

Submission of Monthly Progress Report for the Month of March, 2023 in the NGT Matter OA No. 673 of 2018 (in compliance to NGT order dated 24.09.2020)

I. Details of Sewage Treatment Plant (STP) :

Existing and operational one 8MLD STP at Barjala, Agartala:

- Total Capacity of STP is 8 MLD
- Septage from Agartala city and surrounding peri-urban areas are carried in by cesspool emptier vehicle and treated at this plant.
- Present utilization is 5 MLD
- To increase the utilization to optimal capacity, a DPR was prepared in FY 2016-17.

Another 8 MLD STP at Akhaura (under construction phase by Agartala Smart City):

SBR pile, pile cap, beam work completed, STP wall of the approximately 5.5 meters completed, SBR raft work completed. Admin building upto lintel level completed and other works are in progress.

Bio-Remediation/in-Situ Nalla Treatment of Drains

- 5 (five) nos. of Drains flowing to river Haorah are taken up in pilot mode under Agartala Smart City through in-situ nallah treatment. Incubation center building, screen installed, diffuser installed, sand bag installed, floating mash installed, V notch installed, electric pump house completed for air blower, air blower installed, other work is in progress.

II. Solid Waste Management:

- **Door to Door Waste Collection & Source Segregation of Waste** - Presently 100% door to door waste collection along with source segregation is being practiced in **all 334** wards.
- Total municipal solid waste generated: - 333.1 TPD
- 333.1 TPD is collected, segregated and transported
- Presently 333.1 TPD waste is being processed.

Bio-Degradable And Non-Biodegradable Waste Processing:

- There are 20 ULBs in the State of Tripura.
- Existing 250 TPD Solid Waste Processing plant at DC Nagar Agartala Municipal Corporation AMC is co-used by Bishalgar MC and 6 TPD Solid Waste Processing plant at Kamalpur NP. For remaining 17 ULBs , 16 nos. Tertiary Waste Treatment Plant (TWTP) 10 TPD each are taken up out of which 8 nos. TWTP (80 TPD) are operationalized & 5 nos. (50 TPD) are ready for inauguration. Remaining 3 nos. are targeted to be operationalized by August 2023. Jirania will utilize the TWTP of Ranirbazar MC.
- Total 85 nos. Secondary Waste Sorting & Segregation Centre with total 117 TPD are operationalized in 20 ULBs, for dry waste segregation, storage and recycling.
- Total Solid Waste Disposal/ Processing Capacity of the State is 453 TPD

Landfill/ Dumpsite Remediation:

Total 13 nos. Legacy Waste dumpsites are identified in 13 ULBS as per SBM-U 2.0 Guidelines. All 13 ULBs have floated tender for remediation out of which work orders to agency have been issued by 8 ULBs.

Liquid Waste Management: State High Power Committee (SHPC) in the meeting dated 26-12-2022 has approved the Action Plans of 66 MLD which is under tendering stage.

III.Details of Industrial Pollution:

- **No. of industries in the State:** 2466 Nos. industrial units exist in the state. However, there are only 179 nos. of industrial units identified within the 500 meters of catchment areas of the six identified river stretches in Tripura.
- **No. of water polluting industries in the State:** There are only 179 nos. of industrial units has been identified within 500 meters of the catchment area. Among these 179 nos. of industrial units, only 18 industrial units are foremost generator of industrial effluents. And almost all the industrial units have installed ETPs
- **Quantity of effluent generated from the industries in MLD:** The total industrial discharge from the industries within the 500 meters of catchment area is 14427 LPD. A total of 179 industries are present within 500 meter of the catchment areas of the Six identified river. Out of 179 industries, most of the industries are not generating any industrial effluent and those who generates are already equipped with ETP.

IV. Bio-medical Waste Management:

- **Total Bio-medical generation:** 2800 kg/day (in the ULBs and Towns of catchment areas of the six rivers) 10 Tripura RRC
- **No. of Hospitals and Health Care Facilities:** Total No. of Hospitals and nursing homes: 158 (bedded). 7 District hospitals are equipped with Liquid Waste Treatment Plant.
- **Status of Treatment Facility/ CBMWTF:** One CBWTF Operator has been selected by Health & Family Welfare Department, Govt. of Tripura through open tendering through e-Procurement for the whole State of Tripura. The CBWTF is presently working at Devendra Chandra Nagar in West Tripura District covering all the bedded Hospital of the State. There is no gap in processing the BMW in the State. Amongst the Public Health Facilities 03 state level hospitals namely GBP Hospital, IGM Hospital & Cancer hospital have their own incinerator.

V. Hazardous Waste Management:

- Total Hazardous Waste generation: 360.14 MTA
- No. of Industries generating Hazardous waste: 172 nos.
- Treatment Capacity of all TSDFs: There is no TSDF facility available in the State.
- Avg. Quantity of Hazardous waste reaching the TSDFs and Treated: There is no TSDF facility available in the State.
- Details of on-going or proposed TSDF: Yet to be finalized.
- Fresh inventorization of the Hazardous Waste generation has been done.

VI. Plastic Waste Management:

- Total Plastic Waste generation: As per annual report 2021-22, on PWM Rules, 2016, the amount of Plastic waste generated in the State is: 169.63 TPA.
- Treatment/ Measures adopted for reduction or management of plastic waste: Collected through MRF in each ULBs. There are 13 registered Recyclers in the State.
- Details of Alternate Treatment Technology being adopted by the State/UT : Recently, the State has started using the plastic wastes in road making purpose.
- The RD Department has notified a Policy regarding use of plastic waste in road making in the State.
- Action Plan for phasing out Single Use Plastic is under implementation.

VII. Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;

Tripura State Pollution Control Board (TSPCB) is conducting water quality monitoring on monthly basis under National Water Quality Monitoring Programme (NWMP) of Central Pollution Control Board for the following six identified polluted river stretches in the State: River Stretch Burigaon: along Bishalgarh, Gumti :Telkajila to Amarpur, Haora : Agartala to Champaknagar, Juri along Dharmanagar, Khowai along Teliamura, Manu along Kailashahar. From the analytical report for all the monitoring locations of six rivers entered in EWQDES portal of CPCB by TSPCB since June, 2016, it has been observed that the BOD values for the six identified polluted river stretches were within prescribed standard limit (3 mg/l) except for some specific months in respect of Gumati river (June, July, August & September, 2016 at Sonamura location), Haora river (June & July, 2016 at Chandrapur location; June to August, 2016 at Dashamighat location) Juri river (June to November, 2016 at Krishnapur location) Manu river (June to August, 2016 at Kailasahar location). It is relevant to mention that for all the monitoring locations of Khowai river, the BOD value was within prescribed standard limit (3 mg/l) since June, 2016. According to the latest analytical report of the six river water, the BOD level were found within prescribed standard limit for the 5 identified rivers of Tripura. However, few parameters exceeds the normal standard for the Haora river occasionally. Accordingly Tripura Pollution Control Board (TSPCB) have also sent a proposal of delisting of 6 identified rivers of Tripura in connection with the OA No. 673 of 2018 vide letter no No.F.19(07)/TSPCB/673/5972-977 dated 06-08-2021 to CPCB.

River Wise Details:

Name of the River	River Stretch	Priority	Action Plan under implementation/ Proposed	Present Status
Burigaon	Along Bishalgarh	V	Compressive Action Plan for rejuvenation of the identified river stretches covering individual rivers have been prepared and submitted to Central Pollution Control Board. The Action Plan is under implementation.	Since June, 2016, it has been observed that the BOD values for the six identified polluted river stretches were within prescribed standard limit (3 mg/l) except for some specific months in respect of Gumati river (June, July, August & September, 2016 at Sonamura location), Haora river (June & July, 2016 at Chandrapur location; June to August, 2016 at Dashamighat location) Juri river (June to November, 2016 at Krishnapur location) Manu river (June to August, 2016 at
Gumti	Telkajila To Amarpur	V		
Haora	Agartala to Champaknagar	V		
Juri	Along Dharmanagar	V		
Khowai	Along Teliamura	V		
Manu	Along Kailashahar	V		

				Kailasahar location). It is relevant to mention that for all the monitoring locations of Khowai river, the BOD value was within prescribed standard limit (3 mg/l) since June, 2016. According to the latest analytical report of the six river water, the BOD level were found within prescribed standard limit for the 5 (Burigaon, Gomati, Juri, Manu, Khowai) identified rivers of Tripura. However, few parameters exceed the normal standard for the Haora river occasionally. However, implementation of the Action Plan is going on. The River Rejuvenation Committee (RRC), Tripura is reviewing the implementation of the said Action Plan on regular basis.
The Water Quality analysis report of the six identified river stretches is enclosed as Annexure-1 .				

VIII. Ground water regulation :

- As per report of the Central Ground Water Board, in Tripura State Annual Replenishable Ground Water Resources is 2.19 billion cubic meter (BCM), Net Annual Ground Water' Availability is 1.97 BCM, Annual Ground Water Draft is 0.17 BCM, Stage of Ground Water Development is 9%. Critical stage of Ground- water development is 70 %or above.
- As per earlier NRDWP guidelines (para 9.4 page number 11), 10% of the NRDWP fund shall be utilized for Sustainability of rural water supply schemes. Relaxation will be available only to those States/ 14 Tripura RRC areas that are 'Water Surplus' (with annual normal rainfall more than 1500mm). In the State of Tripura the average annual rainfall is more than 1500mm recorded.
- In the year 2005, analysis of 3682 water samples was carried out through the All India Institute of Hygiene & Public Health (AIIPH&PH), Kolkata and presence of Arsenic in 8 samples above permissible limit (0.05 mg/ltr as per BIS 10500), iron in 3511 samples above permissible limit (1 mg/ltr as per BIS 10500) were found. No other heavy metals i.e. Lead, Zinc, Manganese were found. The presence of Arsenic beyond permissible limit was detected in Ordinary Hand Pump and Mark-11 only. As Arsenic in drinking water is health hazard, at once all the above 8 no. water sources were sealed and alternative sources were created for drinking water supply to that locality.

- Accordingly, 17 numbers new water testing laboratory in the District and DWS Sub Division level have been setup and strengthened the existing water testing laboratory to develop adequate competency and efficiency of the water quality monitoring & surveillance throughout the State. Every year, almost 80% of water supply sources are being tested through laboratory as well as Field Test Kits and the results are being uploaded in the online IMIS of Ministry of Drinking Water & Sanitation, Government of India.
- From the test results, it is observed that the underground water of Tripura State is mainly infested with iron beyond permissible limit. There is no presence of Arsenic beyond permissible limit in drinking water sources at present. Moreover, presence of Lead, Zinc, Manganese etc. in the drinking water sources is not detected so far. Iron removal plant (IRP) has been installed in almost every places in Tripura.
- While issuing the Consent to Establish & Operate Certificate by TSPCB to any industry where extraction of ground water has been done, the permission of Central Ground Water Authority is required as pre requisite condition for obtaining the consent certificate from Tripura State Pollution Control Board. In addition, the industries using ground water are also being directed to recharge 15 Tripura RRC the ground water through ground water recharging pit.
- Moreover, the industries handling with chemicals and hazardous wastes are also being directed not to inject any chemicals/hazardous wastes into the ground water as well as water body without any treatment.
- Central Ground Water Board under the Ministry of Jal Shakti, Department of Water Resources, Government of India issued Show Cause Notice to 04 nos. of Industries for not applying to the Board to renew the NOC for extracting ground water in due time.
- Direction has been issued to all the industries which are extracting ground water for industrial purpose and also for compliance of environmental norms.

IX. Good irrigation practices being adopted by the State:

Generation of mass awareness to conserve water and also for good irrigation practices is being carried out by the farmers in the catchment areas of the River.

X. Rain Water Harvesting:

- All the industries using in the catchment areas responsible for using ground water for industrial purpose is directed to construct rain water harvesting plant and the compliance has been ensured. Accordingly, Rain water harvesting plant has been constructed by almost all the concerned units.
- A comprehensive Rain water harvesting plan has submitted to CPCB.

- In the new Building Rules, the roof top Rain Water Harvesting systems have been included for all new building.

XI. Demarcation of Floodplain and removal of illegal encroachments:

Flood Plane Zones of six identified river stretches were already identified.

XII. Model River:

The State of Tripura has identified **Haora** river stretch as the **Model River** for implementation of Action Plan for restoration of the river. This is also communicated to the NMCG with a copy to CPCB. Some of the major initiatives taken by the State in this regard are as follows:

- a. 5 (five) drains have been identified discharging in the Haora river. *In situ* Bioremediation is being carried out in those 5 drains. Work is under progress.
- b. Haora River Front Development Project has been launched having several objectives to protect this river.
- c. Extensive river bank plantation has been done already.
- d. Regular monitoring of Water Quality is being done by the State Board.
- e. Flood Plain Zone has been identified.
- f. The river bank is made encroachment free and regular monitoring are being done by the concerned Authority.
- g. Proper monitoring is being done so that no solid waste dumped into the river from nearby markets.

XIII. Plantation activities along the rivers:

Bamboo Plantation on sides of the river banks has been done in collaboration with Forest Department, Tripura. Target achieved 100%.

XIV. Reuse of Treated Water:

- The Urban Development Department and Urban Local Bodies has taken many initiatives for utilization of treated sewage effluent.
- AMC had prepared the Action Plan for utilization of treated waste water from Sewage Treatment Plant (STP) located at Barjala, Tripura RRC Agartala. The said Action Plan was sent to Central Pollution Control Board (CPCB) in March 2019.
- AMC is already using treated waste water from the Barjala (Near Lankamura) STP for various activities including watering of gardens & open space in Agartala city, road watering in dry seasons, irrigation of agricultural fields etc.
- A notification has been issued by AMC to use only treated water for the watering of gardens & open space in Agartala city, road watering in dry seasons and never to allow use of drinking water for these activities. AMC also confirms that presently no surface or ground water is used for watering parks and gardens in the city.
- As per the revised Action Plan for utilization of treated water, the additional steps taken by AMC for full compliance of the Hon'ble NGT order are as follows. A dedicated team is formed to look after the gardens and parks in Agartala city.

ANALYTICAL RESULTS OF SURFACE WATER SAMPLES COLLECTED FROM SIX IDENTIFIED RIVER STRETCH OF TRIPURA

Sl. No.	April, 22			May, 22			June, 22			July, 22			August, 22			September, 22		
	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC
S1	1.4	170	58	1.5	170	63	1.7	210	70	1.9	220	83	1.9	220	83	1.8	210	70
S2	2.4	240	63	2.5	280	70	2.6	350	94	2.7	350	94	2.8	350	94	2.6	350	84
S3	1.6	150	58	1.8	210	58	1.9	220	84	2.1	240	84	2.3	280	94	2.1	240	94
S4	1.4	150	58	1.4	170	58	1.6	210	63	1.7	220	63	1.8	240	63	1.6	220	58
S5	1.2	110	46	1.3	120	48	1.4	150	58	1.5	170	63	1.7	210	63	1.5	170	58
S6	1.8	170	63	1.9	210	63	2.2	240	70	2.4	280	84	2.6	280	84	2.2	240	70
S7	1.9	240	58	1.5	280	63	2.4	350	84	2.5	430	110	2.7	430	130	2.6	430	110
S8	1.8	210	48	2.1	220	58	1.4	240	63	2.2	280	79	2.4	280	63	2.2	240	63
S9	2.7	430	70	2.8	430	79	2.9	430	84	3.1	430	94	3.3	430	110	3.1	430	94
S10	1.9	210	58	2.0	220	63	1.9	240	70	2.5	280	84	2.4	280	94	2.2	240	84
S11	1.4	170	31	1.5	210	40	1.8	240	47	1.8	240	58	1.9	280	63	1.7	240	58
S12	1.5	94	27	1.7	150	39	1.9	210	48	1.6	210	48	1.7	220	58	1.6	210	58
S13	1.5	110	39	1.6	120	48	1.8	130	48	1.9	150	58	1.9	170	58	1.8	150	47
S14	1.4	170	41	1.5	170	43	1.6	210	58	1.5	220	63	1.6	240	63	1.4	220	63
S15	1.4	150	40	1.5	170	40	1.7	210	48	1.8	220	58	1.9	240	58	1.6	220	58
S16	1.4	63	22	1.4	110	38	1.6	140	47	1.7	170	58	1.8	210	58	1.6	210	48
S17	1.3	110	38	1.5	120	40	1.6	150	48	1.8	170	58	1.9	210	63	1.7	170	58
S18	1.5	120	39	1.6	150	48	1.8	170	58	1.9	170	58	2.2	170	58	2.1	140	43

Sl. No.	October, 22			November, 22			December, 22			January, 23			February, 23			March, 23		
	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC	BOD	TC	FC
S1	1.3	150	47	1.2	130	47	1.2	110	43	1.1	110	41	1.1	94	39	1.1	110	39
S2	2.1	220	63	1.1	210	63	1.8	170	63	1.6	150	58	1.5	130	47	1.6	130	48
S3	1.4	150	48	1.3	130	47	1.2	120	41	1.2	110	41	1.1	110	39	1.2	120	39
S4	1.4	130	47	1.3	120	41	1.2	110	39	1.1	110	39	1.1	94	27	1.1	94	27
S5	1.1	110	43	1.1	110	41	1.1	110	39	1.1	110	38	1.1	110	38	1.4	110	41
S6	1.6	150	63	1.5	130	58	1.4	120	49	1.3	110	47	1.2	110	43	1.2	120	43
S7	1.8	220	58	1.7	210	58	1.5	170	38	1.4	150	47	1.2	130	43	1.2	150	43
S8	1.5	210	47	1.3	170	38	1.3	170	38	1.2	140	38	1.2	130	38	1.3	130	38
S9	2.6	430	70	2.2	430	63	2.1	430	63	1.9	350	58	1.7	350	49	1.8	350	63
S10	1.8	210	48	1.7	170	46	1.6	170	43	1.4	170	43	1.2	150	43	1.4	170	58
S11	1.3	150	31	1.2	130	31	1.2	120	31	1.2	110	31	1.2	110	27	1.2	120	27
S12	1.4	94	26	1.2	94	26	1.2	94	26	1.2	94	26	1.2	94	23	1.3	110	25
S13	1.3	110	32	1.2	94	32	1.2	94	26	1.1	94	26	1.1	94	26	1.2	110	26
S14	1.3	150	38	1.2	130	38	1.2	120	32	1.2	110	31	1.1	94	31	1.1	94	31
S15	1.3	150	38	1.3	130	38	1.2	120	38	1.1	110	33	1.1	110	31	1.2	130	38
S16	1.3	63	22	1.2	58	22	1.2	58	22	1.2	58	22	1.2	49	22	1.2	63	25
S17	1.2	94	38	1.1	94	33	1.1	94	31	1.1	84	31	1.1	63	27	1.2	79	27
S18	1.4	110	39	1.5	94	27	1.6	94	27	1.4	84	27	1.3	84	27	1.3	94	31

*BOD = Bio Chemical Oxygen Demand, TC = Total Coliform, FC = Faecal Coliform

Site of Collection

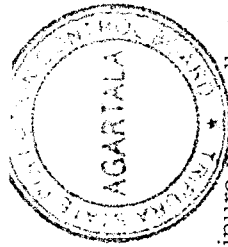
S-1: Gomti River at Jatanbari, S-2: Gomti River at Sonamura, S-3: Gomti River at Rajdharnagar, S-4: Gomti River at Amarpur, S-5: Gomti River at Tirthamukh, S-6: Gomti River at Subhashsetu, S-7: Burigaon River at Bishalgarh, S-8: Haora River at Chandrapur, S-9: Haora River at Dashamighat, S-10: Haora River at Aralia, S-11: Haora River at Kalabagan, S-12: Haora River at Joynagar, S-13: Manu River at Kailasahar, S-14: Khowai River at Trishabari, S-15: Khowai River at Kumari Madhuti setu, S-16: Khowai River at Chakmaghat, S-17: Khowai River at Karailong, S-18: Juri River at Krishnapur.

A. Materials and Methods:

Surface water samples from the six identified river stretches of Tripura were collected on monthly basis. The collected samples were analyzed in the laboratory of TSPCB using the standard methods given in **APHA, 2012** (American Public Health Association).

B. Observations:

From the analytical results for the year 2022-2023 (April, 2022 to March, 2023) it has been observed that, among the six identified rivers stretches in Tripura, 5 stretches having BOD, Total Coliform & Faecal Coliform values were within the prescribed standard limit of CPCB for Class-B (Water for Outdoor Bathing). The BOD values of one river stretch that is Haora River were slightly beyond the prescribed standard limit of CPCB for particular one location (Dashamighat, Haora) for few months only (July, August & September, 2022).



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