

**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 KARAMANA, THIRUVANANTHAPURAM**

**ACTION PLAN FOR RIVER KARAMANA, KERALA - January 2024**

**1. Short Term Plan**

**Maintenance and de-bottle necking of existing sewerage network**

No.	Activity	Implementing agency	Time line	Progress in the month of Nov 2023	Progress in the month of Dec 2023	Progress in the month of Jan 2024	% works completed	Details of works remaining
2.1.1	Pumping lines from the terminal pumping stations namely Kuriyathi, Pattoor, Kannammoola and Enchakkal pumping stations are to be connected directly to STP at Muttathara	Kerala Water Authority	May 2019	100%	100%	100%	100%	100% work of Kuriathy completed. Pumping main of Pattoor, Kannammoola and Enchakkal included in long term works
2.1.2	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pump house by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump Sets	Kerala Water Authority	May 2020	100%	100%	100%	100%	a. Completed
				100%	100%	100%	100%	a) Providing RCC lining for the existing two wells. Lining for first well completed. 2. Pump sets erected in first well and commissioned. Pumping main also completed. Lining for 2 <sup>nd</sup> well partly completed. b) Diesel generator – to be supplied by contractor. Work terminated at the risk and cost of the contractor. Work completed
2.1.3	5 MLD sewage treatment plant at Medical College	Kerala Water Authority	May 2020	100%	100%	100%	100%	Work Completed on 8/8/21.
2.1.4	Installation of adequate pumps in Mudavanmughal	Kerala Water Authority	March 2020	100%	100%	100%	100%	Pump sets installation at Enchakkal and

	and Enchakkal pumping stations.							Mudavanmughal pump house completed.
2.1.5	DG sets in all lift and pumping stations – Mudavanmughal, Aranoor, Thaliyal, Kuriyathi, Pattoor, Kannammola, Pattom, Murinjapalam and Enchakkal	Kerala Water Authority	May 2020	100%	100%	100%	100%	DG sets installation of seven pumping stations completed. Approval from Electrical inspectorate received. Work completed. Trial run also completed.  For Arannoor and Thaliyal. Erection of diesel generator is already included in the item mentioned 2.1.2. For Enchakkal already exists.
2.1.6	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhancha- nthodu, control storm water entry into sewer to avoid overflow in Thampanoor area. Sewage generated in Rajaji Nagar shall be diverted to main sewer line. Sewage generated in Thoppil area shall be diverted main sewer line	Kerala Water Authority	Dec 2020	100%	100%	100%	100%	Work completed.
2.1.7	Discharge of sewage in Parayilkadavu shall be stopped as there is overflow of sewage reaches in houses having sewerage connection and this may lead to discharge of sewage into River Karamana	Kerala Water Authority	Completed	100%	100%	100%	100 % completed	Rehabilitation work of existing pipe line is included in the work State Plan -2019-20- Rehabilitation of sewer line from Sathya Nagar to Karamana BHS and allied works. Works Completed.
2.1.8	Divert the sewer line from the School compound of Government Karamana High School	Kerala Water Authority	completed	100%	100%	100%	100% completed	Work mentioned is same as the above work which is completed.
2.1.9	Rehabilitation by laying new lines increasing size of undersized main and reconstruction by	Kerala Water Authority	May 2020	0%	.0%	1.5 %	100 %	Works completed – 75No. (Rs. 15.41cr) AMRUT-44,



3.1.1	Extension of sewerage system to Block F to G coastal belt	Kerala Water Authority	Three years					<p>Consultant appointed for preparing Detailed Project Report for uncovered wards of the Thiruvananthapuram Corporation and Rehabilitation of existing system was terminated from the contract due to breach of contract by the firm vide Proceedings No. KWA/SE/SEW/EOI/REPL/338/2020- 2021 of the Superintending Engineer, Sewerage Circle, Kerala Water Authority Thiruvananthapuram dated 31.05.2022 to arrange the balance work at their risk and cost. As directed in the Chief Secretary's meeting dated 21/06/2022 the work of preparation of DPRs has to be done internally. DPR preparation of sewerage system to the uncovered areas of TMC is now being carried out internally by KWA. The total wards were divided into 10 clusters. DPR of Cluster 1 Zone 1 &amp; 2 for Rs 99 Crores and DPR of Cluster 1 Zone 3&amp;4 for Rs.58.50 submitted to the Secretary WRD on 13/04/23.Later as per the direction of Secretary Thiruvananthapuram Corporation the DPR for Cluster 1 was revised including Zone 1&amp;5 for Rs 91.00 Cr and Zone 3&amp;4 for Rs 66.50 Cr and was submitted to the Secretary Thiruvananthapuram Corporation on 28.12.2023 for getting AS under UIDF. Cluster 3, which was originally consisting of Thiruvallam, Poonkulam and Vellar is the second in the priority list and was taken up. This Cluster is then modified by adding more wards and is divided into 3 zones. Zone 1 of cluster 3 is consisting of Puthenpally and Part of Muttathara (until STP) was taken up on priority based on the demand of Thiruvananthapuram Corporation. The DPR for Cluster 3</p>	
3.1.2	Extension of sewerage system to Block H to R								
3.1.3	Extension of sewerage system to newly added areas of corporation viz,								
3.1.4	Providing sewerage system in Block A to E								
3.1.5	Rehabilitation of existing Network and pump house in block A to E								
3.1.6	Procurement of equipment for maintenance of sewerage system.								
3.1.7	Additional STP requirement								

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Zone 1 is prepared consisting of Puthenpally and Muttathara (Part) Wards and submitted to CE on 02.12.22. DPR of Cluster 3 Zone 1, Puthanpalli ward of 1.5 MLD Sewerage network with 5 year O&M and without centage submitted to Corporation under AMRUT 2.0 on 11/1/23. The DPR of Cluster 3 Zone 2 and Zone 3 is prepared and submitted on 21.01.2023. The DPR for cluster 2 is submitted on 27.02.2023 and is verified and kept in Shelf. The DPR for cluster 4 (Thirumala Thrikkannapuram and Punnakkamughal wards ) is prepared and submitted on 30.03.2023. and as suggested for identifying Corporation / Govt lands for the collection well and STP proposed is being done and after obtaining sanction of the puramboke land identified there will be changes in the design network and there by changes will be made in the DPR . DPR for Cluster IX ( priority wards ( Vizhinjam and Harbour area) completed and submitted on 29.09.2023. Land for STP identified and the confirmation of the land nit yet received. DPR of cluster X comprising of wards Shangumugham, Vettucaud, Vallakadavu, Beemapalli (part), Beemapalli East (part), Valiyathura and Kadakampally is under preparation.

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	Total Amount		5000CR					

Signed by  
Santhoshkumar. R. V  
Date: 03-02-2024 17:33:01

**ANALYSIS REPORT OF RIVERS INCLUDED IN THE LIST OF PRS-2022 FOR THE MONTH OF JANUARY 2024**

SL NO	PARAMETER	RIVER-NEYYAR		RIVER- KARAMANA		RIVER- MAMOM	RIVER- AYIROOR	RIVER- VAMANAPURAM
		Amaravila	Aruvippuram	Aruvikkara	Moonnattumukku	Mamom	Ayiroor	Vamanapuram
1	Temperature, 0°C	28	29	28	29	29	28	29
2	Dissolved Oxygen, mg/l	6.4	7.1	8.5	0.4	8	6.4	5.3
3	pH	6.5	6.4	6.2	6.7	6.4	6.2	6.5
4	Conductivity, µmhos/cm	59	75	85	590	125	119	122
5	BOD, mg/l	0.9	1.3	1.9	8.8	0.7	2.1	1.5
6	Nitrate-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL
7	Turbidity, NTU	1.6	2.2	2	7.3	2	1.8	2
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	16	20	20	124	24	20	24
10	Chloride, mg/l	12	16	16	108	20	28	24
11	COD, mg/l	4	4	4	24	4	4	4
12	TKN, mg/l	ND	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO <sub>3</sub> , mg/l	16	20	18	132	28	22	24
15	Calcium as CaCO <sub>3</sub> , mg/l	10	14	10	112	24	12	20
16	Magnesium as CaCO <sub>3</sub> , mg/l	6	6	8	20	4	10	4
17	Sulphate, mg/l	BDL	BDL	BDL	7	BDL	BDL	BDL
18	Calcium (Ca <sup>2+</sup> ), mg/l	4	5.6	4	45	9.6	4.8	8
19	Magnesium (Mg <sup>2+</sup> ), mg/l	1.5	1.5	2	4.9	1	2.4	1
20	Sodium, mg/l	6.5	8.5	8.6	55.9	11.2	14.6	13.1
21	Total Dissolved Solids, mg/l	37	47	48	322	68	67	68
22	Total Fixed Solids, mg/l	25	31	32	109	36	39	39
23	Total Suspended Solids, mg/l	15	19	18	71	16	19	28
24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron, mg/l	0	0	0	0	0	0	0
26	Potassium, mg/l	1.4	1.5	2.1	8.6	1.8	2.8	2.4
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	1400	600	1100	35200	1100	2200	2600
29	Fecal Coliform, MPN/100 ml	1000	300	600	24800	900	1700	1900
30	Fecal Streptococcus, MPN/100 ml	NIL	NIL	NIL	NIL	NIL	NIL	NIL
31	% SODIUM	44.3	45.8	47.5	46	44.6	55.4	51.3
32	SAR	0.7	0.8	0.9	2.1	0.9	1.4	1.2

## 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 PAMBA, PATHANAMTHITTA**

S. No	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		Kadapra Grama Panchayat id totally open defection free. All the sewage generated in the households and other places and inistutions have 100% treatment of sewage-situ
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		Niranam Gramapanchayat is an upper Kuttanad area , so no such dry land suitable for solid waste treatment plant is available . MCF construction completed .13 mini MCF implimentedc in all wards . Necessary instruction are given to all offices and institution to strictly comply with the green protocol and is regularly monitored.
5	Chief Secretaries may set up appropriate monitoring mechanism at state level <ul style="list-style-type: none"><li>• Specifying accountability of nodal authorities not below the Secretary level</li><li>• Chief Secretaries may have an accountable person attached in their office for this purpose</li></ul>		
	<ul style="list-style-type: none"><li>• Monitoring at State level must take place</li></ul>		
6	Progress report may be furnished by the State/UTs to		



	<ul style="list-style-type: none"> <li>• Secretary, Ministry of Jal Shakti</li> <li>• Member Secretary, CPCB</li> </ul>		
6.1	<p>Progress Report may be comprised of details along with completion timelines on:</p> <p>(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.</p> <p>(II) <u>Status of STPs, I&amp;D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(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</p> <p>(iv) <u>Status of Solid Waste Management &amp; Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;</p> <p>(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.</p>		<p>The Panchayat has resolved to identify all polluting sources involved in pollution of river resources and initiation of penal action against them.</p>

	(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		
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**ACTION PLAN FOR RIVER PAMBA, KERALA**

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of <b>December 2023</b>	Progress in the month of <b>January 2024</b>	% works completed	Details of works remaining
A(a)	No industries	-	-	-	-	-	-
A(a)	Monitorng of river water quality	Kerala State Pollution Control Board	Continuing project				
C(ii)	Establishment of de-centralized solid waste treatment facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	31.03.2021	NA	Not submitted report		Inauguration of functioning.

				<p>The Panchayat has resolved to identify all polluting involved in pollution of river resources and initiation of penal against them</p> <p>Not submitted the report</p>	<p>The Panchayat has resolved to identify all polluting involved in pollution of river resources and initiation of penal against them</p> <p>Niranam Gramapanchayat is an upper Kuttanad area , so no such dry land suitable for solid waste treatment plant is available</p>		
C	Resource Recovery Facility	Mannar Panchayat,	31.03.2021	NA	Not submitted the report	NA	Collection and transportation

		Kadapa/ Niranam Panchayath		Resource Recovery Facility due to non-availability of space	Resource Recovery Facility due to non-availability of space		of Non-bio degradable Materials to RRF for processing
				It will be suitable if RRF is established at Block level in Niranam Grama Panchayath	It will be suitable if RRF is established at Block level in Niranam Grama Panchayath		

C	Installing household and community level solid waste management units	Mannar Panchayat	31.03.2021	Not submitted report	Not submitted report	100%	Construction and operation of Aerobic compost unit.
C	Door to door collection and transportation of municipal solid waste	Mannar Panchayat	31.03.2021	Not submitted report	Not submitted report		Continuing
C	Construction of small sewage treatment plant with screening, septic tank and	Kadapra Panchayat	31.12.2020	The Panchayat is considered is sewage treatment plants is currently not need with in Panchayat area around Parumala	The Panchayat is considered is sewage treatment plants is currently not need with in Panchayat area around Parumala		

	disinfection to the storm water drain of Parumala Town						
C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Mannar Town	Mannar Panchayat	31.12.2020	Not submitted report	Not submitted report	0%	Not applicable
C	Construction of compound wall with fencing	Irrigation department	31.03.2021	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government		
C	Removing light jungle and muddies from river courses	Irrigation department	31.03.2021				
C	Electrical-Light arrangements and Surveillance cameras	Irrigation department	31.03.2021				
C	Regulating activities in flood plain zone, protection and management of flood plain zone	Irrigation department	31.03.2021	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government		
	Greenery development Plantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing	Irrigation department	31.03.2021				

	encroachment						
C (b) (ii)	Green Protocol implementation in all Offices institution & Public function	Mannar, Kadapra/ Niranam Panchayat	31.05.2020	100%	Not submitted report		Continuation of Green Protocol.
				Green protocol has implemented in public officers Kadapa Grama Panchayat	Green protocol has implemented in public officers Kadapa Grama Panchayat		
				Necessary instruction are given to all offices and institution to strictly comply with the green protocol and is regularly monitored in Niranam Grama Panchayath	Necessary instruction are given to all offices and institution to strictly comply with the green protocol and is regularly monitored in Niranam Grama Panchayath		
D(a)	Issues relating to E-flow,maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department	30.11.2020	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government		
D (b)	Irrigation practices	Irrigation	30.04.2020				

		department					
E	Awareness programmes for sections of public	Kerala State Pollution Control Board	31.05.2020				
C	Management of municipal, plastic, hazardous, biomedical and electrical waste	LSGD	31.03.2021	Draft by-law of Plastic Waste Handling has been passed by the Grama panchayat Committee on 05/02/2021. Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 12 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 500 kg of plastic materials is kept ready for transportation. Socio-Economic Unit (SEU) has been selected as implementing agency for the construction Two mini MCFs in each ward in all the 18 wards of Mannar GP. For the management of electrical, electronic and hazardous waste, the Grama Panchayat has reached in an agreement with Clean Kerala Company. Collection and handing over of electrical,	NA		continuing. About 12 tonnes of plastic materials handed over to Clean Kerala Company(CKC ) so far. About 500 kg of plastic materials is kept ready for transportation. Socio-Economic Unit



						<p>(SEU) has been selected as implementing agency for the construction Two mini MCFs in each ward in all the 18 wards of Mannar GP. For the management of electrical, electronic and hazardous waste, the Grama Panchayat has reached in an agreement with Clean Kerala Company.</p>	
						<p>Collection and</p>	

				<p>of electrical, electronic and hazardous waste, the Grama Panchayat has reached in an agreement with Clean Kerala Company. Collection and handing over of electrical, electronic and hazardous waste will start. Biomedical waste is being collected from source and transported for processing by IMAGE (IMA Goes + Eco-friendly), an initiative run by IMA (Indian Medical Association)</p>				

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**ACTION BY GROUND WATER DEPARTMENT**

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of <b>December,2023</b>	Progress in the month of <b>January,2024</b>	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	NOC has not been issued to industries for Ground Water extraction during November 2023	NOC has not been issued to industries for Ground Water extraction during December 2023	Demand based	1. As per the GEC estimation all the blocks in the District has been categorized as SAFE. 2. Provisions of GW (control & Regulation) Act 2002 is implementing strictly for regulating extraction of GW resource in the district.
2	B(ii)	Ground water recharging / rain water harvesting	Artificial Recharge Structure Estimate for 11 sites sent to Directorate for Technical Sanction & Estimate for pond renovation at two sites in Pandalam Thekkekkara Grama Panchayath one also under preparation.	Artificial Recharge Structure Estimate for pond renovation at one site (Perumpetty Valiyakulam) Sent for Technical Sanction. One site pond renovation estimate under preparation. Pond renovation at Malayalappuzha Grama Panchayath work tendered and work order issued.	Demand based	All the blocks in the district is categorized as SAFE as per GEC estimation. Kadapra- Niranam Area is not feasible for Ground Water Recharge. However, GW recharging programme is taken up in some pockets in the midland area including Manimala basin. Where seasonal GW level fluctuation is

						noticed.
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	Groundwater sample collection during the month of July 2023 monitoring wells (borewells and open wells) collected and sent to Analytical Lab Thiruvananthapuram for chemical analysis soon.	Groundwater sample collection during the month of July 2023 monitoring wells (borewells and open wells) collected and sent to Analytical Lab Thiruvananthapuram for chemical analysis soon.	Periodical assessment(Regular programme) Chemical analysis result of groundwater samples collected during November-2020 reveals that the gw quality is good and potable.	(i)Maintaining a network of observation wells in various hydro geomorphic units throughout the district from which water level and water samples have been collected periodically and analysed. (ii)generally groundwater quality is good and potable
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices	Borewell/ tube well construction is regulated in the district by insisting permit of local bodies based on the feasibility report  ii) Promoting conjunctive use of groundwater and surface water for irrigation purpose.	Borewell/ tube well construction is regulated in the district by insisting permit of local bodies based on the feasibility report  ii) Promoting conjunctive use of groundwater and surface water for irrigation purpose.	Continuing programme	i)Borewell/tube well construction is regulated in the district by insisting permit of local bodies based on the feasibility report of GWD ii) Promoting conjunctive use of groundwater and surface water for irrigation purpose. iii)Awareness programmes organised to the public to adopt rainwater harvesting measures

# MONTHLY ANALYSIS REPORT OF POLLUTED RIVER STRETCHES JANUARY-2024

## STATION: MANNAR

Sampling Date: 05.01.2024

Sl. No	PARAMETERS	ITTINAYARKKADAVU BRIDGE KUTTAMPEROOR	KOTTAKAL KADAVU BRIDGE KORATTIKADAVU	PARUMALA BRIDGE	MANNAR BRIDGE
1	Temp. (°C)	27	26	28	27
2	pH	7.1	7.0	7.2	7.1
3	Conductivity (µS/cm)	48.76	51.60	51.27	43.76
4	DO (mg/L)	5.9	6.1	6.2	5.7
5	BOD (mg/L)	1.2	0.8	0.8	1.2
6	COD (mg/L)	6.4	3.2	3.2	6.4
7	TDS (mg/L)	76	66	60	52
8	TC (CFU/100ml)	930	470	520	270
9	FC (CFU/100ml)	420	190	220	100
10	FSC(CFU/100ml)	Nil	Nil	Nil	Nil

**WATER QUALITY DATA OF POLLUTED RIVER STRETCHES JANUARY-2024****DISTRICT OFFICE, PATHANAMTHITTA****Date of Sampling: 05.01.2024**

Sl. No	PARAMETERS	THAKZHY	EDATHUA	MANNAR
1	Temperature, °C	26	28	27
2	pH	6.3	6.4	6.3
3	Conductivity, µmhos/cm	53.79	57.81	52.25
4	Turbidity, NTU	1.0	2.1	0.9
5	Phenolphthalein Alkalinity, as CaCO <sub>3</sub>	Nil	Nil	Nil
6	Total Alkalinity, as CaCO <sub>3</sub>	10	10	11
7	Chloride, mg/l	8	11	8
8	COD, mg/l	6.4	6.4	6.4
9	TKN, mg/l	0.3	0.25	0.2
10	Ammoniacal-N, mg/l	BDL	BDL	BDL
11	Hardness, as CaCO <sub>3</sub> mg/l	22	22	24
12	Calcium, as CaCO <sub>3</sub> mg/l	12	12	14
13	Magnesium as CaCO <sub>3</sub> , mg/l	10	10	10
14	Sulphate, mg/l	1.51	1.9	2.14
15	Sodium, mg/l	4.5	5.4	5.6
16	Total Dissolved Solids, mg/l	32	34	36
17	Total Fixed Solids, mg/l	27	29	31
18	Total Suspended Solids, mg/l	22	24	26
19	Phosphate, mg/l	BDL	BDL	BDL
20	Boron, mg/l	BDL	BDL	BDL
21	Potassium, mg/l	0.298	0.197	0.293
22	BOD, mg/l	1.1	1.6	1.2
23	Fluoride, mg/l	0.2	0.2	0.23
24	Dissolved Oxygen, mg/l	6.4	5.9	6.2
25	Nitrate-N, mg/l	0.194	0.194	0.231
26	Total Coliform, CFU/100 ml	390	420	400
27	Faecal Coliform, CFU/100 ml	130	140	130
28	SAR	0.41713	0.500558	0.39049
29	% of sodium	13.39767	14.13106	11.12080
30	Faecal Strepto Coccus,CFU/100 ml	Nil	Nil	Nil

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

**RIVER PERIYAR. ERNAKULAM**

<b>S. No.</b>	<b>Activity to be monitored</b>	<b>Timeline</b>	<b>Submission of progress by State/UT- Compliance status</b>
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level <ul style="list-style-type: none"><li>• Specifying accountability of nodal authorities not below the Secretary level</li><li>• Chief Secretaries may have an accountable person attached in their office for this purpose</li></ul>		
	<ul style="list-style-type: none"><li>• Monitoring at State level must take place</li></ul>		
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none"><li>• Secretary, Ministry of Jal Shakti</li><li>• Member Secretary, CPCB</li></ul>		
6.1	Progress Report may be comprised of details along with		

<p>completion timelines on:</p> <p>(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.</p> <p>(II) <u>Status of STPs, I&amp;D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(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</p> <p>(iv) <u>Status of Solid Waste Management &amp; Details of Processing Facilities</u>  Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;</p> <p>(vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including</p>		
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A(b)	Augmentation and Revamping of existing STP at near Adwaita Ashramam and to increase the capacity of STP so as to treat more sewage generated in the municipality	Aluva Municipality	Dec 2019	The construction work of STP at Advaita Ashram is in progress. The agreement for the civil works has been completed at present and the work will start immediately. Electrical work is reserved for retendering. Investments have been made for mechanical related work. Currently STP is working partially, therefore steps have been taken to speed up the partial functioning. Informed that mechanical and civil related works may completed within 2 months.	The construction work of STP at Advaita Ashram is in progress. The agreement for the civil works has been completed at present and the work will start immediately. Electrical work is reserved for retendering. Investments have been made for mechanical related work. Currently STP is working partially, therefore steps have been taken to speed up the partial functioning. Informed that mechanical and civil related works may completed within 2 months.	The construction work of STP at Advaita Ashram is in progress. The agreement for the civil works has been completed at present and the work will start immediately. Electrical work is reserved for retendering. Investments have been made for mechanical related work. Currently STP is working partially, therefore steps have been taken to speed up the partial functioning. Informed that mechanical and civil related works may completed within 2 months.		
A(b)	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	2021	A proposal was submitted for 0.3MLD ETP. Preparation for DPR will be completed within 2 weeks. Adding waste from fish stall along with abattoir is considered.	A proposal was submitted for 0.3MLD ETP. Preparation for DPR will be completed within 2 weeks. Adding waste from fish stall along with abattoir is considered.	A proposal was submitted for 0.003MLD ETP. 45 lakh preliminary DPR has been prepared. Suchithwa mission has directed to revise and submit the DPR as 7 KLD. It is informed that		

						0.3 MLD in previous minutes is recorded s wrong and 0.003(3 KLD) is the correct value.		
A(b)	Discharge of sewage from township to the River through drain near Periyar Hotel shall be stopped.	Aluva Municipality	2020					
A(b)	Identification of the establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain and to collect fine based on polluter pay principle	Aluva Municipality, KSPCB	2020	74 cases been caught from the 24 inspections conducted on the month of June .A fine of Rs.5,60,000 has been imposed and out of this Rs.35,000 is paid. Further action is taken for the rest. As well as Rs. 1, 46,000 has been levied from the inspections conducted on illegal waste dumping sites and 26,000 rupees has been paid out of this. The remaining follow up action is being taken.	Out of 4 inspections one case was found on the month of December. And they paid the fine that imposed, which is Rs 25000. Also 4 inspections were done regarding the illegal waste dumping and imposed Rs 5000 as fine and paid	8 inspections were conducted on last month. No new cases were found.		
A(a)(iv)	Periodical inspection in the	KSPCB	Perio					

	Industries, Flats, hotels monitoring of STP,ETP		dical					
C(ii)	Installation of modern abattoirs	Aluva Municipality	March 2021	DPR proposal prepared by IRTC (Accredited Agency) for the installation of machines has been submitted for the approval	DPR proposal prepared by IRTC (Accredited Agency) for the installation of machines has been submitted for the approval	DPR proposal prepared by IRTC (Accredited Agency) for the installation of machines has been submitted for the approval		
A(b)	Procurement of sewer cleaning machines and equipment maintenance	Aluva Municipality	March 2020	Drainage cleaning activities are done everyday. JCBs are also used for carry out the waste. The excavated waste is then disposed in Thumboormuzhi compost.	Drainage cleaning activities are done everyday. JCBs are also used for carry out the waste. The excavated waste is then disposed in Thumboormuzhi compost.	Drainage cleaning activities are done everyday. JCBs are also used for carry out the waste. The excavated waste is then disposed in Thumboormuzhi compost.		
E	Installation of cameras at the waste dumping spots	Aluva Municipality	2020	For monitoring the dumping sites, 25 lakh rupee-worth of cameras have been established. But the NVR has been ceased by the police in connection with a criminal case in Aluva .Therefore it is currently not working. Night surveillance squad operation is still ongoing.	25 lakhs rupee-worth cameras have been established for monitoring waste dumping site	For monitoring the dumping sites, 53 cameras costing 25 lakh has been installed.		

A(b)	Construction of retaining wall with HDPE liner at Kalamassery dumping yard in order to prevent the leachate discharge from the yard to Thoombungal Thodu	Kalamassery Municipality	September 2019	NA	NA	NA		
C(ii)	Installation of plastic shredding unit	Kalamassery Municipality	June 2019	NA	NA	NA		
A(a)(iv)	Constitution of squads for night surveillance for finding the unauthorized dumping of sewage at NAD wet lands Kalamassery	Kalamassery Municipality, Police department	2020	NAD not provided <b>₹ 1939440</b>	NAD not provided CCTV.Night squad fine Rs. <b>1939440</b>	NAD not provided CCTV. Night squad fine Rs. <b>1970940</b>		
A(b)	Installation of common STP for Kalamassery Municipality and ETP at Municipal Market	Kalamassery Municipality	December 2019	75 cents land identified at North Kalamassery for sewage and septage treatment plant	75 cents land identified at North Kalamassery for sewage and septage treatment plant	75 cents land identified at North Kalamassery for sewage and septage treatment plant		
A(a)(iv)	Monitoring and surveillance of industries in Kalamassery Industrial Estate in order to prevent unauthorized discharges to Muttar River	KSPCB	2019					
C(ii)	Installation of modern abattoirs including poultry and meat rendering plants.	Kalamassery Municipality	2021	industries department has informed that land is not available in the	A letter dated 03.10.22 has forwarded to the govt. for allotment of	A letter dated 03.10.22 has forwarded to the		

		ality, Industri es Depart ment (for land allotme nt)		industrial estate	land for the construction of modern abattoirs	govt. for allotment of land for the construction of modern abattoirs		
A(b)	Identification of the establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain	Kalamassery Municipality	2020	Inspection conducted on 24/09/2020, 22/07/2021, 13/08/2021, 01/01/2022, 10/01/2022, 11/01/2022, 12/01/2022 & notice issued to 49 persons. 12 persons cleared violations. Second notice issued to 2 persons and rectified the defect. Inspection conducted on 28.07.2022, fresh notice issued to 5 persons, 1 person cleared violation. Inspection conducted on 15.09.2022, fresh notice issued to 1 person fresh	Inspection conducted on 24/09/2020, 22/07/2021, 13/08/2021, 01/01/2022, 10/01/2022, 11/01/2022, 12/01/2022 & notice issued to 49 persons. 12 persons cleared violations. Second notice issued to 2 persons and rectified the defect. Inspection conducted on 28.07.2022, fresh notice issued to 5 persons, 1 person cleared violation. Inspection conducted on 15.09.2022, fresh notice issued to 1 person Inspection conducted on 29.12.2022, 5 persons cleared violation Inspection conducted on 16.02.2023, 1 person fresh notice issued7 outlet of	Inspection conducted on 24/09/2020, 22/07/2021, 13/08/2021, 01/01/2022, 10/01/2022, 11/01/2022, 12/01/2022 & notice issued to 49 persons. 12 persons cleared violations. Second notice issued to 2 persons and rectified the defect. Inspection conducted on 28.07.2022, fresh notice issued to 5 persons, 1 person cleared violation. Inspection conducted on 15.09.2022, fresh notice issued to 1 person . Inspection conducted on	NA	

				notice issued to 1 person Inspection conducted on 29.12.2022, 5 persons cleared violation Inspection conducted on 16.02.2023, 1 person fresh notice issued	houses, 3 outlet of establishment in may 2023	29.12.2022, 5 persons cleared violation . Inspection conducted on 16.02.2023, 1 person fresh notice issued. 7 outlet of houses, 3 outlet of establishment in may 2023		
E	Installation of cameras at the waste dumping spots	Kalamassery Municipality	2020	Camera installed on 10 locations. 2 portable (mobile) camera has installed for identifying waste dumping spot. Rs 31560/- levied till date	Camera installed on 10 locations. 2 portable (mobile) camera has installed for identifying waste dumping spot. Rs 36560 /- levied till date	Camera installed on 10 locations. 2 portable (mobile) camera has installed for identifying waste dumping spot. Rs 36560 /- levied till date		
A(b)	Identification of sources of sewage discharged to drain near Pathalam bridge and action to stop the discharge which reach river Periyar from hotels, labour camps etc In case the quantity of sewage generated is assessed to be more STP need to be installed	Eloor Municipality, KSPCB (for monitoring)	2020	Inspections are done time to time. Waste discharging outlets from shops were identified and proper arrangements are made as remedy. No new waste discharging findings were caught	Inspections are done time to time. Waste discharging outlets from shops were identified and proper arrangements are made as remedy. No new waste discharging findings were caught	Inspections are done time to time. No new waste discharging findings were caught		
E	Installation of cameras at the waste dumping spots	Eloor Municipality	2020	The project is being implemented at a cost of	The project is being implemented at a cost of	Keltron cameras have been established near		

		ty		Rs.44 lakh to install 104 cameras. Tender has been opened. Camera locations have been identified. Keltron cameras have been established near HIL company and Aarattukadavu	Rs.44 lakh to install 104 cameras. Work has started after identifying the locations for the camera. Keltron cameras have been established near HIL company and Aarattukadavu	HIL company and Aarattukadavu. The e-tender for 3 projects has been completed(Rs.44,00,000/- )as per the plan 2023-24 for the camera installation at various areas of municipality. Tender received firms have been engaged in agreements therefore camera installations works are still in progress.		
A(a)(iv)	Periodical inspection in the Industries, Flats, hotels for monitoring of STP,ETP located in Cochin corporation	KSPCB	periodical	Inspection ongoing	Inspection ongoing	Inspection ongoing		
A(a)	Inventory of sources of pollution through a rapid study/Study for identification of pollution sources at Edapally thodu	Kochi Municipal Corporation	3 months	( Did Not Attend The meeting) To find the source of discharge, a squad was formed under Engineering and health and regular inspections are carried out. Identified sources will be informed. Desilting	( Did Not Attend The meeting) To find the source of discharge, a squad was formed under Engineering and health and regular inspections are carried out. Identified sources will be informed. Desilting works have been completed	( Did Not Attend The meeting) To find the source of discharge, a squad was formed under Engineering and health and regular inspections are carried out. Identified sources will be informed. Desilting		



				works have been completed		works have been completed		
E	issuing notice to the defaulters	Kochi Municipal Corporation	4 months					
A(a)(iv)	Periodical inspection in the flats, hotels, shops located along the river	Kochi Municipal Corporation	periodical	A thorough inspection was carried out in the establishments near the river. 76 outlets of institutions have been closed. Made them to take PCB consent. A fine of 3 lakh have been imposed.	A thorough inspection was carried out in the establishments near the river. 76 outlets of institutions have been closed. Made them to take PCB consent. A fine of 3 lakh have been imposed.	A thorough inspection was carried out in the establishments near the river. 76 outlets of institutions have been closed. Made them to take PCB consent. A fine of 3 lakh have been imposed.		
A(b)	Identification of natural drains/thodu reaching river Periyar and cleaning of weeds, grasses etc	Irrigation department	2 years	Cleaning of 20 canals and 13 sub canals under Eloor municipality on the banks of Periyar in Kalamassery constituency and 40 canals under Paravur constituency situated on the banks of Periyar in Karumallor, Kunnukara and Alangad Panchayath , which comes under the auspices of minor irrigation office are under progress. The proposal for the	Cleaning of 20 canals and 13 sub canals under Eloor municipality on the banks of Periyar in Kalamassery constituency and 40 canals under Paravur constituency situated on the banks of Periyar in Karumallor, Kunnukara and Alangad Panchayath , which comes under the auspices of minor irrigation office are under progress. The proposal for the cleaning of the Onithod which connected from Periyar has been submitted	Cleaning of 20 canals and 13 sub canals under Eloor municipality on the banks of Periyar in Kalamassery constituency and 40 canals under Paravur constituency situated on the banks of Periyar in Karumallor, Kunnukara and Alangad Panchayath , which comes under the auspices of minor irrigation office are under progress. The	Estimate submitted for FS	1)Detailed estimate submitted to higher authority for FS. FS not obtained so far

				<p>cleaning of the Onithod which connected from Periyar has been submitted to the government by the Ernakulum district collector from minor irrigation office. Permission not received. Irrigation Division has submitted estimates for rehabilitation of the following streams under Ernakulam.</p> <p>1. Kuthuthodu (IRR/IA/EST/8495/2022_5_8_7) Rs. 74.40 lakh</p> <p>2.Edathodu (IRR/IA/EST/8495/2022_5_11_10) Rs. 9/- lakh</p> <p>These works have not been approved.The cleaning of Vliyachal canal and Erazhichal in Eloor municipality is in progress under Minor irrigation department.</p>	<p>to the government by the Ernakulum district collector from minor irrigation office. Permission not received. Irrigation Division has submitted estimates for rehabilitation of the following streams under Ernakulam.</p> <p>1. Kuthuthodu (IRR/IA/EST/8495/2022_5_8_7) Rs. 74.40 lakh</p> <p>2.Edathodu (IRR/IA/EST/8495/2022_5_11_10) Rs. 9/- lakh</p> <p>These works have not been approved.The cleaning of Vliyachal canal and Erazhichal in Eloor municipality is in progress under Minor irrigation department.</p>	<p>proposal for the cleaning of the Onithod which connected from Periyar has been submitted to the government by the Ernakulum district collector from minor irrigation office. Permission not received. Irrigation Division has submitted estimates for rehabilitation of the following streams under Ernakulam.</p> <p>1. Kuthuthodu (IRR/IA/EST/8495/2022_5_8_7) Rs. 74.40 lakh</p> <p>2.Edathodu (IRR/IA/EST/8495/2022_5_11_10) Rs. 9/- lakh</p> <p>These works have not been approved.The cleaning of Vliyachal canal and Erazhichal in Eloor municipality is in progress under Minor irrigation department.</p>		
C(iii)	Clearing of weeds, grasses at the river bank in order to	Irrigation departm	3 year	The project Operation Vahini 2022 is carried	The project Operation Vahini 2022 is carried out	The project Operation Vahini 2022 is carried		One work d

	ensure the smooth flow of water	ent	s	out to clean and desilt drains and hand drains. As part of this project, works on some tributaries of Periyar have been completed and also the cleaning of 17.5km of Edamula-Muttar-Varapuzha reach which is a part of Periyar is under completion. Proposals have been issued for cleaning activities Edayar and Methanam. If permission is granted, they will also be taken up	to clean and desilt drains and hand drains. As part of this project, works on some tributaries of Periyar have been completed and also the cleaning of 17.5km of Edamula-Muttar-Varapuzha reach which is a part of Periyar is under completion. Proposals have been issued for cleaning activities Edayar and Methanam. If permission is granted, they will also be taken up	out to clean and desilt drains and hand drains. As part of this project, works on some tributaries of Periyar have been completed and also the cleaning of 17.5km of Edamula-Muttar-Varapuzha reach which is a part of Periyar is under completion. Proposals have been issued for cleaning activities Edayar and Methanam. If permission is granted, they will also be taken up		already complete near Pathalam LCR.
D(a)	Maintaining of Minimum flow in river during lean period and periodical operation of Regulators at River in-order to maintain minimum flow.	Irrigation department	3 years	The shutters are opened and operated at regular intervals.	Periodically maintained for the minimum flow of water by operating the shutter properly at pathalam lock cum regulator	Periodically maintained for the minimum flow of water by operating the shutter properly at pathalam lock cum regulator		
A(b)	Common Effluent Treatment Plant at Edayar Industrial Estate	Industries department	2022					
A(b)	Construction of internal roads and proper drainage	Industries department		Completed construction of 13 roads and drainages. Rs.6.54 crore	Completed the constructed roads and drainage works	Completed the constructed roads and		

	in Edayar industrial estate			has been approved to PWD for maintenance and repair. The construction works will start from December 15	in the locality of Edayar which comes under the project of MSE-CDP and costed 9 crore. 6.54 crore rupees has been sanctioned to PWD for works to be completed and construction of 34 lakh rupees drainage is under progress. 45% of work is completed. Process for the construction of internal road which worth Rs 6.20 crore is in progress	drainage works in the locality of Edayar which comes under the project of MSE-CDP and costed 9 crore. 6.54 crore rupees has been sanctioned to PWD for works to be completed and construction of 34 lakh rupees drainage is under progress. 50% of work is completed. Process for the construction of internal road which worth Rs 6.20 crore is in progress		
A(b)	Installation of common discharge pipe line at downstream of Pathalam Regulator Bridge	Industries department, Irrigation department	3 years					
E	Installation of Night vision surveillance cameras at the River Bank side	KSPCB	2020					
A(a)(iv)	Periodical Monitoring of Eloor, Edayar, Kalamassery	KSPCB	2020	Routine inspection is going on. Night	Routine inspection is going on. Night Surveillance also	Routine inspection is going on. Night		

	Industrial belts			Surveillance also carried out continuously.	carried out continuously.	Surveillance also carried out continuously.		
A(a)(iv)	Monitoring of quality of water at various intake point	Kerala Water Authority	2020					
A(a)(iv)	Installation of additional continuous online River water monitoring station	KSPCB	2022	The maintenance works of Online monitoring station in the downstream side of Pathalam Bund have been completed and is working. Online monitoring station in the upstream side has been installed. Display board work is in progress. Quality of water at upstream is satisfactory	New water monitoring station has been set up at the Upstream side of the Pathalam bund. The online data of water monitoring is available in the office. Quality of water at upstream is satisfactory	New water monitoring station has been set up at the Upstream side of the Pathalam bund. The online data of water monitoring is available in the office. Quality of water at upstream is satisfactory		
A(b)	Identification of the establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain	Kadungallur Panchayat	2020	Waste discharging units has been identified .issued notices and fine is charged .Biobin , composite pit are available	Waste discharging units are been identifies. Fine and notices were issued to them	Waste discharging units are been identifies. Fine and notices were issued to them		
E	Installation of cameras at the waste dumping spots	Kadungallur Panchayat	2020	The 17 lakh project to install camera is underway.30 spots been identified and a fine of	The 17 lakh project to install camera is underway and technical sanction got approved.The monitoring	The 17 lakh project to install camera is underway and technical sanction got		

				15000 rupees charged as penalty last month	squad has identified 30 spots and 18000 rupees charged been charged as fine on december	approved.The monitoring squad has identified 30 spots. The tender will get opened this month. The squad is monitoring and issuing notices and collecting fines.		
A(b)	Identification of the establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain	Choornikkara Panchayat	2020	150 soak pits have been constructed to prevent dumping of sewage from houses into the river, and no other problems exist.	150 soak pits have been constructed to prevent dumping of sewage from houses into the river, and no other problems exist.	150 soak pits have been constructed to prevent dumping of sewage from houses into the river, and Rs 10,000 is charged as fine.		
E	Installation of cameras at the waste dumping spots	Choornikkara Panchayat	2020	For the monitoring of dumping spots, 50 lakh rupees project is submitted for installing camera. Out of which 25 lakhs should be collected in the form of donation. 50 lakhs to be amended to 30 lakhs is under consideration. 2.11 lakhs as CSR contribution. It was decided to negotiate with the companies for the remaining amount, 5	For the monitoring of dumping spots, 50 lakh rupees project is submitted for installing camera. Out of which 25 lakhs should be collected in the form of donation. 50 lakhs to be amended to 30 lakhs is under consideration. The amount received in the form of CSR as contribution will be announced in the next meeting.. It is decided to negotiate with other	For the monitoring of dumping spots, 50 lakh rupees project is submitted for installing camera. Out of which 25 lakhs should be collected in the form of donation. 50 lakhs to be amended to 30 lakhs is under consideration. The amount received in the form of CSR as contribution will be announced in the next meeting.. It is decided		

				lakh is also under consideration	companies about the remaining amount..The donation amount has been revised to 5 lakh.	to negotiate with other companies about the remaining amount..The donation amount has been revised to 5 lakh.		
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### LONG TERM MEASURES

No. (as per Action Plan )	Activity	Implementing agency	Time line	Progress in the month of November2023	Progress in the month of December2023	Progress in the month of January 2024	% works completed	Details of works remaining
A(b)	Construction of walkway, ring roads etc at the Periyar River bank at industrial belt.	Irrigation department	4 years	An investigation estimation of 8 lakh have been prepared for the construction of road and dyke wall nearby industrial belt.Financial sanction is received and sent for administration sanction. Dyke wall design will be accomplished by analyzing the investigation report and	An investigation work has been started for the construction of surveillance road and dyke wall on the side of industrial belt.The dyke wall design can be finalized after considering the investigation report and availability of space. Investigation process shall be completed within 2 months	Completed soil investigation work for the construction of dyke wall.The survey works are still pending. The dyke wall design can be finalized after considering the investigation report and availability of space.		





1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks					
2	B(ii)	Ground water recharging / rain water harvesting					
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps					
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices					

**Analysis report of polluted river stretches-R Periyar, R- Chithrapuzha,R-Kadambrayar, R-Chalakudy For the month of JANUARY 2024**

STNCode	Sampling Date	Sampling Time	StnName	Type Of Water Body	Name Of Water Body	River Basin
17	11.01.2024	10:30	Periyar at Eloor	River	Periyar River	
1338	05.01.2024	10:40	Periyar at SDP Aluva	River	Periyar River	
2334	27.01.2024	10:40	Periyar at Pathalam	River	Periyar River	
2335	27.01.2024	12:45	Periyar at Kalamassery	River	Periyar River	
3468	05.01.2024	10:55	Periyar at KWA Aluva	River	Periyar River	
2337	12.01.2024	10:35	Kadambrayar At Brahmapuram	River	Kadambrayar River	
2338	12.01.2024	10:00	Kadambrayar At Manackkadavu	River	Kadambrayar River	
1573	12.01.2024	11:00	Chithrapuzha At Irumpanam	River	Chithrapuzha River	
1154	05.01.2024	01:45	Chalakudy at Pulikkakadavu	River	Chalakudy River	

Sl. No.	Parameters	Values								
		Station Code								
		17	1338	2334	2335	3468	2337	2338	1573	1154
1	Temperature, °C	29	27	27	28	27	29	28	29	29
2	Dissolved Oxygen, mg/l	4.8	5.4	8.0	4.3	5.5	1.0	1.1	1.2	5.8
3	pH	8.3	6.1	7.7	7.5	6.3	6.9	7.1	8	6.3
4	Conductivity, µmhos/cm	1732	59	13170	82	49	125	138	226	374
5	BOD, mg/l	1.6	1	3.5	1.5	0.7	3.8	3.2	4.2	2.2
6	Nitrate-N, mg/l	0.09	0.45	0.07	0.29	0.4	0	0	0	0.34
7	Turbidity, NTU	4.8	7.5	12.4	4.1	7.8	11.2	11.3	5.2	10.3
8	Total Alkalinity, as CaCO <sub>3</sub>	19	16	40	17	16	28	25	23	80
9	Chloride, mg/l	550	8	3000	12	4	20	23	40	94
10	COD, mg/l	4.0	2.4	8.8	3.2	2.4	10.4	8.8	11.2	5.6
11	TKN, mg/l	0	0	0	0	0	0	0	0	1.2
12	Ammoniacal-N, mg/l	0	0	0	0	0	0	0	0	1.1
13	Total Hardness, as CaCO <sub>3</sub> mg/l	210	19	1400	16	17	29	25	45	121
14	Calcium, as CaCO <sub>3</sub> mg/l	180	8	800	11	11	12	6	13	52
15	Magnesium as CaCO <sub>3</sub> , mg/l	30	11	600	5	6	17	19	32	69
16	Sulphate, mg/l	35.5	BDL	140	BDL	BDL	BDL	BDL	18	BDL
5.8	Sodium, mg/l	350	4.54	1729	6.99	2.88	12	15	22.73	51
18	Total Dissolved Solids, mg/l	1350	35	7800	45	27	69	76	129	265
19	Total Fixed Solids, mg/l	1200	21	6200	28	18	52	59	98	160
20	Total Suspended Solids, mg/l	110	6	220	4	3	10	10	15	40
21	Phosphate, mg/l	0.04	0.03	0.24	0.08	0.03	0.05	0.04	4	0.03
22	Boron, mg/l	0.18	BDL	BDL	0.03	0	0.04	0.1	0.01	0.06
23	Potassium, mg/l	24	0.74	112.00	1.28	0.84	4.56	7	8.24	6.7
24	Fluoride, mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA
25	Total Coliform, MPN/100 ml	1500	4000	2000	2700	2700	1400	3100	1700	2600
26	Feacal Coliform, MPN/100 ml	940	1600	630	1200	1400	840	1400	920	1700
27	Feacal Streptococci, MPN/100ml	84	330	84	70	130	110	200	140	430

**KERALA STATE POLLUTION CONTROL BOARD**  
**ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR**  
**ANALYSIS REPORT OF RIVER PERIYAR - JANUARY 2024**  
Sampling point: VETTUKADAVU

Sl. No	Parameter	Unit	05.01.2024	25.01.2024
1	Temp	°c	29.2	31.1
2	pH		7.2	7.2
3	Conductivity	µS/cm	4947.00	10770.00
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	1489.3	3077.9
6	Hardness	"	700.0	2100.0
7	D.O.	"	6.2	8.8
8	Calcium	"	80.0	200.0
9	Magnesium	"	121.500	388.800
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	40.0	40.0
13	BOD	"	3.9	3.2
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	800.0	400.0
17	FC	"	200.0	NIL
18	FS	"	NIL	NIL

\* TURBIDITY METER IS OUT OF ORDER

\*\* SPECTROPHOTOMETER IS OUT OF ORDER

  
**BINEESHA M.P.**  
Assistant Scientist

**KERALA STATE POLLUTION CONTROL BOARD**  
**ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR**  
**ANALYSIS REPORT OF RIVER PERIYAR - JANUARY 2024**

**Sampling point: PATHALAM BRIDGE**

Sl. No	Parameter	Unit	05.01.2024	25.01.2024
1	Temp	°c	29.2	31.1
2	pH		7.5	7.3
3	Conductivity	µS/cm	152.80	93.71
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	34.8	20.9
6	Hardness	"	34.0	25.0
7	D.O.	"	6.8	5.7
8	Calcium	"	10.0	8.0
9	Magnesium	"	2.187	1.215
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	24.0	24.0
13	BOD	"	1.3	1.6
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	1400.0	700.0
17	FC	"	400.0	NIL
18	FS	"	NIL	NIL

\* TURBIDITY METER IS OUT OF ORDER

\*\* SPECTROPHOTOMETER IS OUT OF ORDER

  
**BINEESHA M.P.**  
Assistant Scientist

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**ANALYSIS REPORT OF RIVER PERIYAR - JANUARY 2024**  
**Sampling point: PUTHALAM KADAVU**

Sl. No	Parameter	Unit	05.01.2024	25.01.2024
1	Temp	°c	29.2	30.9
2	pH		7.4	6.8
3	Conductivity	µS/cm	93.00	88.89
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	20.9	17.9
6	Hardness	"	29.0	21.0
7	D.O.	"	2.6	3.1
8	Calcium	"	10.8	6.8
9	Magnesium	"	0.486	0.972
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	28.0	26.0
13	BOD	"	2.2	1.2
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	1900.0	1900.0
17	FC	"	500.0	400.0
18	FS	"	NIL	NIL

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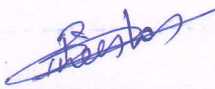
  
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**ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR**  
**ANALYSIS REPORT OF RIVER PERIYAR - JANUARY 2024**  
Sampling point: PATHALAM BUND U/S

Sl. No	Parameter	Unit	05.01.2024	25.01.2024
1	Temp	°c	29.2	30.8
2	pH		7.4	7.2
3	Conductivity	µS/cm	106.90	138.20
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	20.9	27.8
6	Hardness	"	26.0	25.0
7	D.O.	"	6.2	5.3
8	Calcium	"	9.6	7.2
9	Magnesium	"	0.486	1.701
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	24.0	24.0
13	BOD	"	1.8	1.9
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	1000.0	500.0
17	FC	"	300.0	NIL
18	FS	"	NIL	NIL

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**KERALA STATE POLLUTION CONTROL BOARD**  
**ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR**  
**ANALYSIS REPORT OF RIVER PERIYAR - JANUARY 2024**  
Sampling point: PATHALAM BUND D/S

Sl. No	Parameter	Unit	05.01.2024	25.01.2024
1	Temp	°c	29.2	30.9
2	pH		7.3	7.0
3	Conductivity	µS/cm	1227.0	13840.0
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	695.0	4269.4
6	Hardness	"	600.0	1700.0
7	D.O.	"	4.8	2.1
8	Calcium	"	80.0	360.0
9	Magnesium	"	97.200	194.400
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	30.0	56.0
13	BOD	"	4.5	1.6
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	600.0	200.0
17	FC	"	NIL	NIL
18	FS	"	NIL	NIL

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**KERALA STATE POLLUTION CONTROL BOARD**  
**ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR**  
**ANALYSIS REPORT OF RIVER PERIYAR - JANUARY 2024**  
**Sampling point: MANJUMMAL BUND**

Sl. No	Parameter	Unit	05.01.2024	25.01.2024
1	Temp	°c	29.2	31
2	pH		7.7	7.0
3	Conductivity	µS/cm	97.56	96.32
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	15.9	23.8
6	Hardness	"	26.0	24.0
7	D.O.	"	5.6	2.5
8	Calcium	"	8.8	7.6
9	Magnesium	"	0.972	1.215
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	26.0	30.0
13	BOD	"	1.0	1.3
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	1300.0	900.0
17	FC	"	300.0	200.0
18	FS	"	NIL	NIL

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**KERALA STATE POLLUTION CONTROL BOARD**  
**ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR**  
**ANALYSIS REPORT OF RIVER PERIYAR - JANUARY 2024**  
**Sampling point: ALUVA - MANAPPURAM**

Sl. No	Parameter	Unit	05.01.2024	25.01.2024
1	Temp	°c	29.2	31
2	pH		7.3	7.4
3	Conductivity	µS/cm	58.22	54.27
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	14.9	14.9
6	Hardness	"	18.0	24.0
7	D.O.	"	5.8	5.8
8	Calcium	"	6.0	4.0
9	Magnesium	"	0.729	3.402
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	44.0	18.0
13	BOD	"	1.4	1.6
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	1800.0	1200.0
17	FC	"	400.0	600.0
18	FS	"	NIL	NIL

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POLLUTED RIVER STRETCH MONITORING PROGRAM (JANUARY - 2024)												
Station Name		RIVER KORAYAR AT KANJIKODE										
Type of Water body		RIVER										
Completed by		DO, PALAKKAD										
Agency		Kerala State Pollution Control Board										
1	Station Code	2	3	2	6							
2	Date and time of sample taken (DD/MM/YY, HH/MM)	04-01-2024										
3	Weather	1	0	:	3	5						
4	Approximate depth of main stream	Cloudy		Clear ✓		Windy		Raining				
5	Color & Intensity	< 50 cm		50 – 100 cm ✓		>100 cm		Flood				
6	Odour	Clear ✓		Turbid		Green		Brown				
7	Floating Matter	1 = Light		2 = Moderate ✓		3 = High						
8	Visible effluent discharges in proximity	None ✓		Fishy		H <sub>2</sub> S		Other				
9	Human activities around the station	Floating Algae		Floating sludge		Oil & Grease		Water Hyacinth				
10	Location details	Industrial		Municipal sewage		None ✓						
11	Flow rate	31 m <sup>3</sup> /s										
12	Major polluting source	Cattle wading ✓		Tourism spot		Fishing		Bathing ✓		Other		
13	Uses of water in downstream	U/s of town or		D/s of town or		Pilgrim center/Bathing		None				
14	Major polluting source	Irrigation		Drinking water source ✓		Fishing		Domestic				
15	Uses of water in downstream	Organized water source		Cultivation		Bathing Ghat		Others				

Sl.No	Determinant	Value
1	Temperature, °C	26.5
2	Dissolved Oxygen, mg/l	6.36
3	pH	7.94
4	Conductivity, µmhos/cm	818
5	BOD, mg/l	2.8
6	Nitrate-N, mg/l	0.569
7	Turbidity, NTU	BDL
8	Phenolphthalein Alkalinity, as CaCO <sub>3</sub> mg/l	BDL
9	Total Alkalinity, as CaCO <sub>3</sub> mg/l	205
10	Chloride, mg/l	127.93
11	COD, mg/l	8.4
12	TKN, mg/l	0.007
13	Ammoniacal-N, mg/l	BDL
14	Hardness, as CaCO <sub>3</sub> mg/l	240
15	Calcium, as CaCO <sub>3</sub> mg/l	150
16	Magnesium as CaCO <sub>3</sub> , mg/l	90
17	Sulphate, mg/l	26.44
18	Calcium (Ca <sup>2+</sup> ), mg/l	60
19	Magnesium (Mg <sup>2+</sup> ), mg/l	21.87
20	Sodium, mg/l	74
21	Total Dissolved Solids, mg/l	500
22	Total Fixed Solids, mg/l	315
23	Total Suspended Solids, mg/l	BDL
24	Phosphate, mg/l	0.0128
25	Boron, mg/l	BDL
26	Potassium, mg/l	14
27	Fluoride, mg/l	0.309
28	Total Coliform, MPN/100 ml	300
29	Fecal Coliform, MPN/100 ml	100
30	Fecal streptococci, MPN/100 ml	ABSENT
31	% Sodium	38.41
32	SAR	2.08

POLLUTED RIVER STRETCH MONITORING PROGRAM (JANUARY - 2024)												
Station Name		KALPATHYPUZHA AT KALPATHY										
Type of Water body		RIVER										
Completed by		DO, PALAKKAD										
Agency		Kerala State Pollution Control Board										
1	Station Code	3	4	6	0							

2	Date and time of sample taken (DD/MM/YY, HH/MM)	04-01-2024									
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	H <sub>2</sub> S	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	21 m <sup>3</sup> /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, °C	26
2	Dissolved Oxygen, mg/l	5.6
3	pH	7.96
4	Conductivity, µmhos/cm	290.6
5	BOD, mg/l	2.36
6	Nitrate-N, mg/l	0.265
7	Turbidity, NTU	BDL
8	Phenolphthalein Alkalinity, as CaCO <sub>3</sub> mg/l	BDL
9	Total Alkalinity, as CaCO <sub>3</sub> mg/l	97
10	Chloride, mg/l	33.98
11	COD, mg/l	7.08
12	TKN, mg/l	0.007
13	Ammoniacal-N, mg/l	BDL
14	Hardness, as CaCO <sub>3</sub> mg/l	101
15	Calcium, as CaCO <sub>3</sub> mg/l	64
16	Magnesium as CaCO <sub>3</sub> , mg/l	37
17	Sulphate, mg/l	5.58
18	Calcium (Ca <sup>2+</sup> ), mg/l	25.6
19	Magnesium (Mg <sup>2+</sup> ), mg/l	8.99
20	Sodium, mg/l	21
21	Total Dissolved Solids, mg/l	170
22	Total Fixed Solids, mg/l	108
23	Total Suspended Solids, mg/l	BDL
24	Phosphate, mg/l	0.0218
25	Boron, mg/l	BDL
26	Potassium, mg/l	5.4
27	Fluoride, mg/l	0.306
28	Total Coliform, MPN/100 ml	500
29	Fecal Coliform, MPN/100 ml	300
30	Fecal streptococci, MPN/100 ml	40
31	% Sodium	29.72
32	SAR	0.91

**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 KADALUNDI, MALAPPURAM**

<b>S. No.</b>	<b>Activity to be monitored</b>	<b>Timeline</b>	<b>Submission of progress by state/UT-Compliance status</b>
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		STP Repairing project DPC approved and sent to TS.
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		Action plan prepared
5	Chief Secretaries may set up appropriate monitoring mechanism at state level <ul style="list-style-type: none"> <li>• Specifying accountability of nodal authorities not below the Secretary level</li> <li>• Chief Secretaries may have an accountable person attached in their office for this purpose.</li> </ul>		
	<ul style="list-style-type: none"> <li>• Monitoring at State level must take place</li> </ul>		
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none"> <li>• Secretary,Ministry of Jal Shakti</li> <li>• Member Secretary,CPCB</li> </ul>		
6.1	Progress Report may be comprised of details along with completion timelines on:		Last updated report submitted was on january 26 ,2024

<p>(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.</p> <p>(II) <u>Status of STPs, I&amp;D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(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</p> <p>(iv) <u>Status of Solid Waste Management &amp; Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;</p> <p>(vi) Preventing dumping of waste and scientific waste management including bio-medical</p>		<p>(I) Identified 3 drains on 10/12/2018 at the Hajiyyar pally stretch. Already Screen Net installed to both side of the bridge and periodic inspection &amp; drainage of cleaning doing.</p> <p>(ii) Malappuram municipality – 30KLD. Consent application is submitted for the revamping activities. Action plan prepared through KWA</p> <p>(iii) NIL</p> <p>(iv) Activities progressing with decentralised source level treatment method and 2506 devices are distributed. New Project approved for 6000 Ring compost unit. Project Approved. Got T.S.E. Tender.</p> <p>(v) Attached Analysis Report for the month of January 2024. More activities are progressing under the “The Lineer Ozhukum Navakeralam” scheme</p> <p>(vi) Actions being initiated to prevent illegal waste dumping. Bio-Medical Waste collecting through IMAGE. Municipality has one MRF and 3 MCF’s. Dry Waste</p>
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	<p>waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.</p> <p>(vii)Ground water regulation</p> <p>(viii) Adopting good irrigation practices,</p> <p>(ix) Protection and management of food plain Zones (FPZ),</p> <p>(x) Rain water harvesting,</p> <p>(xi)Maintaining minimum Environmental flow of river</p> <p>(xii) Plantation on both sides of the river</p> <p>(xiii) Setting up biodiversity parks on flood plains by removing encroachment</p>		<p>Collecting through HKS and stored in these facilities from where recyclable materials are handed over to authorised recyclers and rejects, to KEIL through Clean Kerala Company.</p> <p>(vii)NA</p> <p>(viii)Complying</p> <p>(ix)NA</p> <p>(x)Complying</p> <p>(xi)Complying</p> <p>(xii)NA</p> <p>(xiii)NA</p>

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**ACTION PLAN FOR RIVER KADALUNDI, MALAPPURAM, KERALA**

1. MALAPPURAM MUNICIPALITY-SHORT TERM SOLID & LIQUID WASTE MANAGEMENT ACTION PLAN								
No.	Activity	Implementing agency	Time line	Progress in the month of November2023	Progress in the month of December2023	Progress in the month of January2024	% of works completed	Details of works remaining
1.1	Slaughter house and Poultry house	Malappuram Municipality	July 2022	No progress	No progress	No progress	0%	No progress
1.2	Valiyathodu Cleaning - 8 Km length	Malappuram Municipality	completed	completed	completed	completed	completed	completed
1.3	Installation of screening net in the Valiyathodu	Malappuram Municipality	completed	completed	completed	completed	completed	completed
1.4	Identification of polluting points in Kadalundi river & awareness campaign - River walk(puzhanadatham - 15 km length)	Malappuram Municipality	completed	completed	completed	completed	completed	completed
1.5	Sanitation facility and treatment of waste water in the markets - Treatment plant	Malappuram Municipality	completed	completed	completed	completed	50%	Work in progress
1.6	The discharge of waste water from the surrounding houses to the Valiyathodu - Blocking of discharge of liquid waste	Malappuram Municipality	completed	completed	completed	completed	completed	completed
						completed		



1.7	Identification of illegal outlets into storm water drains and fine imposed on such units.	Malappuram Municipality	ongoing	completed	completed		completed	Inspections continuing.
1.8	Biodegradable waste Bio gas plants- 186 Bio bins – 908 Bucket compost – 1445 Tumburmuzhi Aerobic bins - 4 Submitted proposal for 8000 ring compost systems	Malappuram Municipality	In progress	In progress	In progress	In progress	completed	Completed
1.9	Non biodegradable waste MCF & Plastic shredding and Bailing Echo Kiosk	Malappuram Municipality	Completed	Completed	Completed	Completed	Completed	Completed
			March 2020	In progress	In progress	40 mini MCF has been approved	completed	Completed
1.10	Identification and monitoring of illegal activities/ CC TV Network installation	Malappuram Municipality	Ongoing	In progress	In progress	In progress	No progress	No progress

## 2.KERALA STATE POLLUTION CONTROL BOARD

No.	Activity	Implementing agency	Time line	Progress in the month of November 2023	Progress in the month of December 2023	Progress in the month of January 2024	% works Completed	Details of works remaining
2.1	River water quality Monitoring- Thirurangadi, Hajiyarpally National Water Quality Programme(NWMP)	KSPCB	Ongoing; Monthly frequency	100%				
2.2	River water quality Monitoring - Thirurangadi, Kooriyad, Manikut, Hajiyarpally, Anakkayam, Oravambrum -	KSPCB	Ongoing; Seasonal -  Pre - monsoon, monsoon, post - monsoon	100%				

	State Water monitoring programme (SWMP)							
2.3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc. in Malappuram Municipalarea	KSPCB	Ongoing; Interval; Red – 1 month, Orange- 3 months, Green- 6 months	100%				

### 3.GROUND WATER DEPARTMENT

No.	Activity	Implementing agency	Time line	Progress in the month of November2023	Progress in the month of December2023	Progress in the month of January2024	% works completed	Details of works remaining
3.1.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier status : As	Ground water Department		No action included in the approved action plan to be performed by Ground Water Department	No action included in the approved action plan to be performed by Ground Water Department	No action included in the approved action plan to be performed by Ground Water Department		

	<p>per Groundwater resources of Kerala, 2017 estimate a total number of 3 blocks (Mankada, Vengara and Malappuram) comes under the Kadalundi river basin. Out of three blocks Malappuram and Vengara are semi-critical blocks and the rest is a safe one, stage of groundwater extraction ranges from 69.43 % to 79.84%)</p>							
3.2	<p>Ground water recharging / rain water harvesting</p> <p>(Earlier status : The average pre - monsoon groundwater level ranges from 7.59mbgl - 13.57 mbgl. Groundwater Department has implemented 3 no of</p>	Ground water Department		<p><b>No action included in the approved action plan to be performed by Ground Water Department</b></p>				

	roof top rain water recharging through recharge pit schemes in Vengarablock.)							
3.3	<p>Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or handpumps</p> <p>(Earlier status : Groundwater Department has 6 observation dug wells and 14 bore wells in the river stretch. (report attached ) (Map No: 7 attached))</p>	Ground water Department		<b>No action included in the approved action plan to be performed by Ground Water Department</b>				
3.4	<p>For regulating use of ground water for irrigation purpose, adopting good irrigation practices</p> <p>(Earlier status : The total irrigation draft in the area ranges from 979.683 -</p>	Ground water Department		<b>No action included in the approved action plan to be performed by Ground Water Department</b>				

1857.49 ha.m.)							
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**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 TIRUR, MALAPPURAM**

<b>S. No.</b>	<b>Activity to be monitored</b>	<b>Timeline</b>	<b>Submission of progress by state/UT-Compliance status</b>
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level <ul style="list-style-type: none"> <li>• Specifying accountability of nodal authorities not below the Secretary level</li> <li>• Chief Secretaries may have an accountable person attached in their office for this purpose.</li> </ul>		
	<ul style="list-style-type: none"> <li>• Monitoring at State level must take place</li> </ul>		
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none"> <li>• Secretary, Ministry of Jal Shakti</li> <li>• Member Secretary,CPCB</li> </ul>		
6.1	Progress Report may be comprised of details along with completion timelines on:		Last updated report submitted was on ,2024 January 26

<p>(i) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.</p> <p>(ii) <u>Status of STPs, I&amp;D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(iii) <u>Status of CETPs</u> Details of Existing CETP and ETP</p>	<p>(i) Identified 17 drains out of which 9 were additionally identified on 11.07.2019</p> <p>(ii) <u>Tirur FishMarket STP</u>– 45 KLD- Not working condition. Accordingly conducted site inspection by Board on 16.02.2024 to evaluate progress, No progress found. Since about 3 years repeated directions are being issued for time bound renovation of fish market STP.</p> <p>(ii) <u>Tirur municipal Bus Stand STP</u>-50 KLD –Present status-working condition ,send letter to suchitwa mission for technical evaluation and approvals.</p> <p>iii)NIL</p> <p>(iv) De centralised treatment facilities, Disposal using sanitary landfills, composting operations, MRF, MCF etc. Slaughter house- completed civil work. Electrical installation works started.</p> <p>(v) Attached as Annexure II-Analysis report during the month of January 2024</p>
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<p>Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status</p> <p>(iv) <u>Status of Solid Waste Management &amp; Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;</p> <p>(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.</p> <p>(vii) Ground water regulation</p> <p>(viii) Adopting good irrigation practices,</p> <p>(ix) Protection and management of food plain Zones (FPZ),</p> <p>(x) Rain water harvesting,</p>	<p>(vi) Actions are being initiated to prevent illegal waste dumping. BMW are being disposed scientifically through IMAGE. Municipality have MRF, MCF facilities</p> <p>(vii) NA</p> <p>(viii) Complying</p> <p>(ix) NA</p> <p>(x) Complying</p> <p>(xi) Complying</p> <p>(xii) NA</p> <p>(xiii) Reported that encroachment survey is completed and now the process of laying survey stones is in progress.</p>
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(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		

## ACTION PLAN FOR RIVER TIRUR, KERALA

<b>1. IRRIGATION DEPARTMENT</b>								
<b>1.</b>								
No.	Activity	Implementing agency	Time line	Progress during month of 2023	Progress during month of 2023	Progress during month of 2024	% works completed	Details of works remaining
			31.03.2020	November	December 2023	January 2024		
1.1.1	Strengthening the right side bund of Tirur- Ponnani Puzhaat Porur, ward no. 1 Tirur Municipality	Irrigation Department	6 Months	In Progress	Investigation work report of the collective regulator has been received and the estimate will be prepared in connection with it.	progressing	60%	In progressing

1.1.2	Cleaning and development of old PonnaniThodu at Thazhepalam	Irrigation Department	6 Months			progressing		
1.1.3	Repair and Rehabilitation of Koottayi Regulator cum Bridge across TirurPonnaniPuzhain Mangalam Grama Panchayath in Malappuram Dist	Irrigation Department	18 Months	No progres	Work got stuck due to conditions at site.	No progress.		Cracks on girders and settlement of piers towards right bank has seen on 18.11.2023.So the work can be continued only after addressing the present issues. So while preparing the estimate based on the study report from KERI Peechi,the solution for the new issues also has to be finalized.Meeting held on 29.11.2023 at the office of CEI &A in the presence of CE IDR B concluded to conduct a detailed technical study by an expert team to find a solution for the existing issues.
<b>1</b>	<b>2.TIRUR MUNICIPALITY</b>							
No.	Activity	Implementing agency	Time line	Progress during month of November 2023	Progress during month of	Progress during month of January2024	% works completed	Details of works remaining

					December2023			
2.1	Provide septic tank for nearest houses	Tirur Municipality	Dec 2019	completed	completed	completed	100	NIL
2.2	Establishment of Solid waste Treatment Plant ThumboorMuzhiModel Aerobic Bin	Tirur Municipality	March 2020	completed	completed	completed	100	NIL
2.3	Establishment of Non Degradable waste treatment Plant, Resource Recovery facility, Plastic Shredding Unit Segregation shed	Tirur Municipality	March 2020	completed	completed	Completed	100	NIL
2.4	SlaughterHouse	Tirur Municipality	December 2020	Electrical works on going	In progress	Slaughter house ETP rendered but only one participated . so retender process started.	90%	ETP wok submitted for TS to suchitwa mission tvn
2.5	Fencing on Bridgeside ThalakkadathurBridge	Tirur Municipality	December 2020	completed	completed	completed		NIL
2.6	Installation of CCTV Camera near the river BankThalakadathurBr idge	Tirur Municipality	May 2020	Completed	completed	Cctv installation will be done by KELTRON soon.	progressing	
2.7	Planting of Bamboo seedlings	Tirur Municipality	June 2020	Completed	completed	completed	100	NIL

	on the river bank (Thazhepalam)							
2.8	Renovation of Effluent treatment plant at fish Market. AMC Granted ETP with Aerobic System	Tirur Municipality	June 2019	Progressing	O&M was not mentioned in the tender call for ETP work,hence O&M was also included in the letter &only one company participated in it,company informed that O&M amount 90000/month+GST ,the huge amount cannot be sanctioned without the report of technical committee	Fish market STP repair work started,will be completed by the end of February 24.	Renovation work under process	(See minutes)
2.9	Setting up of STP at Private Bus stand	Tirur Municipality	June 2020	STP work completed,send letter to suchitwa mission for technical evaluation and approvals.	STP work completed.	Progressing. send letter to suchitwa mission for technical evaluation and approvals.	completed	(See minutes)

2.10	Setting up of a new drain after demolishing the old one. The old one was the hub of the waste water outlet of the shops and other establishments. The proposed drain is constructing in the middle of the road so as to avoid intrusion of pipes from outside	Tirur Municipality	June 2020	Completed	Completed	Completed	100	Completed
2.11	Identification of illegal outlets in to storm water drain sand fine shall be imposed on such units	Tirur Municipality				Fine imposing mechanism going on	20 Notice.	

### 3.KERALA STATE POLLUTION CONTROL BOARD

No.	Activity	Implementing agency	Time line	Progress in the month of November 2023	Progress in the month of December 2023	Progress in the month of January 2023	% works completed	Details of works remaining
3.1	River water quality Monitoring- Thalakkadathur National Water Quality Programme(NWMP)	KSPCB	Ongoing; Monthly frequency					Ongoing monthly frequency
3.2	River water quality Monitoring State Water monitoring programme (SWMP)	KSPCB	Ongoing; Seasonal					Ongoing seasonal

3.3	Inspection and effluent quality monitoring of the flats, Industrial units, Service stations, hospitals, auditorium, hotels in Municipal area		Ongoing; Interval; Red – 1 month, Orange- 3 months, Green- 6 months			Ongoing
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#### 4. ACTION PLAN BY VARIOUS GRAMA PANCHAYATHS- THALAKKAD, VETOM, MANGALAM, CHERIAMUNDAM

No.	Activity	Implementing agency	Time line	Progress in the month of November 2023	Progress in the month of December 2023	Progress in the month of January 2024	% works completed	Details of works remaining
4.1	Protection of TirurPonnani River	Thalakkad Grama Panchayath handover fund to District Panchayath	31.03.2020	Completed	Completed	Completed	100	NIL
4.2	Installation of CC TV camera on YetterikadavuKunjulikkadavuMangattiri Bridge, Aikkanchiri Bridge, Paravanna Bridge	Vetom - KS SECURITY SYSTEM	Spill over due to lack of fund	completed	completed	completed	100	NIL
4.3	Installation of CC TV camera	Mangalam Grama Panchayath Win Plus Agency, Kondotty	Completed	completed	completed	completed	100	NIL
4.4	Haritha KeralamThirur-Ponnanipuzha protection	Mangalam Grama Panchayath	31.03.2020	No progress	No progress	No progress Due to audit	70% protection of wall	Landscaping

		Nirmithi Kendra, Kozhikode				objection.	completed	work remainig as per estimate
4.5	Fencing on bridge side Thalakkadathur	Cheriyamundam Grama Panchayath	March 2020	complete d	completed	completed	100	NIL
<b>5.GROUND WATER DEPARTMENT</b>								
No.	Activity	Implementing agency	Time line	Progress in the month of Novembe r 2023	Progress in the month of December2023	Progress in the month o f January2024	% works completed	Details of works remaining
5.1.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks  (Earlier status: As per Groundwater resources of Kerala, 2017 estimate a total number of 2 blocks (Tirur and Kuttippuram) comes under the Tirur river basin. These two blocks are semi-critical blocks and the stage of groundwater extraction ranges from 77.75 % to 77.92%)	Ground water Department  Therefore, to regulate ground water resources in this area, no permission is granted for packaged drinking water industries or any other water induced industries	NA	No permits issued	No permits issued	No permits issued  NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NA	NA
5.2	Ground water recharging / rain water harvesting  (Earlier status: The average pre -monsoon groundwater level ranges from 6.14mbgl - 8.49 mbgl.)	NA	NA		NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NA	NA




5.3	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	Ground water Department  No observation well along the river stretches)			NA		NA	NA
5.4	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status: The total irrigation draft in the area ranges from 49.14 - 870.97 ha.m.)	Ground water Department  No Data Available. No Updation after GEC 2017. (Report not published)			NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NA	NA

### 6.REVENUE DEPARTMENT

No	Activity	Implementing agency	Timeline	November 2023	Progress December 2023	Progress January 2024	% works completed	Details of works remaining
6.1	Survey of boundaries of river side	Revenue department		Completed	Completed	Completed	100%	Encroachment survey completed.

**ANALYSIS REPORT OF POLLUTED STRETCH POINTS IN TIRUR RIVER JANUARY 2024**

SI NO	Name of point	PARAMETERS				
		P <sup>H</sup>	DO (mg/l)	BOD (mg/l)	COD (mg/l)	FC(cfu/100m l)
1	Drain near Tirur Railway station	7.0	3.4	1.8	7	200
2	Thazhepalam drain	7.0	3.2	1.6	6	250
3	Naduvilangadi drain (old ponnaniyodu)	Dried				
4	Annassery drain	Dried				
5	Canal at CV Land	Dried				
6	Canal at Mangalam thuruth	6.5	5.3	2.0	6	350
7	Canal at Pullooni	7.8	4.6	1.3	5.2	180
8	Drain near Mangattiri bridge	Dried				
9	Drain near Ettirikkadavu bridge	7.1	5.3	1.3	5.2	50
10	Epothingal	6.4	3.0	1.6	4.8	150
11	Asarikkadav	6.6	3.3	1.8	7.2	100
12	Kandanathkadav	6.5	4.1	2.0	6	280
13	Pancharamoola	Dried				
14	Kakadav	6.4	5	1.6	6.4	200
15	Kanathkadav	6.6	4.6	1.7	6.8	860
16	Drain near tirur railway station	Dried				
17	Payyanangadi(kadayithodu)	Dried				

  
 Assistant Scientist

**ANALYSIS REPORT OF POLLUTED STRETCH POINTS IN  
KADALUNDY RIVER JANUARY2024ALONG HAJIYARPALLY**

Sl.No	Name of point	PARAMETERS				
		pH	DO (mg/l)	BOD(mg/l)	COD (mg/l)	FC (cfu/100 ml)
1	Valiyangadi drain	6.5	6.4	1.0	6.4	100
2	Valiyangadi bypass drain	Dried				
3	Valiyathod drain	6.6	6.1	1.6	6.0	200
4	Hajiyarpally	6.8	6.8	2.1	8	100



Assistant Scientist

**Kerala State Pollution Control Board, District Office, Kozhikode**

**NATIONAL MISSION FOR CLEAN GANGA**

**Format for submission of monthly progress report by state/UTs**

**(Hon'ble NGT in the matter of OA.No.673/2018 dated 6/12/2018) For**

**the month of JANUARY 2024–Kallayi polluted river stretch**

Sl.No.	Activity to be monitored	Timeline	Submission of progress by state/UT-compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
2	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STP must be ensured.		
3	Timeline for completing all steps of action plans including completion of setting up STP and their commissioning		
4	Chief secretaries may setup appropriate monitoring mechanisms at the state level <ul style="list-style-type: none"><li>● Specifying accountability of nodal authorities not below the secretary level</li><li>● Chief secretaries may have an accountable Person attached in their office for this purpose</li></ul>		
	<ul style="list-style-type: none"><li>● Monitoring at the state level must take place</li></ul>		

5	<p>Progress report may be furnished by the state/UTs to</p> <ul style="list-style-type: none"> <li>● Secretary,ministry of Jal Shakti</li> <li>● Member secretary,CPCB</li> </ul>		
5.1	<p>Progress report may be comprised of details along with completion timeline on:</p> <p>(i) Identification of polluting source including drains contributing to river pollution and action as per NGT order on in situ treatment.</p> <p>(ii) <u>status of STPs,I&amp;D and sewage networks</u> Details of Existing Infrastructure,Gap Analysis,Proposed along with completion timeline</p> <p>(iii) <u>status of CETPs</u></p> <p>Details of existing CETP and ETP infrastructure,Gap analysis,proposed along with completion timeline,No.of industries and complying status.</p> <p>(iv) <u>status of solid waste management&amp;details of processing facilities</u></p> <p>Details of existing infrastructure,Gap analysis proposed along with completion timeline</p> <p>(v) Latest water quality of polluted river,its tributaries,drains with flow details and ground water quality in the catchment of polluted river;</p> <p>(vi) preventing dumping of waste and scientific waste management including bio-medical waste plastic waste and decentralizing waste processing,including waste</p>		

	<p>generated from hotels,ashrams etc.</p> <ul style="list-style-type: none"><li>(vii) Ground water regulation</li><li>(viii) Adopting good irrigation practices</li><li>(ix) protection and management of flood plain zones(FPZ),</li><li>(x) Rainwater harvesting</li><li>(xi) Maintaining minimum environmental flow of river</li><li>(xii) Plantation on both sides of the river</li><li>(xiii) Setting up bio diversity parks on flood plains by removing encroachment</li></ul>		<p style="text-align: center;"><b>Monthly progress report enclosed</b></p>
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## ACTION PLAN FOR RIVER KALLAYI , KERALA

### Kozhikode Corporation

No.	Activity	Implementing agency	Time line	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	% works completed	Details of works remaining
1	Identification of illegal outlets into storm water drain and issue Notice to such units	Kozhikode Corporation	30.12.2020				12 illegal outlet into storm water.Fine remitted Rs 90000/-	Continuing random inspections and imposing fine regularly	On going
2	Waste to energy project proposed at Njeliyamparamba	KSIDC	30.06.2021						Not reported
3	Establishment of Aerobic compost units	Kozhikode Corporation	Completed and functioning				New project going on		

4	Segregation of solid waste at source-level and treatment of household wastes	Kozhikode Corporation	30.06.2019				Biodegradable waste managements equipment installed in household level 1. Bockashi bucket-3243 2. geebin-5575 3. Biogas-138 4. Ring compost-2446 5. Pipe compost-1110	100% Coverage	
5	Setting up of rendering treatment plant for chicken stall wastes	Kozhikode Corporation	30.06.2019	On going	On going		Rendering plant installed in Thamarassery Panchayath(Fresh cut rendering plant).Chicken waste generated from chicken stalls under Kozhikode corporations are being transported to rendering plant at Thamarassery.	100% Coverage	



6	Implementation of Green protocol unit	Kozhikode Corporation	30.06.19				On going		
7	Setting up of common STP of (13MLD)  7.1 At Kothi bridge - 6 MLD plant proposed  7.2 At Avikkal - 7 MLD plant proposed	Kozhikode Corporation	31.03.2020				The corporation is trying to restart the projects.Hence Estimate was recast and submitted to the SLTC/SHPSC for revised administrative sanction.The SLTC dated 27.09.2023 has considered this project and recommended the SHPSC for further Approvals.Total station survey completed construction of Fencing and the, Soil investigation has been completed.Site cleared. Presently the work has been		

							<p>stopped due to a stay order from the Munsif Court.</p> <p>For both the proposals work can be restarted only after resolving court case.</p>		
8	Implementation of STP at Kottooli (13.5 MLD)					<p>After receiving Council approval, the project was submitted to the Government for Administrative sanction. The AS was deferred and directed to revise the proposal to increase the number of connections. KWA is revising the proposal.</p>	<p>27 MLD STP and 220 KLD FSTP as a co-treatment, with an associated network of 50km</p>		

9	Cleaning of Canoli canal	Kozhikode Corporation	Periodical			on going process	On going		Continuous - seasonal
10	Purchasing of Solar Boat for Canoli canal cleaning	Kozhikode Corporation	31.03.2020				Project dropped		
11	Installation of CCTV Camera for the Identification and monitoring of illegal activities	Kozhikode Corporation				Implementation started	On going		
12	Establishment of Mobile Septage Units	Kozhikode Corporation	31.03.2020				Project dropped		
13	Action taken against dumping of wastes into river and public places	Kozhikode Corporation	On going action				66 Nos. Fine remitted Rs. 263500/-	Continuing random inspections and imposing fine regularly	
14	Cleaning of B.K canal	Kozhikode Corporation	31.03.2020				Completed on 31.05.2021	100%	

15	<p>Establishment of treatment plant at Medical college (3MLD plant)</p> <p>15.1-2 MLD plant proposed</p> <p>15.2-1 MLD plant proposed</p>	Kozhikode Corporation	31.03.2020				<p>2 MLD STP work was completed and started working</p> <p>100%</p> <p>1 MLD STP works were restarted at the site on 11.10.2023 and are expected to be completed by 15.12.2023</p> <p>88%</p> <p>20%</p>	
16	Construction of drains at Y.M.RC Ayyankarcolony	Kozhikode Corporation	31.03.2020				<p>The work has started and is in progress. Sidewall construction 30 m completed. Expected to be completed by 28.02.2024. 963 m drainage Construction is remaining.</p> <p>60%</p> <p>40%</p>	
17	Treatment facility for waste water in central Market	Kozhikode Corporation						Not reported

18	Establishment of comfort stations	Kozhikode Corporation							Not reported
19	Provide facility for MRF,RRF,Super MRF Three units existing  19.1 Njeliyanparamb 19.2 Industrial estate 19.3 Mayor Bhavan jayanthi nagar colony	Kozhikode Corporation					3.MRF and 5.MCF are already existing. New project going on		
20	Identification of illegal outlets from house to storm water drain and issue Notice to such Houses	Kozhikode Corporation					12	On going - Continuous process	
21	Establishment of Plastic shredding unit	Kozhikode Corporation					Project started		
22	Establishment of slaughtering unit	Kozhikode Corporation					Project under Consideration		Not reported
23	Cleaning of drains in Kozhikode Town	Kozhikode Corporation					On going - Continuous process		

## Perumanna Grama Panchayath

No	Activity	Implementing agency	Time line	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	% works completed	Details of works remaining
1	Outlets into storm Water drain and issue notice	Perumanna Panchayat, kozhikode	Continues process					Inspection Conducting regularly	
2	Establishment of six aerobic compost units in panchayat	Perumanna Panchayat , Kozhikode through MGNREGS	12/2021					100% Work of completed	5 units will be started if public place is available
3	Collection and segregation of solid waste in the river	Perumanna Panchayat	Continues process in every year					74% Work completed	
4	Setting up of residential treatment plant for chicken stall waste	Perumanna Panchayat	Continues process			Resolution passed by panchayat board to execute an agreement with fresh cut, Thamarasser y, KKD		91%	

5	Setting up of 360 soak pit plant in all houses near the river area and panchayat	Perumanna Panchayat through MGNREGS	12/2021				As of now 119 No.s completed. No further progress reported after the month of July		
6	Implementation of 360 compost unit near river side and panchayat	Perumanna Panchayat , Kozhikode through MGNREGS	12/2021				As of now 126 No.s completed. No further progress reported after the month of July		
7	Implementation of water flow project ( Aluvangal Thazham Perumbatta Elamanapadam, Valiyapadam. Mampuzhthode Naveekarana, project no 260/2021 project cost 16.67 Lakhs).	Perumanna Panchayat	12/2021				Technical sanction obtained. Tender procedure completed. Included in 2021-22 plan as spillover project.		

8	Cleaning of Mambuzha river ( project name : Mambuzha water flow restoration, project no 01/2018-19	District Panchayat , Kozhikode	2018-2019				Work has been completed by District Panchayat, Kozhikode		
9	Establishment of 18 nos of mini MCF in different wards including Payyadi methal where the river is flowing	Perumanna Panchayat , Kozhikode through MGNREGS	12/2021				As of now 11 No.s completed. No further progress reported after the month of July		
10	Collection of plastic Waste from the river	Perumanna Panchayat	Continuous process				Process will be done every year		



## Peruvayal Grama Panchayath

No .	Activity	Implementing agency	Time line	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	%works completed	Details of works remaining
1	Outlet in storm water drain and issued notice	Peruvayal G P	Continu ous process			20 Notice issued	Ongoing		
2	Establishment of 5b units anaerobic composed unit in panchayat.	Peruvayal GP through MGNREGS	04/2023 to 03/2021						work will commence on third week of November 2023
3	Setting up of rendering plant for chicken solid waste	Peruvayal G P	Continuous process				Commence on 01/03/2024		
4	Setting up of 379 soak pit plant in all houses	Peruvayal G P	04/2023 to 03/2024				On going		

5	Cleaning of Mambuzha river ( Mambuzha renovation) project no :190/2017-18	District panchayat Kozhikode	2017-2018				Completed by Panchayath		
6	Establishment of 8 numbers of mini MCF	Peruvayal GP through MGNREGS	04/2023 TO 03/2024			6 mini MCF completed		25%	6 will start immediately
7	Collection of plastic waste from the river	Peruvayal GP	Continuous process			3 times collected	On going	100%	
8	Collection and segregation of solid waste in the river	Peruvayal GP	Continuous process			3 times collected	On going		
9	Establishment of Bio gas plant	Peruvayal GP	2023-24			26 numbers completed		70%	Work will be completed by the end of April 2024
10	Well recharge	Peruvayal GP through MGNREGS	2023-24			63 numbers completed		60%	Work will be completed by the end of April 2024

## Mavoor Grama Panchayat

No.	Activity	Implementing agency	Time line	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	%Work completed	Details of work remaining
1	Transportation of waste management to refinement unit	Konnari Advanced Polymers Limited	2022-23				Completed	100%	
2	Cleaning of Cherupuzha (Kuniyakadav to Thenghilakadav)	Mavoor GP	2022-23				Completed	100%	1500 mtr
3	Valayannor Thodu cleaning	MGNREGS	2022-23				Completed		115 mtr
4	Arayancode kalchira Thodu Cleaning	MGNREGS	2022-23				On going		115 mtr
5	Vellaram Kandi Chirakkal thazham thodu	Mavoor GP	2023-24				completed	100%	
6	Ring compost	Mavoor GP	2023-24				On going		
7	Kadayan thodu	MGNREGS	2023-24				completed	100%	

8	Chalippadam Punchappadam thodu	MGNREGS	2023-24				Completed	100%	
9	Puthiyottil thazham Elaram thodu	MGNREGS	2023-23				Completed	100%	

## OLAVNNA GRAMAPANCHAYAT

N o	Activity	Implementing Agency	Time line	Progressing the month Of OCTOBER 2023	Progress In The Month Of NOVEMBER R 2023	Progress In The Month Of DECEMBER 2023	Progress In The Month Of JANUARY 2024	% Works Completed	Details Of Remaining Work
1	Collection of plastic waste from the river	Olavanna Gramapanchayat	Continuous process			8 Times collected	Process continuing	96%	
2	Collection of segregation of solid waste in the river	Olavanna Gramapanchayat	Continuous process			9 Times collected	Process continuing	97%	
3	Cleaning of Mambuzha river	Olavanna Gramapanchayat	Continuous process				Process continuing	93%	
4	Well recharge	Olavanna Gramapanchayat through MGNREGS	4/2023 To 3/2024				As of now 1 no's completed.		Work will be completed by the end of March 2024
5	Setting up of soak pit in houses	Olavanna Gramapanchayat through MGNREGS	4/2022 To 3/2024				As of now 14 no's completed.		Work will be completed by the end of March 2024

6	Action taken against dumping of waste in to river	Olavanna Gramapanchayat	Continuous process				On going	93%	Process continuing
7	Collection of non-biodegradable waste	Harith karma sena	Throughout the year						Process continuing

## IRRIGATION DEPARTMENT

No	Activity	Implementing Agency	Timeline	Progress In The Month Of NOVEMBER 2023	Progress In The Month Of DECEMBER 2023	Progress In The Month Of JANUARY 2024	% Works Completed	Details Of Remaining Work
1	Desilting of Kallayi river from Kaduppini to Kothi in Kozhikode Corporation	Irrigation department	31.03.2021			DPR was submitted to SE,INC,KKD on 16.10.2019 for Rs 773.05 lakhs (730 lakhs for desilting of river and 43.05 lakhs for fencing of 5 bridges) under action plan of Kallayi river. Rs.790 lakhs deposited by kozhikode corporation for desilting of kallayi river under urban agglomeration on 06.03.2021.The work is under retender process.		
2	Provide fencing on the sides of the Bridge	Irrigation department	31.03.2021			DPR was submitted to SE,INC,KKD on 16.10.2019 for Rs 773.05 lakhs(730 lakhs for desilting of river and 43.05 lakhs for fencing of 5 bridges). Revised DPR Submitted to Superintending Engineer		

						for Rs.47.52 lakhs for fencing of 3 bridges vide this office letter No.D1/GL/NGT/2019 td.28-01-2023		
3	Dredging , Desilting & removal of weeds from E K canal ( 11.21 km)	Irrigation department	31.07.2019			Work entrusted to Kerala Waterways & Infrastructure Ltd(KWIL)		
4	Bio park in Kozhikode District	Irrigation department				Land for the proposed bio park is to be demarcated by the Revenue authorities after necessary boundary survey and subsequent bio cover works are to be done by the Social Forestry Department		
5	Flood prone mapping in Kozhikode District	Irrigation department				Action to be taken by the Hydrology Wing of Irrigation Department as this needs data collection, scientific analysis and modeling skills.		



## Kerala State Pollution Control Board

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	% works completed	Details of works remaining
1	River water quality monitoring-Kallayi river National Water Quality Monitoring Programme (NWMP)	KSPCB	Ongoing ; monthly frequency					
2	River water quality monitoring-Kallayi rivers State Water Monitoring Programme,KSPCB fund(SWMP)	KSPCB	Ongoing. Seasonal monitoring- pre-monsoon , monsoon , post-monsoon					
3	Inspection and effluent quality monitoring of the flats,industrial units,service stations, hospitals, Hotels etc. In Malappuram Municipal area	KSPCB	Ongoing  Interval: Red- 1 month.  Orange-3months. Green-6months.					

## Suchitwa Mission

No. (as per Action Plan)	Activity	Implementing agency	Timeline	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	% works completed	Details of works remaining
1	Board displaying messages against dumping to be placed in river banks	Suchitwa Mission	15.07.19					

## Action Plan by Ground Water Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	% works completed	Details of works remaining
B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones / blocks ( Earlier status: As per Ground water resources of Kerala,2017 estimate,Kozhikode Block comes under the Kallai river basin and the block is safe with stage of ground water Extraction 68.49% )	Ground Water Department		Nil	Nil	Nil		
B(ii)	Ground water recharging/ rain water harvesting (Earlier status:The average pre - monsoon ground water level is 7.23 mbgl. Ground water Department has implemented 3 no of dug well recharge schemes at Kozhikode block)	Ground Water Department		Nil	Nil	Nil		
B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/ bore wells or hand	Ground Water Department		Nil	Nil	Nil		

	pumps (Earlier status-Ground water Department has 1 observation Piezometer (BW) in the river stretch.)							
B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status -The total irrigation draft in the Block area is 488.76 ha.m.)	Ground Water Department		Nil	Nil	Nil		

## Action plan by irrigation Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of NOVEMBER 2023	Progress in the month of DECEMBER 2023	Progress in the month of JANUARY 2024	% works completed	Details of works remaining
E	Dredging and desilting	Irrigation Department	3 years			DP Rs. 790 lakhs deposited by Kozhikode corporation for desilting of kallayi river under urban agglomeration on 06.03.2021. The work is under retender process.		
E	E-flow ( by micro water shed management)	Irrigation Department	3 years			Action to be taken by the hydrology wing of irrigation department as this needs data collection, scientific analysis and modeling skills. The matter has been communicated to the Hydrology wing Assistant Engineer at Kozhikode.		

E	Flood plain zone ( protection and management)	Irrigation Department	3 years			Action to be taken by the hydrology wing of irrigation department. The matter has been communicated to the Hydrology wing.		
E	Greenery development ( plant in trees on the banks)	Irrigation Department	3 years					



KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

REGIONAL OFFICE, KOZHIKODE

Phone: 2300744 (CEE); kspcb.kerala.gov.in
3rd FLOOR, ZAMORIN'S SQUARE, LINK ROAD, KOZHIKODE - 673 002

ANALYSIS REPORT OF RIVER WATER

Table with columns for Report No., Date, Date of Sample Collection, Time, Sampled by, Sampling Method, Sample container, Source, Specific sampling location, Sample preservation, Parameters, unit, Method No., and SAMPLE ID (KL 1 to KL 6). Includes data for pH, CONDUCTIVITY, BOD, DISSOLVED OXYGEN, TOTAL COLIFORM, FECAL COLIFORM, FECAL STREPTOCOCCUS, and TEMPERATURE.

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, K.L3- KALLAI RIVER AT MANKAVU BRIDGE, KL5- KALLAI RIVER AT KALLAI BRIDGE & KL6- KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM .

Handwritten signature and date 6/2/24, Scientist in charge

## 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 UPPALA, KASARGOD

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level <ul style="list-style-type: none"><li>• Specifying accountability of nodal authorities not below the Secretary level</li><li>• Chief Secretaries may have an accountable person attached in their office for this purpose</li></ul>		
	<ul style="list-style-type: none"><li>• Monitoring at State level must take place</li></ul>		
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none"><li>• Secretary, Ministry of Jal Shakti</li><li>• Member Secretary, CPCB</li></ul>		
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 in-situ treatment.		



<p>(II) <u>Status of STPs, I&amp;D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(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</p> <p>(iv) <u>Status of Solid Waste Management &amp; Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline</p> <p>(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;</p> <p>(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.</p> <p>(vii) Ground water regulation</p> <p>(viii) Adopting good irrigation practices</p> <p>(ix) Protection and management of food plain Zones (FPZ)</p>		
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(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		

**ACTION PLAN FOR RIVER UPPALA, KASARAGOD DISTRICT, KERALA**  
**MONTHLY PROGRESS REPORT FOR THE MONTH OF December 2023**  
**RIVER UPPALA, KASARGOD**

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of November 2023	Progress in the month of December 2023	Progress in the month of January 2024	% works completed	Details of works remaining
C(ii)	Material collection facility. Operation	Mangalpady Grama Panchayath	2019	NA	NA	NA		
C	Waste management including purchase of vehicle to collect waste.	Mangalpady Grama Panchayath/ Green Space Private company	2019- 2020	NA	NA	NA	-	
E	Installation of camera	Mangalpady Grama Panchayath	March 2020	NA	NA	NA		
C	Electrification of material collection facility	Manjeshwaram Grama Panchayat	2019-2020	Electrified	Electrified	Electrified	100%	Completed
C	Transportation of collected waste	Manjeshwaram Grama Panchayat	March 2020	12960 KG rejected waste transported	25165 kg waste transported	28450 Kg waste Transported	<b>100%</b>	completed

E	Installation of camera	Manjeshwaram Grama Panchayat	March 2020	CC TV installed at 4 places by Keltron, connected to Police Station and Panchayath Office	CC TV installed at 4 places by Keltron, connected to Police Station and Panchayath Office	CC TV installed at 4 places by Keltron, connected to Police Station and Panchayath Office	100%	completed
C	Tying of net on both sides of the bridge	Irrigation Department	2019-2020	DPR submitted to Chief Engineer (Price ID: 2019/10825/IA) for approval. Informed that as the proposed NH upgrade works are going on and these works are to be carried out along with the bridges which are part of the NH ,it would not be desirable to Carry to these works now. It is hereby notified that NH department itself undertakes and executes the said works in connection with the upgradation of NH 66.	DPR submitted to Chief Engineer (Price ID: 2019/10825/IA) for approval. Informed that as the proposed NH upgrade works are going on and these works are to be carried out along with the bridges, which are part of the NH, it would not be desirable to carry to these works now. it is hereby notified that NH department itself undertakes and executes the said works in connection with the upgradation of NH 66.	DPR submitted to Chief Engineer (Price ID: 2019/10825/IA) for approval. I informed that as the proposed NH upgrade works are going on and these works are to be carried out along with the bridges, which are part of the NH, it would not be desirable to carry to these works now. it is hereby notified that NH department itself undertakes and executes the said works in connection with the upgradation of NH 66.		Work still under process.
E	Continuous vigil on	Police Department					100%	

	waste dumping on roads		Completed
A(a)	Water quality monitoring	KSPCB	Being done regularly

Sd/-

Environmental Engineer

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		03.01.2024	
Nature and flow of the river		Moderate flow, water level decreased	
Sl.No	Parameters	Unit	Uppala Bridge
1	Temperature	° C	30
2	pH	-	7.54
3	Conductivity	µmhos/cm	7440
4	Turbidity	NTU	1.5
5	BOD	mg/l	2.0
6	Dissolved Oxygen	mg/l	7.1
7	Total Coliforms	cfu/100ml	620
8	Feecal Coliforms	cfu/100ml	30
9	Feecal Streptococcus	cfu/100ml	0
10	Chlorides	mg/l	2350
11	Total Alkalinity	mg/l	300
12	Total Hardness	mg/l	600
13	Calcium Hardness	mg/l	70
14	Magnesium Hardness	mg/l	530
15	Calcium	mg/l	28.06
16	Magnesium	mg/l	129.0
17	Total Dissolved Solids	mg/l	6120
18	Sodium	mg/l	1400
19	Potassium	mg/l	48

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		03.01.2024	
Nature and flow of the river		Water level decreased, moderate flow	
Sl.No	Parameters	Unit	Uppala River Near Bhagavathi Temple
1	Temperature	° C	30
2	pH	-	7.43
3	Conductivity	µmhos/cm	1110
4	Turbidity	NTU	0.9
5	BOD	mg/l	1.1
6	Dissolved Oxygen	mg/l	7
7	Total Coliforms	cfu/100ml	460
8	Feecal Coliforms	cfu/100ml	0
9	Feecal Streptococcus	cfu/100ml	0
10	Chlorides	mg/l	860
11	Total Alkalinity	mg/l	22
12	Total Hardness	mg/l	251
13	Calcium Hardness	mg/l	17
14	Magnesium Hardness	mg/l	234
15	Calcium	mg/l	6.8
16	Magnesium	mg/l	56.860
17	Total Dissolved Solids	mg/l	978
18	Sodium	mg/l	435
19	Potassium	mg/l	11.1

Sd/-  
Assistant Scientist