and commissioning of under construction STP at Modinagar, Ghaziabad	January 2020	U.P. Jal Nigam/ Govt. working Agencies	Timeline as informed by Urban Development Department, Govt. of U.P.
6	Formulation of Action Plan for long term use of treated water discharged from STPs	03 Months	U.P. Jal Nigam, Irrigation & Concerned ULBs in consultation with UPPCB/CPCB	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
7	Installation of Web Cams & OCEEMS in STPs	03 Month	U.P. Jal Nigam/ Operating Govt. Agencies	
8	Formulation of Action Plan for income generation of STPs including installation of Solar Power Plants, Energy Plantation & sale of sludge and treated water, bio-composting etc.	03 Months	U.P. Jal Nigam & ULBs	
9	Obtaining Consent to Operate/Establish and Hazardous Authorization from UPPCB	02 Months	U.P. Jal Nigam/ Operating Govt. Agencies	
10	Preparation of DPR for channelization including diversion of sewage generated from household / township / villages to sewer lines and interception of all drains (excluding drains carrying industrial wastewater) for ensuring proper treatment through upcoming STPs.	Within 3 Months	Jal Nigam / Nagar Nigam, Concerned Districts	
11	Septage Management in the areas where sewerage network does not exist	Within 6 Months	ULBs/Jal Nigam	The ULBs will ensure compliance in the prescribed time line as informed by Urban Development Department.
(b) Long Term Action Point				
1	Laying of Sewerage Network & Connection of households to the sewer line in order to utilize the installed capacity of existing STPs	24Months from sanction of DPR	U.P. Jal Nigam & Concerned ULBs	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
2	Establishment of Sewage Treatment Plants of adequate capacity	24 to 30 Months from sanction of DPR	U.P. Jal Nigam & Concerned ULBs	Detailed plan alongwith details of status of DPR, source of funding etc. Is given in para-3.2 as informed by Urban Development Department, U.P.
3	Tapping & diversion of the drains having high sewage load to STPs to be constructed on I&D model	24 to 30 Months from sanction of DPR	U.P. Jal Nigam & Concerned ULBs	Detailed plan alongwith details of status of DPR, source of funding etc. Is given in para-3.2 as informed by Urban Development Department, U.P.
4	Infrastructure Development in Irrigation/Horticulture/ Sprinkling/ Industrial use etc. And ensuring use of treated water from functional STPs.	24 to 30 Months from sanction of DPR	U.P. Jal Nigam & Concerned ULBs	
5	Installation of Solar Power Plant & Energy Plantations in the vacant land of STPs	12 Months from sanction of DPR	U.P. Jal Nigam/ Operating Govt. Agencies	
6	Installation of supplementary/tertiary treatment system in existing STPs which are not able to achieve discharge norms in the present system.	12 Months from sanction of DPR	U.P. Jal Nigam & Concerned ULBs	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
7	Treatment of waste water in Rural areas flowing into the river by Bio-remediation/Phyto-remediation/Oxidation Pond etc.	12 Months	Gram Panchayat, Panchayati Raj, Rural Development Departments, Rastriya Swachta Mission-Gramin	The financial resources may be arranged from MNREGA/Swachh Bharat Mission – Gramin
8	Ensuring ODF in all the villages situated along the river	12 Months	Gram Panchayat, Panchayati Raj, Rural Development Departments, Rastriya Swachta Mission-Gramin	
B. INDUSTRIAL WASTE MANAGEMENT				
(a) Short Term Action Point				
1	Re-inventorisation of Water Polluting Industries in the catchment area of the drains and their status with respect to consent, installation of ETP, adequacy of ETP and final discharge point	03 Months	UPPCB, UPSIDC, ULBs & Department of Industries	
2	Monitoring of water polluting industries and ensuring closure of industries which are operating without consent or non-compliant	Quarterly	UPPCB & CPCB	
3	Installation of OCEEMS, Flow Meter & Web Cams in large and medium category of GPIs with connectivity to the server of CPCB and UPPCB	03 Months	UPPCB	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
4	Closure and legal action against the illegal water polluting industries operating in non-confirming /residential areas	Regular activity	District Level Inter-Departmental Enforcement Committee having representatives of Administration, Police, UPPCB, ULBs, Development Authority, Power Corporation, Department of Industries etc.	
5	Installation of tertiary treatment plant in CETP, Pilkhua, Hapur.	06 Months	Hapur Pilkhua Development Authority, Department of Industries	
(b) Long Term Action Point				
1	Adoption of cleaner technologies by water polluting industrial sectors having major impact on water quality of the river. For eg. – Electroplating, Dyeing, Pulp & Paper industries etc.	24 Months	UPPCB, CPCB & Department of Industries	
2	Imposing stringent norms in Distillery, Pulp & Paper, Slaughter House & Tannery sectors	24 Months	Departments of Environment, Industries, Excise & UPPCB	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
3	Reducing abstraction of ground water by reuse/recycle of treated effluent by installation of additional treatment facilities & process improvement	12 Months	CGWA, CPCB, Department of Industries & UPPCB	
4	Use of treated effluent from CETPs for industrial and irrigation purposes	12 Months	Department of Industries, SPVs, Operating Agencies, UPPCB & CPCB	
5	Actions related to improvement of ETPs and reduction of use of ground water by the industries as per the prescriptions given in Appendices 3A, 3B, 3C, 3D & 3E.	6 to 24 Months	Department of Industries, UPPCB & CPCB	
6	Expansion of CETP, Pilkhuwa, Hapur	24 Months	HPDA	

C. SOLID WASTE & FLOOD PRONE ZONE MANAGEMENT

(a) Short Term Action Point

1	Strictly ensuring prohibition of dumping of solid & other waste within 500 Meters of the banks of the river	Immediate	ULBs, Gram Panchayat Development Authorities & Urban Development Department	
2	Collection & Segregation of Solid Waste as per the provision of SWM Rules, 2016	Immediate	ULBs, Gram Panchayat Development Authorities & Urban	The ULBs will ensure compliance as per timeline given according to the Action Plan (Appendix-8) as informed by Urban Development Department, UP. Panchayati Raj Department, UP will

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
			Development Department	ensure compliance in Rural Areas.
3	Disposal of Recyclable waste through registered recyclers	Immediate	ULBs, Gram Panchayat, Development Authorities & Urban Development Department	The ULBs will ensure compliance as per timeline given according to the Action Plan (Appendix-8) as informed by Urban Development Department, UP. Panchayati Raj Department, UP will ensure compliance in Rural Areas.
4	Compliance of SWM Rules, 2016 by bulk generators (onsite bio-composting, disposal of recyclable waste through registered recyclers)	02 Months	ULBs, Development Authorities, Railways, Transport Corporation, Mandi Parishad, Cantonment Board, Educational Institution, RWAs & Urban Development Department etc.	The ULBs will ensure compliance as per timeline given according to the Action Plan (Appendix-8) as informed by Urban Development Department, UP. Panchayati Raj Department, UP will ensure compliance in Rural Areas.
5	Upgradation & operation of existing non-operational & non-complying Solid Waste Treatment Facilities as per prescribed norms	06 Months	ULBs, Development Authorities & Urban Development Department	The ULBs will ensure compliance as per timeline given according to the Action Plan (Appendix-8) as informed by Urban Development Department, UP. Development Authorities will also ensure compliance in concerned areas.
6	Compliance of C&D Waste Management	Immediate	ULBs, Development	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
	Rules, 2016 & prohibition of illegal dumping of C&D waste		Authorities & Urban Development Department	
7	Installation of Web Cams in Solid Waste & C&D Waste Treatment & Disposal Facilities with open access to UPPCB & CPCB server connectivity	03 Month of functioning of the processing plants	ULBs, Development Authorities & Urban Development Department	
8	Formulation of Action Plan for income generation of Solid Waste & C&D Waste Treatment & Disposal Facilities including installation of Solar Power Plants, Energy Plantation & sale of RDF, compost etc.	02 Months	ULBs, Development Authorities & Urban Development Department	The ULBs will ensure compliance as per timeline given according to the Action Plan (Appendix-8) as informed by Urban Development Department, UP. Development Authorities will also ensure compliance in concerned areas.
9	Obtaining Consent to Operate/Establish and Authorization from UPPCB	02 Months	ULBs, Development Authorities, Urban Development Department & UPPCB & CPCB	
10	Ensuring idol immersion in environmental friendly manner by creation of artificial ponds with proper lining & proper disposal of sludge & effluent	Immediate	ULBs, Development Authorities & District Administration	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
11	Ensure strict prohibition of encroachments & illegal constructions in FPZ	06 Months	Development Authorities, District Administration & Police and Irrigation Department	
12	Removal of solid waste & algal growth disposed in the river by use of low cost innovative techniques with involvement of local community	06 Months	ULBs, Gram Panchayat, Development Authorities & Irrigation Department	The boats with improvised trash skimming attachments may be tried along the length of the river for removal of floating Solid Waste with the help of local community.
(b) Long Term Action Point				
1	Establishment of new solid waste & C&D treatment & disposal facilities against the gap with respect to generation of solid waste	24 Months after sanction of DPR	ULBs, Development Authorities & Urban Development Department	The ULBs will ensure compliance as per timeline given according to the Action Plan (Appendix-8) as informed by Urban Development Department, UP. Development Authorities will also ensure compliance in concerned areas.
2	Treatment & disposal of legacy waste dumped within 500 meters of the bank of the River	24 Months after sanction of DPR	ULBs, Development Authorities & Urban Development Department	The ULBs will ensure compliance as per timeline given according to the Action Plan (Appendix-8) as informed by Urban Development Department, UP. Development Authorities will also ensure compliance in concerned areas.

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
3	Construction of electric/fuel efficient crematorium to stop disposal of unburnt/ semi burnt corpses in the river	24 Months	ULBs, Development Authorities & Urban Development Department	The ULBs will ensure compliance as per timeline given as informed by Urban Development Department, UP. Development Authorities will also ensure compliance in concerned areas.
4	Demarcation & notification of FPZ by introducing Pillars at suitable locations in river flood plain and preventing encroachment in river bed.	24 Months	Irrigation Department	Only after sanctioning of DPR & its other formalities including sanctioning of budget under NMCG.
5	Removal of illegal encroachments & constructions from FPZ	24 Months	District Level Committee headed by D.M, with representative from concerned Departments.	

D. ECOLOGICAL FLOW & GROUND WATER MANAGEMENT

(a) Short Term Action Point

1	Identification, inventorization & geo referencing of wetlands/water bodies including their zone of influence & catchment areas within 2 Km of the river	03 Months	State Wetland Authority, Forest & Wildlife, Panchayati Raj, Revenue Department, ULBs & Gram Panchayats	
---	---	-----------	--	--

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
2	Identification & geo referencing of vacant lands in the vicinity of the river for development of bio-diversity parks & forest areas	03 Months	Forest & Wildlife, Panchayati Raj, Revenue Department, ULBs & Gram Panchayats	
3	Identification of external water sources like canal escapes etc. for addition of water in the river for dilution purposes	03 Months	Irrigation Department	Only surplus water after fulfilling irrigation demands will be provided to near by rivers through canal escapes.
4	Prohibition of illegal mining & diversion of river stream	Regular Activity	District Administration, Mining Department & Irrigation Department	Only diversion of river stream would be reported to District authorities in non monsoon period by concerned district irrigation officers.
5	Ensuring rain water harvesting/recharging structures/rainier wells on river banks & construction of water harvesting structures	Regular Activity	Mining, Rural Development & Minor Irrigation Department	Possible funding may be arranged through MNREGA and Central assistance by NMCG.
(b) Long Term Action Point				
1	Notification of E-flow of the River	12 Months	Irrigation Department, MoWR (CWC)	Notification of E-flow of the River will be done by MOWR (CWC).
2	Ecological restoration of the wetlands including plantation in the catchment area & development of community based eco-tourism in the wetland	24 Months from sanction of DPR	State Wetland Authority, Forest & Wildlife Department, Tourism Department & National Mission for Clean Ganga	Possible source of funding may be from Centrally Sponsored Scheme for Development of Wetlands and from NMCG.

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
3	Development of Bio-diversity Parks and Riverine Forests by plantation & re-generation of native species of trees, grasses & herbs and establishment of new nurseries	24 Months from sanction of DPR	State Wetland Authority, Forest & Wildlife Department & National Mission for Clean Ganga	Funds may be arranged from NMCG.
4	Adoption of good irrigation practices, suitable crop selection, use of sprinkler/drip irrigation to minimize the water consumption through awareness & support to the farmers	12 Months	Agriculture Department, Rural Development, Minor Irrigation Department	
5	Removal of encroachment from wetlands, ponds & their restoration	24 Months	Revenue, Administration, Panchayati Raj Department, ULBs & Gram Panchayats	
6	Allowing flow of fresh surplus water source like canal for restoration of E-flow	18 Months	Irrigation Department	Only surplus water after fulfilling irrigation demands will be provided to near by rivers through canal escapes.
E. MONITORING & EVALUATION				
(a) Short Term Action Point				
1	Daily Monitoring of river water quality at the upstream & downstream of cities & meeting points of the major drains	Regular Activity	UPPCB, District Ganga Committee/ District Environment Committee	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
2	Weekly monitoring of drains, STPs & CETPs	Regular Activity	UPPCB, District Ganga Committee/ District Environment Committee	
3	Monitoring of water polluting industries	Quarterly	UPPCB, District Ganga Committee/ District Environment Committee	
4	Monitoring of ground water quality within 500 meters of the rivers & drains	Quarterly	UPPCB, CGWA, CPCB & District Ganga Committee/ District Environment Committee	
5	Pre-monsoon & post-monsoon monitoring of ground water level	Regular Activity	CGWA & Directorate of Ground Water	
6	Measurement of River flow as per the protocol	Regular	Irrigation Department & District Ganga Committee/ District Environment Committee	Annual flow discharge data of river .
7	Project formulation & funding including recurring expenses for employment of JRFs/Monitoring Assistants/Field Assistants, purchase of kits & equipments,	02 Months	UPPCB, District Ganga Committee/ District Environment Committee, SMCG &	

S. No.	Action Point	Timeline	Implementing Department/Agency	Remark
	vehicle on rental basis, development of Web Portal & establishment of Control Room, purchase of desktop computers, printers/ LED Monitor etc.		NMCG	
8	Development of Web Portal for reporting & centralized monitoring of water quality of the river & drains and action points with access to all concern stakeholders departments/agencies responsible for implementation of the action plan	Regular	UPPCB, NMCG & CPCB	
9	Establishment of Regional Control Rooms at District/ Division Level for monitoring & uploading of data related to monitoring of water quality & compliance of action points with its integration to the State Level Control Room	04 Months	UPPCB, District Ganga Committee/ District Environment Committee	

APPENDICES

Appendix-1

Pollution Source Mapping of River Kali (East) from Muzaffarnagar to Gulaothi (Bulandshahar)

S. No.	District	Name of Drain	Meeting Point of Drain		Domestic/ Industrial/ Mixed	Tapped/ Untapped/ Partially Tapped	Industries		Sewage Discharge (MLD)			Status of Bar-mesh
			Latitude	Longitude			Number	Treated Effluent (MLD)	Treated	Untreated	Total	
1	Muzaffarnagar	Khatauli Drain	29°16'42.5"N	77°47'15.9"E	Mixed	Untapped	01	1.65	0.0	3.0	3.0	No
2	Meerut	Abu Nala Drain-1	29°57'39" N	77°45'54" E	Mixed	Untapped	09	7.612	84.7	384.95	51.67	Yes
	Meerut	Abu Nala Drain-2	28°55'56" N	77°45'23" E	Mixed	Untapped	05	0.38			243.62	Yes
	Meerut	Odean Drain	28°55'56" N	77°45'23" E	Mixed	Untapped	08	1.374			174.36	Yes
	Meerut	Chhoiya Drain Meeting in Hapur	28°41'44" N	77°51'03" E	Industrial	Untapped	05	5.35	-	-	-	No
3	Modi Nagar, Meerut & Hapur	Khadauli Drain/ Kadrabad Drain			Mixed	Untapped	51	9.1	10.20	26.77	36.97	No

S. No.	District	Name of Drain	Meeting Point of Drain		Domestic/ Industrial/ Mixed	Tapped/ Untapped/ Partially Tapped	Industries		Sewage Discharge (MLD)			Status of Bar- mesh
			Latitude	Longitude			Number	Treated Effluent (MLD)	Treated	Untreated	Total	
4	Hapur	Hapur Drain			Mixed	Untapped	05	0.455	-	25.84	25.84	No
	Hapur	Hapur Drain - 1 (City Drain)			Domestic	Untapped	-	-	-	5.00	5.00	No
5.	Bulandshahar	Gulaothi Drain			Mixed	Untapped	02	0.70	-	5.80	5.80	No

Appendix-2

Details of Cities & Towns

S.No.	District	Name of City/ Town	Type of ULB	Population (Lakh) Census - 2011	Estimated Population (Lakh) Year - 2019
1	Muzaffarnagar	Khatauli	Nagar Palika Parishad	0.72	0.81
2	Meerut	Meerut	Nagar Nigam & Cantonment Board	13.98	15.75
3	Bulandshahar	Gulaothi	Nagar Palika Parishad	0.50	0.56
4.	Ghaziabad	Modi Nagar	Nagar Palika Parishad	1.30	1.73
5.	Hapur	Hapur	Nagar Palika Parishad	2.62	3.48
	Total			19.12	22.33

Appendix-3

Details of Industries

S. N.	District	Name and Address	Location		Type	Treatment Mechanism (ETP/CETP)	Effluent Discharge (KLD)	Effluent Discharge Drain	Compliance Status (yes/No)
			Latitude (N)	Longitude (E)					
1	Muzaffarnagar	Triveni Engg. Industries Ltd. Khatauli Muzaffarnagar.	29.27534	77.74091	Sugar	ETP	1650	Khatauli	Yes
2	Meerut	IPL (U.P. State Sugar Corp. Ltd). Sakauti Tanda , Meerut	29°11'25.746"	77°42'58.445"	Sugar	ETP	180	Abu Nala-1	Yes
3	Meerut	Daurala Organics Ltd. Daurala ,Meerut	29°7'5.513"	77°41'47.606"	Chemical	ETP	1600	Abu Nala-1	Yes
4	Meerut	Daurala Sugar Works (Chemical Unit) Daurala ,Meerut	29°7'5.513"	77°41'47.606"	Chemical	ETP	3600	Abu Nala-1	Yes
5	Meerut	Daurala Sugar Works, Distillery Unit Daurala, Meerut	29°7'52.454"	77°42'49.430"	Distillery	ETP	ZLD	Abu Nala-1	Yes
6	Meerut	Daurala Sugar Works, Sugar Unit, Daurala , Meerut	29°7'19.808"	77°42'19.343"	Sugar	ETP	1200	Abu Nala-1	Yes
7	Meerut	Deepika Exports, Rali Chauhan, Parikshitgarh, Meerut	28°59'05.8"	77°47'03.19"	Textile	ETP	2	Abu Nala-1	Yes
8	Meerut	Contentantial India, Modipuram, Meerut	29°03'45.0"	77°42'16.6"	Tyre	ETP	1000	Abu Nala-1	Yes
9	Meerut	Win Medicare, Modipuram, Meerut	29°03'29.9"	77°42'25.8"	Medicine	ETP	20	Abu Nala-1	Yes
10	Meerut	Ashoka Handloom, Geshupur, Meerut	28°56'29.6"	77°45'25.7"	Textile	ETP	10	Abu Nala-1	Yes

11	Meerut	Pashupati Textile, Garh Roadk, Meerut	28°56'53.4"	77°45'28.8"	Textile	ETP	10	Abu Nala - 2	Yes
12	Meerut	Biharilal Kargha Udyog, Garh Road, Meerut	28°56'52.5"	77°45'23.8"	Yarn/Textile Processing	ETP	8	Abu Nala - 2	Yes
13	Meerut	United Spirits Ltd. Meerut Cant. Meerut	29°00'45.6"	77°41'05.5"	Distillery (Only Bottling)	ETP	100	Abu Nala - 2	Yes
14	Meerut	Anhusar Busher & Enwave Ltd. (Submilar India Ltd.)	29°02'43.6"	77°41'08.3"	Beer	ETP	240	Abu Nala - 2	Yes
15	Meerut	U.P. Dying & Printing Works, 68 Navchandi Ground, Meerut	28°57'53.78"	77°43'0.07"	Yarn/Textile Processing	ETP	25	Abu Nala - 2	Yes
16	Meerut	Ashoka Handloom Ind-1, Shyamnagar, Meerut	28°56'37.2984"	77°43'19.1964"	Yarn/Textile Processing	ETP	15	Odean	No (Closer Order by UPPCB issued on 18-12-2018 & is lying close)
17	Meerut	Tanya Marketing Pvt. Ltd. Alipur Jijmana Hapur Road, Meerut	28°54'27.10"	77°44'45.50"	Slaughter House and Meat Processing	ETP	210	Odean	Yes
18	Meerut	Al-Saqib Exports Pvt. Ltd., Vill.-Alipur, Hapur Road,	28°54'19.67"	77°44'05.78"	Slaughter House	ETP	280	Odean	Yes
19	Meerut	Al-Faheem Meatex Pvt. Ltd., Vill.-Alipur, Hapur Road, Meerut	28°54'38.18"	77°44'13.88"	Slaughter House	ETP	789	Odean	Yes
20	Meerut	Al Yasir Exports, Hapur Road, Meerut	28°54'28.17"	77°44'9.13"	Meat Processing	ETP	10	Odean	Yes
21	Meerut	Al Aksa Foods Pvt. Ltd., Hapur Road, Meerut	28°54'23.1"	77°44'8.2"	Meat Processing	ETP	10	Odean	Yes

22	Meerut	Al Akhlaq Export Ltd. Hapur Road, Meerut	28°54'21.5"	77°44'17.5"	Meat Processing	ETP	30	Odean	Yes
23	Meerut	Al Shavez Frozen Foods Pvt. Ltd., Alipur Jijmana, Meerut	28°54'25.6"	77°44'11.12"	Meat Processing	ETP	30	Odean	Yes
24	Hapur	Mawana Sugar Works, Mawana , Meerut	29°5'39.534"	77°55'28.787"	Sugar	ETP	2500	Chhoiya	Yes
25	Hapur	Naglamal Sugar Complex , (Distillery Unit), Naglamal, Meerut	28°53'4.061"	77°50'1.929"	Distillery	ETP	ZLD	Chhoiya	Yes
26	Hapur	Naglamal Sugar Complex Garh Road, Meerut	28°53'4.061"	77°50'1.929"	Sugar	ETP	1200	Chhoiya	Yes
27	Hapur	Shri Venktesh Paper Mills Formely Known as Anand Tissues Ltd., Vill.Fitkari, Mawana,Meerut	29°7'8.034"	77°51'34.547"	Paper	ETP	650	Chhoiya	Yes
28	Hapur	Sangal Papers Ltd.Vill – Bhainsa Mawana, Meerut	29°6'11.824"	77°52'36.279"	Paper	ETP	1000	Chhoiya	Yes
29	Meerut	Janki news print pvt. ltd.(Sumit Agro Products Ltd.) Panchali Baghpat Road ,Meerut	28°57'52.075"	77°36'48.657"	Paper	ETP	750	Kadrabad	Yes
30	Meerut	Kanav Papers Pvt Ltd(Formaly known as Dev Priya Fibers Pvt.Ltd. Panchli, Bagpath Road ,Meerut	28°58'3.626"	77°37'45.5670 "	Paper	ETP	700	Kadrabad	Yes
31	Meerut	Star Kraft Papers Pvt ltd(Formely known as Devstar Paper Pvt Ltd. Panchali,Bagpat Road,Meerut)	28°58'3.872"	77°37'49.473"	Paper	ETP	ZLD	Kadrabad	Yes
32	Meerut	Gangol Sahkari Dugdh Utpadak Sangh Ltd., Gangol Road, Meerut.	28°57'46.1"	77°42'20.8"	Dairy	ETP	600	Kadrabad	Yes

33	Meerut	Kailash Dairy, Rithani, Delhi Road, Meerut	28°56'16.2"	77°39'53.3"	Dairy	ETP	350	Kadrabad	Yes
34	Meerut	ASPG Infrastructure Pvt. Ltd., Partapur, Meerut	28°55'49.0"	77°38'44.1"	Engineering	ETP	8	Kadrabad	Yes
35	Meerut	Kamal Dying House, B-5, Udyogpuram, Meerut	28°55'3.6048"	77°35'9.2484"	Yarn/ Textile Processing	ETP	15	Kadrabad	Yes
36	Meerut	Raj Kumar Textiles, A-16 Udyogpuram, Meerut	28°57'24.344"	77°44'53.337"	Yarn/ Textile Processing	ETP	15	Kadrabad	Yes
37	Meerut	Shakun Handifab, Partapur, Meerut	28°56'53.855"	77°45'30.385"	Yarn/ Textile Processing	ETP	20	Kadrabad	Yes
38	Meerut	National Handloom, Mohkampur, Meerut	28°56'48.192"	77°40'14.1348 "	Yarn/ Textile Processing	ETP	8	Kadrabad	Yes
39	Meerut	Anupam Processers, Partapur, Meerut	28°55'4.518"	77°39'07.85"	Yarn/ Textile Processing	ETP	325	Kadrabad	No (Closer Order issued by UPPCB dated 04-12-2018)
40	Meerut	Modern Process House, Mohakampur, Meerut	28°57'2.3860"	77°40'17.8428 "	Yarn/ Textile Processing	ETP	13	Kadrabad	Yes
41	Meerut	Rama Tax Process House, Rithani, Meerut	28°55'29.594"	77°39'12.567"	Yarn/ Textile Processing	ETP	160	Kadrabad	Yes
42	Meerut	Kanta Polytex P Ltd, Bypass Road, Vedvyas Puti, Meerut	28°57'24.966"	77°38'33.558"	Yarn/ Textile Processing	ETP	20	Kadrabad	Yes
43	Meerut	Loothara Handloom Pvt.Ltd, Gangol Road, Meerut	28°54'48.5944"	77°38'58.434"	Yarn/ Textile Processing	ETP	15	Kadrabad	Yes

44	Meerut	Jyoti Industries(Changed name S.S Textiles), E-86, udyogpuram Partapur, Meerut	28°43'12.132"	77°35'5.619"	Yarn/ Textile Processing	ETP	20	Kadrabad	Yes
45	Meerut	Rachit Prints,B-9,10,11 Udyogpuram, Meerut	28°57'20.534"	77°44'39.061"	Yarn/ Textile Processing	ETP	15	Kadrabad	Yes
46	Meerut	Shiva Fastners, Partapur, Meerut	28°56'55.895"	77°45'30.385"	Zip dyeing	ETP	5	Kadrabad	Yes
47	Meerut	Solitaire Foods Pvt. Ltd., Gangol Road, Partapur, Meerut	28°54'15.2"	77°39'29.4"	Dairy	ETP	150	Kadrabad	Yes
48	Meerut	Bhalla International, A-1/1, Udyogpuram, Meerut	28°55'08.2"	77°39'20.9"	Electroplating	ETP	2	Kadrabad	Yes
49	Meerut	Stag International, 19/20, Udyogpuram, Meerut	28°55'08.2"	77°39'12.4"	Electroplating	ETP	5	Kadrabad	Yes
50	Meerut	Chamunda Papers (P) Ltd., Dheerkheda Ind. Area ,Meerut	28°46'7.271"	77°46'30.887"	Paper	ETP	ZLD	Kadrabad	Yes
51	Meerut	U.P. State Sugar Corporation Ltd., Mohiuddinpur, Meerut	28°52'58.83 "	77°37'4.84"	Sugar	ETP	250	Kadrabad	Yes
52	Meerut	Paswara Papers Ltd., Mohiuddinpur , Meerut	28°53'8.812"	77°35'57.092"	Paper	ETP	ZLD	Kadrabad	Yes
53	Meerut	Alps Industries Ltd., Vill.- Aminagar Bhoorbaral,Meerut	28°54'33.473"	77°38'11.148"	Textile	ETP	800	Kadrabad	Yes
54	Meerut	Harbanshlal Foods Pvt. Ltd., Mohiuddinpur, Meerut	28°53'16.28"	77°36'59.12"	Dairy	ETP	350	Kadrabad	Yes
55	Meerut	Harbansh Dairy, Mohiuddinpur, Meerut	28°53'18"	77°37'01"	Dairy	ETP	350	Kadrabad	Yes
56	Meerut	Dev. Priya industries Ltd. - Unit II Vill – Saini Mawana Road , Merrut	29°2'14.16"	77°46'55.23"	Paper	ETP	ZLD	Direct East Kali	Yes

57	Meerut	Dev Priya Product Ltd. Vill Saini Mawana Road ,Meerut	29°2'10.66"	77°46'51.39"	Paper	ETP	3000	Direct East Kali	Yes
58	Meerut	Dev. Priya industries(Unit - 1) Ltd. Vill – Saini Mawana Road , Mrt	29°2'14.76"	77°46'55.23"	Paper	ETP	ZLD	Direct East Kali	Yes
59	Meerut	Dev. Priya Papers Ltd. Vill – Saini Mawana Road ,Meerut	29°2'16.76"	77°46'57.28"	Paper	ETP	1100	Direct East Kali	Yes
60	Meerut	Anand Duplex Ltd. Unit - I,Vill – Saini Mawana Road, Mawana	29°2'49.08"	77°47'10.98"	Paper	ETP	529	Direct East Kali	No (Closer Order issued by UPPCB on 20-09-2018 and is lying closed)
61	Meerut	Anand Duplex Ltd. Unit - II,Vill – Saini Mawana Road, Mawana	29°2'49.08"	77°47'10.98"	Paper	ETP	990	Direct East Kali	Yes
62	Meerut	Anand Triplex Board Ltd., Vill – Saini Mawana Road, Meerut	29°2'50.20"	77°47'0.53"	Paper	ETP	900	Direct East Kali	Yes
63	Meerut	New Bonanja India Ltd., Saini, Mawana Road, Meerut	29°2'7.54"	77°47'27.92"	Paper	ETP	360	Direct East Kali	Yes
64	Ghaziabad	Ghaziabad organics Ltd. Bhojpur Modi Nagar	28°47'13.86"	77°38'33.75"	Distillery	ETP	ZLD	Kadrabad	
65	Ghaziabad	Kartik Fabrics Pvt.Ltd., khasra no.184-185-186, Pawanpuri, Murad Nagar, Ghaziabad.	28°36'30.86"	77°17'26.86"	Yarn/ Textile Processing	ETP	120	Kadrabad	Yes
66	Ghaziabad	Kripa Ram Dairy (P) Ltd., Unit-2, Bhojpur, Modi Nagar, Gzb.	28.786315	77.644431	Dairy	ETP	300	Kadrabad	Yes

67	Ghaziabad	Modi Distillery, Modi Nagar, GZB. (Daily spent Wash generation 220 KL/Day)	28°49'34.72"	77°34'6.20"	Distillery	ETP	ZLD	Kadrabad	Yes
68	Ghaziabad	Modi Nagar Paper Mills Ltd.ModiNagar (Waste Paper)	28°49'3.21"	77°33'10.83"	Pulp & Paper	ETP	200	Kadrabad	Yes
69	Ghaziabad	Modi Sugar Mills, Modi Nagar, Ghaziabad.	28°49'9.13"	77°33'32.81"	Sugar	ETP	500	Kadrabad	Yes
70	Ghaziabad	Ram Niwash Goyal & Sons, Sikheda Road, Modi Nagar, Ghaziabad.	28°49'2.26"	77°33'11.48"	Yarn /Textile Processing	ETP	5	Kadrabad	Yes
71	Ghaziabad	NIF P Ltd., (Namestey India Foods P Ltd.), Khasra No. 243 & 244, Village Yusufpur, Ishapur, Bhojpur, Pargana-Jalabad, Modi Nagar, Ghaziabad.	28°38'1.91"	77°21'43.51"	Dairy	ETP	580	Kadrabad	Yes
72	Hapur	Shri Calendering works, partapur Road Pilakhua, Hapur.	28°42'54.32"	77°38'49.95"	Yarn/ Textile Processing	ETP	0	Kadrabad	Dismantal
73	Hapur	Brajnathpur Sugar Mills, Brajnathpur, Distt-Hapur.	28°38'9.79"	77°46'32.68"	Sugar	ETP	600	Kadrabad	Yes
74	Hapur	Jindal Pipes Ltd., Jindal Nagar, Hapur.	28°41'45.98"	77°35'6.92"	Metal Surface Treatment	ETP	207	Kadrabad	Yes
75	Hapur	Keshav Industries, Khasra No. 290, Delhi-Garh Road, Near Petrol Pump, Dhaulana, Pilkhuwa, Hapur.	28°42'38.27"	77°39'4.62"	Yarn/ Textile Processing	ETP	14	Kadrabad	Yes
76	Hapur	Mother Dairy Fruit & Vegetable P Ltd. (unit of Pilkhuwa Dairy), 18Km Pilkhuwa, Hapur.	28°41'58.37"	77°36'47.51"	Dairy	ETP	1160	Kadrabad	Yes

77	Hapur	N.C.M.L. (P) Ltd., Vill-Hindalpur Road, Pilkhuwa, Hapur.	28°41'59.37"	77°37'4.21"	Vegitable Oil	ETP	60	Kadrabad	Not in operation
78	Hapur	Pilkhuwa Water Proofing company, Jindal Nagar, Hapur.	28°42'7.60"	77°34'53.19"	Yarn/Textile Processing	ETP	4.5	Kadrabad	Yes
79	Hapur	R.K.B. Towel Mfg. Co. Ltd., (Formely Control Textiles), Hapur Road Dasna, Distt-Distt.- Hapur	28°44'46.42"	77°46'15.62"	Yarn /Textile Processing	ETP	320	Kadrabad	Yes
80	Hapur	Salasar Techno Engineering Pvt.Ltd., Khasra no.283, Parson Jindal Nagar, Hapur.	28°41'37.08"	77°34'5.86"	Metal Surface Treatment	ETP	37	Kadrabad	Yes
81	Hapur	Salasar Techno Engineering Pvt.Ltd., unit-2, Khera Road, Pilkhuwa, Hapur.	28°41'37.08"	77°34'5.86"	Metal Surface Treatment	ETP	37	Kadrabad	Yes
82	Hapur	Simbhaoli Sugar Mills Ltd(Distillary Unit) Brajnathpur, Hapur.	28°45'45.75"	77°59'15.09"	Distillery	ETP	ZLD	Kadrabad	dismantal
83	Hapur	Slaughter House of Pilkhuwa City Board, Pilkhuwa, Hapur.	28°42'16.04"	77°39'36.80"	Slaughter House and Meat Processing	ETP	0	Kadrabad	Yes
84	Hapur	Super Dyeing & Printing Works, NH-24, Delhi-Hapur Road, Pilkhuwa, Hapur.	28°39'33.48"	77° 8'17.77"	Yarn/Textile Processing (Canvas Cloth Starch)	ETP	5	Kadrabad	Yes
85	Hapur	Super Processing House, NH-24, Delhi-Garh Road, Near Mother Dairy, Pilkhuwa, Hapur.	28°42'5.58"	77°36'45.40"	Yarn/Textile Processing (Canvas	ETP	5	Kadrabad	Yes

					Cloth)				
86	Hapur	Surbhi Multi Tex-Prints Pvt. Ltd., 418/3, Chijarsi Main, NH-24, Near Mother Dairy, Pilkhuwa, Hapur.	28°39'53.30"	77°28'41.14"	Yarn/ Textile Processing	ETP	0	Kadrabad	Dismental
87	Hapur	Ved Cellulose Ltd., Khasra no.231 & 232 16 KM Hapur Road, Hapur. (Waste Paper)	28°41'52.12"	77°35'41.44"	Pulp & Paper	ETP	ZLD	Kadrabad	Yes
88	Hapur	Daily Foods, Modi Nagar Road, Hapur.	28°40'12.12"	77°35'41.59"	Dairy	ETP	0	Hapur	Selfcloesd
89	Hapur	Merino Industries Ltd., Vill-Accheja, Hapur, Hapur.	28°43'18.5"N	77°43'52.6"E	Misc	ETP	440	Hapur	Yes
90	Hapur	Nav Bharat Duplex Ltd., Badnauli, Modi Nagar-Hapur Road, Hapur. (Waste Paper)	28°44'27.0"N	77°45'00.8"E	Pulp & Paper	ETP	ZLD	Hapur	Yes
91	Hapur	Raybon Foods P Ltd., Rampur Road, Hapur.	28°42'44.8"N	77°46'30.1"E	Slaughter House and Meat Processing	ETP	0	Hapur	Yes
92	Hapur	Raybon Organics Pvt. Ltd., Khasra No. 923, 1160/2, 1161/2, Rampur Road, Hapur. (Only Rendering)	28°42'44.8"N	77°46'30.1"E	Slaughter House and Meat Processing	ETP	15	Hapur	Yes
93	Bulandshahar	V.R.S. Foods. Ltd. (U-3), Old Bus Stand, Gulaothi, Bulandshahar.	28°35'29.37"	77°47'07.17"	Dairy	ETP	100	Gulaothi	Yes
94	Bulandshahar	V.R.S. Foods. Ltd. (U-4), Old Bus Stand, Gulaothi, Bulandshahar.	28°35'29.37"	77°47'07.17"	Dairy	ETP	600	Gulaothi	Yes
	Total						33503.5		

Appendix 3 A

GAP Analysis of Industries Situated in the Polluted Stretch of River Kali (East)

Sl. No.	District	Name of Industry	Sector	Water Consumption (KLD)	Effluent Discharge (KLD)	Details of ETP	Gap Analysis	Remark
1	2	3	4	5	6	7	8	9
1	Meerut	Anhusar Busher & Enwave Ltd. (Submilar India Ltd.)	Beer	940	240	Bar Screen, Equalization Tank, UASB Reactor, Aeration Tank, Secondary Clarifier, Sludge Drying Beds	No Gap	--
2	Meerut	Daurala Organics Ltd. Daurala ,Meerut	Chemical	1650	1600	Equalization Tank, Tube settler , Polishing tank, Aeration Tank-I & II, Secondary Clarifier, MGF & ACF, Sludge Drying Beds, Filter press.	No Gap	--
3	Meerut	Daurala Sugar Works (Chemical Unit) Daurala ,Meerut	Chemical	3650	3600	Oil & Grease trap, Cynite treatment unit, pretention tank, Sludge Removal Skimmer, Collection tank, Sludge Drying beds.	No Gap	--
4	Meerut	Gangol Sahkari Dugdh Utpadak Sangh Ltd., Gangol Road, Meerut.	Dairy	600	600	Oil & Grease Trap, Equalization Tank, Aeration tank-I & II, Secondary Clarifier, Sludge drying beds,	No Gap	--

5	Meerut	Kailash Dairy, Rithani, Delhi Road, Meerut	Dairy	400	350	Oil & Grease Trap, Equalization Tank, Tube Settler, Aeration Tank, Secondary Clarifier, Sludge Drying Beds, DMF & ACF.	No Gap	--
6	Meerut	Solitaire Foods Pvt. Ltd., Gangol Road, Partapur, Meerut	Dairy	175	150	Oil & Grease Trap, Equalization Tank, Primary Settling tank, Aeration Tank, Secondary Clarifier, Sand filter, ACF, SDBs	No Gap	--
7	Meerut	Harbanshlal Foods Pvt. Ltd., Mohiuddinpur, Meerut	Dairy	400	350	Oil & Grease trap, Equalization Tank, Trickling filter, Secondary Clarifier, Aeration Tank, Sludge Drying beds	No Gap	--
8	Meerut	Harbansh Dairy, Mohiuddinpur, Meerut	Dairy	400	350	Oil & Grease trap, Equalization Tank, Trickling filter, Secondary Clarifier, Aeration Tank, Sludge Drying beds	No Gap	--
9	Ghaziabad	Kripa Ram Dairy (P) Ltd., Unit-2, Bhojpur, Modi Nagar, Gzb.	Dairy	375	300	Screen Chamber, Oil & Grease Trap, Equalization Tank, Flash Mixing, Primary Settling Tank, Aeration Tank , Secondary Settling Tank, Sludge Drying Beds.	No Gap	--

10	Ghaziabad	NIF P Ltd., (Namaste India Foods P Ltd.), Khasra No. 243 & 244, Village Yusufpur, Ishapur, Bhojpur, Pargana-Jalabad, Modi Nagar, Ghaziabad.	Dairy	625	580	Bar screen, Oil & Grease Trap, Equalization Tank, Flash Mixing, Settling Tank, Aeration Tank, Secondary Clarifier, Sludge Drying Beds	No Gap	--
11	Hapur	Mother Dairy Fruit & Vegetable P Ltd. (unit of Pilkhuwa Dairy), 18Km Pilkhuwa, Hapur.	Dairy	1800	1160	Phase-I Screen Chamber, Fat Trap, Equalization Tank, Hybrid Anaerobic Reactor, Aeration Tank, Secondary Clarifier, Sludge Drying Beds, Sand Filter, Activated Carbon Filter. Phase-II Screen Chamber, Fat Trap, Equalization Tank, Hybrid Anaerobic Reactor, Aeration Tank, Secondary Clarifier, Sludge Drying Beds. Phase-III Sump, Equalization Tank, Fat Skimmer, UASB Reactor, Aeration Tank, Secondary Clarifier, SDB, Gas Holder.	No Gap	--
12	Hapur	Daily Foods, Modi Nagar Road, Hapur.	Dairy	0	0	Collection tank, Equalization tank, Oil & grease trap, Chemical mixing tank, Aeration tank, Settling tank, ACF & SDB	No Gap	Presently Closed

13	Bulandshahar	V.R.S. Foods. Ltd. (U-3), Old Bus Stand, Gulaothi, Bulandshahar.	Dairy	110	100	OGT, Equalization Tank, Flash Mixing, Settling Tank, Aeration Tank, Secondary Clarifier, Sludge Drying Beds	No Gap	--
14	Bulandshahar	V.R.S. Foods. Ltd. (U-4), Old Bus Stand, Gulaothi, Bulandshahar.	Dairy	625	600	OGT, Equalization Tank, Flash Mixing, Settling Tank, Aeration Tank, Secondary Clarifier, Sludge Drying Beds	No Gap	--
15	Meerut	Daurala Sugar Works, Distillery Unit Daurala, Meerut	Distillery	984	ZLD	MEE, R.O., Bio Composting, CPU Unit, Web Cam Connected to UPPCB & CPCB server	No Gap	Unit is complying the charter norms.
16	Meerut	Naglamal Sugar Complex , (Distillery Unit), Naglamal, Meerut	Distillery	580	ZLD	MEE, Bio composting, Web camera, CPU Unit, Data linkage to CPCB and UPPCB	No Gap	Industry is maintaining the ZLD.
17	Ghaziabad	Ghaziabad organics Ltd. BhojpurModi Nagar	Distillery	400	ZLD	Multi effect evaporator & Bio Composting	No Gap	--
18	Ghaziabad	Modi Distillery, Modi Nagar, GZB. (Daily spent Wash generation 220 KL/Day)	Distillery	375	ZLD	Multi effect evaporator & Bio Composting	No Gap	--
19	Hapur	Simbhaoli Sugar Mills Ltd(Distillery Unit) Brajnathpur, Hapur.	Distillery	1420	ZLD	Multi effect evaporator & Bio Composting	No Gap	--

20	Meerut	United Spirits Ltd. Meerut Cant. Meerut	Distillery (Only Bottling)	200	100	Collection Tank, Anaerobic Tank, up flow Anaerobic bio filter, Aeration Tank, Secondary Clarifier, Carbon filter, Sludge Drying Beds	No Gap	Industry is not manufacturing the Alcohol. Only bottling is being done.
21	Meerut	Bhalla International, A-1/1, Udyogpuram, Meerut	Electroplating	2	2	Equalization cum Holding Tank, Chemical Dosing Tank, Flash Mixing Tank, Flocculation Tank, Tube Settler, Sludge Drying Beds.	Phase wise Reduction of Fresh Water Consumption & other action points as Appendix - 3 D	--
22	Meerut	Stag International, 19/20, Udyogpuram, Meerut	Electroplating	5	5	Equalization Tank, Reaction Tank, Buffer Tank, DMF, Sludge Drying Beds	Phase wise Reduction of Fresh Water Consumption & other action points as Appendix - 3 D	--
23	Meerut	ASPG Infrastructure Pvt. Ltd., Partapur, Meerut	Engineering	10	8	Equalization cum neutralization tank, tube settler, Sludge drying bed	No Gap	--
24	Meerut	Al Yasir Exports, Hapur Road, Meerut	Meat Processing	15	10	Equalization Tank, Aeration Tank, Chemical dosing Tank, Settling Tank, Sludge Drying Beds	No Gap	

25	Meerut	Al Aksa Foods Pvt. Ltd., Hapur Road, Meerut	Meat Processing	15	10	Settling Tank, Chlorination Tank, Clarifier, DMF and SDBs	No Gap	
26	Meerut	Al Akhlaq Export Ltd. Hapur Road, Meerut	Meat Processing	36	30	Oil & Grease Trap, Equalization Tank, Primary Clarifier, Aeration Tank-I & II, Secondary Clarifier, SDBs, ACF,	No Gap	
27	Meerut	Al Shavez Frozen Foods Pvt. Ltd., Alipur Jijmana, Meerut	Meat Processing	34	30	Oil & Grease Trap, Equalization Tank, Flash mixing Tank, Primary Settling Tank, Aeration Tank, Secondary Clarifier & SDBs	No Gap	
28	Meerut	Win Medicare, Modipuram, Meerut	Medicine	23	20	Oil & Grease trap, collection cum Equalization Tank, Flash mixing tank, Primary settling, Bio- Reactor, Sludge Settling Tank, MGF, ACF, Sludge Drying Beds	No Gap	
29	Hapur	Jindal Pipes Ltd., Jindal Nagar, Hapur.	Metal Surface Treatment	320	207	Equalization tank, Chemical dosing tank, Flocculation tank, settling tank, Final outlet tank, ACF, SDB	No Gap	--

30	Hapur	Salasar Techno Engineering Pvt.Ltd., Khasra no.283, Parson Jindal Nagar, Hapur.	Metal Surface Treatment	47	37	Oil & Grease Traps, Equalization Tank, Flash Mixer, Flocculation Tank, Tube Settler, Dual Media Filter, Filter Press.	No Gap	--
31	Hapur	Salasar Techno Engineering Pvt.Ltd., unit-2, Khera Road, Pilkhuwa, Hapur.	Metal Surface Treatment	47	37	Oil & Grease Traps, Equalization Tank, Flash Mixer, Flocculation Tank, Tube Settler, Dual Media Filter, Filter Press.	No Gap	--
32	Hapur	Merino Industries Ltd., Vill-Accheja, Hapur, Hapur.	Misc	550	440	Potato Flakes Division – ETP Installed. Equalization Tank, Reaction cum Chemical Dosing Tank, Tube Settler – 4 No's, Relay Tank, Aeration Tank-3, Dual Media Filter. Laminate Division – ETP Installed. Equalization Tank, Aeration Tank, Settler, Relay Tank, Filter Press, Carbon Filter.	No Gap	--
33	Meerut	Shri Venktesh Paper Mills (Formerly Known as Anand Tissues Ltd.), Vill.Fitkari, Mawana, Meerut	Paper	1100	650	Holding Tank, Sedical, Primary Clarifier, Aeration tank, Secondary Clarifier, DMF, Sludge press, SDBs	No Gap	--

34	Meerut	Sangal Papers Ltd.Vill – Bhainsa Mawana, Meerut	Paper	1600	1000	Equalization Tank, Color Removal Unit, Primary Clarifier, Aeration tank, Secondary Clarifier, DMF, Sludge drying beds	No Gap	--
35	Meerut	Janki news print pvt. ltd.(Sumit Agro Products Ltd.) Panchali Baghpat Road ,Meerut	Paper	1500	750	Collection Tank, Sedibel , Equalization Tank, Primary Clarifier, Aeration tank, Secondary Clarifier, DMF, Filter press, SDBs	Industry has to install Aeration Tank-III capacity 650 KL, DMF unit & Filter Press.	Source:- As per RO recommendation dated 13-04-2018 for expansion of NOC
36	Meerut	Kanav Papers Pvt. Ltd.(Formerly known as Dev Priya Fibers Pvt.Ltd. Panchli, Bagpath Road ,Meerut	Paper	950	700	Sedibel, Equalization Tank, Primary Clarifier, Aeration tank, Secondary Clarifier, Sludge drying beds	The unit has to install mechanical sludge removal system.	Source:- CPCB direction under section 5 of EP Act dated 16-05-2017.
37	Meerut	Star Kraft Papers Pvt ltd(Formely known as Devstar Paper Pvt Ltd. Panchali,Bagpat Road,Meerut)	Paper	160	ZLD	Equalization Tank, Primary Clarifier, Aeration tank, Secondary Clarifier, Sludge drying beds, Filter Press, Recycle Tank	No Gap	Source :- Consumption & discharge as per third party inspection report date 26-05-2018
38	Meerut	Chamunda Papers (P) Ltd., Dheerkheda Ind. Area ,Meerut	Paper	170	ZLD	Equalization Tank, Chemical dosing Tank, Sedicell, Holding Tank, STF Filters,	No Gap	--

39	Meerut	Paswara Papers Ltd., Mohiuddinpur , Meerut	Paper	900	ZLD	Poly disc filter, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier, MGF, ACF, Sludge filter press	No Gap	--
40	Meerut	Dev. Priya industries Ltd. - Unit II, Vill – Saini Mawana Road , Meerut	Paper	480	ZLD	Sedical & Clarifier,	No Gap	--
41	Meerut	Dev Priya Product Ltd. Vill Saini Mawana Road , Meerut	Paper	3800	3000	Equalization Tank, Sedical, Primary Clarifier, Aeration Tank –I & II, Secondary Clarifier, Filter, Sludge drying beds	No Gap	The capacity of the plant 500 MTD to produce Kraft paper. Industry is complying the charter.
42	Meerut	Dev. Priya industries Ltd. (Unit -1), Vill – Saini Mawana Road , Meerut	Paper	310	ZLD	Collection Tank, Sedical, Primary Clarifier, Aeration Tank, Filters, Sludge drying beds	No Gap	--
43	Meerut	Dev. Priya Papers Ltd. Vill – Saini Mawana Road ,Meerut	Paper	1800	1100	Equalization Tank, Primary Clarifier, Sedical , Aeration tank, Secondary Clarifier, DMF, Sludge drying beds	No Gap	--
44	Meerut	Anand Duplex Ltd. Unit -I, Vill – Saini Mawana Road, Mawana	Paper	610	529	Equalization Tank, Sedical, Primary Clarifier , Aeration tank-I, Secondary Clarifier, DMF	No Gap	--

45	Meerut	Anand Duplex Ltd. Unit - II,Vill – Saini Mawana Road, Mawana	Paper	1200	990	Equalization Tank, Primary Clarifier, Sedical , Aeration tank, Secondary Clarifier, DMF, Sludge drying beds	No Gap	--
46	Meerut	Anand Triplex Board Ltd., Vill – Saini Mawana Road, Meerut	Paper	1650	900	Equalization Tank, Primary Clarifier, Sedical , Aeration tank, Secondary Clarifier, DMF, Sludge drying beds	Proper metering of the chemical dosing at ETP should be ensured.	Source:-Third party inspection & recommended dated 18-05-2018
47	Meerut	New Bonanja India Ltd., Saini, Mawana Road, Meerut	Paper	450	360	Equalization Tank, Primary Clarifier, Aeration tank, Secondary Clarifier, Sludge drying beds	No Gap	Source:- Water consumption as per third party inspection dated 19-05-2018
48	Ghaziabad	Modi Nagar Paper Mills Ltd.ModiNagar (Waste Paper)	Pulp & Paper	350	200	Collection Tank, Screens, Primary Clarifier, Aeration Tank, Secondary Clarifier, Dual Media Filter, Vibrator screen, Sludge Drying Beds	No Gap	--
49	Hapur	Ved Cellulose Ltd., Khasra no.231 & 232 16 KM Hapur Road, Hapur. (Waste Paper)	Pulp & Paper	1250	ZLD	Sedical (Kraft Recovery Plant)- 2 No, Equalization Tank, Primary Clarifier -I & II, Aeration Tank with diffused aeration system, Secondary Clarifier- I & II, collection sump, Dual Media Filter, Sludge Drying Beds.	No Gap	--

50	Hapur	RAC Papers Ltd (Old Name Nav Bharat Duplex Ltd.), Badnauli, Modi Nagar-Hapur Road, Hapur. (Waste Paper)	Pulp & Paper	690	ZLD	Equalization Tank, Sedicell (Fibre Recovery System), Primary Clarifier, Aeration Tank, Secondary Clarifier, Sludge Drying Beds.	No Gap	--
51	Meerut	Al-Saqib Exports Pvt. Ltd., Vill.-Alipur, Hapur Road,	Slaughter House	300	280	Equalization Tank, Primary Settling tank, Aeration Tank, Secondary Clarifier, Filter, Sludge Drying Beds	Irrigation Management Plan to be submitted to maintain ZLD within six month.	The existing gap with reference to discharge of effluent, effluent treatment infrastructure, solid waste management as per the norms laid down in CPCB document.
52	Meerut	Al-Faheem Meatex Pvt. Ltd., Vill.-Alipur, Hapur Road, Meerut	Slaughter House	928	789	Collection Tank, Fat Trap, Anaerobic Tank-I & II, Tube Settler- I & II, Secondary Clarifier-I & II, Filters-II, Sludge Drying Beds.	Phase wise Reduction of Fresh Water Consumption & other action points as Appendix - 3 B	The existing gap with reference to discharge of effluent, effluent treatment infrastructure, solid waste management as per the norms laid down in CPCB document.

53	Meerut	Tanya Marketing Pvt. Ltd. Alipur Jijmana Hapur Road, Meerut	Slaughter House and Meat Processing	230	210	Oil & Grease Trap, Equalization Tank, Primary Settling Tank, Aeration Tank-I & II, Secondary Settling Tank, UV Sterilizer Filters & Sludge drying Beds	Phase wise Reduction of Fresh Water Consumption & other action points as Appendix - 3 B	The existing gap with reference to discharge of effluent, effluent treatment infrastructure, solid waste management as per the norms laid down in CPCB document.
54	Hapur	Slaughter House of Pilkhuwa City Board, Pilkhuwa, Hapur.	Slaughter House and Meat Processing	0	0	--	--	Closed
55	Hapur	Raybon Foods P Ltd., Rampur Road, Hapur.	Slaughter House and Meat Processing	0	0	Oil & Grease Trap, Equalization Tank, Flash Mixing Tank, Primary Clarifier, Aeration Tank-1, Secondary Clarifier, Secondary Clarifier-1, Aeration Tank-2, Secondary Clarifier-II, Polishing Tank, Sand Filter & Filter Press.	Phase wise Reduction of Fresh Water Consumption & other action points as Appendix - 3 B	Presently closed. The existing gap with reference to discharge of effluent, effluent treatment infrastructure, solid waste management as per the norms laid down in CPCB document.
56	Hapur	Raybon Organics Pvt. Ltd., Khasra No. 923, 1160/2, 1161/2, Rampur Road, Hapur. (Only Rendering)	Rendering Plant	19	15	Oil & Grease Trap, Equalization Tank, Flash Mixing Tank, Primary Settling Tank, Aeration Tank, Secondary Settling Tank, Polishing Tank, Sludge Drying Beds.	No Gap	--

57	Muzaffarnagar	Triveni Engg. Industries Ltd. Khatauli Muzaffarnagar.	Sugar	4800	1650	Oil & Grease trap, Chemical mixing Tank, Equalization Tank, Primary Clarifier, Aeration Tank-I & II, Secondary Clarifier, Pressure Sand Filter, Activated Carbon Filter, Sludge Drying Beds, Holding Lagoon of capacity 16500 m ³ .	1. Unit has to provide treatment of spray pond overflow. 2. Irrigation plan to be submitted & implemented.	Source :-CPCB letter dated 16-05-2018 for Compliance of direction under section 5 of EP Act.
58	Meerut	IPL (U.P. State Sugar Corp. Ltd). Sakauti Tanda , Meerut	Sugar	250	180	Oil & Grease trap, Chemical dosing, Equalization Tank, Anaerobic Tank, Aeration Tank, Secondary Clarifier, Sludge Drying Beds.	Unit has to provide treatment of spray pond overflow.	Source :-CPCB direction under section 5 of EP Act Dated 07-02-2018
59	Meerut	Daurala Sugar Works, Sugar Unit, Daurala , Meerut	Sugar	2335	1200	Oil & Grease trap, Equalization Tank, Anaerobic filter, Aeration Tank, Secondary Clarifier, Sludge Drying Beds	Irrigation plan to be submitted & implemented.	Source:- As per CPCB direction under section 5 EP Act dated 02-11-2017
60	Meerut	Mawana Sugar Works, Mawana , Meerut	Sugar	4000	2500	Oil & Grease trap, Equalization Tank, Settling Tank, Aeration Tank, Secondary Clarifier, SDBs.	The unit shall commission mechanical sludge Handling system of adequate capacity.	Source:- CPCB direct under section 5 EP Act, dated 22-10-2018

61	Meerut	Naglamal Sugar Complex Garh Road, Meerut	Sugar	2500	1200	Oil & Grease trap, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier , SDBs & Filters.	1. The unit has to install brine recovery plant for refinery sugar unit. 2. Irrigation plan to be submitted & implemented.	Source:-CPCB direceton under section 5 of EP Act dated 18-05- 2018
62	Meerut	U.P. State Sugar Corporation Ltd., Mohiuddinpur, Meerut	Sugar	350	250	Oil & Grease trap, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier ,Aeration Tank, Carbon Filter & SDBs	The unit shall commission mechanical sludge handling system of adequate capacity.	CPCB direction under section 5 of EP Act dated 14-05-2018
63	Ghaziabad	Modi Sugar Mills, Modi Nagar, Ghaziabad.	Sugar	1500	500	Bar Screen, Oil & Grease Traps, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier, Sludge Drying Beds.	No Gap	--
64	Hapur	Brajnathpur Sugar Mills, Brajnathpur, Distt-Hapur.	Sugar	1200	600	Bar Screen, Oil & Grease Traps, Equalization Tank, Flash Mixing Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier, Sand Filter, Sludge Drying Beds.	No Gap	--

65	Meerut	Deepika Exports, Rali Chauhan, Parikshitgarh, Meerut	Textile	2	2	Equalization Tank, Chemical dosing Tank, Reaction Tank, Settling Tank, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
66	Meerut	Ashoka Handloom, Geshupur, Meerut	Textile	25.3	10	Equalization Tank, Flash mixing tank, Reaction Tank, Tube Settler, Multigrade Filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
67	Meerut	Pashupati Textile, Garh Roadk, Meerut	Textile	19	10	Oil & Grease trap, Equalization Tank, Reaction Tank, Clarifier and Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
68	Meerut	Alps Industries Ltd., Vill.- Aminagar Bhoorbaral, Meerut	Textile	1000	800	Bar Screen, Oil & Grease trap, Tube Settler, Aeration Tank, Reaction Tank, Filter Press	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.

69	Meerut	Continental India, Modipuram, Meerut	Tyre	2000	1000	Oil & Grease trap, Equalization Tank, Flash mixing tank, Primary Tube Settler, DMF, Filter press.	No Gap	--
70	Hapur	N.C.M.L. (P) Ltd., Vill- Hindalpur Road, Pilkhuwa, Hapur.	Vegetable Oil	75	60	Oil & Grease trap, Equalization tank, chemical dosing tank, Aeration tank, Settling tank, ACF & SDB	No Gap	Presently not in operational.
71	Ghaziabad	Kartik Fabrics Pvt.Ltd., khasra no.184-185-186, Pawanpuri, Murad Nagar, Ghaziabad.	Yarn/Textil e Processing	255	120	Equalization Tank, Chemical Dosing Tank, Reaction tank, Primary settling tank, Tube settler, Secondary settling tank, SDB, Duel media filter, etc	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
72	Hapur	ShriCalendering works,partapur Road Pilakhua, Hapur.	Yarn/Textil e Processing	0	0	--	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	Closed

73	Meerut	Biharilal Kargha Udyog, Garh Road, Meerut	Yarn/Textile Processing	21.5	8	Collection Tank, Chemical Dosing Tank, Reaction Tank, Clarifier, Filter, Sludge Drying Beds.	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
74	Meerut	U.P. Dying & Printing Works, 68 Navchandi Ground, Meerut	Yarn/Textile Processing	30	25	Collection Tank, Flash Mixer, Primary Settling Tank, Aeration Tank, Secondary Tube Settler, Sand Filter, Activated Carbon Filter, Sludge Drying Beds.	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
75	Meerut	Ashoka Handloom Ind- 1, Shyamnagar, Meerut	Yarn/Textile Processing	16	15	Equalization Tank, Chemical Dosing Tank, Reaction Tank, Settling Tank, Activated Carbon Filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.

76	Meerut	Kamal Dying House, B-5, Udyogpuram, Meerut	Yarn/Textile Processing	15.5	15	Grease Trap, Aeration Tank, Equalization Tank, Clarifier , Pressure Filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
77	Meerut	Raj Kumar Textiles, A-16 Udyogpuram, Meerut	Yarn/Textile Processing	18.5	15	Bar Screen, Settling Tank, Reaction Tank, Equalization Tank, Clarifier Tank, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
78	Meerut	Shakun Handifab, Partapur, Meerut	Yarn/Textile Processing	25	20	Collection tank, Reaction tank , Clarifier, Pressure filter, Sludge drying beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
79	Meerut	National Handloom, Mohkampur, Meerut	Yarn/Textile Processing	10.5	8	Equalization Tank, Aeration Tank, Settling tank, Carbon filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.

80	Meerut	Anupam Processers, Partapur, Meerut	Yarn/Textile Processing	330	325	Bar Screen, Oil & Grease Trap, Equalization Tank, Chemical dosing Tank, Tube Settler, Carbon/Sand Filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
81	Meerut	Modern Process House, Mohakampur, Meerut	Yarn/Textile Processing	21	13	Collection Tank, Mixing Tank, Tube Settler, Flocculation Tank, Sand Filter and Carbon Filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
82	Meerut	Rama Tax Process House, Rithani, Meerut	Yarn/Textile Processing	170	160	Oil & Grease Trap, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
83	Meerut	Kanta Polytex P Ltd, By pass Road, Vedvyas Puti, Meerut	Yarn/Textile Processing	21	20	Bar Screen, Aeration Tank, Equalization tank, Dozing tank, Reaction tank, Tube Settler, Carbon/Sand filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.

84	Meerut	Loothara Handloom Pvt.Ltd, Gangol Road,Meerut	Yarn/Textile Processing	15.5	15	Equalization Tank, Settling Tank, Reaction cum Tube Settler, DMF, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
85	Meerut	Jyoti Industries(Changed name S.S Textiles), E-86, udyogpuram Partapur, Meerut	Yarn/Textile Processing	20	20	Oil & Grease Trap, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
86	Meerut	Rachit Prints,B-9,10,11 Udyogpuram, Meerut	Yarn/Textile Processing	19.5	15	Holding tank, tube settler, Carbon filter, Chemical dozing tank, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
87	Ghaziabad	Ram NiwashGoyal& Sons, Sikheda Road, ModiNagar,Ghaziabad.	Yarn/Textile Processing	10	5	Equalization Tank, Chemical Dosing Tank, Reaction tank, Primary settling tank, Tube settler, Secondary settling tank, SDB, Duel media filter, etc	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.

88	Hapur	Keshav Industries, Khasra No. 290, Delhi-Garh Road, Near Petrol Pump, Dhaulana, Pilkhuwa, Hapur.	Yarn/Textile Processing	24	14	Screen chamber, Equalization tank, Flash mixing tank, Reaction tank, Tube settler, ACF & SDB	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
89	Hapur	Pilkhuwa Water Proofing company, Jindal Nagar, Hapur.	Yarn/Textile Processing	10	4.5	Equalization Tank, Chemical Dosing Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier, Sludge Drying Beds.	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
90	Hapur	R.K.B. Towel Mfg. Co. Ltd., (FormelyControl Textiles), Hapur Road Dasna, Distt- Distt.- Hapur	Yarn/Textile Processing	400	320	Oil Grease Traps, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier, Sludge Drying Beds.	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
91	Hapur	Surbhi Multi Tex-Prints Pvt. Ltd., 418/3, Chijarsi Main, NH-24, Near Mother Dairy, Pilkhuwa, Hapur.	Yarn/Textile Processing	0	0	--	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	Dismantled

92	Hapur	Super Dyeing & Printing Works, NH-24, Delhi-Hapur Road, Pilkhuwa, Hapur.	Yarn/Textile Processing (Canvas Cloth Starch)	6	5	Collection tank, Equalization tank, Reaction tank, Tube settler, Treated water tank, ACF & SDB	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
93	Hapur	Super Processing House, NH-24, Delhi-Garh Road, Near Mother Dairy, Pilkhuwa, Hapur.	Yarn/Textile Processing (Canvas Cloth Starch)	6	5	Equalization tank, Chemical Dosing tank, Reaction tank, Tube settler, Treated water tank, ACF & SDB	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
94	Meerut	Shiva Fastners, Partapur, Meerut	Zip dyeing	7	5	Equalization Tank, Aeration Tank, Settling tank, Tube Settler, Pressure filter, Sludge Drying Beds	Water Consumption to be reduced & charter of CPCB to be followed. As per Appendix - 3 C	As per CPCB charter for water recycling and pollution prevention for textile industry.
	Total			58768.3	33503.5			

Appendix 3B

Action Points for Slaughter Houses

The Slaughter House unit shall take time bound steps as detailed below for fulfilling the existing gaps with reference to discharge of effluent, effluent treatment infrastructure, solid waste management as per the norms laid down in CPCB document :

1. The Water consumption and effluent discharge in the unit shall be restricted as below :

Animal	Specific water consumption M ³ /TLWK			Timeline
	Large Category	Medium Category	Small Category	
	(More than 200 Large animal i.e. bovines per day, or more than 1000 small animal i.e. goat and sheep per day)	(50 to 200 Large animal i.e. bovines per day, or 300 to 1000 small animal i.e. goat and sheep per day)	(Less than 50 Large animal i.e. bovines per day, or less than 300 small animal i.e. goat and sheep per day)	
Buffalo	0.30 - 0.50	0.1-0.25	0.05 - 0.25	06 Months
Goat/ Sheep	1.2 - 2.1	1.3 - 2.5	0.8 - 1.7	06 Months

*. M³/TLWK - Cubic Meter per Ton of Live Weight killed.

Source : Central Pollution Control Board vide its office memorandum dated 23-11-2017 has released a document titled "Revised Comprehensive Industry Document on Slaughter Houses".

2. Action Points with timeline for upgrading the Effluent Treatment Plant and its monitoring-

S.No.	Action Point	Timeline
1	ETP must be provided with tertiary treatment units like Pressure Sand Filter, Activated Carbon Filter, Ultra Filtration	03 Months
2	Calibration of Online Continuous Effluent Monitoring System as per CPCB protocol and ensure continuous linkage with server of CPCB.	01 Month

3	Installation of High Definition Open to Network Web Camera ón ETP, final outlet point, final discharge point and its connectivity with UPPCB.	01 Month.
4	Ensuring Zero Liquid Discharge by way of recycling of treated effluent in process or utilization of effluent treated as per norms for irrigation on land.	06 Months.
5	Installation of sealed flow metering system along with running hours at the inlet water source (Borewell or other sources) and outlet and at inlet pipeline of different process operation and outlet of ETP	30-06-2019
6	Colour Coding of Pipelines carrying recycled process water and fresh process water.	06 Months
7	Segregation of salt bearing stream and installation of salt recovery/evaopration system.	06 Months

Appendix 3C

Action Points for Textile Industries

Central Pollution Control Board has released a document titled "Charter for Water Recycling & Pollution Prevention For Textile Industry".

The Textile unit shall take timebound steps as detailed below for fulfilling the existing gaps with reference to water consumption & discharge of effluent, effluent treatment infrastructure etc. as below with timeline for upgrading the Effluent Treatment Plant –

S.No.	Objective	Action Point	Timeline
1.	Water Consumption	Reduce Water consumption by 20 % per kg of product by Completing upgradation of ETP.	31-12-2019
2.	Water Consumption	Reduce Water consumption by 15 % in addition to last years 20 % per kg of product by Completing upgradation of ETP by adding tertiary treatment units.	31-12-2020
3.	Water Consumption	Confirmation of 30 % Water Recycle against total input (in other words water consumption per kg should be reduced by 30 % minimum)	Beyond 31-12-2020
4.	Monitoring of Water Consumption	Installation of sealed flow meter and running hours meter on bore wells and inlet pipeline of different process section.	01 Month
5.	Colour coding of pipe lines	Colour coding of pipe lines carrying recycled process water and fresh process water	06 Months
6.	Self-Assessment of ETP adequacy	Preperation of ETP adequacy assessment report	01 Month
7.	Installation of sealed flow metering system	Installation of sealed flow metering system along with running hours at the inlet water source (Borewell or other sources) and outlet and at inlet pipeline of different process operation and outlet of ETP	30-06-2019
8.	Setting up of Online Effluent Monitoring System	Setting up of Online Effluent Monitoring System to Monitor final outlet discharge, units connected to CETPs can have Common System Installed at CETP discharge	06 Months

Appendix 3 D

Action Points for Electroplating Industries

The Electroplating units shall take timebound steps as detailed below for fulfilling the existing gaps with reference to adoption of cleaner technology, water consumption & discharge of effluent-

S.N	Gap	Action Point	Timeline
1	Adoption of cleaner technology	Usage of cyanide in electroplating should be phased out. Non-Cyanide Plating Processes should be adopted	31-12-2019
2	Proper segregation of metal bearing effluent streams	Different metal bearing streams shall be segregated by way of dedicated marked lines, to segregate waste water according to its characteristics	03 Months
3	Reducing Water Consumption	Unit shall achieve the target of 50% reduction in water consumption by adopting cleaner technologies such as: Introduction of rinse water recirculation, Using of countercurrent rinsing systems; recycling rinse waters to the process after treatment. Regenerate and recycle process baths and rinse water after treatment.	31-12-2019
4	Reducing waste water discharge	Unit shall reduce the waste water discharge upto 50% by adopting cleaner technologies such as: Controlling spillages by using troughs between tanks and avoiding haphazard rinsing and washing Recycling of treated effluent for rinsing.	31-12-2019
5	Upgradation of ETP	ETP must be provided with tertiary treatment units like Reverse Osmosis Plant, Ultra Filtration, Ion Exchange etc, to enable recycling of treated effluent in the process	31-12-2019
6	Self-Assessment of ETP adequacy	Preparation of ETP adequacy assessment report	01 Month

7	Installation of sealed flow metering system	Installation of sealed flow metering system along with running hours at the inlet water source (Borewell or other sources) and outlet and at inlet pipeline of different process operation and outlet of ETP.	03 Months
8	Setting up of Online Effluent Monitoring System	Setting up of Online Effluent Monitoring System to Monitor final outlet discharge.	06 Months
9	Colour Coding of Pipelines	Colour Coding of Pipelines carrying recycled process water and fresh process water.	06 Months
10	Monitoring of pollution control systems	Installation of High Definition Open to Network Web Camera on ETP, final outlet point, final discharge point and its connectivity with UPPCB.	01 Month.

Appendix 3E

Action Plan for Distillery & Fermentation Sector for Mitigation of Pollution to ensure ZLD

Sr.no.	GAP	Action Point	Time Line
1.	MEE condensate management	MEE condensate management through CPU	12 Months
2.	Mass flow meter at inlet & outlet	Installation of online mass flow meter at inlet & outlet of MEE & its connectivity to CPCB/UPPCB server	03 Months
3.	Restriction on spentwash storage capacity	Restriction on Spentwash storage capacity I. 01 Month in case of Bio-compost II. 01 Week in case of incineration	03 Months
4.	Installation of web cam	Installation of PTZ cameras and connectivity	01 Month
5.	Ground water monitoring	Setting up of adequate no. of bore well and pizometers around the bio compost area for Ground water monitoring.	03 Months
6.	OCEMS on boilers.	Installation of OCEMS on boilers.	06 Months
7.	Implementation of notification regarding compost	Registration from Agriculture Department as per notification of compost & sale of bio-compost in bag packing	Immediate
8.	Safe storage of Molasses	Safe storage of Molasses as per CPCB guidelines.	Immediate

Appendix 3F

Treated effluent quality of CETP Pilkhua, Hapur						
S.No.	Date	Parameters				Status
		pH(mg/L)	BOD(mg/L)	COD(mg/L)	TSS(mg/L)	Compliance (Y/N)
1	30/04/2019	7.9	18	111	80	YES
2	23/04/2019	7.9	25	124	69	YES
3	16/04/2019	7.8	42	95	145	NO
4	09/04/2019	7.6	22	150	98	YES
5	02/04/2019	7.8	27	120	75	YES

Monitoring Reports of CETP Pilakhua, Hapur

Appendix-4

Details of Gram Panchayats & Revenue Villages on the banks of River

VILLAGE SITUATED ALONG THE RIVER KALI RIVER LEFT BANK

S. No.	District	Name of village	LAT	LONG	Distance (Km)	Population (2011)	Decadal growth rate (%)	Estimated population (2019)	Sewage Generation (MLD)	Estimated MSW (Kg/day)
1	Muzaffar Nagar	Rasoolpur Kailaura	29°16'13.59"N	77°47'45.14"E	0.17	2051	16.94	2329	0.252	582.24
2	Meerut	Shahpur Jadid	29°10'13.15"N	77°45'54.23"E	0.3	1351	14.89	1512	0.163	377.98
3	Meerut	Kheri Tappa iwar	29° 7'38.10"N	77°44'50.92"E	0.26	2452	14.89	2744	0.296	686.02
4	Meerut	Jalalabad	29° 4'18.15"N	77°46'16.45"E	0.07	2174	14.89	2433	0.263	608.24
5	Meerut	Ulakhpur	29° 3'29.79"N	77°46'8.01"E	0.1	1588	14.89	1777	0.192	444.29
7	Meerut	Muzaffar nagar saini	29° 2'13.06"N	77°47'29.34"E	0.21	4658	14.89	5213	0.563	1303.22
8	Meerut	Rasulpur Aurangabad	29° 0'22.34"N	77°47'57.62"E	0.2	9890	14.89	11068	1.195	2767.02
9	Meerut	Jalaluddin Masoodpur Gawri	28°58'43.07"N	77°47'41.01"E	0.3	845	14.89	946	0.102	236.41

S. No.	District	Name of village	LAT	LONG	Distance (Km)	Population (2011)	Decadal growth rate (%)	Estimated population (2019)	Sewage Generation (MLD)	Estimated MSW (Kg/day)
10	Meerut	Gesupur	28°57'46.08"N	77°46'6.12"E	0.21	7047	14.89	7886	0.852	1971.61
12	Meerut	Kamalpur	28°56'13.40"N	77°45'49.61"E	0.3	1244	14.89	1392	0.150	348.05
13	Meerut	Kudhla	28°53'51.60"N	77°46'1.82"E	0.29	2362	14.89	2643	0.285	660.84
14	Meerut	Aad	28°52'2.37"N	77°47'26.99"E	0.08	3215	14.89	3598	0.389	899.49
15	Meerut	Ataula	28°48'36.85"N	77°49'37.77"E	0.31	2263	14.89	2533	0.274	633.14
16	Ghaziabad	Simrauli	28°43'35.47"N	77°50'11.31"E	0.32	3755	42.27	5025	0.543	1256.20
17	Ghaziabad	Allabuxpur urf Bagadpur	28°42'27.14"N	77°50'13.83"E	0.28	2195	42.27	2937	0.317	734.32
18	Ghaziabad	Bhatail	28°38'48.31"N	77°49'55.42"E	0.26	1444	42.27	1932	0.209	483.08
19	Bulandshahr	Banboi (Karimnagar)	28°37'23.51"N	77°49'28.30"E	0.29	2716	20.12	3153	0.341	788.29
		Total				51250		59121	6.385	14780.44

VILLAGE SITUATED ALONG THE RIVER KALI RIVER RIGHT BANK

S. No.	District	NAME OF VILLAGE	LAT	LONG	DISTANCE	POPULATION	Decadal growth rate	Estimated population (2019)	Sewage Generation (MLD)	Estimated MSW (Kg/day)
20	Muzaffar Nagar	Khokni	29°15'40.30"N	77°47'40.23"E	0.3	2722	16.94	3091	0.334	772.72
21	Muzaffar Nagar	Galibpur	29°14'45.65"N	77°47'47.84"E	0.3	4220	16.94	4792	0.518	1197.97
22	Muzaffar Nagar	Sikandar pur	29°12'43.75"N	77°47'40.91"E	0.4	1796	16.94	2039	0.220	509.85
23	Meerut	Mamuri	29° 9'35.76"N	77°44'53.02"E	0.6	789	14.89	883	0.095	220.75
24	Meerut	Samoli Salempur	29° 8'12.47"N	77°44'30.55"E	0.55	3699	14.89	4140	0.447	1034.91
25	Meerut	Mamurpur	29° 5'15.18"N	77°45'14.16"E	0.13	2570	14.89	2876	0.311	719.03
25	Meerut	Kaul	28°51'30.17"N	77°47'40.46"E	0.121	2937	14.89	3287	0.355	821.71
27	Meerut	Atrara	28°48'35.31"N	77°48'30.18"E	0.3	7432	14.89	8317	0.898	2079.32
28	Ghaziabad	Muradpur	28°47'48.88"N	77°51'13.07"E	0.2	3422	42.27	4579	0.495	1144.80
	Total					29587		34004	3.672	8501.07
	Grand Total					80837		93126	10.057	23281.51

Appendix-5

WET LANDS / WATER BODIES ALONG THE RIVER KALI (East)

S. No.	NAME OF DISTRICT	NAME OF TOWN	NAME OF NEARBY VILLAGE	LATITUDE	LONGITUDE	DISTANCE FROM RIVER (KM)	LOCATION OF WETLAND	
							LEFT BANK	RIGHT BANK
	Muzaffarnagar	Khatauli	Palri					
			Yahiyapur	29°17'2.74"N	77°46'16.18"E	1.04		Y
1			Khokani	29°16'8.52"N	77°47'22.71"E	0.4		Y
3			Khokani 2	29°15'41.18"N	77°47'31.75"E	0.31		Y
2			Rasoolpur kailaura	29°15'48.62"N	77°47'54.19"E	0.3	Y	
4			Nagla rudrapur	29°15'44.20"N	77°48'28.06"E	1.4	Y	
5			Wazirpur khurd	29°15'30.94"N	77°48'35.06"E	0.97	Y	
6			Wazirpur khurd 1	29°15'21.75"N	77°48'23.21"E	0.43	Y	
7			Galibpur	29°14'39.84"N	77°47'42.91"E	0.39		Y
8			Galibpur 1	29°14'40.01"N	77°47'52.54"E	0.19		Y
9			Jandheri jatanpur	29°14'16.05"N	77°47'7.94"E	1.33		Y
10			Dasola	29°13'18.56"N	77°47'23.69"E	0.41		Y
11			Chitaura	29°13'24.39"N	77°48'47.66"E	1.9	Y	
12			Sikandarpur	29°12'40.55"N	77°47'37.36"E	0.4		Y
13			Sikandarpur 1	29°12'26.56"N	77°47'43.87"E	0.2		Y

S. No.	NAME OF DISTRICT	NAME OF TOWN	NAME OF NEARBY VILLAGE	LATITUDE	LONGITUDE	DISTANCE FROM RIVER (KM)	LOCATION OF WETLAND	
							LEFT BANK	RIGHT BANK
14			Khadli	29°12'1.35"N	77°47'37.38"E	0.57		Y
15			Manish nagar	29°11'36.38"N	77°48'34.95"E	1.17	Y	
16	Meerut	Sardhana	Shahpur jadid	29°10'15.45"N	77°45'57.05"E	0.55	Y	
17			Jamalpur goma	29°10'15.80"N	77°44'51.02"E	1		Y
18			Jamalpur goma 1	29°10'5.39"N	77°44'46.12"E	1.1		Y
19			Mamuri	29° 9'41.37"N	77°44'48.09"E	0.6		Y
			Mahalka	29° 9'1.18"N	77°46'31.22"E	1.95	Y	
			Mahalka 1	29° 9'12.09"N	77°46'22.27"E	1.63	Y	
20			Sarsawa	29° 8'36.82"N	77°45'43.16"E	0.82	Y	
21			Samoli salempur	29° 8'22.52"N	77°44'27.10"E	0.55		Y
22			Samoli salempur 1	29° 7'52.44"N	77°43'52.51"E	1.19		Y
23			Kheri tappa lawar	29° 7'34.62"N	77°44'48.39"E	0.36	Y	
24			Kheri tappa lawar 1	29° 7'10.71"N	77°44'38.78"E	0.23	Y	
25			Ajhota	29° 6'6.42"N	77°45'18.93"E	1.04	Y	
26			Kailota	29° 5'48.93"N	77°44'11.81"E	0.8		Y
27			Khanuda	29° 4'10.19"N	77°45'25.94"E	0.97		Y
			Jalalabad	29° 4'28.11"N	29° 4'28.11"N	0.39	Y	
28			Maithna indresingh	29° 3'26.71"N	77°45'39.28"E	0.53	Y	
			Ulakhpur	29° 3'19.73"N	77°46'17.49"E	0.35	Y	
29			Bahchaula	29° 2'21.53"N	77°46'26.11"E	0.28	Y	

S. No.	NAME OF DISTRICT	NAME OF TOWN	NAME OF NEARBY VILLAGE	LATITUDE	LONGITUDE	DISTANCE FROM RIVER (KM)	LOCATION OF WETLAND	
							LEFT BANK	RIGHT BANK
30			Salarpur jalalpur	29° 1'14.61"N	77°46'31.82"E	0.89		Y
			Rasulpur auranagabad	29° 0'40.36"N	77°48'2.72"E	0.85	Y	
31			Islamabad chhilora	28°59'44.55"N	77°47'1.22"E	0.97		Y
32		Meerut Tehsil	Islamabad chhilora 1	28°59'54.03"N	77°46'56.93"E	1.03		Y
33		Rajapur Block	Medpur	28°58'7.16"N	77°47'36.11"E	0.97	Y	
34			Rali chauhan	28°58'25.03"N	77°46'19.26"E	0.94		Y
35			Gesupur	28°57'54.07"N	77°46'4.05"E	0.52	Y	
36			Dhatawali	28°57'5.94"N	77°46'31.09"E	0.8	Y	
37			Gokulpur vill	28°56'38.55"N	77°45'55.31"E	0.51	Y	
38			Kamlpur	28°56'5.13"N	77°45'40.97"E	0.5	Y	
39			Kamlpur 1	28°56'11.80"N	77°45'58.86"E	0.9	Y	
40			Dhikauli	28°54'21.08"N	77°44'34.45"E	1.12		Y
41			Alipur	28°54'1.88"N	77°45'6.81"E	0.36		Y
42			Kudhla	28°54'1.73"N	77°46'2.30"E	1.02	Y	
43			Peepli khera	28°52'52.57"N	77°45'56.14"E	1.48		Y
44			Peepli khera 1	28°52'47.18"N	77°46'3.97"E	1.27		Y
45			Aad	28°52'4.25"N	77°47'41.80"E	0.63	Y	
46			Kaul	28°51'29.51"N	77°47'25.44"E	0.66		Y

S. No.	NAME OF DISTRICT	NAME OF TOWN	NAME OF NEARBY VILLAGE	LATITUDE	LONGITUDE	DISTANCE FROM RIVER (KM)	LOCATION OF WETLAND	
							LEFT BANK	RIGHT BANK
47			Badholi	28°49'58.66"N	77°47'38.06"E	0.67		Y
48			Ajrara	28°50'13.43"N	77°48'49.23"E	1.23	Y	
49			Atrrara	28°48'36.33"N	77°48'3.99"E	1.03		Y
50			Rajpura	28°48'10.52"N	77°48'28.47"E	0.85		Y
51	Ghaziabad	Hapur	Asra	28°47'51.74"N	77°50'3.02"E	0.71		Y
52			Shafidabad	28°49'1.44"N	77°50'59.12"E	1.21	Y	
54			Agpur	28°48'6.53"N	77°52'8.33"E	1.65	Y	
55			Fatehpur matnaura	28°47'6.13"N	77°52'18.58"E	0.91	Y	
56			Fatehpur matnaura 1	28°47'12.15"N	77°52'0.50"E	0.41	Y	
57			Shahabuddinpur	28°45'39.90"N	77°50'15.47"E	1.21		Y
58			Dadayara	28°45'17.42"N	77°49'32.27"E	2.01		Y
59			Zainuddinpur	28°44'31.51"N	77°50'5.94"E	0.79	Y	
60			Tatarpur	28°42'56.61"N	77°49'22.16"E	0.9		Y
61			Firozabad urf sitadei	28°42'38.71"N	77°49'29.65"E	0.98		Y
62			Chhapokali	28°41'4.49"N	77°51'20.39"E	0.99	Y	
63			Bhatail	28°38'46.31"N	77°49'59.92"E	0.51	Y	
64			Meerpur kalan	28°39'17.36"N	77°49'7.34"E	1.16		Y
65			Jhanda musarrafpur	28°38'3.40"N	77°49'25.04"E	0.95	Y	
66			Shanvi	28°38'22.80"N	77°48'7.94"E	1.22		Y
67	Bulandshahr	Gulaothi	Banboi	28°37'20.63"N	77°49'35.56"E	0.68	Y	
68			Akbarpur	28°37'14.40"N	77°48'42.17"E	0.74		Y

Appendix-6

Status of E-Waste Management

Status of E-waste Recycling / Collection / Generation Units in the State of U.P. (As on 09.10.2018)

S. No.	Name & Address of Unit	Regional Office	Status of Authorisation	Status of Registration & Validity	Type	Capacity (T/Annum)
1	M/s Auctus -E Recycling Solutions Pvt. Ltd., F-637, M.G. Road, Industrial Area, Ghaziabad.	Ghaziabad	Grant	Registered 30.08.2019	Collection, Dismantle	1800
2	M/s Mahaluxmi Metal Alloys (India) Pvt. Ltd., Modinagar, Ghaziabad.	Ghaziabad	Grant	Registered 22.05.2023	Collection, Dismantle, Recyclers	30000
3	M/s N.K. Products, 58-59, M.G. Road, Ghaziabad.	Ghaziabad	Refused	Registered 22.06.2016	Collection, Dismantal	9000
4	M/s Bharat Oil Co., E-18, Site-IV, Sahibabad, Industrial Area, Ghaziabad.	Ghaziabad	Grant	Registered 16-05-18	Collection, Dismantal	4000
5	M/s Planet Green Recycling Pvt. Ltd., G-129, Phase -1, M.G. Road, Ghaziabad.	Ghaziabad	Grant	Registered 23.08.2018	Collection, Dismantal, Recyclers	1500
6	M/s Rocket Sales, Plot No. 1-12, I/A, M.G. Road, Hapur.	Ghaziabad	Grant	Registered 27.08.2019	Collection,, Dismantal	300
7	M/s Arsh Recycling Pvt. Ltd., Plot No. 203, UPSDIC, I/A, M.G. Road, Ghaziabad.	Ghaziabad	Grant	Registered 20.06.2023	Collection, Dismantal, Recycling,	15000
8	M/s Auctus Recycling Solutions Pvt. Ltd. Habibpur, Greater Noida.	Greater Noida	Grant	Registered 06.12.2021	Dismantal, Collection	19500
9	M/s Khan Traders, B-5, site4, Panki Industrial Area, Kanpur.	Kanpur	Grant	Registered 15-11-2020	Collection, Dismantal	7190
10	M/s Green Tech Rcyling, Khasra No.-645, Acchraunds, Bahdaurpur Road, Partapur, Meerut .	Meerut	Grant	Registered 12.01.2022	Collection, Dismantal	1800

11	M/s Narora Atomic Power Station, Narora, Bulandshahar.	Bulandshahar	Not Applied	-	Collection' Dismantaling & Recycling	10
12	M/s Metal Alloys, E-46, Industrial Area, Ramnagar, Varanasi	Varanasi	Grant	Registered 31-05-2019	Collection	1825
13	M/s Comwen Information Technologies Pvt.Ltd., 127/35B, ChakRagunath, Naini, Allahabad.	Allahabad	Grant	Registered 11-08-2017	Collection	300
14	M/s Dasia ECo E-Waste Recyclers E-160 Industrial area, Khalilabad, SantKabairnagar.	Basti	Grant	Registered 31-12-2017	Collection, Dismantaling	720
15	M/s Sims Recycling Solutions Plot no.1 Udyog KendraII Ecotech-III Greater Noida.	Greater Noida	Grant	Registered 31.12.2019	Collection, Dismental, Recycling	1250
16	M/s J.A.O. E-Waste Recycling Co, Vill-Jaitpur,Distt-Moradabad.	Moradabad	Grant	Registered 23.11.2020	Collection	3001
17	M/s HIN Green E-waste Recycling (P) Ltd, B-19/1, Summer Garden Colony, Meerut.	Meerut	Grant	Registered 12.04.2018	Collection, Dismental,	750
18	M/s S.R. Metcast India (P) Ltd 11.8 Km.Agra Mathura Road, Agra.	Agra	Grant	Registered 02.08.2022	Collection	600
19	M/s K.M. Metals Suppliers 9/270,271,Mathura Agra.	Agra	Not Applied	-	Collection	5000
20	M/s Prakash Metal House 39/223, Karwan Lohamandi,Agra.	Agra	Grant	Registered 02.05.2023	Collection	1500
21	M/s Shree MahaveerJi Trading Company, 30/127, Chippitala, Agra.	Agra	Not Applied	Reject	Collection	4500
22	M/s E-Waste Recyclers India E-50, UPSIDC Industrial area, NH-2 Kosikalan, Mahura.	Mathura	Grant	Registered 01.03.2022	Collection, Dismantle	6000
23	M/s Supar Trading Company, Plot No.-3 Govt. Industrial Estate, Talkatora Road, Lucknow.	Lucknow	Not Applied	Registered 03.04.2016	Collection	365
24	M/s V.R. Techno Enviro Services pvt. ltd. khasra No. 440, indira Priyedarshni ward, jarhra Indira Nagar, Lucknow.	Lucknow	Not Applied	Registered 09.04.2016	Collection, Dismantle	365

25	M/s Sachin enterprises,84/1,Plot no.34-35 Fazalganj, Kanpur.	Kanpur	Grant	Registered One Time	Collection	5000 Pieces Per Annum
26	M/s Gandhi Traders, 91/103, Dalelpurwa, Kanpur.	Kanpur	Grant	Registered 04.06.2018	Collection	5000 Pieces Per Annum
27	M/s Greezon Recycling Pvt. Ltd., R 30, UPSIDC, Industrial Area, Sikandrabad, Bulandshahar.	Bulandshaha	Grant	Registered 27.08.2022	Collection Dismental, Recycling	16.5
28	M/s Sachin Enterprises, 123/751, block-T 74 pratapganj Gadariyan Purwa, Fazal gang, Kanpur.	Kanpur	Grant	Registered 16.11.2022	Collection, Dismantling, Refurbishing	2500
29	M/s Greeniva Recycler Pvt. Ltd., Plot No. G-284, M.G. Road, Industrial Area, Hapur.	Hapur	Grant	Registered 18.06.2019	Collection, Dismantling, Recycling.	1500
30	M/s S. Malik Traders, Plot No.-93, 94 Vill-Budhera Jahidpur, Meerut.	Meerut	Grant	Registered 12.01.2022	Collection, Dismantling	365
31	M/s Royal Faiz Recycling (p) Ltd. , I-22, I.A. M.G. Road, Hapur.	Ghaziabad	Grant	Registered 29.01.2023	Collection, Dismental, Recycling	12000
32	M/s 3 C Recycler, F-326, I/A, M.G. Road, Hapur.	Ghaziabad	Grant	Registered 31.12.2022	Collection, Dismental, Recycling	9000
33	M/s Life E- Recycling (P) Ltd., F- 435, UPSIDC I/A, M.G. Road, Hapur.	Ghaziabad	Grant	Registered 05.06.2023	Collection, Dismental,	9000
34	M/s Hind Recycling (P) Ltd., Plot No. F-203, M.G. Road, Hapur.	Ghaziabad	Grant	Registered 01.03.2022	Collection, Dismental,	9000
35	M/s Hayat Recycler, F-53, 54, I/A, M.G. Road, Hapur.	Ghaziabad	Grant	Registered 21.06.2023	Collection, Dismental, Recycling	15000
36	M/s B.R.P. Infotech Private Limited, F-394, Phase-I, M.G.Road, Industrial Area, Hapur	Hapur	Grant	Registered 28.06.2023	Recycling, Dismantling, Segregation, Collection	9000 MT/Year

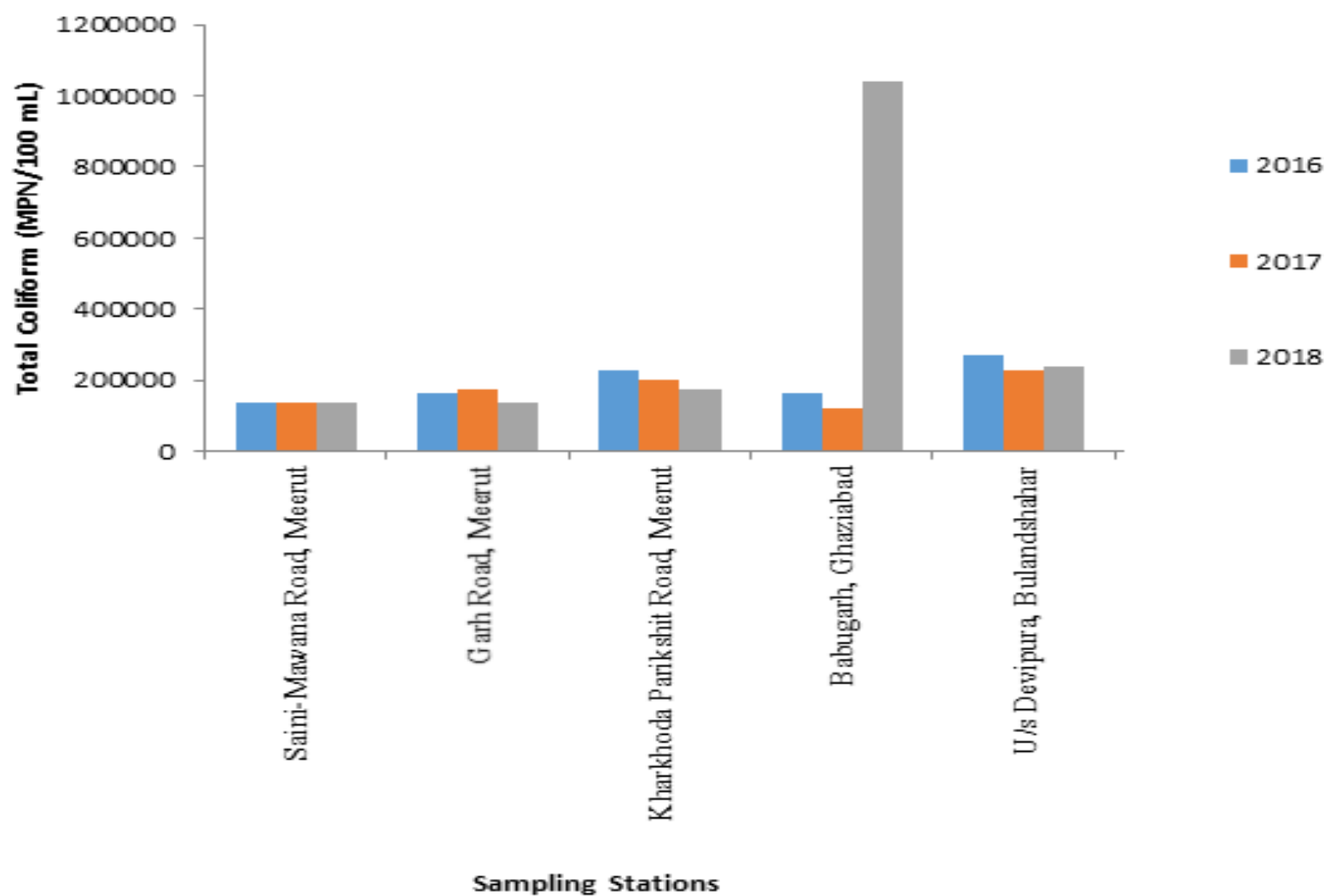
37	M/s Sky Green Waste Recycling Managememt , Khasra No.- 174, Alipur Jijmana, Meerut, U.P.	Meerut	Grant	Registered 20.12.2023	Dismantling, Recycling	5475 MT/Y 4500 MT/A
38	M/s Swachh Bharat Recycling Company, Gali- N0-4, 2083, Saipuram Insutrial Area, Delhi Road, Meerut, U.P.	Meerut	Grant	Registered 08.05.2023	Recycling	4800 MT/A
39	M/s Rudra Interprises, Plot No. A- 96, Sector-A- 4, Tronica City, Loni, Ghaziabad	Ghaziabad	Grant	Registered 03.05.2023	Disposal & Dismantling	500 MT/Month
40	M/s Avgree Recycling Pvt. Ltd. KH No. 549, Vill.- Tiyala, Meerut- Bulandshahar Road, Hapur Bypass, Hapur	Ghaziabad	Grant	Registered 10.09.2023	Dismantling & Segregation	11000 MT/A
41	M/s Faiz Recycling, G-235, MG Road, Industrial Area, Hapur	Ghaziabad	Grant	Registered 13.02.2024	Dismantling & Segregation	36.67 MT/Day
42	M/s Horizon Recycling Pvt. Ltd., Khasra no.-35, Kumarhera, 7th km Dehradun Road, Saharanpur, U.P.	Saharanpur	Grant	Registered 02.08.2022	Recycling, Dismantling, Segregation, Collection	12000 MT/A
43	M/s Golden Ewaste Recyclers Pvt. Ltd., Plot No.- 12A, Gagol Road, Behind Sophia School Udyog Puram, Partapur, Meerut	Meerut	Grant	Registered 01.04.2024	Transporttion, Refurbishing, Dismantling, Segregation, Storage, Disposal	9600 MT/A

Appendix-7

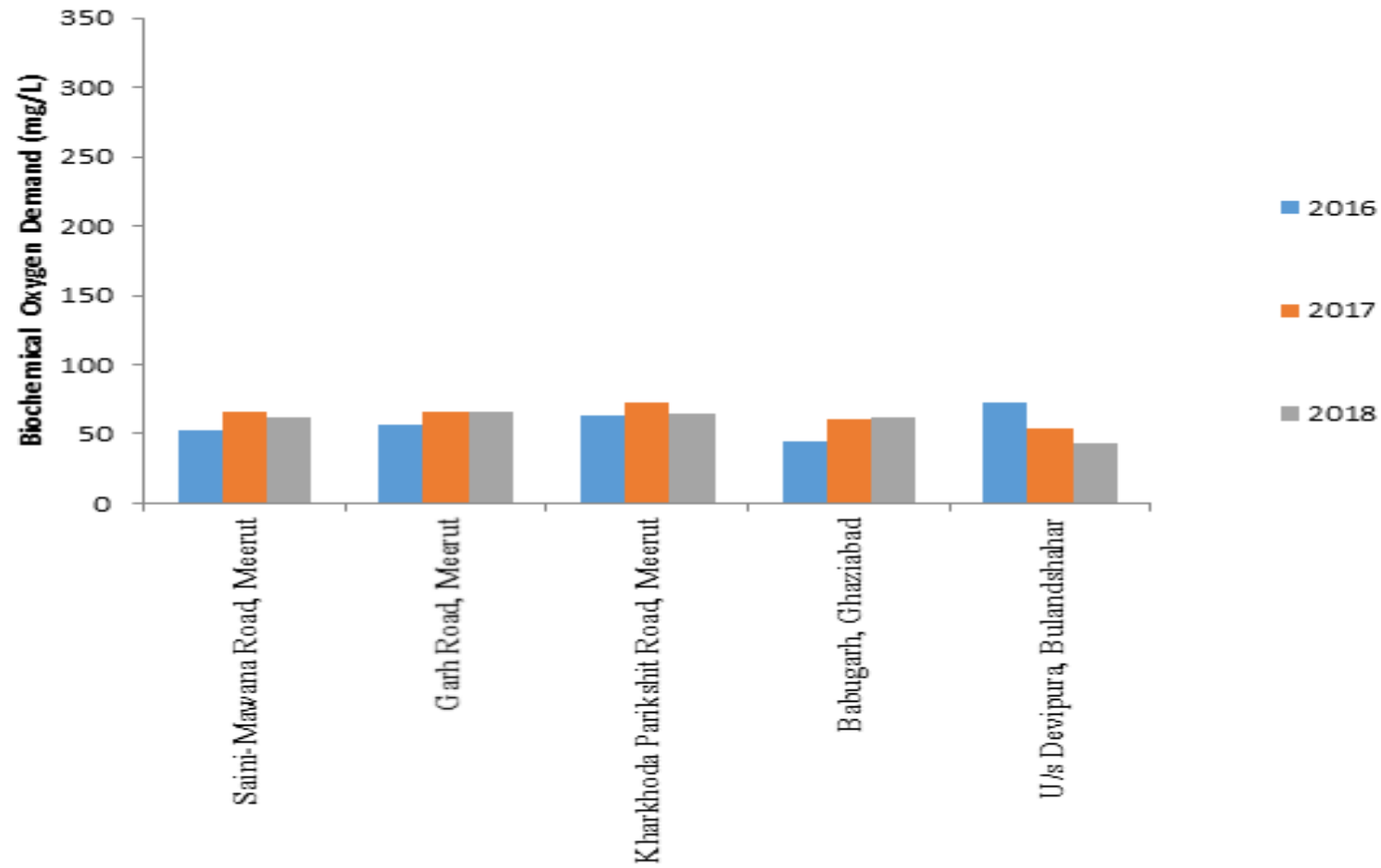
River Water Quality Data Water Quality of River Kali (East) in UP Year 2016-2018

S No	Sample Collection Point	2016			2017			2018		
		DO (mg/l)	BOD(mg/l)	Total Coliform (MPN/100m l)	DO (mg/l)	BOD(mg/l)	Total Coliform (MPN/100m l)	DO (mg/l)	BOD(mg/l)	Total Coliform (MPN/100m l)
1	Saini-Mawana Road, Meerut	Nil	52.3	135833	Nil	65.42	135000	Nil	61.8	138417
2	Garh Road, Meerut	Nil	56.3	165833	Nil	65.83	171667	Nil	66.3	138333
3	Kharkhoda Parikshit Road, Meerut	Nil	63.7	230000	Nil	72.42	203333	Nil	65.0	175833
4	Babugarh, Ghaziabad	Nil	44.6	163750	Nil	60.60	120625	Nil	61.4	1038333
5	U/s Devipura, Bulandshahar	Nil	73.1	269167	Nil	53.75	227917	Nil	43.7	239091

Comparative chart of Total Coliform In River Kalli (East)



Comparative chart of Biochemical Oxygen Demand In River Kali (East)



CLASS OF WATER AS PER IS:2296

Classification	TYPE OF USE
ClassA	Drinking watersourcewithoutconventional treatmentbut afterdisinfection
ClassB	Outdoorbathing
ClassC	Drinking watersourcewith conventional treatment followed bydisinfection.
ClassD	Fish culture and wild life propagation
ClassE	Irrigation,industrial cooling orcontrolled waste disposal

TOLERANCE LIMITS

TABLE-1: TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – A

S. No. (1)	Characteristic (2)	Tolerance (3)
(i)	pH	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l,	6.0
(iii)	Bio-chemical Oxygen Demand	2.0
(iv)	Total Coliform Organisms, MPN/100 ml, Max	50
(v)	Colour, Hazen units, Max	10
(vi)	Odour	unobjectionable
(vii)	Taste	Agreeable taste
(viii)	Total Dissolved Solids, mg/l, Max	500
(ix)	Total Hardness (as CaCO ₃), mg/l, Max	300
(x)	Calcium Hardness (as CaCO ₃), mg/l, Max	200
(xi)	Magnesium (as CaCO ₃), mg/l, Max	100
(xii)	Copper (as Cu), mg/l, Max	1.5
(xiii)	Iron (as Fe), mg/l, Max	0.3
(xiv)	Manganese (as Mn), mg/l, Max	0.5
(xv)	Chlorides (as Cl), mg/l, Max	250
(xvi)	Sulphate (as SO ₄), mg/l, Max	400
(xvii)	Nitrates (as NO ₃), mg/l, Max	20
(xviii)	Fluorides (as F), mg/l, Max	1.5
(xix)	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	0.002
(xx)	Mercury (as Hg), mg/l, Max	0.001
(xxi)	Cadmium (as Cd), mg/l, Max	0.01
(xxii)	Selenium (as Se), mg/l, Max	0.01
(xxiii)	Arsenic (as As), mg/l, Max	0.05
(xxiv)	Cyanides (as CN), mg/l, Max	0.05
(xxv)	Lead (as Pb), mg/l, Max	0.1
(xxvi)	Zinc (as Zn), mg/l, Max	15
(xxvii)	Chromium (as Cr ⁶⁺), mg/l, Max	0.05
(xxviii)	Anionic detergents, (as MBAS), mg/l, Max	0.2
(xxix)	Poly-nuclear aromatic hydrocarbons (PAH),	0.2
(xxx)	Mineral oil, mg/l, Max	0.01
(xxxi)	Barium (as Ba), mg/l, Max	1.0
(xxxii)	Silver (as Ag), mg/l, Max	0.05
(xxxiii)	Pesticides	Absent
(xxxiv)	Alpha emitters, µc/ml, Max	10 ⁻⁸
(xxxv)	Beta emitters, µc/ml, Max	10 ⁻⁸

TABLE- 2: TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – B

S. (1)	Characteristic (2)	Tolerance Limit (3)
(i)	pH Value	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l, Max	5.0
(iii)	Biochemical Oxygen Demand (5 days at 20 °C),	3.0
(iv)	Total Coliform Organisms, MPN/100 ml, Max	500
(v)	Fluorides (as F) <mg/l, Max	1.5
(vi)	Colour, Hazen units, Max	300
(vii)	Cyanides (as CN), mg/l, Max	0.05
(viii)	Arsenic (as As), mg/l, Max	0.2
(ix)	Phenolic Compounds (as C ₆ H ₅ OH) mg/l, Max	0.005
(x)	Chromium (as Cr ⁶⁺), mg/l, Max	1.0
(xi)	Anionic detergents (as MBAS), mg/l, Max	1.0
(xii)	Alpha emitters, µc/ml, Max	10 ⁻⁸

TABLE - 3: TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – C

S.No.	Characteristic	Tolerance Limit
(1)	(2)	(3)
(i)	pH Value	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l Minimum	4.0
(iii)	Biochemical Oxygen Demand	3.0
(iv)	Total coliform organisms, MPN/100 ml, Max	5000
(v)	Colour, Hazen units, Max	300
(vi)	Fluorides (as F), mg/l, Max	1.5
(vii)	Cadmium (as Cd), mg/l, Max	0.01
(viii)	Chlorides (as Cl), mg/l, Max	600
(ix)	Chromium (as Cr ⁶⁺), mg/l, Max	0.05
(x)	Cyanides (as CN), mg/l, Max	0.05
(xi)	Total Dissolved Solids, mg/l, Max	1500
(xii)	Selenium (as Se), mg/l, Max	0.05
(xiii)	Sulphates (as SO ₄), mg/l, Max	400
(xiv)	Lead (as Pb), mg/l, Max	0.1
(xv)	Copper (as Cu), mg/l, Max	1.5
(xvi)	Arsenic (as As), mg/l, Max	0.2
(xvii)	Iron (as Fe), mg/l, Max	50
(xviii)	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	0.005
(xix)	Zinc (as Zn), mg/l, Max	15
(xx)	Insecticides, mg/l, Max	Absent
(xxi)	Anionic detergents (as MBAS), mg/l, Max	1.0
(xxii)	Oils and grease, mg/l, Max	0.1
(xxiii)	Nitrates (as NO ₃), mg/l, Max	50
(xxiv)	Alpha emitters, µc/mg, Max	10 ⁻⁹
(xxv)	Beta emitters, µc/ml, Max	10 ⁻⁸

TABLE- 4: TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – D

S.No.	Characteristic	Tolerance Limit
(1)	(2)	(3)
(i)	pH value	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l, Min.	4.0
(iii)	Free Ammonia (as N), mg/l, Max.	1.2
(iv)	Electrical Conductance at 25 °C, µS, Max	1000
(v)	Free Carbon Dioxide (as CO ₂), mg/l, Max	6.0
(vi)	Oils and Grease, mg/l, Max	0.1
(vii)	Alpha emitters, µc/ml, Max	10 ⁻⁹
(viii)	Beta emitters, µc/ml, Max	10 ⁻⁸

TABLE- 5: TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – E

S.No.	Characteristic	Tolerance Limit
(1)	(2)	(3)
(i)	pH value	6.0 to 8.5
(ii)	Electrical Conductance at 25°C, µS, Max	2250
(iii)	Sodium Adsorption Ratio, Max	26
(iv)	Boron (as B), mg/l, Max	2.0
(v)	Total Dissolved Solids, (inorganic), mg/l, Max	2100
(vi)	Sulphates (as SO ₄), mg/l, Max	1000
(vii)	Chlorides (as Cl), mg/l, Max	600
(viii)	Sodium Percentage, Max	60
(ix)	Alpha emitters, µc/ml, Max	10 ⁻⁹
(x)	Beta emitters, µc/ml, Max	10 ⁻⁸

Appendix-8

MSW improvement action plan time-line for the ULBs of Department of Urban Development, UP

S.N.	Key Activities	Timeline (In Months)								
		1	2	3	4	5	6	7	8	9
1	Policy Framework adoption (During the period the ULBs are required to adopt various rules /regulation in terms of bylaws for effective implementation of SWM rules)									
2	With adoption action plan the ULBs along the river will formulate IEC campaign (Specifically designing of promotional materials related to not only just for better waste management in the area but also making common people/institutions aware and sensitise about river pollution and its control measure for making an effective behaviour change. The first 2 months will be needed for preparing the material and widely spreading the message and then it's going to be a continuous effort for a sustained drive to make perceptible change among stakeholders.)									

3	Detail Gap Analysis of existing resources in terms of human resource/equipment/vehicles that are presently deployed and further required for full compliance of SWM rules. During the period each ULB shall prepare a detail micro plan (ward -wise) in sync with the action plan for effective implementation.									
4	Procurement of Required Material / Services after Gap Analysis									
5	Capacity Building. All the key stakeholders from senior officials to the level of safaikarmi is required to be sensitize and trained for the effective compliance of SWM rules and during the period intensive capacity building programmes shall be conducted.									
6	Identification of Land/ Building for waste processing shall be completed for all ULBs within 2 months (decentralised composting/MRF).									
7	Construction /Setting up of decentralised processing facility (composting for wet waste and MRF for dry waste) in all ULBs.									
8	Bulk waste Generators Identification and consultation/capacity building for on-site									

	Waste Management.									
9	Identification and integration of Informal Rag Pickers									
10	Segregation/ collection / transport / processing (10 percent) (by 4th month of Action Plan adoption)									
11	Segregation/ collection / transport / processing (20 percent)									
12	Segregation/ collection / transport / processing (35 percent)									
15	Segregation/ collection / transport / processing (50 percent)									
16	Segregation/ collection / transport / processing (65 percent)									
17	Segregation/ collection / transport / processing (80) percent)									
18	Segregation/ collection / transport / processing (100) percent) Within 12 months.									