

JOINT INSPECTION REPORT
(DTD 18.07.2019)
FOR
ENVIRONMENT STATUS OF KHARI RIVER AND KHARICUT CANAL
IN GUJARAT

WITH REFERENCE TO ORDER DTD 01.07.2019 OF
HONOURABLE NGT IN ORIGINAL APPLICATION NO. 105/2019 (PB)
(AJITSINGH BHURUBHA VAGHELA & INHABITANTS OF SEVERAL VILLAGES OF
KHEDA TALUKA, DIST. KHEDA VERSUS STATE OF GUJARAT)

BY



CENTRAL POLLUTION CONTROL BOARD
REGIONAL DIRECTORATE (WEST) VADODARA
AND
GUJARAT POLLUTION CONTROL BOARD GANDHINAGAR

JOINT VISIT AND MONITORING REPORT OF KHARI RIVER AND KHARICUT CANAL IN GUJARAT STATE IN COMPLIANCE OF ORDER OF HON'BLE NGT, PRINCIPAL BENCH, NEW DELHI IN THE MATTER AJITSINH BHURUBHA VAGHELA & INHABITANTS OF SEVERAL VILLAGES OF KHEDA TALUKA, DIST. KHEDA VRS. STATE OF GUJARAT [OA No. 105/2019]

BACKGROUND

In the matter of Original Application No. 105/2019 (Ajitsinh Bhurubha Vaghela & inhabitants of several Villages of Kheda Taluka, Dist. Kheda Vrs. State of Gujarat) Hon'ble National Green Tribunal (NGT), Principal Bench, New Delhi passed an order on 25th March, 2019 that a Joint committee of Central Pollution Control Board and Gujarat Pollution Control to look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report in the matter. The matter is based on the proceedings initiated by Hon'ble NGT on receipt of complaint by them through a letter by the applicant alleging that untreated effluents are being discharged in Kharicut canal which is meeting Khari River in Gujarat affecting irrigation facilities of the inhabitants and the only source of water for irrigation and for consumption by animals like cattle and sheep etc.

In accordance to the order of Hon'ble NGT, the joint inspecting team has submitted report to the Hon'ble NGT. Thereafter, Hon'ble NGT, Principal Bench, New Delhi passed an order on 01st July, 2019 to conduct a fresh inspection by a team comprising of a senior officer of the CPCB and Member Secretary, GPCB.

Accordingly, senior officer of CPCB and Member Secretary, GPCB has conducted fresh inspection on 18th July, 2019, along with officers of Regional Directorate (West) of Central Pollution Control Board (CPCB) and Regional office of Gujarat Pollution control Board (GPCB). Name of the officials in the team are as below:

- K.C.Mistry, Member Secretary GPCB
- Prasoon Gargava, RD (W), CPCB Vadodara
- Amit R. Thakkar, Scientist D, CPCB (W), Vadodara
- T B Shah Regional Officer, RO-Ahmedabad East
- Y A Tehsin, Regional Officer, RO- Nadiad
- A. J. Rathod, DEE, GPCB, RO-Nadiad
- Ashvin Mistry, AEE, GPB, RO-Ahmedabad East
- Jaydip Joshi, AEE, GPCB, HO- Gandhingar
- H. P. Maisuria, SSA, GPB, RO-Ahmedabad East

FINDINGS BASED ON FRESH INSPECTION

As reported earlier, Khari River originates from the hills near Nandol, 20 km east of Gandhinagar, bordering Ahmedabad district. The 80 km long Kharicut canal begins from Raipur village and was constructed more than 100 years ago during the British period for the purpose of providing irrigation support to 10,200 ha in 110 villages spread over 80 km in Daskroi taluka of Ahmedabad district and Mahemdavad taluka of Kheda district.

The Khari cut canal passes through the east part of the Ahmedabad city which receives the water from the Narmada Main canal through the branch canal of the Daskroi. Khari River remains dry throughout the year except in the rainy season. Khari River and Kharicut canal ultimately meets at the Ropada Village at downstream of the Ahmedabad City.

The Kharicut canal stretch from Muthia Village to Ropada Village and then confluence with Khari River at Ropada Village. The said stretch of the canal and the stretch of Khari River till Navagam Village was inspected during the present monitoring. The stretch of Kharicut canal passes through main industrial estates of Ahmedabad namely Naroda GIDC, Odhav GIDC and Vatva GIDC. At Vinzol this canal receives wastewater (treated/untreated) from Sewage Treatment Plant(STP) of Ahmedabad Municipal Corporation (AMC) located at Village Vinzol.

The Ahmedabad Municipal Corporation has provided extensive sewerage network in residential/commercial areas for collection of sewage from the eastern part of the Ahmedabad. There are presently two Sewage Treatment Plant (STPs) in the same premises, old STP having 70 MLD design capacity and new STP 35 MLD. Operation and Maintenance of both the STP are carried out by separate agencies hired by AMC. The STP receives about 170 MLD wastewater. Hence, the excess untreated wastewater is bypassed directly into the final disposal chamber along with treated waste water which ultimately leads to River Khari . Additional STP of reported capacity 100 MLD is under construction. AMC has obtained CCA for 70 MLD STP and CTE for 35 MLD STP.

The team of officials carried out detailed inspection with monitoring to assess the present status and identify potential sources for abnormalities found in water flowing in the Khari cut canal as well as Khari River.

The stretch of the canal and the river covered for inspection and monitoring is depicted in the google image along with sampling locations and results of pH and COD parameters for kind ready reference at a glance. The findings in relation with the said depicted image are as below:

- The stretch of Kharicut canal for the present investigation is considered from Muthia Village. Stagnant water was observed in the canal near bridge entering the industrial area at GIDC Naroda. The flow in the kharicut canal increases with the ingress of domestic sewage as it passes through residential areas of Vatva/ Ring road area of Ahmedabad before entering GIDC of Vatva. 04 grab samples were collected in this stretch (reflected as K1, K2, K3 & K4).
- The canal after flowing through GIDC Vatva receives the treated/ untreated wastewater from Vinzol STP at Vinzol Village (location S2).

Location	Description	Time (hours)	Lat.	Long.	Color of Sample
K7	River Khari at Ropada Foot over bridge, near Railway bridge, Village Ropada	17:25	22.92693	72.64381	Grayish
K8	River Khari at Chosar Village Bridge	15:05	22.90256	72.63681	Yellowish Brown
K9	River Khari at Lali Village Bridge	18:10	22.86888	72.62743	Brownish
K10	River Khari at Bidaj Village Bridge	19:40	22.85157	72.61816	Brownish

- During visit of Vinzol STP of AMC, it was found that old 70 MLD STP was not operational due to pump maintenance work. As informed the STP is not in operation since 03.06.2019. The new STP 35 MLD was found operational. The records of STP were checked. It was found that acidic wastewater is often detected at the inlet of STP through sewerage network. It was informed that as per instructions from AMC to the operator of 70 MLD STP, pH of wastewater received is checked on hourly basis and when pH is found in acidic range, the wastewater is bypassed and discharged directly to Kharicut canal.
- The new STP of 35 MLD is based on SBR technology which is in operation since April 2019. SBR is observed damaged.
- As stated earlier, the STP receives about 170 MLD wastewater from Ahmedabad East. Grab samples of wastewater were collected from the inlet of STP (Location S1) and outlet of 35 MLD STP (location depicted as S2 in image). The sample collected during visit at the inlet of STP was neutral. The STP has received acidic wastewater at the inlet in early morning hours. Acidic pH at the SBR tank of 35

MLD confirms the intake of acidic wastewater at the STP. One sample of waste water collected from SBR-1 tank of 35 MLD (S3 in sample result). Acidic pH was found in the final outlet from 35 MLD (location depicted as S2 in image) and remaining excess untreated wastewater as collected at the inlet was found being bypassed and discharged into the Kharicut canal leading to Khari river. The analysis result reveals that the STP is almost defunct and non-performing.

- The AMC storm water drain was found meeting the Kharicut canal at this place. The storm water line was having light yellowish brown colored water. The colored storm water indicates non-domestic/sewage source. It is found that AMC has bypassed the stream from sewerage line leading to Vinzol STP to this storm water line. Grab Sample of water collected from this point (location depicted as K5 in the image).
- Grab Sample from Kharicut canal on the other side of SP Ring road Railway Bridge at Vinzol Village was also collected (location depicted as K6 in the image). The canal meets the Khari River at Village Ropda under the Railway Bridge. No flow was observed in the upstream of Khari River until the confluence of Kharicut canal at Village Ropda. In other words, the River Khari at downstream of Ropda village carries only wastewater received from the Kharicut canal.
- 04 grab samples of wastewater were also collected from Khari River stretch i.e. from Ropada Village to Bidaj Village (location depicted as K7, K8, K9 and K10 in the image). During visit samples of wastewater were checked for pH (on pH strip), it was found that the Khari river was having pH in acidic range at Chosar Village, Lali Village and Bidaj Village.
- During the visit, it was observed that the farmers of the land located adjacent to the bank of Khari River and Kharicut canal are fetching the wastewater from Khari

River/ Kharicut canal through diesel operated pumps & flexible pipelines for irrigation.

Considering the presence of acidic water in the identified stretch of canal and river, the team focused on identification of potential sources of such unauthorized discharges. Findings in this regard are as below:

- As per observation and evidences made by the team during visit, the prominent sources of acidic wastewater in the Kharicut canal, Khari River is Vinzol STP where acidic waste water comes through illegal discharge into the domestic pipeline network of Vinzol STP. The potential locations are scattered and mostly without any habitation in proximity. The description is as below:
 - There are about 100 manholes in the sewerage network of AMC in the East Ahmedabad leading to Vinzol STP. A few of them are open and mostly unattended with potential points for unauthorized discharge through tankers in odd hours. Acidic wastewater at the inlet of Vinzol STP confirms receipt of acidic wastewater through sewerage network.



Acidic discharge from 35 MLD Vinzol STP

- Looking to field observations in kharicut canal near Chosar village, and near S.P. Ring road, Railway bridge, possibility of surreptitious discharge through tankers could not be ruled out.
- Possibility of Illegal discharge through drain line of automobile service stations, connected with the sewerage network line of AMC, was also explored during discussion with the locals in the area. Such service stations are suspected to carry out washing activity of chemical bearing tankers. Two tankers (GJ01 FT1578 and GJ27 -X1860) at washing station namely Jai Brahmani Washing Centre, Hathijan Circle was found suspected. The team visited the washing center. One tanker (GJ01-FT1578) was washed and another tanker (GJ27-X1860) was found parked on the ramp of the washing platform. Both the tankers were found empty. The pH of wastewater remaining inside the tanker's valve was found acidic. The pH of accumulated wastewater in the wash-down pit was also found acidic and brown-yellow in color.



Tanker parked on the washing ramp. Patches of brownish yellow water inside the washdown pit



Another tanker parked in the washing station

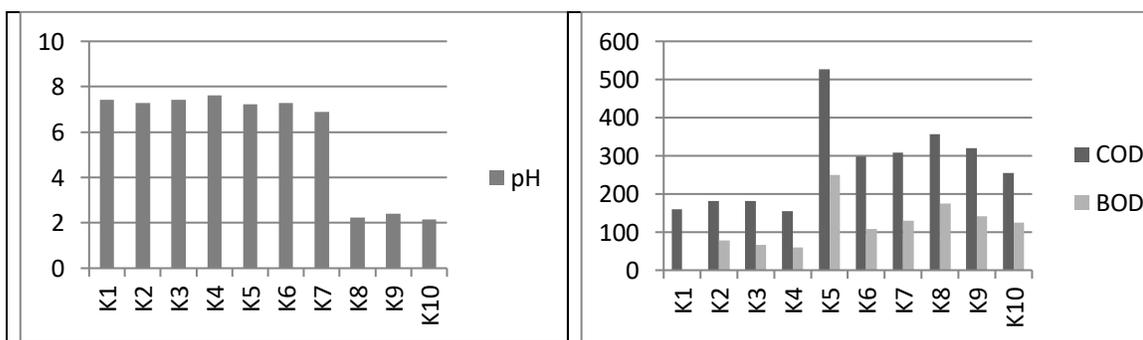


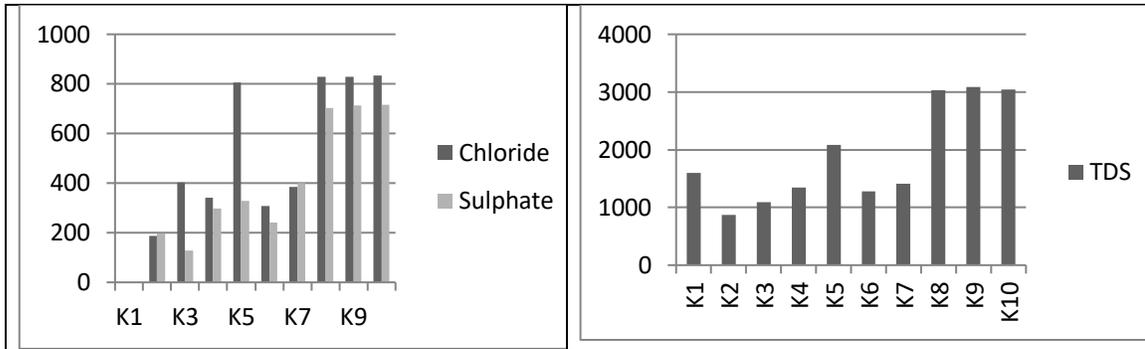
Location where tankers were suspected

- The team has interacted with the owner of washing stations. He informed that the tankers are coming here for washing and was reluctant to share any details. A complaint was registered with Police Station of the Vivekanand Nagar for the incident by the GPCB Regional Officer, Ahmedabad (East). Copy of the complaint registered is attached as Annexure - 1.

Summarily, it is concluded that contamination of Kharicut Canal and River is resulted due to unauthorized industrial discharges through tankers in the odd hours at scattered spots on to the STP sewerage network of AMC leading to Vinzol STP. The results of monitoring carried out during this fresh inspection are attached as Annexure 2 of this report.

The concentration values of the parameters like pH, COD, BOD, Chloride, Sulphate and TDS along the flow profile are depicted in following bar graphs.





Above bar graphs are indicating gradual deterioration after identified potential locations of unauthorized discharge as well as effluent containing chlorine and Sulphur compounds, probably in the form of spent acids.

DETAILS OF ACTION TAKEN IN THE MATTER

Based on the observations and findings of the fresh inspection, the Gujarat Pollution Control Board has initiated following actions to address the issue under consideration:

Intensive monitoring of Khari cut canal and Khari river is already being carried out by Regional office of GPCB. In order to strengthen the existing monitoring it has been decided to engage the vigilance office and representatives of the Association for further intensifying the monitoring.

A complaint has been lodged with police department for taking actions on unauthorized movement and disposal of waste water by tankers.

For Extensive patrolling by police and control on unauthorized tanker movement in the area the matter is being referred to the highest authority in the Government of Gujarat.

The matter is now being taken up with Ahmedabad Municipal Corporation for proper closure and maintenance of open and unattended man-holes in sewerage network. In addition to this illegal connections to this sewerage network by unauthorized agencies if any, would be asked to be identified and disconnected by AMC.

GPCB is also placing the matter before River Rejuvenation Committee (RRC) for taking stock of the situation.

Prasoon Gargava
Regional Director,
Regional Directorate (West)
CPCB, Vadodara

K. C. Mistry
Member Secretary
GPCB, Gandhinagar

Date 19-07-2019

To,

Police Sub Inspector,
Vivekanand Nagar Police Station,
Vivekanand Nagar,
Taluka: Daskroi,
Ahmedabad.

Sir,

We along with the Central Pollution Control Board officials were on monitoring on 18/07/2019. Around at 2:00 PM, two tankers having numbers GJ-27-X-1860 and GJ-1-FT-1578 were observed at Jay Brahmani Washing Centre, which is located at Ring road which is on the way from Hathijan Circle towards Ramol. Both these tankers were empty. But on investigating their drain valve the pH was found acidic (about 2). At this moment neither tanker's driver nor any other person were present. It seems that, acidic waste water maybe discharged from both these tankers illegally. Thereafter for seizing both tankers and for further action, I went to Vivekananda Nagar Police Station. At that time, GPCB officials namely Ashvin R. Mistry (AEE), Jaydeep Joshi (AEE), H. P. Maisuria (SSA) remained present at the location. When I came along with the staff of Vivekananda Nagar Police Station the tankers were not present at the location. My staff who was present at the location told me that after I left the place driver of both tankers came on site and tankers were taken away. When staff tried to stop them, they threatened the staff and the tankers being taken away. Thus, they have obstructed Government Officials in performing their duties. It is requested to carry out necessary actions against the owner of both the tankers and the drivers. It is also important to collect information about source of acidic waste water and it's mode of disposal.

Yours faithfully,

(T.B. Shah)

Regional Officer,
Gujarat Pollution Control Board,
Ahmedabad (East)
Mobile no. 9824180382

Entered in Notary Register
Sr. No. 5811... Of 2019

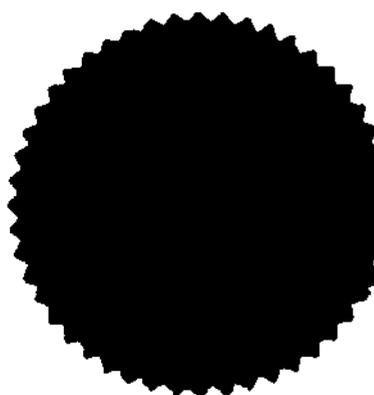
P. S. Thakor
(P. S. THAKOR) NOTARY
GOVT. OF GUJARAT (INDIA)

29 JUL 2019

This is True and Correct
Translation of the Original
Documents from Gujarati/
Hindi to English which
produce before me

P. S. Thakor
P. S. THAKOR
NOTARY
GOVT. OF GUJARAT (INDIA)

29 JUL 2019



Annexure -2

Analysis results of samples collected from various locations in Khari River/ Kharicut canal on dated 18/07/2019

PARAMETERS	LOCATIONS				
	K1	K2	K3	K4	K5
Temp.	30	31	31	31	32
pH	7.43	7.28	7.41	7.62	7.22
Colour	120	50	60	100	150
TDS	1596	870	1096	1342	2078
Suspended Solids	30	114	152	40	170
Ammonical Nitrogen	1.96	18.87	20.55	18.03	48.94
TKN	-	31.70	34.22	30.30	81.48
Alkalinity as Caco3	-	450	566	562	675
Acidity as Caco3	-	-	-	-	-
Percent sodium	-	68	78	80	73
Chloride	-	187	402	341	805
Sulphate	-	197	128	297	328
TC	-	-	-	-	-
FC	-	-	-	-	-
Dissolved oxygen	-	-	-	-	-
COD	160	182	182	155	526
Phenolic Compound	-	BDL	BDL	BDL	0.71
Sulphide	-	BDL	1.39	1.03	1.81
Boron	-	0.19	0.23	0.28	0.33
Iron	-	4.668	2.464	1.349	3.182
Zinc	-	0.036	0.327	BDL	0.405
Total Chromium	-	BDL	0.060	0.030	0.043
Copper	-	BDL	0.108	BDL	0.426
Nickel	-	BDL	0.098	0.092	0.097
Lead	-	BDL	BDL	BDL	BDL
Cadmium	-	BDL	0.180	0.177	0.199
BOD	-	78	67	60	249
Percent Of Acid	-	-	-	-	-
SAR	-	07	12	14	12

PARAMETERS	LOCATIONS				
	K6	K7	K8	K9	K10
Temp.	31	31	31	32	32
pH	7.29	6.90	2.03	2.39	2.15
Colour	50	75	80	80	70
TDS	1274	1410	3162	3090	3042
Suspended Solids	178	198	32	120	96
Ammonical Nitrogen	22.18	26.10	23.68	23.02	38.75
TKN	37.13	43.62	35.58	38.64	63.84
Alkalinity as Caco ₃	568	371	-	-	-
Acidity as Caco ₃	-	-	560	300	410
Percent sodium	78	82	80	78	81
Chloride	309	385	825	828	833
Sulphate	240	401	737	712	716
TC	-	9400	540	3500	210
FC	-	1100	94	930	79
Dissolved oxygen	-	BDL	-	BDL	BDL
COD	299	308	228	320	254
Phenolic Compound	BDL	0.13	BDL	0.94	BDL
Sulphide	4.93	6.81	BDL	BDL	BDL
Boron	0.26	0.24	0.19	0.44	0.39
Iron	2.588	7.523	15.74	14.40	17.891
Zinc	0.171	0.648	2.371	1.963	2.610
Total Chromium	0.090	0.136	0.108	0.168	0.203
Copper	3.829	0.062	BDL	0.062	BDL
Nickel	0.071	0.072	0.092	0.135	0.123
Lead	BDL	BDL	BDL	BDL	BDL
Cadmium	0.181	0.198	0.200	0.211	0.212
BOD	108	130	105	141	125
Percent Of Acid	-	-	0.058	0.029	0.039
SAR	12	15	21	18	22

**Analysis results of samples collected from Ahmedabad
Municipal Corporation – STP Vinzol on dated 18/07/2019**

PARAMETERS	LOCATIONS		
	S1	S2	S3
Temp.	32	32	33
pH	6.98	2.12	2.24
Colour	120	80	90
TDS	1436	3068	3036
Suspended Solids	150	36	68
Ammonical Nitrogen	25.93	38.81	39.2
TKN	43.29	64.46	64.34
Alkalinity as Caco ₃	482	-	-
Acidity as Caco ₃	-	510	450
Percent sodium	81	82	78
Chloride	352	824	829
Sulphate	369	710	703
TC	1600	1600	920
FC	220	110	170
Dissolved oxygen	-	-	-
COD	404	332	356
Phenolic Compound	0.47	BDL	1.02
Sulphide	6.79	BDL	BDL
Boron	0.33	0.30	0.31
Iron	2.438	16.11	14.82
Zinc	0.190	2.102	2.172
Total Chromium	0.102	0.166	0.143
Copper	0.052	4.220	BDL
Nickel	0.051	0.087	0.091
Lead	BDL	BDL	BDL
Cadmium	0.217	0.208	0.217
BOD	182	144	174
Percent Of Acid	-	0.051	0.042
SAR	14	23	18

NO.	Location Details
K1	Accumulated waste water sample is collected from Kharicut canal at GIDC Naroda - Dehagam road Bridge,Naroda
K2	Khari cut canal at Dahyalal Park Society, New Naroda, Ahmedabad (East)
K3	From Kharicut canal at upstream of Vatva GIDC near Nirma Bridge.
K4	From Khari cut canal at GIDC Vatva - Vinzol village road bridge, near Phase II, GIDC Vatva(Downstream of Vatva GIDC)
K5	From AMC storm water outlet, near Khari cut canal at S.P. Ring road railway bridge, Vinzol
K6	From Kharicut canal at S.P. Ring road railway bridge, towards TSDF site of Vatva at Vinzol village
K7	From River Khari at Ropada Foot over bridge, near Railway bridge,VillageRopada
K8	From River Khari at Chosar Village Bridge
K9	From River Khari at Lali Village Bridge
K10	From River Khari at Bidaj Village Bridge

S1	From Inlet wet well pumping station of 70MLD & 35MLD STP at Vinzol village
S2	From outfall of 35MLD STP of Ahmedabad Municipal Corporation, Vinzol
S3	From SBR - 1 tank of 35MLD STP at Vinzol village