National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/ UTs

(Hon'ble NGT in the matter of OA No. 673/2018 dated 06.12.2019)

<table>
<tr><th>Sl. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of Progress by State/UT-Compliance Status</th></tr>
<tr><td>1.</td><td>Ensure 100% treatment of sewage at least in situ remediation</td><td>31.03.2021</td><td>
Total Sewage Generation in Kerala: 3759.28 MLD
Total Sewage Treatment capacity in the state: 124.04 MLD
Total septage treatment capacity in the state: 0.2 MLD
Gap in Sewage Treatment in the state: 3635.24 MLD
Total Sewage Treatment in the state out of installed capacity: 55.04 MLD
No. of functional STPs in the state: 7
No. of functional septage treatment plants in the state: 2

*The entire sewage generated in the state is treated by septic tank - soak pit system or STP. Individual septic tank - soak pit systems are provided for households and small establishments. Individual STPs are provided for establishments such as flats, hotels, hospitals, etc. There is no open defecation in the state.

Details of existing STPs/Septage treatment plants in the State:
<table>
<tr><th>Sl. No.</th><th>City/Town</th><th>STP location</th><th>Status</th><th>STP Installed capacity</th></tr>
<tr><td>1</td><td>Thiruvananthapuram</td><td>Common Sewage Treatment Plant, Muttathara, Trivandrum Maintained by Kerala Water Authority</td><td>Operational</td><td>107 MLD</td></tr>
</table>
</td></tr>
</table>

				2	Pathanamthitta	Sewage Treatment Plan at Sannidhanam (5MLD) Maintained by Travancore Devaswom Board	Seasonally Operated during festival season	5 MLD	
						Sewage Treatment Plan at Pamba (3.5 MLD) Maintained by Travancore Devaswom Board	Seasonally Operated during festival season	3.5 MLD	
				3	Kottayam	STP for Houseboat (0.09 MLD) at Kumarakom Maintained by District Tourism Promotion Council, Kottayam	Operational	90 KLD	
				4	Ernakulam	Sewage treatment unit, Kerala Water Authority, Elamkulam, Ernakulam(3 MLD)	Operational	4.5MLD	
						STP owned by Greater Cochin Development Authority,Kad avanthra, Kochi (0.45 MLD)	Operational	0.45 MLD	
						Septage Tratment Plant at Brahmapuram Kochi Corporation, Ernakulam	Operational	0.1 MLD	
						Septage Tratment Plant at Wellington Island, Kochi Corporation	Operational	0.1 MLD	

5	Kannur	Sewage treatment Plant at Taliparambu (0.5MLD) Taliparambu Municipality, Kannur	Operational	0.5MLD
6	Thrissur	Sewage treatment Plant at Guruvayur in Thrissur District	Not yet commissioned	3 MLD

Details of proposed STPs/FSTPs in the State:

Sl. No.	Plant	Place	Capacity (MLD)	Status of the project	Funding Scheme
1.	STP	Municipal Bus Stand, Tirur	0.050	Obtained technical sanction for DPR, Tendering stage	Suchitwa Mission
2.	STP	Comfort station, Adimaly Grama Panchayat, Idukki	0.06	Obtained technical sanction for DPR, Under construction	Suchitwa Mission
3.	FSTP	Cherthala municipality, Alappuzha	0.250	DPR preparation	Suchitwa Mission
4.	STP	Kannur Corporation	Yet to be finalised	DPR preparation stage	Amrut
5.	STP	Palakkad Municipality	0.8	DPR preparation stage	Amrut
6.	STP	Thrissur Corporation	5	DPR preparation stage	Amrut
7.	STP	Kozhikode Corporation	13	DPR preparation stage	Amrut
8.	STP	Kochi Corporation Ward 15	1.4	DPR submitted for technical sanction	Amrut
9.	STP	Kochi Corporation Ward 16	1.1	DPR submitted for technical sanction	Amrut

10.	STP	Kochi Corporation Ward 17	1.4	DPR submitted for technical sanction	Amrut
11.	FSTP	Andamukkam, Kollam Corporation	0.1	Obtained technical sanction for DPR, Tendering stage	Amrut
12.	FSTP	Vasoorichira, Kollam Corporation	0.1	Obtained technical sanction for DPR, Tendering stage	Amrut
13.	FSTP	Karikkuzhiela, Kollam Corporation	0.1	Obtained technical sanction for DPR, Tendering stage	Amrut
14.	FSTP	Ramapuram, Thrissur Corporation	0.1	Obtained technical sanction for DPR, Tendering stage	Amrut
15.	FSTP	Yakkara, Palakkad Municipality	0.1	Obtained technical sanction for DPR, Tendering stage	Amrut
16.	FSTP	Chelora, Kannur Corporation	0.1	Obtained technical sanction for DPR, Tendering stage	Amrut
17.	FSTP	Guruvayur Municipality, Thrissur	0.1	Obtained technical sanction for DPR, Tendering stage	Amrut

Status of Septage Plants under AMRUT in Kerala

The details of the Septage Plants envisaged under AMRUT in Kerala are as follows.

- **Kollam** – 100 KLD Septage Treatment Plants at Andamukam, Vasoorichira & Karikkuzhi Ela are envisaged in Kollam Corporation. Combined Administrative Sanction was issued for these works for an amount of Rs.12.66Cr. on 22.02.2018. Combined Technical Sanction was issued

			for the works for an amount of Rs.9.8Cr. on 22.08.2018. Due to public protest, tender procedures of Andamukkam & Karikkuzhi Ela plants are kept on hold by the Corporation & Vassorichira plant has been cancelled by the Municipal Council. ❖ **Thrissur –** 100 KLD Septage Treatment Plant at Ramavarmapuram is envisaged in Thrissur Corporation. Administrative Sanction was issued for the work for an amount of Rs.3.5Cr. on 01.01.2018. Technical Sanction was issued for the work for an amount of Rs.3.1Cr. on 28.06.2018. Selection notice was issued to M/s.Green Eco on 03.01.2020&Agreement is to be signed. ❖ **Guruvayur** – 100 KLD Septage Treatment Plant at Chakkamkandam is envisaged in Guruvayur Municipality. Administrative Sanction was issued for the work for an amount of Rs.4.5Cr. on 31.05.2018. Technical Sanction was issued for the work for an amount of Rs.3.9Cr. on 30.07.2018. Agreement was executed with M/s.Green Bay, Kochi on 11.12.2019. Work has been started. ❖ **Palakkad –** 100 KLD Septage Treatment Plant at Yakkara is envisaged in Palakkad Municipality. Administrative Sanction was issued for the work for an amount of Rs.3.41Cr. on 23.12.2017. Technical Sanction was issued for the work for an amount of Rs.3Cr. on 30.06.2018.Permissive sanction for the land selected is awaited. ❖ **Kozhikode –** Combined project for Sewerage (1 MLD & 2 MLD) & Septage (100KLD) treatment at Medical College is envisaged in Kozhikode Corporation. Administrative Sanction was issued for the work for an amount of Rs.14.12Cr. on 13.11.2017. Technical Sanction was issued for the work for an amount of Rs.14.11Cr. on 30.07.2018. Agreement was executed with M/s.Green Eco – LCGC joint venture on 09.01.2020. Work has been started.

- **Kannur** - 100 KLD Septage Treatment Plant at Chelora is envisaged in Kannur Corporation. Administrative Sanction was issued for the work for an amount of Rs.3.42Cr. on 23.12.2017. Technical Sanction was issued for the work for an amount of Rs.3.1Cr. on 28.06.2018. Agreement was executed with M/s.Green Eco on 09.01.2020.Work to be started.
- Alappuzha–10 KLD Mobile Septage Units (2 nos.) are envisaged in Alappuzha Municipality. Administrative Sanction was issued for the work for an amount of Rs.0.80Cr. on 30.03.2019.

AMRUT - SEPTAGE PLANTS

Category	Number of Plants	Cost (Rs. Cr.)	AMRUT City
Work started	1	4.50	Guruvayoor-1no.
Agreement executed but not started	1	3.42	Kannur-1no.
Awarded but Agreement not executed	1	3.50	Thrissur-1no.
Tendered but not awarded	2	7.63	Palakkad-1no. & Kollam-1no.
To be retendered	1	4.22	Kollam-1no.
TS not issued	2	0.80	Alappuzha-2nos.
To be cancelled	1	4.22	Kollam-1no.
Total	**9**	**28.29**	

Details showing the project cost of sewage treatment plants planned to be set up under AMRUT scheme are enclosed as Annexure 1.

	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STP s must be ensured	Progressing	Progressing
2.	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2021	Progressing
5.	Chief Secretaries may set up appropriate monitoring mechanism at State level Specifying accountability of nodal authorities not below the Secretary level Chief Secretaries may	Completed	*Vide G.O.(Rt)No.93/2020/WRD dated 28.01.2020 Government of Kerala nominated Deputy Secretary (Projects),Water Resource Department as the nodal authority, Government of Kerala for monitoring the compliance of the directions in the order on fortnightly basis and to maintain record of progress and to act as an accountable person to the Chief Secretary for the purpose. *Vide G.O.(Rt)No.223/2020/WRD dated 12.03.2020 Government of Kerala appointed a monitoring committee comprising of Additional Chief Secretary, Water Resources Department as Chairperson and Principal Secretary, LSGD, Principal Secretary, Environment, Secretary, Water Resources Department and Staff officer to Chief Secretary as nodal officers & members.

	have an accountable person attached in their office for this purpose		
	Monitoring at State level must take place	Fortnightly	Review on progress of action plans is being done at district and state level

Status of implementation of Solid Waste Management Rules, 2016

As per the report of Suchitwa Mission, Kerala generates about 10,044TPD of municipal solid wastes; 14% by 6 city Corporations, 45% by Municipalities and 41% generated by 941 Grama Panchayaths, 49% of the waste is generated in households; 36% in institutions and 15% in way sides and public places. 7734 TPD of waste is putrescible in nature, 1808 TPD is non-biodegradable and 502TPD is inert. Non biodegradables wastes include 603TPD of paper, 402TPD of plastic, 100TPD of metals, 100TPD of glass, 200 TPD of rubber and leather and 40TPD of domestic hazardous waste. Currently 3494 TPD, out of total 7734TPD (45%) of biodegradable waste is treated in households, institutions and community level. This works out to be 45% of the biodegradable waste generated in the State. Projects for installation of 13,09,478 household level composting or bio-methanation units will increase the waste treatment capacity to 71%(i.e. 5491 TPD). The non-biodegradable waste is collected from sources and temporarily stored in material collection facility (MCF). There are 658 operational MCF in Grama panchayaths and 179 operational MCFs in ULBs.

The Government of Kerala has taken efforts to implement the Solid Waste Management Rules, 2016 in the State. There are 6 Corporations, 87 Municipalities and 941 GPs in the State. The Kerala State Pollution Control Board (KPSCB) issued repeated directions to all local bodies to ensure compliance of the Solid Waste Management Rules, 2016. 3831.6 TPD of solid waste is generated from the cities and towns. The Government of Kerala constituted a State Level Advisory Committee on Waste Management chaired by the Chief Secretary; this

Committee has conducted 36 meetings, till date, for monitoring solid waste management on monthly basis. The State is ensuring compliance to Rules 11, 22, 23 and 24. The State has initiated action for compliance regarding legacy waste.

Status of compliance of Plastic Waste Management Rules, 2016

Government have imposed a complete ban on the manufacture, storage, transport, and sale of single use plastic items in the State with effect from 1-1-2020 vide G.O.(Rt) No. 128/2019/ENVT dated 31-12-2019. For the implementation of the producer responsibility as per Solid Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016, Kerala State convened National level seminar on 12-6- 2019. A hearing of brand owners was conducted on 7-12-2019 and evolved proposal for the implementation of EPR and is under the consideration of the Government. The State has ensured compliance to Rules 16 on constitution of State Level Advisory Committee and Rule 17 on annual report.

Extended Producer Responsibility under Solid Waste Management Rules

For the implementation of the producer responsibility as per Solid Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016, Kerala State convened National level seminar on 12-6-2019. A hearing of brand owners was conducted on 07-12-2019 and evolved proposal for the implementation of EPR and is under the consideration of the Government. The financial assistance by brand owners/producers/manufacturers/importers can be remitted in the EPR fund and this fund can be utilized for meeting to the extent possible cost of door-to-door collection.

Bio-Medical Waste Management

Presently, Common Biomedical waste treatment facility is in operation in Palakkad. For CBWTF at Ambalamedu by IMA, the Kochi Corporation earmarked 3 acre land to IMAGE for the project. has been instructed to earmark the area. Work for CBWTF in Ambalamedu by Kerala Enviro Infrastructure Limited will commence soon. Clean Kerala Company submitted proposal for setting up landfill at the site of KINFRA at Ambalamedu and is under the consideration of the Government.

E-Waste Management

The State initiated action for the compliance of EPR. The State has complied with Rule 18 on submission of annual report, and I in the process of setting up a waste processing unit which will become operational in 2020 and land has been allotted to Clean Kerala Company Limited. Action is being taken for the implementation of EPR in the State.

Hazardous Waste Management

There is one CTSDF in Kerala by Kerala Enviro Infrastructure Limited at Ambalamugal, Ernakulam.

OA No. 673/2018 regarding polluted river stretches

As per the Hon'ble NGT order dated 20.09.2018 in OA No. 673/2018, all States and Union Territories were directed to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e. BOD < 3 mg/L and FC < 500 MPN/100 ml) within six months from the date of finalisation of the action plans. There are 21 polluted river stretches in Kerala. The action plans of these 21 polluted river stretches, which were prepared by District Level Technical Committees, were approved by the River Rejuvenation Committee (RRC) in its meetings and submitted to CPCB and Hon'ble NGT. These action plans are being implemented by various departments /agencies. The progress on implementation of them is being reviewed at the district level and state level. Recently CPCB had directed the State to revise the action plans for priority IV polluted river stretches viz. Pamba, Manimala, Kadambrayar, Kecheri and Bharathapuzha and the RRC approved action plans were submitted to CPCB. The website www.ksrrc.in developed by the Kerala PCB for RRC is being updated continuously with the action plans, minutes, orders, analysis reports, etc.

As per the recent analysis reports of water quality of the polluted river stretches the bathing quality as directed by Hon'ble NGT is achieved/ maintained in 15 stretches. It is expected that by 31.03.2021 the bathing quality may be achieved in the rest 6 stretches also. Due to the outbreak of COVID-19 and associated lockdown and as some offices are in containment zones/ hot spot area various offices could not function in full swing and some actions could not be completed in time. However actions are in progress to implement the action plans.

Status of water quality of the polluted river stretches:

SL. No.	District	River	Polluted River stretches	Priority	Quality of water as in February 2020	% of compliance as in February 2020	Quality of water as per latest report	Present Status as per bathing standards
1.	Kasargod	Uppala	POYYA TO MULINJA	V	BOD <3 FC<500	90%	BOD <3 FC<500	Quality maintained
		Mogral	ALONG MOGRAL	V	”	90%	”	”
2	Kannur	Kavvai	ALONG KAVVAI	V	”	”	”	”
		Kuppam	THALIPARAMBA TO VELICHANGOOL	V	”	”	”	”
		Peruvamba	ALONG PERUVAMBA	V	”	”	”	”
		Ramapuram	ALONG RAMAPURAM	V	”	”	”	”
3.	Malappuram	Thirur	NADUVILANGADI TO THALAKKADATHUR	V	”	”	”	”
		Kadalundi	ALONG HAJIRAPPALLY/ HAJIYARPALLI	V	”	”	BOD>3 at one point FC<500	Quality almost maintained
4.	Palakkad	Bharathapuzha	ALONG PATAMBI	IV	”	”	BOD <3 FC<=500	Quality maintained
		Bhavani	ALONG ELACHIVAZHY	V	BOD <3 FC>500	80%	BOD <3 FC<=500	”

5.	Thrissur	Kecheri	PULIYANNOR TO KECHERY	IV	BOD <3 FC< or =500	85%	BOD <3 FC< 500	”
		Karuvannur	ALONG KARUVANNUR	V	BOD <3 FC<500	”	BOD <3 FC<500	”
		Puzhakkal	OLARIKKARA TO PUZHACKAL	V	”	”	BOD <3 FC<=500	”
6.	Ernakulam	Chithrapuzha	IRUMPANAM TO KARINGACHIRA	V	BOD <3 FC>500	30%	BOD <3 FC>500	It is expected that by 31.03.2021 the bathing quality may be achieved
		Kadambrayar	MANCKAKADAVU TO BRAHMAPURAM	IV	”	”	”	”
		Periyar	ALWAYE-ELOOR TO KALAMASSERY	V	”	”	BOD <3 FC< 500 at some points	Quality maintained at some points. It is expected that by 31.03.2021 the bathing quality may be achieved
7.	Kozhikode	Kallayi	THEKEPURAM TO ARAKKINAR	V	BOD <3 FC>500	40%	BOD >3 at one point FC>500	”
		Kuttiyadi	ALONG KUTTIYADY	V	”	”	BOD <3 FC>500 except at one point	”
8.	Pathanamthtitta	Pamba	MANNAR TO THAKAZHY	IV	BOD <3 FC>500	70%	BOD <3 FC<500	Quality maintained
9.	Alappuzha	Manimala	KALLOOPARA TO		BOD <3	50%	BOD <3	Quality maintained

			THONDRA	IV	FC>500		FC<500	
10.	Trivandrum	Karamana	MALEKKDU TO THIRUVALLAM	I	BOD <3 FC>500	30% (Short term>50%)	BOD >3 FC>500 except at one point	It is expected that by 31.03.2021 the bathing quality may be achieved

Status of STP proposed in the action plan of polluted river stretches:

SL. No.	District	River	Polluted River stretches	Priority	Details of STPs	Status	Timeline
1.	Kasargod	Uppala	POYYA TO MULINJA	V	No STP proposed	-	-
		Mogral	ALONG MOGRAL	V	No STP proposed	-	-
2	Kannur	Kavvai	ALONG KAVVAI	V	No STP proposed	-	-
		Kuppam	THALIPARAMBA TO VELICHANGOOL	V	No STP proposed	-	-
		Peruvamba	ALONG PERUVAMBA	V	STP proposed at market place by Payyannur Municipality	Project report is given to Technical Sanction at Suchitwa Mission as informed by Payyannur Municipality	31.03.2022
		Ramapuram	ALONG RAMAPURAM	V	No STP proposed	-	-
3.	Malappura	Thirur	NADUVILANGADI		1 STP completed in		-

	m		TO THALAKKADATHUR	V	market – 45 KLD Setting up of STP at Private Bus stand-50 KLD- Thirur municipality	Finished Under Progress	 June 2020
		Kadalundi	ALONG HAJIRAPPALLY/ HAJIYARPALLI	V	Malappuram Municipality- 30 KLD STP	Completed & Working	-
4.	Palakkad	Bharathapuzha	ALONG PATAMBI	IV	Primary Sewage Treatment Plant and Septage Treatment plant - Pattambi Municipality	Progressing (Proposal Submitted Before Council)	31.03. 2021
		Bhavani	ALONG ELACHIVAZHY	V	No STP proposed	-	-
5.	Thrissur	Kecheri	PULIYANNOR TO KECHERY	IV	Common STP - Wadakkanchery Municipality. 2 common STPs are proposed, One at Athani (350 MLD) and other at Ottupara (500MLD).	DPR under praparation	31.03.2021
		Karuvannur			Construction of	Invited tender for	30.05.2021

			ALONG KARUVANNUR	V	FSTP and STP-Irinjalakkuda Municipality proposed	FSTP and STP for DPR.	
		Puzhakkal	OLARIKKARA TO PUZHACKAL	V	Sewage treatment plant of 100 KLD and 360 KLD at Ramavarmapuram and District Hospital, Thrissur in Amrut Project-Thrissur Corporation Constructing decentralised sewerage scheme at Vachikulam which is an innovative project in this sector in Kerala State. TS obtained. 2.5 MLD plant with 28.0 km Pipe line and one' intermediate pumping station. The most populated 7 divisions of Thrissur Corporation and more than 10000 houses &,	2.5MLD project tendered under AMRUT project	30.05.2021

					institution are covered in this project. Thrissur Corporation		
6.	Ernakulam	Chithrapuzha	IRUMPANAM TO KARINGACHIRA	V	Additional STP requirement (if needed) (Thrikkakkara Municipality, Thripunithura Municipality)- Associated with Cochin Corporation Brahmapuram plant	**(1)** Efforts to locate lands for installing the plant are being carried out **(2)** A letter has been sent to the Government, MLA and the District collector for allotting the vacant land in Thrippunithura Municipality, for the construction of the Sewage Treatment plant. Steps will be taken to build a Municipal Sewage Treatment plant once the space is available	3 years
		Kadambrayar	MANCKAKADAVU TO BRAHMAPURAM	IV	Provide facility for the treatment of sewage, sullage and garbage generated-	Request letter submitted to Govt to provide	3 years

					Thrikkakkara Municipality	land at Brahmapuram for the installation of STP (Thrikkakkara Municipality)	
		Periyar	ALWAYE-ELOOR TO KALAMASSERY	V	Augmentation and Revamping of existing STP at near Adwaitha Ashramam and to increase the capacity of STP so as to treat more sewage generated in the municipality- Aluva Municipality Augmentation and Revamping of existing STP at Aluva Market and to increase the capacity of STP so as to treat more sewage generated in the municipality - Aluva Municipality Installation of common STP for Kalamassery	DPR for STP at Adwaitha Ashramam has been submitted to Suchithwa mission for an amount of 4.9 lakhs on19.02.2020 and the project is kept for technical sanction. The STP at Aluva market was constructed by Kerala Coastal Area Development Corporation. The Municipality decided to take up the STP project in the FY 2020-2021 Procedures for conducting soil test for the	31.03.2021

					Municipality and ETP at Municipal Market Kalamassery Municipality	construction of treatment plant is on going.	
7.	Kozhikode	Kallayi	THEKEPURAM TO ARAKKINAR	V	Setting up of common STP of(13 MLD) (i.e. at Kothi bridge- 6 MLD plant proposed and at Avikkal -7 MLD plant proposed) Establishment of treatment plant at Medical college (3 MLD plant) 2 MLD, 1 MLD, plant Sewage treatment plant of 13.5 MLD capacity was proposed at Kottooli which was proposed by Kerala State Urban Development Project. But the application no.215/2016 of the	Tendering in progress Initiated the construction The proposal was on stay as ordered by the Hon'ble NGT	30/3/2022 30/3/2021 -

					Hon'ble National Green Tribunal was existing and as the proposal was on stay as ordered by the Hon'ble NGT in the above case.		
		Kuttiyadi	ALONG KUTTIYADY	V	No STP proposed	-	-
8.	Pathanamtthitta	Pamba	MANNAR TO THAKAZHY	IV	STP is not required. Proposed installation of screening, septic tank & disinfection systems for storm water drains in Mannar & Parumala town	. Action is being taken	31.03.2021
9.	Alappuzha	Manimala	KALLOOPARA TO THONDRA	IV	Septage and sewage treatment plant for Chengannoor and Thiruvalla municipality proposed	Chengannur Municipality identified land for implementation of STP	31.03.2021
10.	Trivandrum	Karamana	MALEKKDU TO THIRUVALLAM	I	5 MLD sewage treatment plant at Medical College - Kerala Water Authority proposed Additional STP	Under progress AS for the	31.03.2021 3 years

					requirement by Kerala Water Authority for 60 crores	proposal for engaging consultants for preparation of detailed engineering report received. No response to first tender. To be retendered.	

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/ UTs KARAMANA

(Hon'ble NGT in the matter of OANo. 673/2018 dated 06.12.2019)

<table>
<tr><td>Sl.No.</td><td>Activity to be monitored</td><td>Timeline</td><td>Submission of Progress by State/UT-Compliance Status</td></tr>
<tr><td></td><td>Activity</td><td>Time line</td><td>Present Status</td></tr>
<tr><td>6.1</td><td>Progress Report Pertaining to Karamana River (Priority-1) are given below may be comprised of details along with completion timelines on:</td><td></td><td></td></tr>
<tr><td></td><td>Status of STPs, I&D and sewerage networks Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline</td><td>31.03.2021 (For Medical College)</td><td><u>Details along the Polluted River Stretches</u>
<table>
<tr><td>Total Sewage Generation</td><td>Total number of STPs proposed as per the action plan</td><td>Number of STPs constructed / under construction</td><td>DPR/ Tender stage</td><td>Working / Non working</td><td>Details</td></tr>
<tr><td>132 MLD</td><td>1(additional STP requirement by KWA for 60 crores)</td><td>1(under construction)</td><td></td><td>1 STP working (107MLD) at Muttathara</td><td>5MLD STP at Medical College(Progress - 30%)</td></tr>
</table></td></tr>
<tr><td></td><td>Pumping lines from the terminal pumping stations namely Kuriyathi, Pattoor, Kannammoola and Enchakkal
pumping stations are to be connected directly to STP at Muttathara</td><td>May 2019</td><td>Work completed and commissioned.</td></tr>
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	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pumphouse by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump sets	May 2020	Thaliyal- 40% Arannoor- 15%
	5 MLD sewage treatment plant at Medical College	31.03.2021	Progress - 30%
	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations	March 2020	High offers received on tender. Submitted to higher office for sanction
	DG sets in all lift and pumping stations – Mudavanmughal, Aranoor, Thaliyal, Kuriyathi, Pattoor, Kannammola, Pattom,Murinjapalam and Enchakkal	May 2020	Single offer received. Submitted to higher office for sanction
	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhanchanthodu, control stormwater entry into sewer to avoid overflow in Thampanoor area Sewage generated in Rajaji Nagar shall be diverted to main sewerline Sewage generated in Thoppil area shall be diverted main sewerline.	Dec 2019	Work awarded. Work revised by rerouting the pipeline through main road. Foot path cutting requested from M/s KRFB-Revised estimate
	Discharge of sewage in Parayilkadavu shall be stopped as there is overflow of sewage		Completed

	reaches in houses having sewerage connection and this may lead to discharge of sewage into River Karamana		
	Divert the sewer line from the School compound of Government Karamana High School	May 2020	60 % completed
	Rehabilitation by laying new lines increasing size of undersized main and reconstruction by dilapidated manholes for the last 3 years Total works in progress (59No.) Works in tendering (19No.)	May 2020	Works completed – 43 No. (Rs. 8.77 cr.) In progress – 24 No. (Rs. 7.94 cr.) Tendered/To be tendered – 12 No. (Rs. 3.43 cr.)
	Extension of sewer network wherever technically feasible in new areas of existing blocks In progress(19 No.) Tendering(10 No.)	May 2020	Works completed - 14 No. (Rs. 1.96cr.) In progress – 6 No. (Rs. 13.42 cr.) Tendered/To be tendered – 9 No. (Rs. 9.31 cr.)
	Procurement of sewer cleaning machines and equipment maintenance	May2020	No response to first tender. Work retendered.
	Around 155 houses in Kurukuvilakom, Kannettumukku shall be provided with septic treatment system.	-	Not technically feasible to connect to existing sewer system. Septic tanks may be provided by Corporation.
	Establishment of six additional	May 2020	Works completed - 1 No. (Rs. 2.28 cr.)

	blocks in uncovered areas In Progress (8 nos.) Tendering (12 nos)		In progress – 9 No. (Rs. 85.05 cr.) Tendered/To be tendered – 10 No. (Rs. 25.59 cr.)
Solid Waste Management Action Plan			
	Slaughter house and poultry waste	March 2021	**Slaughter House**- Work awarded to KEL Agreement executed duration-1 year. **Poultry waste**- TMC starts collecting poultry waste coming under jurisdiction of 25 HI Office from 1st November 2019 on pilot basis with online tracking of vehicles. User fee with respect to poultry waste collection is also through online payment system. Entire functioning of system is managed by green Trivandrum Software and its link is provided in corporation website. The entire poultry waste generated in whole Corporation area is collected and supplied to rendering plant in Aluva and Tamil Nadu.
	Sanitation facility and Treatment of waste water in the markets of Pangode, Kumarichan da,Kannettumukku	Dec 2019	**Kumarichanda**: STP Plant (Bio membrane bioreactor Technology- 10000LD) is installed and applied for consent to operate to KSPCB. **Pangode**: Steps were taken to clean existing septic tank and an estimate amount of 40lakhs prepared for establishing modern ETP and council decided to include in plan 2021. Prepared DPC approved project –Rennovation of pangode fish market ETP-1000LD.
	Provide facility for the treatment of sewage, sullage and garbage generated in the poonthura slum area between Karamana river and sea		**Garbage:** Regarding Solid Waste Management in Poonthura slum door to door collection started and wetwaste is treated in Aerobic bin and drywaste to RRC. Regarding treatment of sullage, land availability is a problem to establish a common treatment facility. On survey is reviled 618 households are living in this area out of this 240 houses are having sufficient septage and waste water treatment facility. ULB has to address 378 households' issues. ULB has issued notice to 378 households

		March 2020	
	The discharge of waste water from the surrounding houses to the pond at Jagathy is to be stopped	March 2020	Notice issued to households is to stop discharge of waste water to pond. KWA so far not identified site to set up STP
	Around 155 Houses in Kurukuvilakom, Kannettumukku shall be provided with septic and treatment system		Door to door collection facility is provided. Health Supervisor and Jagathi circle Health Inspector is authorised to issue notice on the basis of site inspection. Notice was issued to households to provide septic tank.
	Identification of illegal outlets into storm water drains and fine shall be imposed on such units		12.06 lakhs Fine collected.
	Biodegradable waste(Bio-composter)	May 2020	The components in the DPR are approved by the DPC. Tender proceedings are initiated. Regarding Three layer Bio-composter Bin (for wet waste management in houses) supply order issued and installation of fifty Thousand kitchen bin units is ongoing. DPR Sanctioned amount of State and Central share had released rupees 13,45,43,500 (partial).
	Biodegradable waste(Thumboormuzhi aerobic bins)	May 2020	
	Biodegradable waste(community biogas)	May 2020	
	Biodegradable waste(organic waste converter)	May 2020	
	Biodegradable waste(portable biogas)		
	Biodegradable waste(Portable aerobins)		
	Biodegradable waste(Ring compost)		
	Biodegradable waste(segregation bins)	May 2020	
	Biodegradable waste(RRC)		

	Biodegradab le waste(Plastic Recycling unit)		
	Biodegradable waste(Mobile MRF)		
	Biodegradable waste(Electronic Weigh bridge)		
	Biodegradable waste(Solar electrical cart)		
	Biodegradable waste(Swaps shops)		
	Biodegradable waste(PET bottle crushing)		
	Biodegradable waste(Napkin destroyer)		
	Animal crematorium at Kattela	May 2020	
	Urban Gardening		
	Upgradation of present facilities		
	Capacity building & IEC		
	Viability gap fund		
	Prevent entry of Stormwater into sewer line along with KWA	May 2020	Close monitoring is done by health Squad and all Health Inspectors are directed to issue notice and prosecution.
	Take steps to prevent the solid wastes in sewer line as reported by KWA	May 2020	Employees were placed at various spots during night to prevent dumping of Solid Waste in drains. And fines are being charged. Regarding waste throwing to public place, Corporation collected an amount of Rs 43550/-as fine 01.03.2020 to 31.03.2020.
	Monitoring		
	River water quality monitoring -	Ongoing;	Monitoring of water quality

	Killiyar, Karamana, Parvathiputhanar, Akkulam-Veli lake	monthly frequency	
	Storm drains monitoring - Amayizhanchanthodu, Ulloorthodu, Pattomthodu, Kannamoolathodu, Thekkanakkara canal	Ongoing Seasonal monitoring – pre-monsoon, monsoon, post-monsoon	Notice issued to TVM Corporation
	Inspection and effluent quality monitoring of the flats, industrial units, servicestations, hospitals,hotels etc in Thiruvananthapuram Corporation area	Ongoing Interval: Red – 1 month. Orange – 3 m. Green – 6 m.	Monitoring of establishments, service stations, flats, industrial units
	1. Long term Plan **Sewerage network**		
	Long term measures proposed	Three years	AS for the proposal for engaging Consultants for preparation of Detailed Engineering Report got Administrative Sanction for Government. TS issued. No response to first tender. To be retendered.
	Extension of sewerage system to Block F to G coastal belt		
	Extension of sewerage system to Block H to R		
	Extension of sewerage system to Newly added area of corporation		

	Providing sewerage system in Block A to E		
	Rehabilitation of existing network and pump house in block A to E		
	Additional STP requirement		
Solid waste management Long term measures proposed			
	Acquire 58 acres of land and rehabilitate 8150 families from the banks of River	5 years	Action is being taken for the identification of land
	Desilting and development		
	Development package for ParvathyPuthanar	3 years	Desilting is done by KWIL upto Valakkadavu
	Desilting and development of AmayizhanchanThodu	1.5 years	Work in Progress
	Improvements to Thekkenekara canal and desiliting-	1 year	Work in Progress
	Karimadam tank improvements,desilting sheet piling/under preparation and providing fencing	1.5 years	Work in Progress
	Development of Karamana basin	1.5 years	Work in Progress
	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of	Latest water quality of Karamana River is attached as annexure.	

	polluted river;	

STATE WATER MONITORING PROGRAMME (SWMP) 2020

Analysis Report for the month of MARCH-2020

Name of River	KARAMANA					
Date and Time of Sample collection	11/3/2020					
Method of analysis						
Sl no.	Parameters	SAMPLE ID					
		Peppara	Aruvikkara	Mangatukadavu	Pallathukadavu	Thiruvallom	Moonnattumukku
1	Temperature,degree celsius	27	27	27.5	28	29	28
2	pH	6.9	7.4	7.5	7.7	7.4	6.6
3	Turbidity,NTU	5.2	4.8	6.7	10	6.8	6.2
4	Electrical Conductivity,	81	75	84	86	392	430
5	DO,mg/l	6.3	5.8	4.6	2.3	1.8	0.7
6	BOD,mg/l	0.8	0.9	1.8	5.1	9.6	7.8
7	NH3N,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	BDL	1.6
9	Chloride,mg/l	22	20	38	84	82	85
10	Phosphate,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
11	Total Alkalinity,mg/l	10	8	14	52	63	58
12	Total Hardness,mg/l	30	18	22	72	118	126
13	Calcium,mg/l	18	12	18	62	92	82
14	Magnesium,mg/l	12	6	4	10	26	44
15	Sodium,mg/l	0	3.8	7.3	16.4	21.8	24.2
16	Potassium,mg/l	1.1	1.2	2	5.8	7.4	10.8
17	Boron,mg/l	0	0	0	0	0	0
18	SAR	0	0.223	0.405	0.509	0.516	0.535
19	TC,cfu/100ml	300	400	1600	1800	4100	11000
20	FC,cfu/100ml	100	100	900	800	800	3800
21	Faecal Streptococci	ND	ND	ND	ND	ND	ND

STATE WATER MONITORING PROGRAMME (SWMP) 2020

Analysis Report for the month of APRIL-2020

Name of River	KARAMANA					
Date and Time of Sample collection	10/4/2020					
Method of analysis						
Sl no.	Parameters	SAMPLE ID					
		Peppara	Aruvikkara	Mangatukadavu	Pallathukadavu	Thiruvallom	Moonnattumukku
1	Temperature,degree celsius	28	28	27	28	28	27
2	pH	7.1	7.6	7.2	7.2	7.2	7.1
3	Turbidity,NTU	4	4.2	5.4	6.8	6.2	6.6
4	Electrical Conductivity,	78	80	82	84	382	415
5	DO,mg/l	6.5	6.1	4.4	2.6	2.3	0.3
6	BOD,mg/l	0.7	0.8	1.9	4.8	9	7.2
7	NH3N,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	BDL	1.2
9	Chloride,mg/l	21	22	36	80	79	81
10	Phosphate,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
11	Total Alkalinity,mg/l	10	8	12	48	62	54
12	Total Hardness,mg/l	28	21	24	67	116	123
13	Calcium,mg/l	17	16	19	53	94	86
14	Magnesium,mg/l	11	5	5	14	22	37
15	Sodium,mg/l	0	3.4	6.8	12.8	20.2	21.2
16	Potassium,mg/l	0.9	1.9	1.8	5.2	6.8	9.4
17	Boron,mg/l	0	0	0	0	0	0
18	SAR	0	0.189933	0.35833	0.403623	0.486771	0.480971
19	TC,cfu/100ml	400	400	1400	1600	3800	10000
20	FC,cfu/100ml	100	100	700	600	700	3400
21	Faecal Streptococci	ND	ND	ND	ND	ND	ND

STATE WATER MONITORING PROGRAMME (SWMP) 2020

Analysis Report for the month of MAY-2020

Name of River	KARAMANA					
Date and Time of Sample collection	10/5/2020					
Method of analysis						
Sl no.	Parameters	SAMPLE ID					
		Peppara	Aruvikkara	Mangatukadavu	Pallathukadavu	Thiruvallom	Moonnattumukku
1	Temperature,degree celsius	26	26	26	26	27	27
2	pH	6.3	6.2	6.3	6.4	6.8	6.6
3	Turbidity,NTU	4.1	5.8	5.1	6.7	11.3	6.4
4	Electrical Conductivity,	68	58	133	121	294	325
5	DO,mg/l	6.3	6.8	4.6	1.9	2.8	0.3
6	BOD,mg/l	0.2	1.2	1.8	6	5.4	7.8
7	NH3N,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	BDL	1.9
9	Chloride,mg/l	18	10	38	24	62	64
10	Phosphate,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
11	Total Alkalinity,mg/l	8	16	14	38	42	48
12	Total Hardness,mg/l	16	10	28	52	96	96
13	Calcium,mg/l	12	8	24	38	58	64
14	Magnesium,mg/l	4	2	4	14	38	32
15	Sodium,mg/l	3.8	4.1	6.5	9.3	20	24
16	Potassium,mg/l	2.1	2.1	1.5	3.2	6.8	6.6
17	Boron,mg/l	0	0	0	0	0	0
18	SAR	0.978	0.3355	0.323196	0.32731	0.50089	0.610977
19	TC,cfu/100ml	300	500	1600	1600	4100	11000
20	FC,cfu/100ml	100	200	800	400	800	4200
21	Faecal Streptococci	ND	ND	ND	ND	ND	ND

☎0471-2303844

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KERALASTATE POLLUTION CONTROLBOARD

t l c f k w Ø m \ a e n \ o l c W \ n b { ' W t m À U v
DISTRICT OFFICE, THIRUVANANTHAPURAM

P n Ã m H m ^ o k v , X n c p h \ '] p c w
T. C. 12/96 (4,5), PLAMOODU JN., PATTOM P.O,THIRUVANANTHAPURAM – 695 004

Sn.kn. 12/96 (4,5), ¹maqSv PwKvj³,]«w]n.H, Xncph\']pcw þ 695 004

Analysis Report of Drains (Pre Monsoon)On 2020

Sl.No	STATIONS	pH	BOD
1	Pippinmoodu	6.2	75
2	Mudavanmugal,Arattukadavu	5.8	90
3	JagathyPalam	5.6	84
4	Kannettumukku	6.2	66
5	Chadiyara	6.4	87
6	Thamalam	6.1	45
7	Mangottukadavu	6.6	27
8	Thaliyal, Iyiranimuttom	5.6	99
9	Killippalam(Thoppilkadavu)	5.8	96
10	Kuriathy	6.1	81
11	Moonnattumukku	5.7	102

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

Bharathapuzha at Pattambi – May 2020

<table>
<tr><th>S. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of progress by state/UT-Compliance status</th></tr>
<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:

Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

<u>Status of STPs, I&D and sewerage networks</u>
Details of Existing Infrastructure ,Gap Analysis,</td><td>Primary STP (oil and grease trap with grit chamber) - 31.03.2021

Not Proposed

Not</td><td>Progressing
(Proposal Submitted Before Council)

<u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (town wise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>1.9MLD(Pattambi municipality)</td><td>1 Primary STP (oil and grease trap with grit chamber</td><td>NIL</td><td>NIL</td><td>NIL(septic tank soakpit system</td><td>Progressing (Proposal Submitted Before Council)</td></tr>
</table>
</td></tr>
</table>

	Proposed along with completion timeline	proposed	
	<u>Status of CETPs</u>		Not Applicable
	Details ofExisting CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.	MSW treatment Plant – March 2021	Not Applicable
	(<u>Status of Solid Waste Management & Details of Processing Facilities</u>	March 2021	Construction work for the MSW treatment plant was started on 25/05/2020 and will be complete within two months
	Details of		Water quality monitoring of polluted river stretch, two additional points, 5 major drains were completed during the

	Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	Implemented by January 2020	period of May 2020. Management of dry wastes were achieved through the MCF and RCF facilities, BMW by CBWTDF, E-Waste by authorised collection agencies.
	Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	March 2021	Project preparation on-going. Project preparation on-going. Progressing
	Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing,	March 2021	

	including waste generated from hotels, Ashrams, etc. Ground water regulation Adopting good irrigation practices, Protection and management of food plain Zones (FPZ), Rain water harvesting, Maintaining minimum Environmental flow of river Plantation on both sides of the river Setting up biodiversity parks on flood plains by removing encroachment	March 2021 (greenery development)	

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET MAY 2020

Nhangatiri Temple (U/S of NWMP-2)

Station Name		RIVER BHARATHAPUZHA AT PATTAMBI (NWMP-2)										
Type of Water body		RIVER										
Completed by		DO, PALAKKAD										
Agency		Kerala State Pollution Control Board										
1	Station Code	2	3	3	2							
2	Date and time of sample taken (DD/MM/YY, HH/MM)	05.05.2020										
		1	1	:	5	0						
3	Weather	Cloudy			Clear √			Windy			Raining	
4	Approximate depth of main stream	< 50 cm			50 – 100 cm √			>100 cm			Flood	
5	Color & Intensity	Clear √			Turbid			Green			Brown	
		1 = Light			2 = Moderate √			3 = High				
6	Odour	None √			Fishy			H2S			Other	
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease			Water Hyacinth	
8	Visible effluent discharges in proximity	Industrial			Municipal sewage			None √				
9	Human activities around the station	Cattle wading			Tourism spot			Fishing	Bathing √		Other	
10	Location details	U/s of town or industrial area √			D/s of town or industrial area			Pilgrim center/Bathing Ghat/Water intake			None	
11	Flow rate	12.3 m^3/s										
12	Major polluting source	Industrial effluent			MSW		PW	None √			Other	
13	Uses of water in downstream	Irrigation			Drinking water source √			Fishing			Domestic	
		Organized water source			Cultivation			Bathing Ghat			Others	

Sl.No	Determinant	Value
1	Temperature, ^0C	33
2	pH	7.49
3	Conductivity, µmhos/cm	218
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	69.2
7	Chloride, mg/l	18.81
8	COD, mg/l	8
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	72.5
12	Calcium, as $CaCO_3$ mg/l	44
13	Magnesium as $CaCO_3$, mg/l	28.5
14	Sulphate, mg/l	8.69
15	Sodium, mg/l	12.51
16	Total Dissolved Solids, mg/l	131
17	Total Fixed Solids, mg/l	81.22
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	0.1216
20	Boron, mg/l	BDL
21	Potassium, mg/l	2.27
22	BOD, mg/l	1.8
23	Fluoride, mg/l	0.361
24	Dissolved Oxygen, mg/l	6.23
25	Nitrate-N, mg/l	0.513
26	Total Coliform, MPN/100 ml	1000
27	Fecal Coliform, MPN/100 ml	600
28	Fecal Streptococci MPN/100 ml	20
29	SAR	4.15

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET MAY 2020

Veliamkallu regulator (D/S of NWMP-2)

Station Name		BHARATHAPUZHA AT PATTAMBI																					
Type of Water body		RIVER																					
Completed by		DO, PALAKKAD																					
Agency		Kerala State Pollution Control Board																					
1	Station Code	2	3	3	2																		
2	Date and time of sample taken (DD/MM/YY, HH/MM)	05.05.2020																					
		1	1	:	2	0																	
3	Weather	Cloudy			Clear			Windy √			Raining												
4	Approximate depth of main stream	< 50 cm			50 – 100 cm √			>100 cm			Flood												
5	Color & Intensity	Clear √			Turbid			Green			Brown												
		1 = Light			2 = Moderate √			3 = High															
6	Odour	None √			Fishy			H2S			Other												
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease			Water Hyacinth												
8	Visible effluent discharges in proximity	Industrial			Municipal sewage			None √															
9	Human activities around the station	Cattle wading			Tourism spot			Fishing		Bathing √			Other										
10	Location details	U/s of town or industrial area			D/s of town or industrial area √			Pilgrim center/Bathing Ghat/Water intake					None										
11	Flow rate	110.5 m^3/s																					
12	Major polluting source	Industrial effluent			MSW			PW		None √			Other										
13	Uses of water in downstream	Irrigation			Drinking water source √						Fishing			Domestic									
		Organized water source						Cultivation		Bathing Ghat				Others									

Sl.No	Determinant	Value
1	Temperature, ^0C	31
2	pH	7.42
3	Conductivity, µmhos/cm	279
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	85
7	Chloride, mg/l	35.63
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	90
12	Calcium, as $CaCO_3$ mg/l	46
13	Magnesium as $CaCO_3$, mg/l	44
14	Sulphate, mg/l	9.186
15	Sodium, mg/l	21.62
16	Total Dissolved Solids, mg/l	167
17	Total Fixed Solids, mg/l	109
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	0.1025
20	Boron, mg/l	BDL
21	Potassium, mg/l	3.24
22	BOD, mg/l	1.1
23	Fluoride, mg/l	0.382
24	Dissolved Oxygen, mg/l	6.81
25	Nitrate-N, mg/l	0.357
26	Total Coliform, MPN/100 ml	800
27	Fecal Coliform, MPN/100 ml	200
28	Fecal Streptococci MPN/100 ml	20
29	SAR	4.9

ASSISTANT SCIENTIST

NATIONAL WATER QUALITY MONITORING PROGRAMME
(NWMP -2 DATA- MAY2020)

Station Name		BHARATHAPUZHA AT PATTAMBI															
Type of Water body		RIVER															
Completed by		DO, PALAKAKD															
Agency		Kerala State Pollution Control Board															
1	Station Code	2	3	3	2												
2	Date and time of sample taken (DD/MM/YY, HH/MM)	12.04.2020															
		1	0	:	1	5											
3	Weather	Cloudy			Clear √				Windy				Raining				
4	Approximate depth of main stream	< 50 cm			50 – 100 cm √				>100 cm				Flood				
5	Color & Intensity	Clear √			Turbid				Green				Brown				
		1 = Light			2 = Moderate √				3 = High								
6	Odour	None √			Fishy				H2S				Other				
7	Floating Matter	Floating Algae			Floating sludge				Oil & Grease				Water Hyacinth				
8	Visible effluent discharges in proximity	Industrial			Municipal sewage √				None								
9	Human activities around the station	Cattle wading			Tourism spot				Fishing		Bathing √		Other				
10	Location details	U/s of town or			D/s of town or				Pilgrim center/Bathing				None				
11	Flow rate	25 m^3/s															
12	Major polluting source	Industrial effluent			MSW √			PW	None				Other				
13	Uses of water in downstream	Irrigation			Drinking water source √						Fishing		Domestic				
		Organized water source						Cultivation	Bathing Ghat				Others				

NATIONAL WATER QUALITY MONITORING PROGRAMME
(NWMP -2 DATA- MAY 2020)

Station Name		BHARATHAPUZHA AT PATTAMBI																					
Type of Water body		RIVER																					
Completed by		DO, PALAKAKD																					
Agency		Kerala State Pollution Control Board																					
1	Station Code	2	3	3	2																		
2	Date and time of sample taken (DD/MM/YY, HH/MM)	05.05.2020																					
		0	9	:	4	3																	
3	Weather	Cloudy			Clear √			Windy			Raining												
4	Approximate depth of main stream	< 50 cm			50 – 100 cm √			>100 cm			Flood												
5	Color & Intensity	Clear √			Turbid			Green			Brown												
		1 = Light			2 = Moderate √			3 = High															
6	Odour	None √			Fishy			H2S			Other												
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease			Water Hyacinth												
8	Visible effluent discharges in proximity	Industrial			Municipal sewage √			None															
9	Human activities around the station	Cattle wading			Tourism spot			Fishing			Bathing √			Other									
10	Location details	U/s of town or			D/s of town or			Pilgrim center/Bathing			None												
11	Flow rate	54 m^3/s																					
12	Major polluting source	Industrial effluent			MSW √			PW			None			Other									
13	Uses of water in downstream	Irrigation			Drinking water source √						Fishing			Domestic									
		Organized water source						Cultivation			Bathing Ghat			Others									

Sl.No	Determinant	Value
1	Temperature, ^0C	32
2	pH	6.88
3	Conductivity, µmhos/cm	204
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	78
7	Chloride, mg/l	20.79
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	78
12	Calcium, as $CaCO_3$ mg/l	50
13	Magnesium as $CaCO_3$, mg/l	28
14	Sulphate, mg/l	6.23
15	Sodium, mg/l	12.94
16	Total Dissolved Solids, mg/l	135
17	Total Fixed Solids, mg/l	87.75
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	0.128
20	Boron, mg/l	BDL
21	Potassium, mg/l	3.29
22	BOD, mg/l	1
23	Fluoride, mg/l	0.356
24	Dissolved Oxygen, mg/l	7.53
25	Nitrate-N, mg/l	1.23
26	Total Coliform, MPN/100 ml	1000
27	Fecal Coliform, MPN/100 ml	500
28	Fecal streptococci , MPN/100 ml	80
29	SAR	4.07

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019) KADAMBRAYAR

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<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:
I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline</td><td>Primary STP (oil & grease gap with grit chamber)

3 years</td><td>Progressing

As per the Video Conference conducted on 10.06.2020, it is decided to add Kizhakambalam panchayath also in revised action plan as there is a drain leading to Kadambrayar

Due to COVID-19 situation,Common CETP of CSEZ could not be completed as per the scheduled dated 31.05.2020; The authorities informed that CETP will be commissioned by Nov 2020

<u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (Townwise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>Thrikkakara Municipality (14.46 MLD)</td><td>1</td><td>1</td><td></td><td></td><td>Request letter submitted to Governmentto provide land at Brahmapuram for STP</td></tr>
</table>
</td></tr>
</table>

	II) Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.		
	(iv) Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline		To allot land for installing rendering plant for slaughter house and poultry wastes, Government procedures are on going; Aerobic bins,bio- composter, portable bio gas, ring compost, Sanitary Napkin Destroyer are proposed to install by Thrikkakkara Municipality; Wet solid wastes collected and treated at Brahmapuram Plant
	(v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Attached Monitoring on going; Surveillance cameras are proposed to install on various places
	vi)Preventing dumping of waste and scientific waste management including bio-medical		

	waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	1st phase 2020-21	With the permission of Ground Water Dept
	(vii)Ground water regulation	2nd phase 2021-22	Included in revised action plan
	(viii) Adopting good irrigation practices,		
	ix) Protection and management of food plain Zones (FPZ),		Protection and management of food plain Zones are included in revised action plan by Irrigation Dept
	(x) Rain water harvesting,		Insisting for major units
	(xi)Maintaining minimum Environmental flow of river		During summer season Irrigation Department provides temporary bund to prevent the salt water intrusion due to tidal effects. To maintain natural flow,sluice gate is provided. During the low tide, the shutter of the sluice gate is kept open to maintain minimum flow.
	(xii) Plantation on both sides of the river		
	(X) Setting up biodiversity parks on flood plains by removing encroachment		By Thrikkakkara Municipality

KADAMBAYAR

Analysis Report(MAY 2020)

Sl. No.	Parameters	Brahmapuram	Manakkakkadavu
1	Temperature, ^{0}C	28	29
2	pH	6.6	6.7
3	Conductivity, µmhos/cm	126	86
4	Turbidity, NTU	1.2	3.1
5	Total Alkalinity, as CaCO3	25	20
6	Chloride, mg/l	18	9
7	COD, mg/l	12	10
8	TKN, mg/l	0.13	0
9	Ammoniacal-N, mg/l	0.06	0
10	Hardness, as CaCO3 mg/l	17	13
11	Calcium, as CaCO3 mg/l	5	7
12	Magnesium as CaCO3, mg/l	12	6
13	Sulphate, mg/l	8.1	8
14	Sodium, mg/l	11.56	6.64
15	Total Dissolved Solids, mg/l	72	50
16	Total Fixed Solids, mg/l	60	40
17	Total Suspended Solids, mg/l	20	24
18	Phosphate, mg/l	0	0
19	Boron, mg/l	0.01	0.14
20	Potassium, mg/l	2.26	1.96
21	BOD, mg/l	2.9	1.5
22	Fluoride, mg/l	0.04	0.04
23	Dissolved Oxygen, mg/l	1.3	3.6
24	Nitrate-N, mg/l	0.18	0.07
25	Total Coliform, MPN/100 ml	5400	3400
26	Fecal Coliform, MPN/100 ml	3100	2400
27	Fecal Streptococci	170	200

Analysis Report(APRIL 2020)

Sl. No.	Parameters	Brahmapuram	Manackakadavu
1	Temperature, ^{0}C	30	30
2	pH	6	6
3	Conductivity, µmhos/cm	90	60
4	Turbidity, NTU	4.2	5.7
5	Total Alkalinity, as CaCO3	26	6
6	Chloride, mg/l	11	10
7	COD, mg/l	6.4	8
8	TKN, mg/l	0.02	1.40
9	Ammoniacal-N, mg/l	0	0.41
10	Hardness, as CaCO3 mg/l	16	6
11	Calcium, as CaCO3 mg/l	4	4
12	Magnesium as CaCO3, mg/l	12	2
13	Sulphate, mg/l	2.7	2.8
14	Sodium, mg/l	7.59	7.43
15	Total Dissolved Solids, mg/l	50	34
16	Total Fixed Solids, mg/l	40	28
17	Total Suspended Solids, mg/l	14	10
18	Phosphate, mg/l	0	0
19	Boron, mg/l	0	0.03
20	Potassium, mg/l	1.94	1.81
21	BOD, mg/l	3.2	3.3
22	Fluoride, mg/l	0.06	0.04
23	Dissolved Oxygen, mg/l	2.9	2.2
24	Nitrate-N, mg/l	0.4	0.66
25	Total Coliform, MPN/100 ml	1700	1000
26	Fecal Coliform, MPN/100 ml	12	340
27	Fecal Streptococci	2	17

Analysis Report(MARCH 2020)

Sl. No.	Parameters	Brahmapuram	Manakkakkadavu
1	Temperature, ^{0}C	30	30
2	pH	6.6	6.6
3	Conductivity, µmhos/cm	110	112
4	Turbidity, NTU	3.2	7.1
5	Total Alkalinity, as CaCO3	27	26
6	Chloride, mg/l	13	15
7	COD, mg/l	8.0	6.4
8	TKN, mg/l	0.02	1.60
9	Ammoniacal-N, mg/l	0.00	0.31
10	Hardness, as CaCO3 mg/l	28	45
11	Calcium, as CaCO3 mg/l	16	25
12	Magnesium as CaCO3, mg/l	12	20
13	Sulphate, mg/l	8.9	13.9
14	Sodium, mg/l	9.100	10.5
15	Total Dissolved Solids, mg/l	70	80
16	Total Fixed Solids, mg/l	55	67
17	Total Suspended Solids, mg/l	16	25
18	Phosphate, mg/l	0.020	0.0200
19	Boron, mg/l	0	0.00
20	Potassium, mg/l	2	2.23
21	BOD, mg/l	4.0	3.2
22	Fluoride, mg/l	0.02	0.01
23	Dissolved Oxygen, mg/l	3.6	2.5
24	Nitrate-N, mg/l	0.21	0.01
25	Total Coliform, MPN/100 ml	1500	2700
26	Fecal Coliform, MPN/100 ml	1100	2000
27	Fecal Streptococci	31	79

ENVIRONMENTAL ENGINEER

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs (Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

KECHERI RIVER – May 2020

Sl. No.	Activity to be monitored	Timeline	Submission of progress by state/UT- Compliance status
6.1	Progress Report may be comprised of details along with completion timelines on: Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment. Status of STPs, I&D and		Illegal outlets were identified and notice was issued as per Kerala Municipal Act .In Further inspection outlets were found removed. 2 common STPs are proposed, One at Athani (350 MLD) and other at Ottupara(500MlD).

<table>
<tr>
<td></td>
<td><u>sewerage networks</u>
Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline

<u>Status of CETPs</u>
Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.

<u>Status of Solid</u></td>
<td>31.03.2021

30.09.2020</td>
<td><u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (town wise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>950KLD</td><td>2 common STPs are proposed</td><td>NIL</td><td>DPR UNDER PREPARATION</td><td>NIL</td><td>Common STP - Wadakkanchery Municipality. One at Athani and other at Ottupara).</td></tr>
</table>
NA</td>
</tr>
</table>

	Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timelin Latest water quality of polluted river, it tributaries, drains with flow details and ground water quality in the catchment of		Tender for installation of windrow composting at Kumbalangad completed. Work orde issued. Water quality monitoring of polluted river stretch is done periodically, (Report attached.)

	polluted river; Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. Ground water regulation		Installation of CCTV. Two MRF were setup.*0 kg of non bio degradable waste handed to Clean Kerala company every day.RCF(Cost of installing bailing machine and shredding machine remitted to Clean Kerala company).

	Adopting good irrigation practices, Protection and management of food plain Zones (FPZ) Rain water harvesting, Maintaining minimum Environmental flow of river	30.3.2022	Construction of 1726 rain pits for ground water recharge are under progress Not yet started Construction of

	Plantation on both sides of the river		Rain water harvesting facility for residential building above 150m^2 are under process.
	Setting up biodiversity parks on flood plains by removing encroachment	30.3.2022	Not yet started
		30.3.2022	Not yet started
			Not yet started

KECHERI ANALYSIS REPORT

04.05.2020

SL. NO	PARAMETE	UNIT	VAD1	VAD2
1	PH		6.85	6.66
2	EC	µ/cm	126.1	121
3	BOD	mg/L	2.5	2.6
4	DO	mg/L	5.8	5.6
5	COD	mg/L	8	8
6	TC	CFU/100m	400	500
7	FC	CFU/100m	200	300

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019) MANIMALA

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(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

(II) Status of STPs, I&D and sewerage networks Details of Existing Infrastructure,Gap Analysis, Proposed along with</td><td>31.03.2021</td><td>Details along the Polluted River Stretches

Identified

<table>
<tr><th>Total Sewage Generation (Townwise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>3.36 MLD (Chenganur Municipality)</td><td>1</td><td>Nil</td><td>Nil</td><td>Nil</td><td>Chengannur Municipality identified land for implementation of STP</td></tr>
</table>
</td></tr>
</table>

	completion timeline		Need to be done in Pathanamthitta & Kottayam district offices
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.		NIL
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline		
	(v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		NIL

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ), (x)Rain water harvesting, (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river		Water quality analysis Results up to June 2020 is attached here with. Actions to be initiated by Patanamthitta & Kottayam district offices. Actions to be initiated

	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		Preparation of Action plan by irrigation department is in progress. Actions to be initiated Actions to be taken & icon irrigation department

			Actions to be taken from irrigation department.

Analysis Result of Kalloopara-2020

Parameters	Unit	MONTHS					
		JAN	FEB	MAR	APR	MAY	JUN
PH	-	6.8	6.9	6.9	7.1	6.6	6.8
Conductivity	µS/cm	227	246	258	242	295	199
Turbidity	NTU	0.9	0.9	0.9	0.9	1.1	0.9
DO	mg/l	8.1	8.8	6.9	7.8	7.6	7.2
BOD	mg/l	2.9	3.1	2.7	3.0	3.2	1.8
COD	mg/l	8.0	12.0	16.0	8.0	16.0	4.0
Chloride	mg/l	40.0	50.0	50.0	50.0	60.0	30.0
Sulphate	mg/l	9.8	9.9	10.4	9.6	6.3	3.8
Phosphate	mg/l	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate Nitrogen	mg/l	0.15	0.18	0.19	0.01	0.09	0.24
Amm. Nitrogen	mg/l	BDL	BDL	BDL	BDL	BDL	BDL
Alkalinity	mg/l	40.0	50.0	50.0	60.0	40.0	60.0
T.Hardness	mg/l	40.0	60.0	70.0	70.0	70.0	60.0
Ca. Hardness	mg/l	20.0	30.0	40.0	40.0	40.0	40.0
Mg. Hardness	mg/l	20.0	30.0	30.0	30.0	30.0	20.0
T D S	mg/l	132.4	161.4	182.6	171.6	174.8	136.3
T F S	mg/l	81.60	93.21	95.82	91.74	96.40	93.42
Fluoride	mg/l	0.80	0.80	0.80	0.8	0.90	0.52
Sodium	mg/l	25.1	26.4	27.0	25.06	22.1	17.3
Potasssium	mg/l	7.2	7.5	7.7	6.4	5.3	2.8
TSS	mg/l	44.20	46.23	42.80	43.68	47.62	44.60
Tcoli	No/100ml	500	900	700	500	200	200
Fcoli	No/100ml	300	400	300	200	100	100
Boron	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TKN	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MANIMALA ANALYSIS REPORT

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Analysis Result of Thondra -2020

Parameters	Unit	MONTHS					
		JAN	FEB	MAR	APR	MAY	JUN
PH	-	6.8	6.8	6.8	6.9	6.5	6.9
Conductivity	µS/cm	217	237.06	280	248	260	202
Turbidity	NTU	0.8	0.9	0.9	0.7	0.9	0.8
DO	mg/l	6.1	7.6	8.2	6.9	6.4	6.8
BOD	mg/l	1.4	2.6	2.1	1.9	1.6	1.8
COD	mg/l	12.0	20	16.0	16.0	8.0	4.0
Chloride	mg/l	40.0	60	70.0	40.0	50.0	40.0
Sulphate	mg/l	10.2	10.24	11.0	10.3	8.0	3.2
Phosphate	mg/l	BDL	BDL	0.1	BDL	BDL	BDL
Nitrate Nitrogen	mg/l	0.13	0.1363	0.14	0.01	0.02	0.17
Amm. Nitrogen	mg/l	BDL	BDL	BDL	BDL	BDL	BDL
Alkalinity	mg/l	40.0	50	60.0	70.0	50.0	70.0
T.Hardness	mg/l	40.0	70	90.0	70.0	60.0	80.0
Ca. Hardness	mg/l	20.0	30	50.0	40.0	30.0	30.0
Mg. Hardness	mg/l	20.0	40	40.0	30.0	30.0	50.0
T D S	mg/l	138.6	167.2	198.4	170.2	173.6	142.4
T F S	mg/l	107.60	114.82	126.36	108.20	112.40	106.32
Fluoride	mg/l	0.80	0.8	0.80	0.80	0.90	0.69
Sodium	mg/l	54.4	27.84	28.5	25.8	24.6	16.7
Potasssium	mg/l	5.8	6.2	6.8	5.1	4.9	3.2
TSS	mg/l	31.80	43.2	45.80	42.82	34.20	31.60
Tcoli	No/100ml	700	1000	1500	800	200	300
Fcoli	No/100ml	400	500	800	300	100	200
Boron	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TKN	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Scanned by CamScanner

Details of Drains Join with Kallooppara-Thondra Stretch of Manimala River (March 2020)

Sl.No	Name of Drain	Panchayat	Flow (m3/s)	Long/Lat	BOD mg/l	COD mg/l	TC MPN/100ml
1	Panayambalathodu	Kaviyur	0.46	76.623391/9.39028	0.8	12	2000
2	Padathupalamthodu	Eraviperoor	No flow	76.626870/9.381231	4.7	20	500
3	Thottappuzha	Eraviperoor	0.058	76.629240/9.368316	5.4	32	1200
4	Kuttappuzha under Kattode Bridge	Kaviyur	0.1	76.601103/9.386117	0.5	4	1800
5	Kadavumbara	Kuttoor	0.20	76.601631/9.360769	0.3	12	400
6	Drain Under Varappalam Bridge	Eraviperoor	No flow	76.637261/9.382756	-	-	-
7	Drain Under Kallupalam Bridge	Puramattom	No flow	76.657461/9.396767	-	-	-
8	Komalamthodu	Puramattom	No flow	76.662378/9.403395	-	-	-
9	Vennikkulam Valiyathodu	Puramattom	No flow	76.668929/9.402045	-	-	-
10	Paduthodu	Puramattom	No flow	76.669593/9.417477	-	-	-
11	Mallappally Valiyathodu	Mallappally	No flow	76.657458/9.446676	-	-	-

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National Mission for Clean Ganga

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(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

Pamba– May 2020

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Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

<u>Status of STPs, I&D and sewerage networks</u>
Details of Existing Infrastructure, Gap Analysis, Proposed</td><td>31.03.2021</td><td>Revised action plan already submitted

No sewerage system. STP is not required as the towns on the banks of the polluted stretches are very small.

<u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (Townwise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>1. Mannar (4.19MLD)</td><td>STP not required. Action is</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

	along with completion timeline Status of CETPs Details ofExisting CETP and ETP Infrastructure ,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status. (Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with		2.Parimala (1.97 MLD) 3.Niranam (2.6 MLD) 4.Kadapra (5.78 MLD)	being taken for installation of screening, septic tank & disinfection systems for storm water drains in Mannar & Parumala town.				
			NA Rendering Plant coming up at nearby Thiruvalla Town.					

	completion timeline Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. Ground water regulation Adopting good irrigation		MCF facility for plastic waste formed. Steps have been taken for establishing Thumboormoozhy type aerobic facility & for providing individual waste processing facilities Attached Rendering Plant coming up at nearby Thiruvalla Town. This will help to reduce tendency of dumping slaughter house waste in water bodies

	practices, Protection and management of food plain Zones (FPZ), Rain water harvesting, Maintaining minimum Environmental flow of river Plantation on both sides of the river Setting up biodiversity parks on flood plains by removing encroachment		Not much problem in the area Do Do Do Proposal submitted by Irrigation Dept waiting approval

PAMPA RIVER

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES, JANUARY - 2020
DISTRICT OFFICE, PATHANAMTHITTA

Date of Sampling: 17.01.2020

Sl.No	PARAMETERS	THAKAZHY	EDATHUA	MANNAR
1	Temperature ,ºC	32	31	29
2	pH	7.0	6.8	6.5
3	Turbidity ,NTU	2.1	1.6	7.9
4	Electrical Conductivity ,µ/cm	102.7	61.87	92.44
5	DO, mg/L	5.1	3.1	4.4
6	BOD, mg/L	1.0	1.2	1.9
7	NH_3N, mg/L	0.199	0.341	0.185
8	Nitrate , mg/L	0.922	0.132	0.536
9	Chloride mg/L,	18	12	14
10	Phosphate , mg/L	BDL	BDL	BDL
11	Total Alkalinity, mg/L	17	9.0	11
12	Total Hardness, mg/L	28	24	28
13	Calcium , mg/L	16	14	16
14	Magnesium, mg/L	12	10	12
15	Sodium, mg/L	7.93	6.84	5.8
16	Pottassium , mg/L	1.83	1.34	0.69
17	Boron , mg/L	-	-	-
18	SAR	0.65	0.61	0.48067
19	TC , CFU/100mL	4800	3500	730
20	FC, CFU/100mL	3850	2900	520
21	FS CFU/100mL ,	Nil	NIL	NIL

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES FEBRUARY - 2020
DISTRICT OFFICE, PATHANAMTHITTA

Date of Sampling: 17.02.2020

Sl.No	PARAMETERS	THAKAZHY	EDATHUA	MANNAR
1	Temperature ,ºC	27	28	30
2	pH	6.4	6.5	6.6
3	Turbidity ,NTU	2.8	2.9	5.4
4	Electrical Conductivity ,µ/cm	104.65	53.37	81.99
5	DO, mg/L	4.9	4.3	4.9
6	BOD, mg/L	1.1	1.2	1.6
7	NH_3N, mg/L	0.933	0.621	BDL
8	Nitrate , mg/L	0.361	0.813	0.398
9	Chloride mg/L,	16	10	12
10	Phosphate , mg/L	BDL	BDL	BDL
11	Total Alkalinity, mg/L	12	10	10
12	Total Hardness, mg/L	32	26	26
13	Calcium , mg/L	22	14	14
14	Magnesium, mg/L	10	12	12
15	Sodium, mg/L	7.21	5.62	4.4
16	Pottassium , mg/L	1.941	0.996	0.53
17	Boron , mg/L	-	-	-
18	SAR	0.55	0.48	0.37517
19	TC , CFU/100mL	800	900	510
20	FC, CFU/100mL	300	400	190
21	FS CFU/100mL ,	NIL	10	NIL

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES MARCH - 2020
DISTRICT OFFICE, PATHANAMTHITTA

Date of Sampling: 17.03.2020

Sl.No	PARAMETERS	THAKAZHY	EDATHUA	MANNAR
1	Temperature ,^{o}C	26	26	31
2	pH	6.5	6.4	6.3
3	Turbidity ,NTU	2.3	2.1	4.4
4	Electrical Conductivity ,µ/cm	98.54	59.61	72
5	DO, mg/L	5.7	5.9	4.8
6	BOD, mg/L	1.0	1.3	1.5
7	NH_3N, mg/L	0.0391	BDL	BDL
8	Nitrate , mg/L	0.183	0.0711	0.298
9	Chloride mg/L,	14	10	10
10	Phosphate , mg/L	BDL	BDL	BDL
11	Total Alkalinity, mg/L	11	11	11
12	Total Hardness, mg/L	28	24	22
13	Calcium , mg/L	16	14	14
14	Magnesium, mg/L	12	10	8
15	Sodium, mg/L	6.99	4.38	4.2
16	Pottassium , mg/L	0.718	0.611	0.412
17	Boron , mg/L	-	-	-
18	SAR	0.574	0.388	0.38932
19	TC , CFU/100mL	700	810	420
20	FC, CFU/100mL	300	370	210
21	FS CFU/100mL ,	NIL	Nil	NIL

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES APRIL - 2020
DISTRICT OFFICE, PATHANAMTHITTA

Date of Sampling: 11.04.2020

Sl.No	PARAMETERS	THAKAZHY	EDATHUA	MANNAR
1	Temperature ,ºC	30	30	28
2	pH	7	6.9	6.7
3	Turbidity ,NTU	3.9	2.4	3.5
4	Electrical Conductivity ,µ/cm	60.4	64.32	52
5	DO, mg/L	6.7	6.1	6.3
6	BOD, mg/L	0.5	0.9	0.7
7	NH_3N, mg/L	BDL	BDL	BDL
8	Nitrate , mg/L	BDL	BDL	BDL
9	Chloride mg/L,	10	12	8
10	Phosphate , mg/L	BDL	BDL	BDL
11	Total Alkalinity, mg/L	10	10	9
12	Total Hardness, mg/L	24	20	16
13	Calcium , mg/L	18	12	12
14	Magnesium, mg/L	6	8	4
15	Sodium, mg/L	3.9	5.93	3.1
16	Pottassium , mg/L	0.299	0.063	0.215
17	Boron , mg/L	-	-	-
18	SAR	0.346	0.58	0.33695
19	TC , CFU/100mL	210	420	280
20	FC, CFU/100mL	60	120	90
21	FS CFU/100mL ,	NIL	NIL	NIL

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES MAY - 2020
DISTRICT OFFICE, PATHANAMTHITTA

Date of Sampling: 12.05.2020

Sl.No	PARAMETERS	THAKAZHY	EDATHUA	MANNAR
1	Temperature ,^{o}C	29	29	29
2	pH	6.7	6.5	6.5
3	Turbidity ,NTU	4.3	2.3	3.8
4	Electrical Conductivity ,µ/cm	68	59.53	57.3
5	DO, mg/L	6.1	6.3	5.7
6	BOD, mg/L	0.9	0.8	1.1
7	NH_3N, mg/L	BDL	BDL	BDL
8	Nitrate , mg/L	BDL	BDL	BDL
9	Chloride mg/L,	14	8	10
10	Phosphate , mg/L	BDL	BDL	BDL
11	Total Alkalinity, mg/L	10	10	10
12	Total Hardness, mg/L	28	24	20
13	Calcium , mg/L	18	16	12
14	Magnesium, mg/L	10	8	8
15	Sodium, mg/L	4.9	4.31	3.8
16	Pottassium , mg/L	0.323	0.98	0.291
17	Boron , mg/L	-	-	-
18	SAR	0.4026	0.38	0.36943
19	TC , CFU/100mL	190	480	220
20	FC, CFU/100mL	40	140	70
21	FS CFU/100mL ,	NIL	NIL	NIL

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER BAVANI AT ELECHIVAZHI –31st

May 2020

<table>
<tr><th>S. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of progress by state/UT-Compliance status</th></tr>
<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:
(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing</td><td>Drains contributing pollution to the River were not identified

Not Proposed</td><td><u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation(town wise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>1.64MLD(Pudur GP)</td><td>NIL</td><td>NIL(septic tank – soakpit system in place)</td><td>NIL</td><td>NIL</td><td>NIL</td></tr>
</table></td></tr>
</table>

	Infrastructure,Gap Analysis, Proposed along with completion timeline	Not proposed	
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.	Dec 2020	Not Applicable
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed	March 2021	Not Applicable

	along with completion timeline		Construction work of MSW Treatment plant is in progress
	(v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	Implemented by January 2020	Water quality monitoring of polluted river stretch and three additional points were completed up to May 2020
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	No specific proposal No specific proposal March 2021	Not applicable
	(vii)Ground water regulation		Not applicable
	(viii) Adopting good irrigation practices,		Not applicable

	(ix) Protection and management of food plain Zones (FPZ),	No specific proposal March 2021	Project Preparation is going on
	(x) Rain water harvesting,		Not applicable
	(xi)Maintaining minimum Environmental flow of river	March 2021 (greenery development)	Project Preparation is going on
	(xii) Plantation on both sides of the river		Project Preparation is going on
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET MAY 2020

Cheerakuzhi (U/S of NWMP-6)

Station Name		RIVER BHAVANI AT ELACHIVAZHI															
Type of Water body		RIVER															
Completed by		DO, PALAKKAD															
Agency		Kerala State Pollution Control Board															
1	Station Code	1	2	0	8												
2	Date and time of sample taken (DD/MM/YY, HH/MM)	06.05.2020															
		1	1	:	2	0											
3	Weather	Cloudy			Clear √			Windy			Raining						
4	Approximate depth of main stream	< 50 cm √			50 – 100 cm			>100 cm			Flood						
5	Color & Intensity	Clear √			Turbid			Green			Brown						
		1 = Light √			2 = Moderate			3 = High									
6	Odour	None √			Fishy			H2S			Other						
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease			Water Hyacinth						
8	Visible effluent discharges in proximity	Industrial			Municipal sewage			None √									
9	Human activities around the station	Cattle wading √			Tourism spot			Fishing		Bathing √			Other				
10	Location details	U/s of town or			D/s of town or			Pilgrim center/Bathing					None √				
11	Flow rate	3.6 m^3/s															
12	Major polluting source	Industrial effluent			MSW		PW	None √			Other						
13	Uses of water in downstream	Irrigation √			Drinking water source √					Fishing			Domestic √				
		Organized water source					Cultivation	Bathing Ghat			Others						

Sl.No	Determinant	Value
1	Temperature, ^0C	29
2	pH	7.51
3	Conductivity, µmhos/cm	129
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	49
7	Chloride, mg/l	9.9
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	51
12	Calcium, as $CaCO_3$ mg/l	26
13	Magnesium as $CaCO_3$, mg/l	24
14	Sulphate, mg/l	1.24
15	Sodium, mg/l	7.47
16	Total Dissolved Solids, mg/l	80
17	Total Fixed Solids, mg/l	50.4
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	0.0832
20	Boron, mg/l	BDL
21	Potassium, mg/l	1.01
22	BOD, mg/l	0.9
23	Fluoride, mg/l	0.41
24	Dissolved Oxygen, mg/l	7.06
25	Nitrate-N, mg/l	1.12
26	Total Coliform, MPN/100 ml	400
27	Fecal Coliform, MPN/100 ml	100
28	Fecal Streptococci MPN/100 ml	20
29	SAR	3.83

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET MAY 2020

Chalayur Uru (U/S of NWMP-6)

Station Name		RIVER BHAVANI AT ELACHIVAZHI																					
Type of Water body		RIVER																					
Completed by		DO, PALAKKAD																					
Agency		Kerala State Pollution Control Board																					
1	Station Code	1	2	0	8																		
2	Date and time of sample taken (DD/MM/YY, HH/MM)	06.05.2020																					
		1	1	:	5	8																	
3	Weather	Cloudy			Clear √			Windy			Raining												
4	Approximate depth of main stream	< 50 cm √			50 – 100 cm			>100 cm			Flood												
5	Color & Intensity	Clear √			Turbid			Green			Brown												
		1 = Light √			2 = Moderate			3 = High															
6	Odour	None √			Fishy			H2S			Other												
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease			Water Hyacinth												
8	Visible effluent discharges in proximity	Industrial			Municipal sewage			None √															
9	Human activities around the station	Cattle wading √			Tourism spot			Fishing			Bathing √						Other						
10	Location details	U/s of town or			D/s of town or			Pilgrim center/Bathing									None √						
11	Flow rate	4.1 m^3/s																					
12	Major polluting source	Industrial effluent			MSW			PW			None √						Other						
13	Uses of water in downstream	Irrigation √			Drinking water source √						Fishing						Domestic √						
		Organized water source						Cultivation			Bathing Ghat						Others						

Sl.No	Determinant	Value
1	Temperature, ^0C	31
2	pH	7.56
3	Conductivity, µmhos/cm	230
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	92
7	Chloride, mg/l	12.87
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	92
12	Calcium, as $CaCO_3$ mg/l	56
13	Magnesium as $CaCO_3$, mg/l	36
14	Sulphate, mg/l	1.09
15	Sodium, mg/l	7.52
16	Total Dissolved Solids, mg/l	130
17	Total Fixed Solids, mg/l	83.2
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	0.1281
20	Boron, mg/l	BDL
21	Potassium, mg/l	1.53
22	BOD, mg/l	0.93
23	Fluoride, mg/l	0.392
24	Dissolved Oxygen, mg/l	7.1
25	Nitrate-N, mg/l	0.92
26	Total Coliform, MPN/100 ml	600
27	Fecal Coliform, MPN/100 ml	400
28	Fecal Streptococci MPN/100 ml	60
29	SAR	2.86

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET MAY 2020

Karathur (D/S of NWMP-6)

Station Name		RIVER BHAVANI AT ELACHIVAZHI																
Type of Water body		RIVER																
Completed by		DO, PALAKKAD																
Agency		Kerala State Pollution Control Board																
1	Station Code	1	2	0	8													
2	Date and time of sample taken (DD/MM/YY, HH/MM)	06.05.2020																
		1	2	:	2	5												
3	Weather	Cloudy			Clear √				Windy				Raining					
4	Approximate depth of main stream	< 50 cm √			50 – 100 cm				>100 cm				Flood					
5	Color & Intensity	Clear √			Turbid				Green				Brown					
		1 = Light √			2 = Moderate				3 = High									
6	Odour	None √			Fishy				H2S				Other					
7	Floating Matter	Floating Algae			Floating sludge				Oil & Grease				Water Hyacinth					
8	Visible effluent discharges in proximity	Industrial			Municipal sewage				None √									
9	Human activities around the station	Cattle wading √			Tourism spot				Fishing		Bathing √		Other					
10	Location details	U/s of town or			D/s of town or				Pilgrim center/Bathing				None √					
11	Flow rate	6.2 m^3/s																
12	Major polluting source	Industrial effluent			MSW		PW		None √				Other					
13	Uses of water in downstream	Irrigation √			Drinking water source √						Fishing		Domestic √					
		Organized water source					Cultivation		Bathing Ghat				Others					

Sl.No	Determinant	Value
1	Temperature, ^0C	32
2	pH	7.82
3	Conductivity, µmhos/cm	231
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	88
7	Chloride, mg/l	13.86
8	COD, mg/l	8
9	TKN, mg/l	0.001
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	92
12	Calcium, as $CaCO_3$ mg/l	58
13	Magnesium as $CaCO_3$, mg/l	34
14	Sulphate, mg/l	2.11
15	Sodium, mg/l	8.13
16	Total Dissolved Solids, mg/l	140
17	Total Fixed Solids, mg/l	89.6
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	0.1601
20	Boron, mg/l	BDL
21	Potassium, mg/l	2.23
22	BOD, mg/l	1.06
23	Fluoride, mg/l	0.31
24	Dissolved Oxygen, mg/l	7.1
25	Nitrate-N, mg/l	1.768
26	Total Coliform, MPN/100 ml	700
27	Fecal Coliform, MPN/100 ml	500
28	Fecal Streptococci MPN/100 ml	20
28	SAR	2.97

NATIONAL WATER QUALITY MONITORING PROGRAMME
(NWMP -6 DATA-MAY 2020)

| | | |

Format for Submission of Monthly Progress Report

CHITRAPUZHA RIVER

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

<table>
<tr><th>S. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of progress by state/UT-Compliance status</th></tr>
<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:

Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in situ treatment.</td><td></td><td>(I) Joint inspection (KSPCB,Irrigation Dept and Thrippunithura Municipality) was proposed to conduct before 31st March 2020; Due COVID-19 situation, inspection postponed ; Notices has been issued by the Thrikkakkara Municipality to Hotels and Flat Owners regarding the removal of sewage pipes / drainage pipes to the water bodies / public ponds passing through the municipal area under Kerala Municipality Act 340A.</td></tr>
<tr><td></td><td><u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline</td><td>3 years</td><td><u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (Townwise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>Thrippunithara (8.4 MLD)</td><td>1</td><td>Nil</td><td></td><td></td><td>Thrippunithara Municipality identified land for implementation of STP</td></tr>
</table></td></tr>
</table>

	Status of CETPs Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.		Nil
	Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline		Steps have been taken to conduct a sanitation survey by Thripunithura Municipality
	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river		Attached with this report
	Preventing dumping of waste and scientific waste management		Monitoring on going; Surveillance cameras have been installed in various parts of Tripunithura Municipality to detect people who are dumping garbage into public water.

	including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Procedures are being taken, including fines. Protective fencing is installed on both sides of the river to prevent dumping of waste in public water bodies
	Ground water regulation Adopting good irrigation practices, Protection and management of food plain Zones (FPZ), Rain water harvesting, Maintaining minimum Environmental flow of river		With the permission of Ground Water Dept Estimates prepared by Irrigation Dept, Rejuvenation works of River konothupuzha is on going(irrigation Dept) Estimates prepared by Irrigation Dept for investigation bunds

	Plantation on both sides of the river Setting up biodiversity parks on flood plains by removing encroachment		On going (Thripunithura Municipality and Irrigation Dept)

CHITRAPUZHA

Analysis Report(MAY2020)

Sl. No.	Parameters	Irumpanam
1	Temperature, ^{0}C	28
2	pH	6.9
3	Conductivity, µmhos/cm	289
4	Turbidity, NTU	5.3
5	Total Alkalinity, as CaCO3	30
6	Chloride, mg/l	48
7	COD, mg/l	4
8	TKN, mg/l	0.14
9	Ammoniacal-N, mg/l	0.05
10	Hardness, as CaCO3 mg/l	35
11	Calcium, as CaCO3 mg/l	10
12	Magnesium as CaCO3, mg/l	25
13	Sulphate, mg/l	17.5
14	Sodium, mg/l	28.85
15	Total Dissolved Solids, mg/l	152
16	Total Fixed Solids, mg/l	136
17	Total Suspended Solids, mg/l	35
18	Phosphate, mg/l	0
19	Boron, mg/l	0.07
20	Potassium, mg/l	2.67
21	BOD, mg/l	0.8
22	Fluoride, mg/l	0.43
23	Dissolved Oxygen, mg/l	6.1
24	Nitrate-N, mg/l	0.69
25	Total Coliform, MPN/100 ml	3800
26	Fecal Coliform, MPN/100 ml	2800
27	Fecal Streptococci	170

Analysis Report(APRIL 2020)

Sl. No.	Parameters	Irumpanam
1	Temperature, ^{0}C	29
2	pH	7
3	Conductivity, µmhos/cm	1238
4	Turbidity, NTU	4.1
5	Total Alkalinity, as CaCO3	43
6	Chloride, mg/l	250
7	COD, mg/l	12
8	TKN, mg/l	0.52
9	Ammoniacal-N, mg/l	0
10	Hardness, as CaCO3 mg/l	300
11	Calcium, as CaCO3 mg/l	120
12	Magnesium as CaCO3, mg/l	180
13	Sulphate, mg/l	180
14	Sodium, mg/l	142
15	Total Dissolved Solids, mg/l	850
16	Total Fixed Solids, mg/l	660
17	Total Suspended Solids, mg/l	55
18	Phosphate, mg/l	0.74
19	Boron, mg/l	0.41
20	Potassium, mg/l	15.5
21	BOD, mg/l	3
22	Fluoride, mg/l	0.71
23	Dissolved Oxygen, mg/l	4.7
24	Nitrate-N, mg/l	0.04
25	Total Coliform, MPN/100 ml	1500
26	Fecal Coliform, MPN/100 ml	480
27	Fecal Streptococci	100

Analysis Report(MARCH 2020)

Sl. No.	Parameters	Irumpanam
1	Temperature, ^{0}C	31
2	pH	6.6
3	Conductivity, µmhos/cm	1082
4	Turbidity, NTU	1.2
5	Total Alkalinity, as CaCO3	37
6	Chloride, mg/l	240
7	COD, mg/l	16
8	TKN, mg/l	0.52
9	Ammoniacal-N, mg/l	0.18
10	Hardness, as CaCO3 mg/l	320
11	Calcium, as CaCO3 mg/l	180
12	Magnesium as CaCO3, mg/l	140
13	Sulphate, mg/l	115
14	Sodium, mg/l	141.7
15	Total Dissolved Solids, mg/l	725
16	Total Fixed Solids, mg/l	595
17	Total Suspended Solids, mg/l	12
18	Phosphate, mg/l	19.5
19	Boron, mg/l	0.00
20	Potassium, mg/l	6.01
21	BOD, mg/l	3.5
22	Fluoride, mg/l	2.38
23	Dissolved Oxygen, mg/l	3.3
24	Nitrate-N, mg/l	6.3
25	Total Coliform, MPN/100 ml	6300
26	Fecal Coliform, MPN/100 ml	4000
27	Fecal Streptococci	200

ENVIRONMENTAL ENGINEER

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

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(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline

(III) <u>Status of CETPs</u>
Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along</td><td>June 2020(Tirur)</td><td>Submitted on March 2020

<u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (Townwise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td><u>TIRUR RIVER</u>
Tirur Municipality (91 KLD)

<u>KADALUNDY RIVER</u>
Malappuram Municipality (0.19 MLD)</td><td>2

1</td><td>1 - under construction
1- completed

1 completed</td><td></td><td></td><td>Market-
(45 KLD – Finished)
Bus stand –
(50 KLD – Under Progress)

Kadalundi River Finished -30 KLD</td></tr>
</table></td></tr>
</table>

	with completion timeline, No. of industries and complying status. (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Existing CETP at KINFRA, Kakkanchery Total capacity- 625 KLD Disposal using sanitary landfills, composting operations, MRF, MCF, etc.

	(vii)Ground water regulation		Attached as Annexure- 1
	(viii) Adopting good irrigation practices,		Biomedical waste disposal through IMAGE Plastic waste through Municipality undertaking. Decentrzlized waste processing through Biogas, Compost Plants etc. Permisssion for extraction of ground water by local bodies.
	(ix) Protection and management of food plain Zones (FPZ),		Effluents from Industrial units utilized after treatment FPZ are identified.
	(x) Rain water harvesting,		Enforced through local bodies.
	(xi)Maintaining minimum Environmental flow of river		Dumping of Sw on River banks are controlled. ●River Rejuvenation Measures taken.

	(xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		Initiated. Initiated.

ANNEXURE I

TIRUR RIVER (MAY 2020)

Ref. NO : PCB/MLPM/G/21/01

Date of sampling 04. 05.2020

SL.NO	PARAMETERS	UNIT	Thalakkad	Mangattiri	Koolupalam	Ezhur	Thazhepalam
1	Temperature	°C	22.5	22.5	DRIED	DRIED	22.5
2	PH	.....	5.5	5.1	DRIED	DRIED	6.5
3	Turbidity	NTU	2.6	2	DRIED	DRIED	2.8
4	Electrical Conductivity	µs/cm	29050	27700	DRIED	DRIED	23570
5	DO	mg/l	3.4	2.8	DRIED	DRIED	3.7
6	BOD	mg/l	2.8	2	DRIED	DRIED	2.4
7	Ammoniacal nitrogen	mg/l	ND	ND	DRIED	DRIED	ND
8	Nitrate	mg/l	5.3	2.1	DRIED	DRIED	1.9
9	Chloride	mg/l	9400	12000	DRIED	DRIED	8500
10	Phosphate	mg/l	ND	ND	DRIED	DRIED	ND
11	Total Alakalinity	mg/l	70	19	DRIED	DRIED	15
12	Total Hardness	mg/l	5100	6100	DRIED	DRIED	5000
13	Calcium	mg/l	1640	2004	DRIED	DRIED	1442
14	Magnesium	mg/l	243	267.3	DRIED	DRIED	340
15	Sodium	mg/l	4250	6682	DRIED	DRIED	2176
16	Potassium	mg/l	212	285	DRIED	DRIED	158
17	Boron	mg/l	ND	ND	DRIED	DRIED	ND
18	SAR	mg/l	25.9	37.2	DRIED	DRIED	13.39
19	TC	TC/100	80	80	DRIED	DRIED	40
20	FC	cfu/100	24	44	DRIED	DRIED	36

KADALUNDI RIVER (MAY 2020)

Ref. NO : PCB/MLPM/G/21/01

Date of sampling 01 .05.2020							
SL.NO	PARAMETERS	UNIT	Oravampu	Anakkaya	Hajiyarpall	Manikuth(R	Kooriyad(R5)
1	Temperature	°C	DRIED	22	22	22	22
2	PH	.....	DRIED	7.2	6.5	6.8	7.3
3	Turbidity	NTU	DRIED	3.1	1.2	3.9	2.8
4	Electrical Conductivity	µs/cm	DRIED	99	184	105	400
5	DO	mg/l	DRIED	6.2	6.5	6	6.6
6	BOD	mg/l	DRIED	0.6	4.8	1.3	0.6
7	Ammoniacal nitrogen	mg/l	DRIED	ND	ND	ND	ND
8	Nitrate	mg/l	DRIED	0.28	0.04	0.48	0.32
9	Chloride	mg/l	DRIED	16	32	15	21
10	Phosphate	mg/l	DRIED	ND	ND	ND	ND
11	Total Alakalinity	mg/l	DRIED	29	35	27	31
12	Total Hardness	mg/l	DRIED	47	56	46	45
13	Calcium	mg/l	DRIED	16.03	16.8	10.02	15.63
14	Magnesium	mg/l	DRIED	1.7	3.4	39.9	35.5
15	Sodium	mg/l	DRIED	9.9	14	10.4	15.67
16	Potassium	mg/l	DRIED	2.49	2.54	1.58	2.27
17	Boron	mg/l	DRIED	ND	ND	ND	ND
18	SAR	mg/l	DRIED	0.62	0.81	0.66	1
19	TC	TC/100	DRIED	72	40	64	40
20	FC	cfu/100	DRIED	48	64	56	16

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

KALLAI

<table>
<tr><th>S. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of progress by state/UT-Compliance status</th></tr>
<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:
(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

(II) <u>Status of STPs, I&D and sewerage networks</u>
Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline

(III) <u>Status of CETPs</u></td><td>Primary STP (oil & grease gap with grit chamber)

Not proposed

Implementation of MCF & RRF was achieved by January 2020</td><td>Action plan submitted

Tendering in progress

<u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (Townwise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>Kozhikode corporation (78 MLD)</td><td>3</td><td></td><td></td><td></td><td>The time line of completion of STP at Kothi and Avikkal is 30/3/2022 and that for completion of STP at medical college is 30/3/2021 as</td></tr>
</table>
</td></tr>
</table>

	Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.	Will be implemented	<table><tr><td></td><td></td><td></td><td></td><td></td><td>informed by the Secretary, Kozhikode corporation .</td></tr></table> NIL
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	Will be implemented	Existing centralized waste disposal facility of 70 MT/DAY at njeliyanparamba (windrow composting), proposal of waste to energy plant at njeliyanparamba implementation in progress Water quality monitoring result in month of may polluted river stretch attached as annexure-2
		No specific proposal	Biomedical waste collected through image, plastic waste disposal through recyclers centralized solid waste (windrow composting) facility 70 MT/ DAY at njeliyanparamba
	(v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of	No specific proposal	NIL
		No specific proposal	NIL
		No specific	NIL

	polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ),	proposal	Initiated Initiated NIL

	(x) Rain water harvesting, (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		

KERALA STATE POLLUTION CONTROL BOARD
കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്
കോഴിക്കോട് മേഖലാ ലബോറട്ടറി
REGIONAL LABORATORY, KOZHIKODE
3RD FLOOR, ZAMORIN'S SQUARE, LINK ROAD, KOZHIKODE – 673 002
Telefax: 2360746, 46, 47
www.keralapcb.org

Annexure-2

15/6/2020

ANALYSIS REPORT OF RIVER WATER

Report No.	KROR 3817 / 1 to 7	Date:	15/06/2020
Date of Sample Collection	11/05/2020	Date of receipt of the sample	11/5/2020
		Time	Hours 16:00
Sampled by:	DO ,KKD	Sample ID	KL1, KL2, KL3, KL5, KL6 ,KL7
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 3817/1-6
Sample container	PC 2.5 L	Ref.letter No.	PCB/EKD/DOM/ENPOLLUTED RIVER STRETCHES/2019 dated 13.05.2020
Source:	KALLAI RIVER WATER	Received from:	EE,DO,KKD
		Period of analysis:	11.05.2020-05.06.2020
Specific sampling location:	GIVEN BELOW	No. of samples	7
		Analysed by:	AC/CVR/JS
Sample preservation:	Ice box	Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22nd Ed.)	

sl no	Parameters	unit	Method No.	SAMPLE ID KL 1	KL 2	KL 3	KL 5	KL 6	KL7
1	pH	-	APHA 4500-H+,B	7.7	7.6	7.5	7.6	7.7	7.7
2	CONDUCTIVITY	µmhos /cm	APHA 2510B	24210	25380	26020	26440	29110	13640
3	BOD	mg/L	IS3025 (Part 44)	1.1	1.5	1.5	1.3	1.3	7.5
4	DISSOLVED OXYGEN	mg/L	APHA 4500-O,C	2	1.6	1.3	1.3	1.5	1.4
5	TOTAL COLIFORM,	CFU/100ml	APHA 9222B	1600	3400	6900	5400	7300	8800
6	FECAL COLIFORM	CFU/100ml	APHA 9222D	1200	2600	5200	3100	6100	7800
8	TEMPERATURE	°C	APHA 2550B	28	27	28	27	27	27

Test method variation: None

Remarks: LDL-Lower Detection Limit BDL-Below Detection Limit

KL1-KALLAI RIVER AT PALATHUMKANDI BRIDGE,POKKUNNU,KL2-KALLAI RIVER AT KADUPPINI BRIDGE, KL3- KALLAI RIVER AT MANKAVU BRIDGE, KL5- KALLAI RIVER AT KALLAI BRIDGE, KL6-KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM & KL7-KALLAI RIVER AT UDAYA RESIDENCY, PAYYANAKKAL .

Scientist in charge
15/6/2020
Asst. Scientist

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019) Karuvannur River – May 2020

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment. (II) Status of STPs,		Inspection conduced and no Illegal outlets were identified. Invited tender for FSTP and STP for DPR.

I&D and sewerage networks Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline

Status of CETPs

Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.

Status of Solid

30.05.2021

Details along the Polluted River Stretches

Total Sewage Generation (town wise)	Total number of STPs proposed as per the action plan	Number of STPs constructed / under construction	DPR/ Tender stage	Working / Non working	Details
(650.33KLD rinjalakkuda Municipality)	2(FSTP and STP)	nil	Invited tender for FSTP and STP for DPR.	nil	INVITED TENDER FOR FSTP AND STP FOR DPR.

	Waste Management & Details of Processing Facilities Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and		NA Windrow compost construction started.Aerobic compost unit – Thumbhurmozhi model construction completed.

	scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc (vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ),		Water quality monitoring of polluted river stretch is done periodically, (Report attached.) Health squard is formed to prevent littering of waste in public places. Police department installed CCTV at Karuvannur bridge and Puthenthodu.Neccesary steps are taken for installation of CCTV at Neerolithodu and Painkilipadam areas.

	(x) Rain water harvesting, (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		Not yet started

			Work not started due to high water level

KARUVANUR

11.05.2020

SL. NO	PARAMETE	UNIT	KT	MRK	KND	MDK	THR	KRV
1	PH		6.43	6.42	6.65	7.15	6.75	6.8
2	EC	µ/cm	75.52	82.75	101.5	107.8	63.13	100.5
3	BOD	mg/L	2	1.8	2.2	1.5	2.6	1.5
4	DO	mg/L	7.5	6.9	4	3.7	7.3	5.1
5	COD	mg/L	7.9	7.9	8	12	8	4
6	TC	CFU/100m	200	300	500	400	400	300
7	FC	CFU/100m	100	100	300	100	200	100

KT - KANAKKAN KADAVU, KARUVANNUR

MRK - NEEI EEROLI THODE

KND - KANATHODU, KARUVANNUR

MDK - MUTTIKKAL DAM, KARUVANNUR

THR- THIRUKUZHI, KARUVANNUR

KRV - PAINKILIKAYAL THODU, KARUVANNUR

Format for Submission of Monthly Progress Report KAVVAYI RIVER

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
6.1	Progress Report may be comprised of details along with completion timelines on: Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in situ treatment.		Identified drains already cleaned before commencement of monsoon by harithakarmasena in local bodies

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Status of STPs, I&D and sewerage networks Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline</td><td></td><td><u>Details along the Polluted River Stretches</u>

<table><tr><td>Total Sewage Generation (town wise)</td><td>Total number of STPs proposed as per the action plan</td><td>Number of STPs constructed / under construction</td><td>DPR/ Tender stage</td><td>Working / Non working</td><td>Details</td></tr><tr><td>18.4 MLD (Payyannur)</td><td>NIL</td><td>NIL</td><td>NIL</td><td>NIL</td><td>NIL</td></tr></table></td></tr>
<tr><td></td><td>Status of CETPs Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.</td><td></td><td></td></tr>
<tr><td></td><td>Status of Solid Waste Management &</td><td></td><td></td></tr>
</table>

	Details of Processing Facilities Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline		
	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river		Attached with this report
	Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Door to door collection of non bio degradable waste is doing by local body and measures for disposal of biodegradable waste is practicing. All existing HCFs are disposing their BMW through CBMWTF

	Ground water regulation Adopting good irrigation practices, Protection and management of food plain Zones (FPZ), Rain water harvesting, Maintaining minimum Environmental flow of river		
	Plantation on both sides of the river Setting up biodiversity parks on flood plains by removing encroachment		

Sd/-

ENVIRONMENTAL ENGINEER

Format for Submission of Monthly Progress Report PERUVAMBA

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB	Monthly (preferably before 20th of every month)	
6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as		Identified drains already cleaned before commencement of monsoon by harithakarmasena in local bodies

<table>
<tr><td></td><td>per NGT order on insitu treatment.</td><td></td><td></td></tr>
<tr><td></td><td>(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</td><td>31.03.2022</td><td>
<table>
<tr><th>Total Sewage Generation(town wise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>18.32MLD(Payyannur)</td><td>1</td><td></td><td></td><td></td><td>STP proposed at market place by PayyannurMunicipality Project report is give.n to Technical Sanction at Suchitwa Mission as informed byPayyannur Municipality</td></tr>
</table>
</td></tr>
<tr><td></td><td>(III) <u>Status of CETPs</u> Details of Existing CETP</td><td></td><td></td></tr>
</table>

	and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.		
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		

	(v)Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river		Attached with this report
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Door to door collection of non bio degradable waste is doing by local body and measures for disposal of biodegradable waste is practicing. All existing HCFs are disposing their BMW through CBMWTF

	(vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ), (x) Rain water harvesting, (xi) Maintaining minimum Environmental flow of river		

	(xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		

Sd/-

ENVIRONMENTAL ENGINEER

Format for Submission of Monthly Progress Report RAMAPURAM

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

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Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in situ treatment.</td><td></td><td>Identified drains already cleaned before commencement of monsoon by harithakarmasena in local bodies</td></tr>
<tr><td></td><td><u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline</td><td></td><td>
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<tr><th>Total Sewage Generation(town wise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>9.1MLD(Madayi)</td><td>NIL</td><td>NIL</td><td>NIL</td><td>NIL</td><td>NIL</td></tr>
</table>
</td></tr>
<tr><td></td><td><u>Status of CETPs</u>
Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of</td><td></td><td></td></tr>
</table>

	industries and complying status.		
	Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline		
	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river		Attached with this report
	Preventing dumping of waste and scientific waste management including bio-		Door to door collection of non bio degradable waste is doing by local body and measures for disposal of biodegradable waste is practicing. All existing HCFs are disposing their BMW through CBMWTF

	medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		
	Ground water regulation Adopting good irrigation practices, Protection and management of food plain Zones (FPZ), Rain water harvesting, Maintaining minimum Environmental flow of river		

	Plantation on both sides of the river Setting up biodiversity parks on flood plains by removing encroachment		

Sd/-

ENVIRONMENTAL ENGINEER

Format for Submission of Monthly Progress Report KUPPAM RIVER

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

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<tr><td></td><td><u>Status of STPs, I&D and sewerage networks</u>
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<tr><td>18.4 MLD (Thaliparamba)</td><td>Nil</td><td>Nil</td><td>Nil</td><td>Nil</td><td>Nil</td></tr>
</table></td></tr>
<tr><td></td><td>Status of CETPs
Details of Existing CETP</td><td></td><td></td></tr>
</table>

	and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.		
	Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		
	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river		Attached with this report

	Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Door to door collection of non bio degradable waste is doing by local body and measures for disposal of biodegradable waste is practicing. All existing HCFs are disposing their BMW through CBMWTF
	Ground water regulation Adopting good irrigation practices, Protection and management of food plain Zones (FPZ), Rain water harvesting,		

	Maintaining minimum Environmental flow of river		
	Plantation on both sides of the river Setting up biodiversity parks on flood plains by removing encroachment		

Sd/-

ENVIRONMENTAL ENGINEER

1. Kavvayi River

Table 1 Concentrations of water quality parameters measured from MAY

Sl no	Parameters	Kankol	Karikuzhithodu	Thattarakadavu Bridge	Kuttyol palam
	Date of collection	**20/05/2020**	**20/05/2020**	**20/05/2020**	**15/05/2020**
1	pH	7.29	7.23	7.57	6.06
2	Electrical Conductivity, µs/cm	200	423	57200	93.2
3	BOD, mg/L	1.1	1.5	1.3	0.67
4	Dissolved Oxygen, mg/L	5.5	5.3	4.6	5.47
5	Total coliform, cfu/100ml	300	280	300	450
6	Faecal coliform, cfu/100ml	60	60	100	80
7	Turbidity	1.1	2	1.1	1.7
8	Total Hardness, mg/L	21	19	6300	25
10	Calcium Hardness, mg/L	16	14	5100	11
9	Magnesium Hardness, mg/L	5	5	1200	14
11	Ammonia-NO_3 ,mg/L	0.007416	0.002163	0.045423	0.0125
12	Sulphate, mg/L	2.324673	3.233763	398.08	1.0909
13	Phosphate, mg/L	0.00051	0.00731	0.00272	BDL
14	Fluoride, mg/L	0.001002	0.000501	0.147127	0.25
15	Total Alkalinity, mg/L	18	17	56	15
16	Chloride, mg/L	28	29	19300	30

11/6/20

2. PERUVAMBA

	Parameters	Kacherikadavu	Mathamangalam	Chandapura	Kandakali
	Date of collection	**26/05/2020**	**26/05/2020**	**15/05/2020**	**28/05/2020**
1	pH	7.76	7.19	6.24	7.28
2	Electrical Conductivity, µs/cm	69.2	48.9	152	55300
3	BOD, mg/L	0.27	0.1	0.2	2.8
4	Dissolved Oxygen, mg/L	6.8	7	5.2	4.6
5	Total coliform, cfu/100ml	80	80	270	600
6	Fecal coliform, cfu/100ml	20	20	40	400
7	Turbidity	0.6	0.6	1.3	1.7
8	Total Hardness, mg/L	9	21	32	11000
9	Calcium Hardness, mg/L	6	13	10	6000
10	Magnesium Hardness, mg/L	3	8	22	5000
11	Ammonia-NO_3, mg/L	0.006489	0.002369	0.0121	0.01751
12	Sulphate, mg/L	0.116883	0.636363	2.4935	261.54779
13	Phosphate, mg/L	0.00051	0.00102	BDL	0.02006
14	Fluoride, mg/L	BDL	BDL	0.36	0.187708
15	Total Alkalinity, mg/L	11	16	11	80
16	Chloride, mg/L	49	48	57	21300

3. RAMAPURAM

	Parameters	Kappugal	Athiyadam	Ramapuram	Vayalapra
	Date of collection	**25/05/2020**	**25/05/2020**	**15/05/2020**	**25/05/2020**
1	pH			6.84	8.03
2	Electrical Conductivity, µs/cm			47300	56000
3	BOD, mg/L			1.8	2.4
4	Dissolved Oxygen, mg/L			4.8	6.8
5	Total coliform, cfu/100ml			210	280
6	Fecal coliform, cfu/100ml			40	80
7	Turbidity			2.4	0.9
9	Total Hardness, mg/L			6600	7900
8	Calcium Hardness, mg/L			2100	4200
10	Magnesium Hardness, mg/L			4500	3700
11	Ammonia-NO_3, mg/L			0.0542	0.54693
12	Sulphate, mg/L			391.26	350.4541
13	Phosphate, mg/L			BDL	0.119
14	Fluoride, mg/L			0.24	0.152471
15	Total Alkalinity, mg/L			76	69
16	Chloride, mg/L			17600	15500

Remarks: No water is available at Kappugal and Athiyadam Stations of Ramapuram area during the month of May-2020.

11.6.2020

4. Kuppam

	Parameters	Velichankeel	Mangalasserry	Kuppam bridge	Variankottam	Vellavu	Kuttyerikkadavu
	Date of collection	**29/05/2020**	**29/05/2020**	**12/05/2020**	**29/05/2020**	**29/05/2020**	**29/05/2020**
1	pH	8.28	7.31	7.23	7.24	7.24	7.17
2	Electrical Conductivity, µs/cm	26300	44000	46100	30300	29100	34000
3	BOD, mg/L	1.1	2.1	0.66	2.3	0.2	2.4
4	Dissolved Oxygen, mg/L	3.8	5.4	4.53	6.2	3.3	6.6
5	Total coliform, cfu/100ml	280	260	560	240	200	180
6	Faecal coliform , cfu/100ml	80	60	180	80	60	60
7	Turbidity	1.5	1.1	1.1	1.5	1.2	0.9
8	Total Hardness, mg/L	7900	6200	5900	4600	5800	7100
10	Calcium Hardness, mg/L	6300	5400	1500	3300	4100	3600
9	Magnesium Hardness, mg/L	1600	800	4400	1300	1700	3500
11	Ammonia-NO_3, mg/L	0.26059	0.033166	0.0142	0.033166	0.034093	0.024514
12	Sulphate, mg/L	300.1555	389.5406	370.19	379.2723	311.363325	286.2897
13	Phosphate, mg/L	0.0131	0.0692	BDL	0.1023	0.1011	0.0321
14	Fluoride, mg/L	0.021877	0.115564	0.12	0.170841	0.168837	0.053607
15	Total Alkalinity, mg/L	49	43	34	64	43	26
16	Chloride, mg/L	20000	21200	15500	20000	18200	16200

1.Kavvayi

Sl.no	Drain	Pollution load BOD May
1	Kotti thodu	No water
2	School ground thodu	No water
3	Kalikadapuram thodu	No water
4	Koorikadavu	No water
5	Ulliyathu kadavu	4
6	Kallatu kadavu	1.2
7	Muttathu kadavu	1.47
8	Vadipram thodu	2

2.Peruvamba

Sl.no	Drain	Pollution load BOD May
1	Naranga thodu	No water
2	Perumba thodu	14.7
3	Valliohmthodu	4
4	Panapuzha thodu	3.8
5	Poomkottu Chal	0.44
6	Manjangottu Thode	No water
7	Kannelamthodu	No water
8	Appithodu	No water
9	Mavullapoyil thodu	4.5
10	Kollali thodu	No water
11	Kannada thodu	5.1

12	Koyakkotu thodu Thokadu	1.8
13	Cherottuvayal thodu	1
14	Kayyil arakulam thodu Kunjimagalam puzha	4.4
15	Tattanvayal thodu	No water

3.Ramapuram thodu

Sl.no	Drain	Pollution load BOD May
1	Kapugal thodu	No water
2	Chembali kundu	7.8-
3	Kulapram kundan thodu Kavilavalapu thodu	No water
4	Aduthila thodu	No water
5	Ottayi thodu	No water
6	Moolakadavu	4.8

4.Kuppam

Sl.no	Drain	Pollution load BOD May
1	Karuvanchal	No water
	Karthikapuram	4.8
	Near Udayagiri	1.6

	Bridge	
	Mukkada Thodu	No water
	Moonamkunnu Thodu	2.5
	Kuttaparamba-Neduvodu Thodu	No water
	D/S of Alakode Hospital	3.8
	Pathayachira	No water
	Near the houses on bank of main River (@ Pariyaram GP)	2.8
	Near House Boat @ Pariyaram GP	No water
	Kavinmunabu	No water
	Manja Thodu	5.6
	Sulthan Thodu	6.4
	Cheru thodu	No water

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

Kuttiyadi River – May 2020

<table>
<tr><th>S. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of progress by state/UT-Compliance status</th></tr>
<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:
I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

(II) <u>Status of STPs, I&D and sewerage networks</u> Details of</td><td>Primary STP (oil & grease gap with grit chamber)

Not proposed</td><td>Progressing

(II) <u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (Townwise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>1.Kuttiyadi
2. Perambra
3.Thottilppalam
4. Changaroth
.8MLD</td><td>Nil</td><td>Nil</td><td>Nil</td><td>Nil</td><td>Septic tank soakpit system in place</td></tr>
</table>
</td></tr>
</table>

	Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	Implementation of MCF & RRF was achieved by January 2020	
	II) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.	Will be implemented	NIL
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,G	Will be implemented	Implemented

	ap Analysis, Proposed along with completion timeline	No specific proposal	Water quality monitoring of polluted river stretch
	(v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	No specific proposal No specific proposal	Water quality monitoring result in month of may polluted river stretch attached as annexure- 1 NIL
	vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated	No specific proposal	

	from hotels, Ashrams, etc.		
	(vii)Ground water regulation		NIL
	(viii) Adopting good irrigation practices,		NIL
	ix) Protection and management of food plain Zones (FPZ),		Initiated
	(x) Rain water harvesting,		Initiated
	(xi)Maintaining minimum Environmental flow of river		NIL
	(xii) Plantation on both sides of the river Setting up biodiversity parks on flood plains by		

	removing encroachment		

KERALA STATE POLLUTION CONTROL BOARD
കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്
കോഴിക്കോട് റീജ്യണൽ ലബോറട്ടറി
REGIONAL LABORATORY, KOZHIKODE
3RD FLOOR, ZAMORIN'S SQUARE, LINK ROAD, KOZHIKODE – 673 002
Telefax: 2300745, 46, 47
www.keralapcb.org

Annexure-1

Office of The Environmental Engineer
CALICUT
Date 15/6/20
Kerala State Pollution C

ANALYSIS REPORT OF RIVER WATER

Report No.	K	R	O	R	3	8	1	8	/	1 to 8	Date:	1	5	0	6	2	0	2	0
Date of Sample Collection	1	4	0	5	2	0	2	0			Date of receipt of the sample	1	4	0	5	2	0	2	0
											Time	Hours:	1	6	:	0	0		
Sampled by:	DO ,KKD										Sample ID	DS1,DS2,DS3,DS4,DS5,DS6.DS7,DS8							
Sampling Method	APHA1060B,a										Sample Lab Code	KROS 3818/1-8							
Sample container	PC 2.5 L										Ref.letter No.	PCB/KKD/DO(GEN)/POLLUTED RIVER STRETCHES/2019 dated 14.05.2020							
Source:	KUTTYADI RIVER WATER										Received from:	EE,DO,KKD							
											Period of analysis:	14.05.2020-05.06.2020							
Specific sampling location:	GIVEN BELOW										No. of samples	8							
											Analysed by:	AC/CVR/JS							
Sample preservation:	Ice box										Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22nd Ed.)								

sl no	Parameters	unit	Method No.	SAMPLE ID							
				DS1	DS2	DS3	DS4	DS5	DS6	DS7	DS8
1	pH		APHA 4500-H+,B	6.3	5.9	6.2	6	6.3	6.7	6.3	6.9
2	CONDUCTIVITY	µmhos/cm	APHA 2510B	53.9	35.7	37.1	25.3	24.5	681.3	48.9	70.8
3	BOD	mg/L	IS3025 (Part-44)	NIL	NIL	0.4	1	0.26	1.13	NIL	0.73
4	DISSOLVED OXYGEN	mg/L	APHA 4500-O,C	8	7.4	8	8	8	6.9	7.1	6.2
5	TOTAL COLIFORM,	CFU/100ml	APHA 9222B	4500	5100	7200	2500	170	4200	6900	7800
6	FECAL COLIFORM	CFU/100ml	APHA 9222D	3100	2900	5600	1900	100	3300	4800	5900
7	TEMPERATURE	°C	APHA 2550B	28	26	26	27	29	27	26	27

Test method variation: None

Remarks: LDL-Lower Detection Limit BDL-Below Detection Limit

DS1-KUTTYADI RIVER NEAR MARUTHOMKARA-DRAINAGE MOUTH, DS2-KUTTYADI RIVER AT PUZHAYORAM HOTEL, DS3-KUTTYADI RIVER NEAR PARK RESIDENCY HOTEL, DS4-KUTTYADI RIVER AT JANAKI FOREST, DS5-KUTTYADI RIVER NEAR PERUVANNAMUZHI DAM,DS6-KUTTYADI RIVER AT GULIKAPUZHA DRAIN MOUTH,DS7-KUTTYADI RIVER AT KADIYANGAD RIVER & DS8-KUTTYADI RIVER BEHIND KSRTCDEPOT, THOTTILPALAM

Scientist in charge
15/6/2020
Asst. scientist

National Mission for Clean Ganga
Format for Submission of Monthly Progress Report by States/ UTs
(Hon'ble NGT in the matter of OZ No. 673/2018 dated 06.12.2019)

UPPALA AND MOGRAL

<table>
<tr><th>S. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Present Status</th></tr>
<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:

Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

<u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline

<u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.

<u>Status of Solid Waste</u></td><td>.</td><td>No external polluting source found

Mostly rural area.No separate STP provided.Mostly scattered houses, so individual septic tank soak pit system provided

<u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation(town wise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>No town</td><td>NIL</td><td>NIL</td><td>NIL</td><td>NIL (individual septic tank soak pit system provided)</td><td>NIL</td></tr>
</table>
NO CETP</td></tr>
</table>

	Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		**Mogral** - MCF provided.Waste being collected through Haritha Karma Sena. **Mangalpady** –MCF located at Kubanur. Waste from road sides and polluted river banks are being removed through a pvt.company named Green Space by using panchayath vehicle.
	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Attached the analysis report of water quality from February – May 2020. The drain joining the Mogral river was found Dry from February – May 2020.
	Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Hotel waste are disposed through pig farms.
	Ground water regulation Adopting good irrigation practices, Protection and management of food plain Zones		

	(FPZ), Rain water harvesting, (xi)Maintaining minimum Environmental flow of river Plantation on both sides of the river Setting up biodiversity parks on flood plains by removing encroachment		The water level in both Mogral and Uppala river decreases during summer.

MOGRAL RIVER - MOGRAL BRIDGE (Existing NWMP Station)						
Sampling Point			Mogral Bridge			
NWMP Station Code			2304			
Latitude			12˚33'36.5"N			
Longitude			74˚57'21.0"E			
Date of Sampling			29.02.2020 FEBRUARY	17.03.2020 MARCH	*11.05.2020 MAY	26.05.2020 MAY
Nature and flow of the river			Less flow, sand mining activity found	Less flow, sand mining activity found	Low water level, less flow	Water level rised due to heavy rain
Sl.No	Parameters	Unit	Mogral Bridge			
1	Temperature	˚C	28	28	28	29
2	pH	-	7.3	7.1	6.97	7.48
3	Conductivity	µmhos/cm	54600	55615	60900	56900
4	Turbidity	NTU	2.9	3.1	3.4	1.7
5	BOD	mg/l	2.53	2.5	1.93	2.4
6	Dissolved Oxygen	mg/l	4.93	5.1	4.96	5.13
7	Total Coliforms	cfu/100ml	360	370	90	110
8	Feacal Coliforms	cfu/100ml	96	76	48	56
9	Feacal Streptococcus	cfu/100ml	40	40	20	10
10	Chlorides	mg/l	17850	18350	20800	20600
11	Total Alkalinity	mg/l	133	138	113	113
12	Total Hardness	mg/l	6700	6950	7500	7100
13	Calcium Hardness	mg/l	5800	5400	6300	6100
14	Magnesium Hardness	mg/l	900	1550	1200	1000
15	Calcium	mg/l	2320	2160	2520	2440
16	Magnesium	mg/l	218.7	376.65	291.6	243
17	Total Dissolved Solids	mg/l	35200	35350	34855	34610
18	Sodium	mg/l	9250	9489	10755	10700
19	Potassium	mg/l	300	410	385	391

MOGRAL RIVER - PUZHAKKARA (Proposed NWMP Station)						
Sampling Point			Puzhakkara			
Distance from existing NWMP Station			3.25 km			
Latitude			12˚33'58.1"N			
Longitude			74˚58'43.7"E			
Date of Sampling			29.02.2020 FEBRUARY	17.03.2020 MARCH	*11.05.2020 MAY	26.05.2020 MAY
Nature and flow of the river			Low water level, less flow	Low water level, less flow	Water level was very low and stagnant nature	Water level rised with comparatively more flow
Sl.No	Parameters	Unit	Puzhakkara			
1	Temperature	˚C	28	28	29	29
2	pH	-	7.3	7.4	7.5	7.95
3	Conductivity	µmhos/cm	13750	13955	14220	14400
4	Turbidity	NTU	1.4	1.5	1.6	1.8
5	BOD	mg/l	2.7	2.6	1.67	1.46
6	Dissolved Oxygen	mg/l	6.73	6.71	6	6.33
7	Total Coliforms	cfu/100ml	140	160	140	100
8	Feacal Coliforms	cfu/100ml	48	52	44	36
9	Feacal Streptococcus	cfu/100ml	30	20	10	10
10	Chlorides	mg/l	3855	4450	4500	4510
11	Total Alkalinity	mg/l	55	71	75	75
12	Total Hardness	mg/l	1400	1550	1785	2100
13	Calcium Hardness	mg/l	1140	1210	1410	1550
14	Magnesium Hardness	mg/l	260	340	375	550
15	Calcium	mg/l	456	484	564	620
16	Magnesium	mg/l	63.18	82.62	91.125	133.65
17	Total Dissolved Solids	mg/l	8500	8956	8975	9100
18	Sodium	mg/l	2000	2300	2335	2355
19	Potassium	mg/l	458	460	448	455

Remarks:

*** Due to lockdown, sampling could not be conducted in the month of April 2020. Thus as soon as the office restarted, sampling was immediately conducted on 11.05.2020 (before lifting of lockdown).**

Note: The drain joining the Mogral river was found dry from February to May 2020.

UPPALA RIVER - UPPALA BRIDGE (Existing NWMP Station)						
Sampling Point			Uppala Bridge			
NWMP Station Code			2306			
Latitude			12˚41'41.7"N			
Longitude			74˚54'16.9"E			
Date of Sampling			29.02.2020 FEBRUARY	17.03.2020 MARCH	* 11.05.2020 MAY	26.05.2020 MAY
Nature and flow of the river			Less flow	Less flow	Low water level, less flow	Water level rised due to heavy rain
Sl.No	Parameters	Unit	Uppala Bridge			
1	Temperature	˚ C	28	29	29	29
2	pH	-	7.12	6.8	7.76	7.36
3	Conductivity	µmhos/cm	54300	55500	58200	52300
4	Turbidity	NTU	2.8	2.9	1.9	1
5	BOD	mg/l	2.73	2.6	2.63	1.86
6	Dissolved Oxygen	mg/l	6.06	6.1	5.93	5.46
7	Total Coliforms	cfu/100ml	120	100	260	280
8	Feacal Coliforms	cfu/100ml	64	68	52	64
9	Feacal Streptococcus	cfu/100ml	30	30	30	20
10	Chlorides	mg/l	19500	19505	22400	19100
11	Total Alkalinity	mg/l	96	99	92	88
12	Total Hardness	mg/l	6300	6350	7300	6500
13	Calcium Hardness	mg/l	5700	5050	6200	5500
14	Magnesium Hardness	mg/l	600	1300	1100	1000
15	Calcium	mg/l	2280	2020	2480	2200
16	Magnesium	mg/l	145.8	315.9	267.3	243
17	Total Dissolved Solids	mg/l	34500	34600	37556	33210
18	Sodium	mg/l	10700	10220	11600	9855
19	Potassium	mg/l	405	395	410	385

UPPALA RIVER - UPPALA RIVER NEAR BHAGAVATHI TEMPLE (Bhagavathi Gate) (Proposed NWMP Station)						
Sampling Point			Uppala River Near Bhagavathi Temple (Bhagavathi Gate)			
Distance from existing NWMP Station			878.66 m			
Latitude			12˚41'20.1"N			
Longitude			74˚54'34.0"E			
Date of Sampling			29.02.2020 FEBRUARY	17.03.2020 MARCH	* 11.05.2020 MAY	26.05.2020 MAY
Nature and flow of the river			Low water level, less flow	Low water level, less flow	Water level was very low and stagnant nature	Water level rised with less flow
Sl.No	Parameters	Unit	Uppala River Near Bhagavathi Temple			
1	Temperature	˚ C	28	28	29	29
2	pH	-	7.2	7.3	7.4	7.32
3	Conductivity	µmhos/cm	12090	12450	13175	13100
4	Turbidity	NTU	0.8	1	1.1	0.9
5	BOD	mg/l	1.53	1.73	1.6	0.53
6	Dissolved Oxygen	mg/l	7.6	6.73	6.3	6.73
7	Total Coliforms	cfu/100ml	80	100	180	150
8	Feacal Coliforms	cfu/100ml	36	40	52	48
9	Feacal Streptococcus	cfu/100ml	30	20	20	10
10	Chlorides	mg/l	3750	3800	4180	3885
11	Total Alkalinity	mg/l	28	30	50	35
12	Total Hardness	mg/l	1230	1300	1500	1380
13	Calcium Hardness	mg/l	1030	1100	1210	1110
14	Magnesium Hardness	mg/l	200	200	290	270
15	Calcium	mg/l	412	440	484	444
16	Magnesium	mg/l	48.6	48.6	70.47	65.61
17	Total Dissolved Solids	mg/l	7500	7550	8010	7800
18	Sodium	mg/l	1975	2000	2050	2005
19	Potassium	mg/l	386	390	430	400

Remarks:

*** Due to lockdown, sampling could not be conducted in the month of April 2020. Thus as soon as the office restarted, sampling was immediately conducted on 11.05.2020 (before lifting of lockdown).**

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

Periyarriver – Aluva – Eloor-Kalamassery

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
6.1	Progress Report may be comprised of details along with completion timelines on: I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.	2020	(I) i)KadungallurPanchayath - The action taken report is not submitted by the panchayath ii)ChoornikkaraPanchayath - Only residential apartments and houses located near the riverbank from which no discharge is found. But, there is discharges to drains in other area of panchayath. Strict measures taken against them. iii)Aluva municipality informed that they had inspected 60 institutions which includes 30 hotels and 9 flats. Out of which 19 hotel discharging the sewage to drainage. Hence notice is issued to the violators and license will be issued only after complying the directions. iv)Inspection carried out by PCB and Muncipality .Notice issued to defaulters and sewage is disposed in to soak pit and septic tank and directed by PCB.Periodic monitoring is done to ensure the same in Eloor municipality. v)Identification of the establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain is under process in Kalamassery municipality. vi)Meeting convened with irrigation department on 06.03.2020 to discuss about the progress of implementation of action plan. The irrigation dept informed the drains are being identified and cleaning is in progress. Many letters informing to submit the

progress report were being issued to irrigation department. But, not received any reply from the department. Remainder was issued on 21.05.2020, but not received any reply till date.

vii)Periodical inspection in the flats, hotels, shops located along the river is ongoing in Cochin Corporation

(II) Details along the Polluted River Stretches

Total Sewage Generation (Townwise)	Total number of STPs proposed as per the action plan	Number of STPs constructed / under construction	DPR/ Tender stage	Working / Non working	Details
1. Alangadu (5.40 MLD) 2. Eloor (3.547 MLD) 3.Kadungallur (4.73 MLD) 4.Kalamassery (8.4 MLD)	3				• DPR for STP at AdwaithaAshramam has been submitted to Suchithwa mission for an amount of 4.9 lakhs on 19.02.2020 and the project is kept for technical sanction. (Time line- Dec-2019) • STP at Aluva market was constructed by Kerala Coastal

(II) Status of STPs, I&D and sewerage networks Details of Existing Infrastructure,Gap Analysis, Proposed along with

31.03.2021

	completion timeline	2021 Dec 2019						Area Development Corporation which was not handed over to Municip ality fully. Municipality requested the KSCWACC to make it functional, was not done. Therefore, the Municipality decided to take up the STP project in the FY 2020-2021(Timeline-2021) • STP in Kalamaserry market – Proce dures for conducting soil test for the construction of treatment plant is on going. (Time line- Dec-2019)

	(III) Status of CETPs Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.	2021	(III)No existing CETP. Common Effluent Treatment Plant at Edayar Industrial Estate - PCB had given a detailed report to ndustries Department for intallation of CETP. The project is reported to be under progress.
	(iv) Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	Mar - 2021	(iv) 1.Construction of retaining wall with HDPE liner at Kalamassery dumping yard in order to prevent the leachate discharge from the yard to ThoombungalThodu - Applied for NOC from Railway for construction of retaining wall. 2.Identification of site is in progress forinstallation of modern abattoirs including poultry and meat rendering plants in Kalamassery municipality. 3.Installation of modern abattoirs in Aluvamuncipality-structural works for slaughter house is completed and send a letter dated 09.03.2017 and 30.06.2017 to Suchitwa Mission for the technical advice and instruction. Also furnished necessary details to the Suchitwa Mission. Once necessary technical instructions receive from Suchitwa Mission, then only the project can be completed, obtaining all necessary statutory clearances.

	(v)Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		(v)Daily sampling from 4 locations and sample taken from an additional points twice in a month and analysing all parameters of polluted stretches. Monthly river sampling from 12 discharge points from industries. Identified drains in the stretch.
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including	2020	vi) Installation of cameras at the waste dumping spots – by local bodies are progressing. In Eloor muncipality fund of 8 lakhs is allotted through the annual plan for the year 2019-20 and contract for installation of cameras is given to keltron. Kalamassery municipality reported Health squad is conducting night surveillance.NAD wet lands can be conducted only with the help of NAD even though conducting surveillance for finding the unauthorized dumping of sewage at NAD wet lands Klaamssery Biomedical wastes through CBWTDF.

	waste generated from hotels, Ashrams, etc.		E-waste through authorised collection agents. Plastic shredding unit is operating , establishment of second unit is under discussion in Kalamassery municipality.
	(vii)Ground water regulation (viii) Adopting good irrigation practices, ix)Protection and management of food plain Zones (FPZ), (x) Rain water harvesting, (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both	Long term measure	Meeting convened with irrigation department on 06.03.2020 to discuss about the progress of implementation of action plan and also to take action for maintaining minimum flow in river. The irrigation dept informed the drains are being identified and cleaning is in progress. Many letters informing to submit the progress report were being issued to irrigation department. But, not received any reply from the department. Remainder was issued on 21.05.2020, but not received any reply till date. Several directions issued by Board to maintain minimum flow, no reply received from the department.

	sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		

KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - MAY 2020
Sampling point: VETTUKADAVU

Sl. No	Parameter	Unit	05/05/2020	25/05/2020
1	Temp	°c	33.6	32.4
2	pH		7	8.2
3	Conductivity	µS	11560	11560
4	Turbidity	NTU	1	2
5	Chlorides	mg/l	3200	3200
6	Hardness	"	2700	2800
7	D.O.	"	5.4	6.6
8	Calcium	"	3200	680
9	Magnesium	"	267.3	267.3
10	Ammoniacal Ntrogen	"	0.782	0.195
11	Phosphate	"	0.139	0.049
12	Total alkalinity	"	15	20
13	BOD	"	2.5	1.7
14	FS	cfu/100ml	NIL	
15	FC	"	500	
16	Nitrate	mg/l	0.693	0.751

Microbiological Incubator Complaint on 21.05.2020

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KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - MAY 2020
Sampling point: PATHALAM

Sl. No	Parameter	Unit	05.05.2020	25.05.2020
1	Temp	°c	33.7	32.4
2	pH		6.8	7.1
3	Conductivity	µS	495	193
4	Turbidity	NTU	1	1
5	Chlorides	mg/l	140	50
6	Hardness	"	100	43
7	D.O.	"	5.6	3.8
8	Calcium	"	140	10.4
9	Magnesium	"	11.66	4.131
10	Ammoniacal Ntrogen	"	0.065	0.124
11	Phosphate	"	BDL	BDL
12	Total alkalinity	"	10	10
13	BOD	"	2.1	3
14	FS	cfu/100ml	NIL	
15	FC	"	800	
16	Nitrate	mg/l	0.028	0.316

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KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - MAY 2020
Sampling point: PUTHALAM

Sl. No	Parameter	Unit	05.05.2020	25.05.2020
1	Temp	°c	33.7	32.3
2	pH		6.5	6.4
3	Conductivity	µS	330	242
4	Turbidity	NTU	1	2
5	Chlorides	mg/l	89	62
6	Hardness	"	78	54
7	D.O.	"	3.7	0.1
8	Calcium	"	89	12.4
9	Magnesium	"	7.533	5.589
10	Ammoniacal Ntrogen	"	0.065	0.328
11	Phosphate	"	BDL	BDL
12	Total alkalinity	"	10	10
13	BOD	"	3	5.8
14	FS	cfu/100ml	NIL	
15	FC	"	900	
16	Nitrate	mg/l	0.163	0.498

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KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - MAY 2020
Sampling point: MANJUMMAL BUND

SI.NO	Parameter	Unit	05.05.2020	25.05.2020
1	Temp	°c	33.6	32.2
2	pH		6.7	6.6
3	Conductivity	µs	318	273
4	Turbidity	NTU	2	2
5	Chlorides	mg/l	85	72
6	Hardness	"	76	63
7	D.O.	"	0.8	0.6
8	Calcium	"	85	14.8
9	Magnesium	"	7.047	6.318
10	Ammoniacal Ntrogen	"	0.304	0.323
11	Phosphate	"	BDL	BDL
12	Total alkalinity	"	10	15
13	BOD	"	5.1	5.3
14	FS	cfu/100ml	NIL	
15	FC	"	400	
16	Nitrate	mg/l	0.245	0.637

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National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

Puzhakkal River– May 2020

<table>
<tr><th>S. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of progress by state/UT-Compliance status</th></tr>
<tr><td>6.1</td><td>Progress Report may be comprised of details along with completion timelines on:
(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.

(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed</td><td>30.05.2021</td><td>Illegal outlets 91530 houses and 122 establishments)were identified and notice issued.
<u>Details along the Polluted River Stretches</u>
<table>
<tr><th>Total Sewage Generation (town wise)</th><th>Total number of STPs proposed as per the action plan</th><th>Number of STPs constructed / under construction</th><th>DPR/ Tender stage</th><th>Working / Non working</th><th>Details</th></tr>
<tr><td>Thrissur (25 MLD)</td><td>3(2.96 MLD)</td><td>Nil</td><td>-</td><td>Nil</td><td>2.5mld project tendered under amrut project</td></tr>
</table>
</td></tr>
</table>

	along with completion timeline		Work tendered and selection memo issued. Agrement not executed.Reminder letter sent
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.		70 percentage of industries installed ETPs.Notice were issued to remaining establishments
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion		Water quality monitoring of polluted river stretch is done periodically,

	timeline (v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		(Report attached.) .

	(vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ), (x) Rain water harvesting,		Riverside protection work for a stretch of 500m has been completed.Construction of second stretch of 450m is ongoing.

	(xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		

PUZHAKKAL ANALYSIS REPORT

12.05.2020

SL. NO	PARAMETE	UNIT	SBA	KTH	PTU	MP
1	PH		6.41	6.49	7.56	6.24
2	EC	µ/cm	170.1	430.2	430.3	121.3
3	BOD	mg/L	2.1	2.3	2.1	1.1
4	DO	mg/L	4.7	4	8	3.5
5	COD	mg/L	8	15.9	8	8
6	TC	CFU/100m	300	800	300	200
7	FC	CFU/100m	200	500	200	100

SBA - NEAR SOBHA CITY, KIZHAKKUMMURI ROAD , PUZHAKKAL
KTH - KURINJAKKAL THODU, PUZHAKKAL
PTU - PANCHIKKAL THODU, PUZHAKKAL
MP - MUPPUZHA, PUZHAKAL