

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 - November 2023

1. Short Term Plan

Maintenance and de-bottle necking of existing sewerage network

No.	Activity	Implementing agency	Time line	Progress in the month of Sept2023	Progress in the month of Oct2023	Progress in the month of NOV2023	% 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% work of Kuriathy completed. Pumping main of Pattoor, Kannammoola and Enchakkal included in long term works
							100%	a. Completed
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%	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 nd 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%	Work Completed on 8/8/21.
2.1.4	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations.	Kerala Water Authority	March 2020				100%	Pump sets installation at Enchakkal and Mudavanmughal pump house completed.
2.1.5	DG sets in all lift and pumping stations – Mudavanmughal, Aranoor, Thaliyal, Kuriyathi, Pattoor, Kannammoola, Pattom, Murinjapalam and Enchakkal	Kerala Water Authority	May 2020				100%	DG sets installation of seven pumping stations completed. Approval from Electrical inspectorate received. Work completed. Trial run also completed. For Aranoor and Thaliyal. Erection of diesel generator is already included in the item mentioned 2.1.2. For Enchakkal already exists.
	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhancha-							



2.1.6	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%	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 % 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% 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 dilapidated manholes for the last 3 years	Kerala Water Authority	May 2020			0%	0%	98.5%	Works completed – 75No. (Rs. 15.41cr) AMRUT-44, State plan-28 MLA ADF/SDF-3 completed (Rs. 3.cr.) AMRUT-1, State plan-0 Expected to be completed by 30.12.2023 for one AMRUT work
	Total works in progress/completed (76No.) Works dropped (2No.)							Dropped – 2 No. (Rs. 1.52cr.) State plan-2	Two works dropped due to not getting offers on repeated tenders and expiry of AS
2.1.10	Extension of sewer network wherever technically feasible in new areas of existing blocks	Kerala Water Authority	May 2020			0.1%	.1%	99.4%	Works completed - 24 No. (Rs. 17.21 cr.) AMRUT-12, State plan-11 MLA ADF/SDF-1
	In progress/Ongoing (24No.)								
	Tendering/ To be arranged (1No.) Land acquisition -1 In progress-3					0.1%			Land acquisition process for three work completed and land handed over to KWA and AS obtained for arranging the work under State Plan 22-23 and one work arranged and one tendered. LA for one work in initial stage.(Details shown in excel sheet attached) Direction from head office to cancel one work and recast the estimate and submit for new AS. Same has been approved in State Plan 2022-23 and tendered. Agreement Executed and pipe supplied and work in progress. Expected date of completion 31.12.23



2.1.11	Procurement of sewer cleaning machines and equipment maintenance	Kerala Water Authority	Mar 2020	0%	0%	0%	100%	Work completed.
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2. Long Term Works

Sl No.	Long term measures proposed	Implementing agency	Amount Required (Rs.in Crore)	Time line	Progress in the month of February	Progress in the month of March	% works completed	Details of works remaining	
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. Cluster 1 comprises of 5 wards - Attukal, Kalady, Kallipankulam, Ambalathara and Kamaleswaram wards - The DPR for cluster 1 amounting to Rs 353.87 Crores was submitted to GoK on 15/10/2022 for obtaining AS. Later as per the direction from CS, the DPR of cluster 1 curtailed into 2 DPRS. DPR of cluster I Zone I&II has been submitted to the Secretary of Jalshakthi for funding under NRCP on 17/02/23. Zone 1 of cluster 3 is consisting of Puthenpally and Part of Muttathara is submitted for AS on 11.01.2023. The DPR of Cluster 3 Zone 2 and Zone 3 is prepared and is under scrutiny/revision. The DPR for cluster 2, is prepared and kept in shelf of projects as there is no fund available. The DPR for cluster 4 (Thirumala Thrikkannapuram and Punnakkamughal wards) is prepared 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 to be made in the DPR. Since there is constraint in land availability for the Construction STP in this cluster, the Technology of the STP changed from SBR to MBBR and hence the revision of the design is to be made. DPR can be resubmitted after designing and obtaining the confirmation of land for the STP and collection well from the TVPM Corporation. DPR for Cluster IX (priority wards - Vizhinjam and Harbour area) is submitted to Govt for according AS. Land for STP identified and the confirmation of the land to be obtained.</p> <p>DPR of cluster X comprising of wards Shangumugham, Vettucaud, Vallakadavu, Beemapalli (part), Beemapalli East (part), Valiyathura and Kadakampally is under preparation.</p> <p>For getting AS under AMRUT 2.0, DPR of Cluster 1 Zone I&2 and Zone 3&4 submitted corporation.</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								
Total Amount			5000CR						



ANALYSIS REPORT OF RIVER KARAMANA @ ARUVIKKARA FOR THE PERIOD FROM JUNE TO NOVEMBER 2023

	PARAMETERS	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1	Temperature, °C	28	28	28	27	27	27
2	Dissolved Oxygen, mg/l	7.1	8.3	8.4	7.2	6.7	11.8
3	pH	7.3	6.7	6.4	8.8	6.3	6.2
4	Conductivity, µmhos/cm	72	77	140	70	87	58.6
5	BOD, mg/l	1.4	1.3	2.1	2.1	1	1.4
6	Nitrate-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
7	Turbidity, NTU	1.1	1.3	1.5	1.8	2	2.1
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	24	19	36	20	16	20
10	Chloride, mg/l	10	16	40	12	20	12
11	COD, mg/l	4	4	8	8	4	4
12	TKN, mg/l	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO ₃ , mg/l	24	18	28	16	13	18
15	Calcium as CaCO ₃ , mg/l	18	10	18	8	8	14
16	Magnesium as CaCO ₃ , mg/l	6	8	10	8	5	4
17	Sulphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
18	Calcium (Ca ²⁺), mg/l	7.2	4	7.2	3.2	3	6
19	Magnesium (Mg ²⁺), mg/l	1.5	1.9	2.4	2	1	1
20	Sodium, mg/l	5.6	8.4	22.3	7.2	12.5	6.5
21	Total Dissolved Solids, mg/l	43	47	110	40	51	39
22	Total Fixed Solids, mg/l	29	33	35	25	30	20
23	Total Suspended Solids, mg/l	18	15	17	13	18	11
24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron, mg/l	0	0	0	0	0	0
26	Potassium, mg/l	1.7	1.9	12	2.5	3.2	1.3
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	600	1100	800	1300	900	1000
29	Fecal Coliform, MPN/100 ml	200	600	400	900	400	500
30	Fecal Streptococcus, MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil
31	% SODIUM	31.8	47.2	52.8	44.9	61.4	41.8

32	SAR	0.5	0.9	1.8	0.8	1.5	0.7
ANALYSIS REPORT OF RIVER KARAMANA @ MOONNATTUMUKKU FOR THE PERIOD FROM JUNE TO NOVEMBER 2023							
SL NO	PARAMETER	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1	Temperature, °C	28	29	29	27	28	28
2	Dissolved Oxygen, mg/l	5.6	5.3	2.4	6.5	3.1	0.6
3	pH	7.6	6.9	6.8	6.6	6.8	6.9
4	Conductivity, µmhos/cm	423	748	1299	253	760	645.6
5	BOD, mg/l	4.2	4.1	6.6	3.9	5.4	7.3
6	Nitrate-N, mg/l	1.9	4.9	5.2	BDL	BDL	BDL
7	Turbidity, NTU	1.9	6.9	7	6.8	6.9	7.1
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	70	40	80	46	88	88
10	Chloride, mg/l	76	176	274	48	156	136
11	COD, mg/l	16	16	24	12	24	24
12	TKN, mg/l	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO ₃ , mg/l	98	108	152	60	156	120
15	Calcium as CaCO ₃ , mg/l	82	80	120	48	128	96
16	Magnesium as CaCO ₃ , mg/l	16	28	32	12	28	24
17	Sulphate, mg/l	18	18	25	BDL	BDL	BDL
18	Calcium (Ca ²⁺), mg/l	32.9	32.1	48	19	51	38
19	Magnesium (Mg ²⁺), mg/l	3.9	6.8	7.8	3	7	6
20	Sodium, mg/l	40.1	92.3	149.6	25.3	80.6	73.5
21	Total Dissolved Solids, mg/l	237	424	708	139	420	356
22	Total Fixed Solids, mg/l	183	186	190	81	120	112
23	Total Suspended Solids, mg/l	96	98	105	57	85	75
24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron, mg/l	0	0	0	0	0	0
26	Potassium, mg/l	8.5	9.3	25.9	5.2	16.9	14.9
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	35800	36000	37500	24000	27000	32500
29	Fecal Coliform, MPN/100 ml	11500	21000	22000	12000	15000	23200

30	Fecal Streptococcus, MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil
31	% SODIUM	44.5	62.6	63.7	45.2	49.7	53.5
32	SAR	1.8	3.9	5.3	1.4	2.8	2.9

ANALYSIS REPORT OF RIVER NEYYAR @ ARUVIPPURAM FOR THE PERIOD FROM JUNE TO NOVEMBER 2023

SL NO	PARAMETER	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1	Temperature, °C	29	27	29	28	29	28
2	Dissolved Oxygen, mg/l	6.8	6.4	5.9	7.2	6.8	6.6
3	pH	7.1	7.1	6.6	6.6	6.4	6.4
4	Conductivity, µmhos/cm	83	112	171	142	121	94.6
5	BOD, mg/l	1.3	1.5	2	1.3	1.9	0.7
6	Nitrate-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
7	Turbidity, NTU	1.4	2.3	2.6	2.7	3	2.4
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	32	22	32	32	20	18
10	Chloride, mg/l	8	20	36	24	32	24
11	COD, mg/l	4	4	8	4	4	4
12	TKN, mg/l	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO ₃ , mg/l	30	16	44	28	20	28
15	Calcium as CaCO ₃ , mg/l	26	10	24	24	16	20
16	Magnesium as CaCO ₃ , mg/l	4	6	20	4	4	8
17	Sulphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
18	Calcium (Ca ²⁺), mg/l	10	4	9.6	9.6	6	8

19	Magnesium (Mg ²⁺), mg/l	0.9	1.5	4.9	1	1	2
20	Sodium, mg/l	5.2	12	19.8	13.1	16.9	12.5
21	Total Dissolved Solids, mg/l	54	62	108	79	74	62
22	Total Fixed Solids, mg/l	26	44	66	52	42	38
23	Total Suspended Solids, mg/l	12	32	25	23	18	15
24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron, mg/l	0	0	0	0	0	0
26	Potassium, mg/l	2.2	4.3	4.6	4.5	4.5	2.2
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	1400	2000	2100	2500	3500	1500
29	Fecal Coliform, MPN/100 ml	1100	1500	1700	1900	2200	1100
30	Fecal Streptococcus, MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil
31	% SODIUM	25.6	54.8	46.3	45.8	58.8	46.9
32	SAR	0.4	1.3	1.3	1.1	1.6	1

ANALYSIS REPORT OF RIVER NEYYAR @ AMARAVILA FOR THE PERIOD FROM JUNE TO NOVEMBER 2023

SL NO	PARAMETER	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1	Temperature, °C	28	29	28	27	28	29
2	Dissolved Oxygen, mg/l	7.4	6.3	6	8.7	7.6	6.5

3	pH	7.4	6.8	6.6	6.6	6.3	6.3
4	Conductivity, μ mhos/cm	118	119	180	98	131	162.5
5	BOD, mg/l	1.2	0.7	0.5	0.7	1.2	0.2
6	Nitrate-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
7	Turbidity, NTU	1.3	1.5	1.4	1.6	1.8	1.7
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	28	32	32	22	24	24
10	Chloride, mg/l	24	20	44	16	32	44
11	COD, mg/l	4	4	4	4	4	4
12	TKN, mg/l	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO ₃ , mg/l	36	32	28	24	20	28
15	Calcium as CaCO ₃ , mg/l	28	24	24	16	16	24
16	Magnesium as CaCO ₃ , mg/l	8	8	4	8	4	4
17	Sulphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
18	Calcium (Ca ²⁺), mg/l	11	9.6	9.6	6.4	6	10
19	Magnesium (Mg ²⁺), mg/l	1.9	1.9	1	2	1	1
20	Sodium, mg/l	12.6	12.4	22.9	8.3	17.5	22.8
21	Total Dissolved Solids, mg/l	70	72	112	55	79	101
22	Total Fixed Solids, mg/l	48	60	63	42	45	52
23	Total Suspended Solids, mg/l	26	42	45	18	20	27
24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL

25	Boron, mg/l	0	0	0	0	0	0
26	Potassium, mg/l	3.8	4.5	10.6	4.1	6.3	7.1
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	1500	1200	1500	2200	3000	1000
29	Fecal Coliform, MPN/100 ml	1000	800	1000	1400	1800	800
30	Fecal Streptococcus, MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil
31	% SODIUM	40.1	41.7	54.5	38.2	57.6	57.2
32	SAR	0.9	1	1.9	0.7	1.7	1.9

ANALYSIS REPORT OF RIVER VAMANAPURAM @ VAMANAPURAM FOR THE PERIOD FROM JUNE TO NOVEMBER 2023

SL NO	PARAMETER	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1	Temperature, °C	29	29	28	27	28	28
2	Dissolved Oxygen, mg/l	8.2	8.4	8.5	8.2	6.7	7.2
3	pH	7.2	6.9	6.4	6.4	6.3	6.4
4	Conductivity, µmhos/cm	63	121	69	62	73	100.3
5	BOD, mg/l	1.2	1.2	1.5	2	1.5	0.9
6	Nitrate-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
7	Turbidity, NTU	1.4	2.4	1.5	1.7	2	1.8
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	22	20	8	12	12	16
10	Chloride, mg/l	8	28	16	16	16	24
11	COD, mg/l	4	4	4	4	4	4
12	TKN, mg/l	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO ₃ , mg/l	20	16	12	16	16	16
15	Calcium as CaCO ₃ , mg/l	14	12	8	8	8	12
16	Magnesium as CaCO ₃ , mg/l	6	4	4	8	8	4
17	Sulphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
18	Calcium (Ca ²⁺), mg/l	5.6	4.8	3.2	3.2	3	5
19	Magnesium (Mg ²⁺), mg/l	1.5	1	1	2	2	1
20	Sodium, mg/l	4.2	15.3	8.4	8.4	8.6	12.6
21	Total Dissolved Solids, mg/l	36	69	38	40	41	58
22	Total Fixed Solids, mg/l	22	56	25	27	28	36
23	Total Suspended Solids, mg/l	14	38	19	20	20	25

24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron, mg/l	0	0	0	0	0	0
26	Potassium, mg/l	0.6	6.5	2.7	2.7	2.8	3.2
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	1200	600	700	1100	2300	2100
29	Fecal Coliform, MPN/100 ml	800	200	300	800	1900	1600
30	Fecal Streptococcus, MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil
31	% SODIUM	30.6	57.8	54.2	48.4	48.9	57.7
32	SAR	0.4	1.7	1.1	0.9	0.9	1.4

ANALYSIS REPORT OF RIVER AYIROOR @ AYIROOR FOR THE PERIOD FROM JUNE TO NOVEMBER 2023

SL NO	PARAMETER	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1	Temperature, °C	29	28	29	28	28	29
2	Dissolved Oxygen, mg/l	5.1	6.9	6.7	6.6	7.4	7.8
3	pH	6.8	6.6	7.1	6.8	6.2	6.3
4	Conductivity, µmhos/cm	154	254	158	119	160	110.8
5	BOD, mg/l	2.3	2.1	0.8	1	0.7	1.5
6	Nitrate-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
7	Turbidity, NTU	4.3	2.3	2.5	2.8	3	2.8
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	36	12	20	30	20	20
10	Chloride, mg/l	20	92	32	28	40	28
11	COD, mg/l	8	8	4	4	4	4
12	TKN, mg/l	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO ₃ , mg/l	42	40	20	40	24	24
15	Calcium as CaCO ₃ , mg/l	38	24	12	24	20	16
16	Magnesium as CaCO ₃ , mg/l	4	16	8	16	4	8
17	Sulphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
18	Calcium (Ca ²⁺), mg/l	15	9.6	4.8	9.6	8	6
19	Magnesium (Mg ²⁺), mg/l	0.9	3.9	1.9	4	1	2
20	Sodium, mg/l	10.9	55.5	17.9	14.8	20.7	14.5
21	Total Dissolved Solids, mg/l	92	178	86	81	88	70
22	Total Fixed Solids, mg/l	65	78	65	45	48	41
23	Total Suspended Solids, mg/l	42	56	40	20	23	20
24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron, mg/l	0	0	0	0	0	0
26	Potassium, mg/l	2.2	3.3	4.9	2.8	5.3	5.1
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	3500	4000	1300	2200	1800	2100

29	Fecal Coliform, MPN/100 ml	1800	2000	800	1500	1400	1600
30	Fecal Streptococcus, MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil
31	% SODIUM	34.6	73.2	59.7	42.5	59.4	50.8
32	SAR	0.7	3.8	1.7	1	1.8	1.3

ANALYSIS REPORT OF RIVER MAMOM @ MAMOM FOR THE PERIOD FROM JUNE TO NOVEMBER 2023

SL NO	PARAMETER	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1	Temperature, °C	29	28	29	27	29	28
2	Dissolved Oxygen, mg/l	6.2	7.1	6.9	10	7.1	9.1
3	pH	6.9	6.6	6.8	6.7	6.4	6.6
4	Conductivity, µmhos/cm	164	167	167	149	150	116.7
5	BOD, mg/l	2.5	1.8	1	1.1	1.2	0.2
6	Nitrate-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
7	Turbidity, NTU	2.8	1.5	1.7	1.9	2	2.1
8	Phenolphthalein Alkalinity, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
9	Total Alkalinity, mg/l	48	20	24	24	32	22
10	Chloride, mg/l	22	44	44	28	28	24
11	COD, mg/l	8	8	4	4	4	4
12	TKN, mg/l	ND	ND	ND	ND	ND	ND
13	Ammoniacal-N, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Hardness as CaCO ₃ , mg/l	52	40	40	28	32	30
15	Calcium as CaCO ₃ , mg/l	46	28	28	24	20	16
16	Magnesium as CaCO ₃ , mg/l	6	12	12	4	12	14
17	Sulphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
18	Calcium (Ca ²⁺), mg/l	18	11	11	9.6	8	6
19	Magnesium (Mg ²⁺), mg/l	1.5	2.9	2.9	1	3	3
20	Sodium, mg/l	12.1	21.5	23.5	15.4	14.9	12.7
21	Total Dissolved Solids, mg/l	94	101	101	84	84	65
22	Total Fixed Solids, mg/l	58	60	64	48	47	35
23	Total Suspended Solids, mg/l	40	44	37	16	17	14

24	Phosphate, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron, mg/l	0	0	0	0	0	0
26	Potassium, mg/l	4.3	5	5	3.8	3.3	2.9
27	Fluoride, mg/l	BDL	BDL	BDL	BDL	BDL	BDL
28	Total Coliform, MPN/100 ml	2800	3500	3000	2500	2600	1000
29	Fecal Coliform, MPN/100 ml	1900	2000	2200	1800	1900	800
30	Fecal Streptococcus, MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil
31	% SODIUM	31.4	50.2	52.4	50.5	47.2	45
32	SAR	0.7	1.5	1.6	1.3	1.1	1

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	31.03.2025	Projects for to be taken
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2025	„
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2025	„
5	Chief Secretaries may set up appropriate monitoring mechanism at state level <ul style="list-style-type: none">• Specifying accountability of nodal authorities not below the Secretary level• Chief Secretaries may have an accountable person attached in their office for this purpose	NA	-
	• -	NA	-
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none">• Secretary, Ministry of Jal Shakti• Member Secretary, CPCB	NA	-

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&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 & 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>31.03.2024</p> <p>31.03.2024</p>	<p>Presently no STP in the panchayat</p> <p>Presently no CETP or ETP in the panchayat</p> <p>Door to door plastic waste collection, Supply of waste bins, Construction of compost pits etc.</p> <p>Not Available</p> <p>Biomedical waste disposed through IMAGE , Plastic waste collected door to door by Haritha Karma Sena</p> <p>Yes, Going On</p>
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(viii) Adopting good irrigation practices		
(ix) Protection and management of food plain Zones (FPZ)		-
(x) Rain water harvesting		Yes, Going On
(xi) Maintaining minimum Environmental flow of river		Yes, Going On
(xii) Plantation on both sides of the river		Yes, Going On
(xiii) Setting up biodiversity parks on flood plains by removing encroachment		

ACTION PLAN FOR RIVER PAMBA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2023	Progress in the month of October 2023	Progress in the month of November 2023	% works completed	Details of works remaining
A(a)	No industries	-	-				-	-
A(a)	Monitorng of river water quality	Kerala State Pollution Control Board	Continuing project	NA				
C(ii)	Establishment of de-centralized solid waste treatment facility	Mannar Panchayat, Panchayath	31.03.2024					
C	Establishment of Material Collection Facility	Mannar Panchayat, Panchayath	31.03.2021	-			100%	
C	Resource Recovery Facility	Mannar Panchayat, Panchayath	31.03.2021	NA			-	
C	Installing household and community level solid waste management units	Mannar Panchayat	31.03.2021	-			50%	
C	Door to door collection and transportation of municipal solid waste	Mannar Panchayat	31.03.2021	Plastic Waste Collection				

C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Parumala Town	Kadapra Panchayat	31.12.2020					
C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Mannar Town	Mannar Panchayat	31.12.2024	„			„	„
C	Construction of compound wall with fencing	Irrigation department	31.03.2021					
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	Regualting activites in flood plain zone, protection and management of flood plain zone	Irrigation department	31.03.2021					
	Greenery developmentPlantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment	Irrigation department	31.03.2021					

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 water 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					

MONTHLY ANALYSIS REPORT OF POLLUTED RIVER STRETCHES NOVEMBER-2023

STATION: MANNAR

SamplingDate: 04.11.2023

<i>SI. No</i>	<i>PARAMETERS</i>	<i>ITTINAYARKKADAVU BRIDGE KUTTAMPEROOR</i>	<i>KOTTAKAL KADAVU BRIDGE KORATTIKADAVU</i>	<i>PARUMALA BRIDGE</i>	<i>MANNAR BRIDGE</i>
1	Temp. (°C)	27	26	27	28
2	pH	6.8	6.9	6.6	6.8
3	Conductivity (µS/cm)	58.11	52.68	62.06	53.39
4	DO (mg/L)	4.9	5.4	5.3	4.9
5	BOD (mg/L)	1.8	1.5	1.3	1.1
6	COD (mg/L)	6.4	6.4	6.4	3.2
7	TDS (mg/L)	76	64	68	52
8	TC (CFU/100ml)	700	400	520	210
9	FC (CFU/100ml)	230	130	170	70
10	FSC(CFU/100ml)	Nil	Nil	Nil	Nil

National Mission for Clean Ganga

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

RIVER MANIMALA, ALAPPUZHA

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	31.03.2021	NIL
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	Since Large Land holding by local residents on the bank, No
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	22.01.2020	Such issues arises, no need of steps since
5	Chief Secretaries may set up appropriate monitoring mechanism at state level <ul style="list-style-type: none">• Specifying accountability of nodal authorities not below the Secretary level• Chief Secretaries may have an accountable person attached in their office for this purpose	22.01.2020	No industry/commercial activity
	<ul style="list-style-type: none">• Monitoring at State level must take place	22.01.2020	NIL
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none">• Secretary, Ministry of Jal Shakti• Member Secretary, CPCB	22.01.2020 Fortnightly commencing	NIL

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&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 & 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</p>	<p>21.12.2019</p> <p>2020-2021</p> <p>2019-2020</p> <p>2020-2021</p> <p>2020-2021</p>	<p>Drains contributing to river pollution were identified. The drains are seasonal and water quality is above the require limit, no in situ.</p> <p>Proposal for setting up an FSTP by Chengannur municipality is initiated.</p> <p>Since the area does not contain any industry no requirement of any CETP, this action. Plan revised.</p> <p>The adjoining local bodies are in the stage of developing and establishing adequate solid waste management facilities also the solid waste during issues were not identified in the stretch during field visit held during past 1 year. Water quality analysis result of the stretch up to NOVEMBER 2023 is enclosed. Awareness campaigns initiated.</p> <p>No groundwater pollution is noted in the area action yet to be initiated.</p>
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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 September 2023	Progress in the month of October 2023	Progress in the month of November 2023	% works completed	Details of works remaining
A(a)	Monitoring of river water quality	Kerala State Pollution Control Board	Continuing project				100%	NIL
A(b)	Rendering Plant at Eraviperoor or Thiruvalla	Eraviperoor/ Thiruvalla local body	31.03.2021				0%	Work to be initiated
C(ii)	Fencing of bridges, desilting, dredging and protection works, surveillance cameras at vantage points	Irrigation department	31.03.2021				0%	Work to be initiated
C	Preventing illegal discharge of septage and other waste water into the river. Formation of River Protection Group	Panchayath, Police , KSPCB	31.05.2020.				0%	Work pending due to COVID pandemic
C	Greenery development Plantation on both sides of the river, setting up biodiversity parks in flood plains and removing encroachment	Irrigation department in association with panchayath	31.03.2021				0%	Yet to be initiated
C(b)(ii)	Green Protocol implementation in all offices, institution & public functions	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoorpanchayaths	31.03.2020				100%	0

D(a)	Issues relating to E-flow, maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department, Hydrographic survey department	31.03.2021					Work to be initiated
C(ii)	Establishment of decentralized solid waste treatment facilities	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoorpanchayaths	31.12.2020				100%	0
C	Installing household & community level solid and domestic sewage waste management	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoorpanchayaths	31.12.2020				NA	NA
C	Door to door collection of solid waste & Material Collection Facilities (MCF) & Resource Revcovery Facilities (RRF)	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoorpanchayaths	31.12.2020				NA	NA

ACTION BY GROUND WATER DEPARTMENT

Sl. No	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Timeline	Progress in the month of September 2023	Progress in the month of October 2023	Progress in the month of November 2023	% 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	31.03.2021					
2	B(ii)	Ground water recharging / rain water harvesting in Govt offices	31.03.2021					
3	NGT order in O.A no.496/2016 Identification of illegal bore wells in the catchment area.	NGT order in O.A no.496/2016 Identification of illegal bore wells in the catchment area.	31.03.2021					

**ANALYSIS REPORT OF DRAINS OF MANIMALA BETWEEN KALLOOPARA AND THONDRA
NOV-2023**

<i>SI NO</i>	<i>BOTTLE NO.</i>	<i>Name of Drains</i>	<i>PH</i>	<i>BOD</i>	<i>TC</i>	<i>FC</i>
1	TK1	Panayampalathodu	6.8	2.4	2500	500
2	TK2	PadathupalamThodu	7.11	0.6	1800	600
3	TK3	Thottappuzha	6.75	0.2	5000	700
4	TK4	Kuttapuzha under Kattodubridge	6.6	1.7	2200	500
5	TK5	Kadavumbara	6.72	1.5	100	0
6	TK6	Drain under Varappalam Bridge	NIL	NIL	NIL	NIL
7	TK7	Drain under kallupalam Bridge	7.15	1.2	2000	300
8	TK8	Komalamthodu	6.9	1	8200	500
9	TK9	Vennikulam Valiyathodu	6.9	0.4	1800	200
10	TK10	Paduthodu	7.2	1.4	4200	800
11	TK11	Mallappally Valiyathodu	7.3	1.6	3900	500

National Mission for Clean Ganga

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RIVER PERIYAR, ERNAKULAM

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">• Specifying accountability of nodal authorities not below the Secretary level• Chief Secretaries may have an accountable person attached in their office for this purpose		
	<ul style="list-style-type: none">• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none">• Secretary, Ministry of Jal Shakti• Member Secretary, CPCB		

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&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 & 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>		
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	<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>		
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ACTION PLAN FOR RIVER PERIYAR, KERALA

SHORT TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2023	Progress in the month of October 2023	Progress in the month of November 2023	% works comp leted	Details of works remaining
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 (Not present in the meeting)	Dec 2019	The construction work of STP at Advaita Ashram is in progress. The agreement for the civil works has been completed at present. 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	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 immedietly. 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	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 immedietly. 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		

				functioning	up the partial functioning. Informed that mechanical and civil related works may completed within 2 months.	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	45 Lakh ETP project proposal has been submitted. A new slaughter house along with this is also considered. Therefore no decision has been made regarding the capacity of ETP	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(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	The outlets of establishments discharging sewage into public drains have been closed and instructed to build treatment facilities. The	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	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		

				inspection information of September regarding the name of the establishment, the fine imposed and the action taken will be sent as a report	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.	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.		
A(a)(iv)	Periodical inspection in the Industries, Flats, hotels monitoring of STP,ETP	KSPCB	Periodical					
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	Drainage cleaning activities are done everyday. JCBs are also used for carry out the waste. The excavated waste is	Drainage cleaning activities are done everyday. JCBs are also used for carry out the waste. The excavated waste is		

				then disposed in Thumboormuzhi compost.	then disposed in Thumboormuzhi compost.	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.	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.	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.		
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	Sept 2019	NA	NA	NA	100%	
C(ii)	Installation of plastic shredding unit	Kalamassery Municipality	June 2019	NA	NA	NA	100%	

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 CCTV. Night squad fine Rs. 1825440	NAD not provided CCTV.Night squad fine Rs. 1867440	NAD not provided CCTV.Night squad fine Rs. 1867440		
A(b)	Installation of common STP for Kalamassery Municipality and ETP at Municipal Market	Kalamassery Municipality	December 2019	NAD not provided CCTV.Night squad fine Rs. 1867440	NAD not provided CCTV.Night squad fine Rs. 1867440	NAD not provided CCTV.Night squad fine Rs. 1867440		
A(a)(iv)	Monitoring and surveillance of industries in Kalamassery Industrial Estate in order to prevent unauthorized discharges to Muttar River	KSPCB	2019	6 outlets were found out by the inspection conducted on last month and they were closed. Information will be sent				

C(ii)	Installation of modern abattoirs including poultry and meat rendering plants.	Kalamassery Municipality, Industries Department (for land allotment)	2021	Industries department has informed that land is not available in the industrial estate	A letter dated 03.10.22 has forwarded to the govt. for allotment of land for the construction of modern abattoirs	A letter dated 03.10.22 has forwarded to the 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	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	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		

				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 notice issued to 1 person Inspection conducted on 29.12.2022, 5 persons cleared violation Inspection conducted on	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 houses, 3 outlet of establishment in may 2023	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 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. No waste discharge was found during inspection time	Inspections are done time to time. No waste discharge was found during inspection time	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		
E	Installation of cameras at the waste dumping spots	Eloor Municipality	2020	Keltron cameras have been installed in the vicinity of the aerobic bins near HIL company and in Manjummel Arattukadavu. Also in the 2023-24 project amount has been allocated for the installation of cameras in different areas of the municipality and according to this 44, 00,000 rupees tender procedures are being taken for 3 projects	Keltron cameras have been installed in the vicinity of the aerobic bins near HIL company and in Manjummel Arattukadavu. Also in the 2023-24 project amount has been allocated for the installation of cameras in different areas of the municipality and according to this 44, 00,000 rupees tender procedures are being taken for 3 projects	The project is being implemented at a cost of 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		

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		
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	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	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	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		
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. Notices were issued against those found violating the law. Notice was sent by the Health Department.	A thorough inspection was carried out in the establishments near the river.112 notices were issued against those found violating the law on last month and 76 outlets of institutions have been closed.	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.		

				Corresponding actions will be reported before 5th September.	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 the Onithod which connected from Periyar has been submitted to the government by the Ernakulum district collector from minor irrigation	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 to the government by the Ernakulum district collector from minor irrigation office.	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 to the government by the Ernakulum district collector from minor irrigation office.		

				<p>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>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>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 ensure the smooth flow of water	Irrigation department	3 years	The project Operation Vahini 2022 is carried out to clean and desilt drainsand hand	The project Operation Vahini 2022 is carried out to clean and desilt drainsand hand	The project Operation Vahini 2022 is carried out to clean and desilt drainsand 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	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	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		
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.	The shutters are opened and operated at regular intervals.	The shutters are opened and operated at regular intervals.		
A(b)	Common Effluent Treatment Plant at Edayar Industrial Estate	Industries department	2022	The project proposal for the establishment of common effluent plant is under				

			<p>revision and didn't receive any reply from government regarding the revised amount. Environmental Engineer explained more details about this subject. On 09/02/2023 during RRC chaired by Chief Secretary discussed OA673/2018 with other related departments and taken a decision that, all the industries in Edayar may have their own ETP so in that case CETP project can be abandoned. Therefore, Environmental Engineer suggested to exclude this agenda from further</p>				
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				discussions.(including the minutes of the referred meeting)				
A(b)	Construction of internal roads and proper drainage in Edayar industrial estate	Industries department			Completed construction of 13 roads and drainages. Rs.6.54 crore has been approved to PWD for maintenance and repair.	Completed construction of 13 roads and drainages. Rs.6.54 crore has been approved to PWD for maintenance and repair.The construction works will start from December 15		
A(b)	Installation of common discharge pipe line at downstream of Pathalam Regulator Bridge	Industries department, Irrigation department	3 year s	It was decided to include the project of installing the common discharge pipeline in the DPR of CETP. Currently CETP project has discontinued and the plan does not exist.				
E	Installation of Night vision surveillance cameras at the River Bank side	KSPCB	202 0	The CCTV cameras and accessories have				

				been installed. 9 cameras have been installed.				
A(a)(iv)	Periodical Monitoring of Eloor, Edayar, Kalamassery Industrial belts	KSPCB	2020	Routine inspection is going on. Night Surveillance also carried out continuously.	Routine inspection is going on. Night Surveillance also carried out continuously.	Routine inspection is going on. Night 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 PathalamBundhave 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	The maintenance works of Online monitoring station in the downstream side of PathalamBundhave 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	The maintenance works of Online monitoring station in the downstream side of PathalamBundhave 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		

A(b)	Identification of the establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain	Kadungallur Panchayath	2020	Inspection Ongoing	Inspection Ongoing	Waste discharging units has been identified .issued notices and fine is charged .Biobin , composite pit are available		
E	Installation of cameras at the waste dumping spots	Kadungallur Panchayath	2020	Project Ongoing	Project Ongoing	The 17 lakh project to install camera is underway.30 spots been indentified and a fine of 15000 rupees charged as penalty last month		
A(b)	Identification of the establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain	Choornikkara Panchayath	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.		
E	Installation of cameras at the waste dumping spots	Choornikkara Panchayath	2020		For the monitoring of sumping 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	For the monitoring of sumping spots, 50 lakh rupees project is submitted for installing camera. Out of which 25 lakhs should be collected in the form of donation. 50		

					to be amended to 30 lakhs is under consideration. 2.11 lakhs as CSR contribution. It was decided to nrgotiate with the companies for the remaining amount, 5 lakh is also under consideration	lakhs to be amended to 30 lakhs is under consideration. 2.11 lakhs as CSR contribution. It was decided to nrgotiate with the companies for the remaining amount, 5 lakh is also under consideration		
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LONG TERM MEASURES

No. (as per Action Plan)	Activity	Impleme nting agency	Time line	Progress in the month of September 2023	Progress in the month of October 2023	Progress in the month of November2023	% works complete d	Detail s of works remain ing
A(b)	Construction of walkway, ring roads etc at the Periyar River bank at industrial belt.	Irrigation department	4 years	A letter (15.07.2023) has been issued by Tahsirdar of Paravur Taluk for surveying the banks of the river. Immediate actions will be followed up. An investigation estimate of Rs.8 lakhs has been prepared and submitted for construction of road and dyke wall near industrial belt. Financial sanction of 5.9 lakhs has been received, sent	Tender process for the 5.9 lakh construction of Dyke wall and surveillance road along the industrial has been completed and engaged in contract agreements. Dyke wall design will be accomplished by analyzing the investigation report and space availability.	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 space availability. It is informed that Investigation process shall be		

				for administrative sanction. The design of the dyke wall can be completed only after considering the investigation report and the availability of space		completed within 2 months. The construction of retaining wall in dumping yard and compound was is completed		
C(i)	Fencing of the river banks along the stretches of waste disposal (Edamula stretch)	Cochin Municipal Corporation	1-2 years					
C(iii)	Beautification of the river stretches (Edamula stretch)	Cochin Municipal Corporation	1-2 years		Explanation will be given in next meeting	Explanation will be given in next meeting		

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 September 2023	Progress in the month of October 2023	Progress in the month of November2023	% 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					
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					

**KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, FLOOR
ANALYSIS REPORT OF RIVER PERIYAR - NOVEMBER 2023
Sampling point: VETTUKADAVU**

Sl. No	Parameter	Unit	05.11.2023	25.11.2023
1	Temp	°C	28.6	28.1
2	pH		7.0	7.0
3	Conductivity	µS/cm	102.70	136.00
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	22.8	31.8
6	Hardness	"	22.0	36.0
7	D.O.	"	7.8	5.8
8	Calcium	"	6.8	12.4
9	Magnesium	"	1.215	1.215
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	26.0	22.0
13	BOD	"	2.9	1.3
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	200.0	700.0
17	FC	"	NIL	100.0
18	FS	"	NIL	NIL

* TURBIDITY METER IS OUT OF ORDER

** SPECTROPHOTOMETER IS OUT OF ORDER

**KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, FLOOR
ANALYSIS REPORT OF RIVER PERIYAR - NOVEMBER 2023
Sampling point: PATHALAM BRIDGE**

Sl. No	Parameter	Unit	05.11.2023	25.11.2023
1	Temp	°C	28.5	28.1
2	pH		7.1	6.9
3	Conductivity	µS/cm	55.93	48.83
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	13.9	17.9
6	Hardness	"	18.0	14.0
7	D.O.	"	6.2	6.1
8	Calcium	"	3.6	4.8
9	Magnesium	"	2.187	0.486
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	28.0	26.0
13	BOD	"	0.9	0.9
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	400.0	600.0
17	FC	"	NIL	100.0
18	FS	"	NIL	NIL

* TURBIDITY METER IS OUT OF ORDER

** SPECTROPHOTOMETER IS OUT OF ORDER

**KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, FLOOR
ANALYSIS REPORT OF RIVER PERIYAR - NOVEMBER 2023
Sampling point: PUTHALAM KADAVU**

Sl. No	Parameter	Unit	05.11.2023	25.11.2023
1	Temp	°C	28.5	28.1
2	pH		7.0	7.1
3	Conductivity	µS/cm	62.02	55.81
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	16.9	16.9
6	Hardness	"	19.0	16.0
7	D.O.	"	6.4	6.2
8	Calcium	"	5.2	4.8
9	Magnesium	"	1.458	0.972
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	32.0	32.0
13	BOD	"	0.9	1.5
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	900.0	2000.0
17	FC	"	400.0	700.0
18	FS	"	NIL	NIL

* TURBIDITY METER IS OUT OF ORDER

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**KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - NOVEMBER 2023
Sampling point: PATHALAM BUND U/S**

Sl. No	Parameter	Unit	05.11.2023	25.11.2023
1	Temp	°C	B	B
2	pH		U	U
3	Conductivity	µS/cm	N	N
4	Turbidity	NTU	D	D
5	Chlorides	mg/L		
6	Hardness	"	O	O
7	D.O.	"	P	P
8	Calcium	"	E	E
9	Magnesium	"	N	N
10	Ammoniacal Nitrogen	"		
11	Phosphate	"		
12	Total alkalinity	"		
13	BOD	"		
14	Sulphate	"		
15	Nitrates	"		
16	TC	cfu/100ml		
17	FC	"		
18	FS	"		

* TURBIDITY METER IS OUT OF ORDER

** SPECTROPHOTOMETER IS OUT OF ORDER

**KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, FLOOR
ANALYSIS REPORT OF RIVER PERIYAR - NOVEMBER 2023
Sampling point: PATHALAM BUND D/S**

Sl. No	Parameter	Unit	05.11.2023	25.11.2023
1	Temp	°C	28.4	28.1
2	pH		7.1	7.0
3	Conductivity	µS/cm	59.3	124.3
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	12.9	29.8
6	Hardness	"	15.0	36.0
7	D.O.	"	7.1	6.0
8	Calcium	"	5.2	13.6
9	Magnesium	"	0.486	0.486
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	28.0	26.0
13	BOD	"	2.6	2.0
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	400.0	600.0
17	FC	"	100.0	100.0
18	FS	"	NIL	NIL

* TURBIDITY METER IS OUT OF ORDER

** SPECTROPHOTOMETER IS OUT OF ORDER

**KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, FLOOR
ANALYSIS REPORT OF RIVER PERIYAR - NOVEMBER 2023
Sampling point: MANJUMMAL BUND**

Sl. No	Parameter	Unit	05.11.2023	25.11.2023
1	Temp	°C	28.1	28.1
2	pH		7.0	6.9
3	Conductivity	µS/cm	100.60	59.99
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	24.8	15.9
6	Hardness	"	32.0	15.0
7	D.O.	"	6.0	5.5
8	Calcium	"	10.8	4.8
9	Magnesium	"	1.215	0.729
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	22.0	26.0
13	BOD	"	1.4	1.5
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	1600.0	1800.0
17	FC	"	1600.0	400.0
18	FS	"	NIL	NIL

* TURBIDITY METER IS OUT OF ORDER

** SPECTROPHOTOMETER IS OUT OF ORDER

**KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, FLOOR
ANALYSIS REPORT OF RIVER PERIYAR - NOVEMBER 2023
Sampling point: ALUVA - MANAPPURAM**

Sl. No	Parameter	Unit	05.11.2023	25.11.2023
1	Temp	°C	28.2	28.1
2	pH		7.4	7.1
3	Conductivity	µS/cm	89.58	41.60
4	Turbidity	NTU	*	*
5	Chlorides	mg/L	11.9	15.9
6	Hardness	"	24.0	19.0
7	D.O.	"	6.2	5.9
8	Calcium	"	8.0	5.6
9	Magnesium	"	0.972	1.215
10	Ammoniacal Nitrogen	"	**	**
11	Phosphate	"	**	**
12	Total alkalinity	"	26.0	28.0
13	BOD	"	0.7	0.9
14	Sulphate	"	**	**
15	Nitrates	"	**	**
16	TC	cfu/100ml	800.0	1100.0
17	FC	"	200.0	300.0
18	FS	"	NIL	NIL

* TURBIDITY METER IS OUT OF ORDER

** SPECTROPHOTOMETER IS OUT OF ORDER

**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

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		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"> • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose. 		
	<ul style="list-style-type: none"> • Monitoring at State level must take place 		
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none"> • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB 		

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&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 & 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>Last updated report submitted was on November 27, 2023</p> <p>(I) Identified 3 drains on 10/12/2018 at the Hajiya pally stretch. Already Screen Net installed to both side of the bridge and periodic inspection & drainage of cleaning doing.</p> <p>(ii) Malappuram municipality – 30KLD. Consent application is submitted for the revamping activities. Application has been returned for clarification. 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 November 2023. More activities are progressing under the “The lineer Ozhukum Navakeralam” scheme</p>
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<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>(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>(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 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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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
1.7	Identification of illegal outlets into storm water drains and fine imposed on such units.	Malappuram Municipality	ongoing	completed	completed	completed	completed	completed
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
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2.KERALA STATE POLLUTION CONTROL BOARD

No.	Activity	Implementing agency	Time line	Progress in the month of September 2023	Progress in the month of October 2023	Progress in the month of November 2023	% works Completed	Details of works remaining
2.1	River water quality Monitoring- Thirurangadi, Hajaripally National Water Quality Programme(NWMP)	KSPCB	Ongoing; Monthly frequency	100%				

2.2	River water quality Monitoring - Thirurangadi, Kooriyad, Manikut, Hajiyarpally, Anakkayam, Oravambrum - State Water monitoring programme (SWMP)	KSPCB	Ongoing; Seasonal - Pre - monsoon, monsoon, post - monsoon	100%					
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 September2023	Progress in the month of October2023	Progress in the month of November 2023	% works completed	Details of works remaining	

3.1.	<p>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 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>	Ground water Department		<p><i>No action included in the approved plan to be performed by Ground Water Department</i></p>	<p><i>No action included in the approved action plan to be performed by Ground Water Department</i></p>	<p><i>No action included in the approved action plan to be performed by Ground Water Department</i></p>		
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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 roof top rain water recharging through recharge pit schemes in Vengarablock.)</p>	Ground water Department		<p><i>No action included in the approved action plan to be performed by Ground Water Department</i></p>				
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		<p><i>No action included in the approved action plan to be performed by Ground Water Department</i></p>				

3.4	<p>For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status : The total irrigation draft in the area ranges from 979.683 - 1857.49 ha.m.)</p>	<p>Ground water Department</p>		<p><i>No action included in the approved action plan to be performed by Ground Water Department</i></p>				
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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

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"> • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose. 		
	<ul style="list-style-type: none"> • Monitoring at State level must take place 		
6	Progress report may be furnished by the State/UTs to <ul style="list-style-type: none"> • Secretary, Ministry of Jal Shakti • Member Secretary,CPCB 		

6.1	<p>Progress Report may be comprised of details along with completion timelines on:</p> <ul style="list-style-type: none"> (i) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (ii) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline 	<p>Last updated report submitted was on ,2023 November28</p> <ul style="list-style-type: none"> (i) Identified 17 drains out of which 9 were additionally identified on 11.07.2019 (ii) <u>Tirur FishMarket STP</u>– 45 KLD- Not working condition. Accordingly conducted site inspection by Board on 09.11.2023 to evaluate progress, No progress found. Since about 3 years repeated directions are being issued for time bound renovation of fish market STP. (ii) <u>Tirur municipal Bus Stand STP</u>-50 KLD –Present status- work completed ,send letter to suchitwa mission for technical evaluation and approvals. preparing for trial run. iii) NIL (iv) De centralised treatment facilities, Disposal using sanitary landfills, composting operations, MRF, MCF etc. Slaughter house- completed civil work. Electrical installation works started. (v) Attached as Annexure II-Analysis report during the month of November2023
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<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 & 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>(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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(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 TIRUR, KERALA

1. IRRIGATION DEPARTMENT								
1.								
No.	Activity	Implementing agency	Time line	Progress during month of 2023	Progress during month of 2023	Progress during month of 2023	% works completed	Details of works remaining
			31.03.2020	September	October	November		
1.1.1	Strengthening the right side bund of Tirur-PonnaniPuzhaatPorur, ward no. I TirurMunicipality	Irrigation Department	6 Months	In Progress	Investigation workreport of the collective regulator has been received and the estimate will be prepared in connection with it.	progressing	28%	Date of completion as per agreement is 26.12.2023
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 TirurPonnaniPuzhainMangalam Grama Panchayath in Malappuram Dist	Irrigation Department	18 Months	No progres	Materials for the work have been brought down and the work can be started in the first week of December.	Work got stuck due to conditions at site.		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 adetailed technical study by an expert team to find a solution for the existing issues.
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2.TIRUR MUNICIPALITY

No.	Activity	Implementing agency	Time line	Progress during month of September 2023	Progress during month of October2023	Progress during month of November2023	% works completed	Details of works remaining
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		90%	ETP wok submitted for TS to suchitwa mission tvm
2.5	Fencing on Bridgeside ThalakkadathurBridge	Tirur Municipality	December 2020	completed	completed	completed	100	NIL
2.6	Installation of CCTV Camera near the river BankThalakadathurBridge	Tirur Municipality	May 2020	Completed	completed	completed	100	NIL
2.7	Planting of Bamboo seedlings on the river bank (Thazhepalam)	Tirur Municipality	June 2020	Completed	completed	completed	100	NIL
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	Fish market STP repair work tender approved by council.Work	Renovation work under process	(See minutes)

					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	will be started next week.		
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	progressing	(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	Tirur Municipality	June 2020	Completed	Completed	Completed	100	Completed

	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							
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 September 2023	Progress in the month of October 2023	Progress in the month of November 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 months					Ongoing

4. ACTION PLAN BY VARIOUS GRAMA PANCHAYATHS- THALAKKAD, VETOM, MANGALAM, CHERIAMUNDAM

No.	Activity	Implementing agency	Time line	Progress in the month of September 2023	Progress in the month of October 2023	Progress in the month of November 2023	% 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	Vettom - 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 Nirmithi Kendra, Kozhikode	31.03.2020	No progress	No progress	No progress Due to audit objection.	70% protection of wall completed	Landscaping work remainig as per estimate
4.5	Fencing on bridge side Thalakkadathur	Cheriyamundam Grama Panchayath	March 2020	complete d	completed	completed	100	NIL

5.GROUND WATER DEPARTMENT

No.	Activity	Implementing agency	Time line	Progress in the month of Septemb	Progress in the month of October 2023	Progress in the month of November 2023	% works completed	Details of works remaining
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				er2023				
5.1.	<p>Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks</p> <p>(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%)</p>	<p>Ground water Department</p> <p>Therefore, to regulate ground water resources in this area, no permission is granted for packaged drinking water industries or any other water induced industries</p>	NA	No permits issued	No permits issued	No permits issued	NA	NA
5.2	<p>Ground water recharging / rain water harvesting</p> <p>(Earlier status: The average pre -monsoon groundwater level ranges from 6.14mbgl - 8.49 mbgl.)</p>	NA	NA		NO ACTION	NO ACTION	NA	NA
5.3	<p>Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps</p>	<p>Ground water Department</p> <p>No observation well along the river stretches)</p>			NA		NA	NA
5.4	<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 49.14 - 870.97</p>	<p>Ground water Department</p> <p>No Data Available. No Updation after</p>			NO ACTION	NO ACTION	NA	NA

	ha.m.)	GEC 2017. (Report not published)				DEPARTMENT		
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6.REVENUE DEPARTMENT

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

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 NOVEMBER 2023–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">● Specifying accountability of nodal authorities not below the secretary level● Chief secretaries may have an accountable Person attached in their office for this purpose		
	<ul style="list-style-type: none">● Monitoring at the state level must take place		

5	<p>Progress report may be furnished by the state/UTs to</p> <ul style="list-style-type: none"> ● Secretary, ministry of Jal Shakti ● Member secretary, CPCB 		
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&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 & 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> <p>(vii) Ground water regulation</p> <p>(viii) Adopting good irrigation practices</p> <p>(ix) protection and management of flood plain zones(FPZ),</p> <p>(x) Rainwater 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 bio diversity parks on flood plains by removing encroachment</p>		<p>Monthly progress report enclosed</p>
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ACTION PLAN FOR RIVER KALLAYI , KERALA

Kozhikode Corporation

Kozhikode Corporation									
No.	Activity	Implementing agency	Time line	Progress in the month of AUGUST 2023	Progress in the month of SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	% 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				1 illegal outlet into storm water.Fine remitted Rs 20000/-	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						completed

4	Segregation of solid waste at source-level and treatment of household wastes	Kozhikode Corporation	30.06.2019				Biodegradable waste managements equipments installed in household level 1. Bockashi bucket-3243 2. geebin-5575 3. Biogas-124 4. Ring compost-2222 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	<p>Setting up of common STP of (13MLD)</p> <p>7.1 At Kothi bridge - 6 MLD plant proposed</p> <p>7.2 At Avikkal - 7 MLD plant proposed</p>	Kozhikode Corporation	31.03.2020				<p>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>		

							<p>stopped due to a stay order from the Munsif Court. 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				36 Illegal dumping of waste found.	Continuing random inspections and imposing fine regularly	
14	Cleaning of B.K canal	Kozhikode Corporation	Periodical				On going		Continuous - seasonal

15	Establishment of treatment plant at Medical college (3MLD plant)	Kozhikode Corporation	31.03.2020				2 MLD STP work was completed and started working	100%	
	15.1-2 MLD plant proposed								
	15.2-1 MLD plant proposed						1 MLD STP works nearly completion	80%	20%
16	Construction of drains at Y.M.RC Ayyankarcolony	Kozhikode Corporation	31.03.2020				The work was started at the site, and the initial level was reported to the Chief technical Examiner's office. 963 m drainage Construction is remaining	58%	42%
17	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.		
20	Identification of illegal outlets from house to storm water drain and issue Notice to such Houses	Kozhikode Corporation					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 AUGUST 2023	Progress in the month of SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	% 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 AUGUST 2023	Progress in the month of SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	% 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 AUGUST 2023	Progress in the month of SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBE R2023	% 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

No	Activity	Implementing Agency	Time line	Progressing the month Of August 2023	Progress In The Month Of September 2023	Progress In The Month Of October 2023	Progress In The Month Of November 2023	% Works Completed	Details Of Remaining Work
1	Collection of plastic waste from the river	Olavanna Gramapanchayat	Continuous process				As of now 4 times collected. No further progress reported after the month of August	96%	Process continuing
2	Collection of segregation of solid waste in the river	Olavanna Gramapanchayat	Continuous process				As of now 5 times collected. No further progress reported after the month of August	97%	Process continuing

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. No further progress reported after the month of August		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. No further progress reported after the month of August		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

Name of Subdivision: Irrigation South

Name of Section: Irrigation section Calicut

No	Activity	Implementing Agency	Timeline	Progressing the month Of August 2023	Progress In The Month Of September 2023	Progress In The Month Of October 2023	Progress In The Month Of November 2023	% Works Completed	Details Of Remaining Work
1	Desilting of Kallayi river from Kaduppini to Kothi in Kozhikode Corporation	Irrigation department					Rs.790 Lakhs deposited by kozhikode corporation under urban agglomeration. Work under tender process		
2	Provide fencing on the sides of the Bridge	Irrigation department					DPR amounting to 2.52 Lakhs submitted to CE,I&A,TVM. Vide this office letter no.D5-NGT/1429/2019 vol III Dtd.20.07.2023		

3	Providing chain linked fencing on both sides of Kothi bridge across Ibrahim thodu of Kallai river in Kozhikode corporation	Irrigation department					DPR amounting to 28.30 Lakhs submitted to CE,I&A,Tvm,vi de this office letter No.D5-NGT/1429/2019 Vol III Dtd.20.07.2023		
Name of Section:Irrigation section E K Canal section									
1	Providing fencing on Mooriyad road bridge at kozhikode corporation	Irrigation department					DPR amounting to 16.70 Lakhs submitted to CE,I&A,Tvm,vi de this office letter No.D5-NGT/1429/2019 Vol III Dtd.20.07.2023		

Kerala State Pollution Control Board

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	% 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 SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	% 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 SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	% 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 SEPTEMBER 2023	Progress in the month of OCTOBER 2023	Progress in the month of NOVEMBER 2023	% works completed	Details of works remaining
E	Dredging and desilting	Irrigation Department	3 years					
E	E-flow (by micro water shed management)	Irrigation Department	3 years					
E	Flood plain zone (protection and management)	Irrigation Department	3 years					
E	Greenery development (plant in trees on the banks)	Irrigation Department	3 years					

KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

കോഴിക്കോട് റീജണൽ ഓഫീസ്
REGIONAL OFFICE, KOZHIKODE



Phone: 0495-2300744. Mail: pcbrokkd@gmail.com Website: kspcb.kerala.gov.in
3rd FLOOR, ZAMORIN'S SQUARE, LINKROAD, KOZHIKODE - 673 002

CALICUT
Date: 02/12/23

ANALYSIS REPORT OF RIVER WATER

Sample No.	K R O R 4 8 6 7 / 1 to 5	Date:	0 2 1 2 2 0 2 3					
Date of Sample Collection	1 8 1 1 2 0 2 3	Date of receipt of the sample	1 8 1 1 2 0 2 3					
		Time	Hours: 1 5 : 0 0					
Sampled by:	RL, KKD	Sample ID	KL1, KL2, KL3, KL5, & KL6					
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 4867/1-5					
Sample container	PC 2.5 L	Ref.letter No.	PCB/KKD/DO/ Polluted River Stretch/2018 Vol. IV. Dated:18.11.2023					
Source:	KALLAI RIVER WATER	Received from:	EE,DO,KKD					
		Period of analysis:	18.11.2023-30.11.2023					
Specific sampling location:	GIVEN BELOW	No. of samples	5					
		Analysed by:	AKG/NKT/AM/SP					
Sample preservation:	Ice box	Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22 nd Ed.)						
SAMPLE ID								
sl no	Parameters	unit	Method No.	KL 1	KL 2	KL 3	KL 5	KL 6
1	pH	-	APHA 4500-H+,B	6.95	6.86	6.98	7.38	7.91
2	CONDUCTIVITY	umhos /cm	APHA 2510B	4330	11660	13450	26150	39300
3	BOD	mg/L	IS3025 (Part 44)	4.5	4.6	4.6	4.8	1.4
4	DISSOLVED OXYGEN	mg/L	APHA 4500-O,C	2.93	2.8	2.73	1.8	5.93
5	TOTAL COLIFORM,	CFU/100ml	APHA 9222B	11000	24000	37000	46000	19000
6	FECAL COLIFORM	CFU/100ml	APHA 9222D	6000	9000	13000	21000	9000
7	FECAL STREPTOCOCCUS	CFU/100ml	APHA 9230 C	200	400	1100	2100	700
8	TEMPERATURE	°C	APHA 2550B	26	27	27	28	27

Test method variation: None

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

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

DEI
DA-603
So
2/12/23

[Signature]
2/12/23
Scientist in charge

MOGRAL RIVER - MOGRAL BRIDGE (Existing NWMP Station)			
Sampling Point		Mogral Bridge	
NWMP Station Code		2304	
Latitude		12°33'36.5"N	
Longitude		74°57'21.0"E	
Date of Sampling		15.11.2023	
Nature and flow of the river		Medium flow, water level decreased	
Sl.No	Parameters	Unit	Mogral Bridge
1	Temperature	°C	30
2	pH	-	7
3	Conductivity	µmhos/cm	900
4	Turbidity	NTU	1.1
5	BOD	mg/l	0.7
6	Dissolved Oxygen	mg/l	6.2
7	Total Coliforms	cfu/100ml	800
8	Feacal Coliforms	cfu/100ml	310
9	Feacal Streptococcus	cfu/100ml	10
10	Chlorides	mg/l	250
11	Total Alkalinity	mg/l	48
12	Total Hardness	mg/l	150
13	Calcium Hardness	mg/l	70

14	Magnesium Hardness	mg/l	63
15	Calcium	mg/l	28.06
16	Magnesium	mg/l	19.400
17	Total Dissolved Solids	mg/l	449
18	Sodium	mg/l	136
19	Potassium	mg/l	1.2

MOGRAL RIVER - PUZHAKKARA (Proposed NWMP Station)			
Sampling Point		Puzhakkara	
Distance from existing NWMP Station		3.25 km	
Latitude		12°33'58.1"N	
Longitude		74°58'43.7"E	
Date of Sampling		15.11.2023	
Nature and flow of the river		Water level decreased, Medium flow	
Sl.No	Parameters	Unit	Puzhakkara
1	Temperature	°C	30
2	pH	-	6.9
3	Conductivity	µmhos/cm	103.4
4	Turbidity	NTU	0.1
5	BOD	mg/l	2.0
6	Dissolved Oxygen	mg/l	6.6
7	Total Coliforms	cfu/100ml	600
8	Feecal Coliforms	cfu/100ml	580
9	Feecal Streptococcus	cfu/100ml	10
10	Chlorides	mg/l	19
11	Total Alkalinity	mg/l	17
12	Total Hardness	mg/l	13
13	Calcium Hardness	mg/l	6

14	Magnesium Hardness	mg/l	7
15	Calcium	mg/l	2.4
16	Magnesium	mg/l	1.701
17	Total Dissolved Solids	mg/l	61
18	Sodium	mg/l	6.97
19	Potassium	mg/l	2.35

Sd/-
Assistant Scientist

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		15.11.2023	
Nature and flow of the river		Moderate flow, water level decreased	
Sl.No	Parameters	Unit	Uppala Bridge
1	Temperature	° C	30
2	pH	-	7.34
3	Conductivity	µmhos/cm	197
4	Turbidity	NTU	3.7
5	BOD	mg/l	0.2
6	Dissolved Oxygen	mg/l	7.4
7	Total Coliforms	cfu/100ml	790
8	Feacal Coliforms	cfu/100ml	380
9	Feacal Streptococcus	cfu/100ml	10
10	Chlorides	mg/l	17
11	Total Alkalinity	mg/l	20
12	Total Hardness	mg/l	35
13	Calcium Hardness	mg/l	23
14	Magnesium Hardness	mg/l	8
15	Calcium	mg/l	6

16	Magnesium	mg/l	1.9
17	Total Dissolved Solids	mg/l	64
18	Sodium	mg/l	8.8
19	Potassium	mg/l	0.64

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			015.11.2023
Nature and flow of the river			Water level decreased, moderate flow
Sl.No	Parameters	Unit	Uppala River Near Bhagavathi Temple
1	Temperature	° C	30.1
2	pH	-	7.21
3	Conductivity	µmhos/cm	95
4	Turbidity	NTU	1
5	BOD	mg/l	0.2
6	Dissolved Oxygen	mg/l	7.2
7	Total Coliforms	cfu/100ml	700
8	Feecal Coliforms	cfu/100ml	440
9	Feecal Streptococcus	cfu/100ml	8
10	Chlorides	mg/l	14
11	Total Alkalinity	mg/l	21
12	Total Hardness	mg/l	12
13	Calcium Hardness	mg/l	11
14	Magnesium Hardness	mg/l	1
15	Calcium	mg/l	4.4

16	Magnesium	mg/l	0.243
17	Total Dissolved Solids	mg/l	52
18	Sodium	mg/l	5.14
19	Potassium	mg/l	2.55

Sd/-
Assistant Scientist