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KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Patton P.O., Thiruvananthapuram – 695 004
പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004



PCB/HO/EE3/MPR/10/2023

Date: 29/12/2023

From

The Member Secretary

To

The Secretary
Ministry of Jal Shakthi,
Department of Water Resources,
River Development & Ganga
Rejuvenation, Shram Shakti
Bhawan, RafiMarg,
New Delhi- 110001

Sub:-Forwarding Monthly Progress Report for the month of November 2023 -reg.
Ref:-.Order of the Hon'ble NGT in the matter of O.A.No.673/2018

Sir,

Kind attention is invited to the subject matter. The matter is reported for kind information.

The report prepared in revised format with respect to the progress in implementation action plan of polluted river stretches, for the month of November 2023 is submitted herewith. As per CPCB report on water quality 2022, 11 polluted river stretches were deleted and 8 new stretches were added and hence the number of polluted river stretches is currently 18. Considering the water quality data, CPCB was requested to delist 7 stretches. But the reply is yet to be received. As part of actions taken, samplings have been started in new rivers. It may kindly be noted that newly added river stretch Pullur is a very small stream and gets dried up in Summer months and from February, 2019 onwards the BOD values of Pullur river never exceeded 3 mg/l. From March, 2019 onwards the water quality of Uppala river never

2022. By analyzing last three years (2021-2023) data in Pulikkadavu monitoring station , BOD values have not exceeded 3mg/l. Hence Pulikkadavu stretch may be exempted from the list. Also Vettilapara, Kanjirappilly, Chalakudy monitoring stations in Chalakudy river have BOD value less than 3mg/l in the last three years (2021-2023). Mamom, Vamanapuram, Ayroor, Neyyar monitoring stations have BOD values not exceeded 3mg/l in the last six months June to November in 2023. Detailed report will be submitted soon. So these stations may be exempted from the list

Encl: As above

Yours faithfully,



MEMBER SECRETARY

National Mission for Clean Ganga
Monthly Progress Report for the month of November 2023 in the NGT
Matter OA No. 673 of 2018 (in compliance to NGT order dated
24.09.2020)

For the State of Kerala

Overall status of the State:

I. Total Population: Urban Population & Rural Population separately:

As per Census 2011, Kerala has a population of 3,37,77,386. Rural population in Kerala is 2,58,40,501 and urban population in the state is 79,36,885. Population projected for 2020 for rural area is 2,70,05,078 and for urban area is 82,94,583. The water consumption and wastewater generated are calculated based on the population projected for 2020.

II. Estimated Sewage Generation(MLD):

A dossier on sewage and sullage generation in the State of Kerala has been prepared by the Board. Based on the report:

- Estimated Sewage and Sullage generation in Urban area - 1058 MLD
(Sewage – 317 MLD, Sullage- 741MLD)
- Estimated Sewage and Sullage generation in Rural area - 2917 MLD
(Sewage – 875 MLD, Sullage- 2042MLD)

Total Sewage and Sullage generation – 3975 MLD (Sewage – 1192 MLD, Sullage- 2783MLD)

III. Details of Sewage Treatment Plant:

- ☐ Existing no. of common STPs/FSTPs: 22 (common STPs and other STPs) and 4 common FSTPs and 2144 number of individual STPs
- ☐ No. of functional common STPs in the state: 14
- ☐ No. of functional common septage treatment plants in the state: 4
- ☐ Total sewage treatment capacity in the state through existing common STPs: =133.975 MLD
- ☐ Total septage treatment capacity in the state through existing common FSTPs: 0.22 MLD
- ☐ Sewage treatment capacity via individual STPs in establishments: 90.040 MLD
- ☐ Treatment of sewage by septic tank- soak pit (Individual residences) -1011 MLD
- ☐ Gap in treatment of sewage : 21.865 MLD

- Kerala is declared as open defecation free State. A survey of liquid waste management was conducted in 2016 for 66.7 lakh residences (www.haritham.kerala.gov.in). The study revealed that in most of the household sullage from(kitchen, bathroom) is separated from sewage (toilet).
- Sullage which forms 70% of domestic waste water and sewage is only 30%.The major quantity of sullage, which is not contaminated with faecal coliform, is disposed through soak pit and for farming in their own premises. Some instances of discharge to open public places were also identified and actions were taken to stop the same.
- Sewage is discharged through septic tank/soakpit, common/ individual sewage treatment plant. The mixing of sewage and sullage occurs in the case of common sewage treatment plant and individual STPs. Based on the survey results retrofitting measures are also adopted in the State.
- In Kerala,flats are less compared to individual households. Individual households which are having septic tank /soak pit existing for toilets attached to them. However action is being taken in urbanised areas to divert wastewater to common STPs.
- Based on the instruction from Jalsakthi,Status of liquid waste management in all localbodies including panchayat have been called for by means of google spreadsheet.From the data received so far, the sullage which is not contaminated is disposed through soakpit and for farming in household premises is also reported.

Proposals submitted for NRCP fund

- DPR for sewerage system in cluster 1 comprising Attukal, Ambalathara, Kalady, Kalippankulam, Kamaleswaram was forwarded to Ministry of Jalsakthi vide letter dated 24.11.2022 for funding under NRCP.
- DPR for sewer line at Muttar, Perandoor, Vennala, Elamkulam was forwarded to Ministry of Jalsakthi vide letter dated 31.01.2023 for funding under NRCP.

Further action taken

- Letter was issued to District Collector Thiruvananthapuram to complete the activities in Karamana action plan and copy of letter is enclosed. This includes following:
 - 1.Taking of urgent action for the full utilization of 5MLD plant of Medical college.
 2. DG sets in sewage pumping/lift stations are to be operated urgently,
 - 3.To stop discharge from sewage lift station of Plamoodu,
 - 4.Urgent corrective actions are to be taken to divert discharge waste water from Rajaji Nagar,
 - 5.Urgent action is to be taken for the rehabilitation of sewer networks
 6. Urgent action is to be taken for completion of construction of slaughter house at Kunnukuzhi
 - 7.Urgent action is to be taken to treat waste water in the market of Pangode, Kumarichanda
 8. Urgent action is to be taken for completion of sewer work in newly added areas(sewerage system from Block F to G, Block H to R, Block A to E.
 - 9.Urgent action is to be taken to provide 155 houses in Kurukuvilakom with septic and treatment system.

10. The process on addressing gap of 107 MLD plant at Muttathara is to be reported.

11. Urgent action is needed to finish the work of rehabilitation of 8150 families from the banks of river.

- Letter was given to district collectors to prepare action plan for new river stretches. Directions given to the District officers of PCB to start monitoring water quality of newly added polluted river stretches instead of deleted polluted river stretches from November onwards.
- Notice was issued to railway Station, South Ernakulam for non compliance of the Board's direction for installation of STP and for not providing treatment for the waste containing oil from locoshed. This has been brought to notice of CPCB vide letter dated 15.03.23.
- EC Notice issued to railway on 27/06/2023, Reply received on 17/07/2023 and hearing is conducted on 07/09/2023. It was informed that 50KLD sewage treatment plant for the railway stations of Alappuzha, Aluva, Angamali, and Thrissur will be provided by 31- 12-2023 and for Chengannur station, STP is expected in October 2024. Sewage treatment plant of 350KLD for Ernakulam Junction (Ernakulam North) is expected by June 2024. Sewage treatment plant of 750KLD for Ernakulam South is expected by October 2024. Sewage treatment plant of 475 KLD is reported to be provided under station development by 1-2-2026.
- In the hearing conducted by the Board with the railway officials on 7-9-2023, the need to treat the waste water before disposal was stressed. Action is now being taken by Railway for providing facility for stopping such discharge. For diesel locoshed of South Railway Station, it was reported that the work of removal of oily sludge accumulation in the area near locoshed; work of sludge removal and remediation of the area is expected to commence by 30.11.2023 and will be completed by end of December 2023. The proposed cost of the work is Rs.22 lakhs. For STP in Ernakulam Railway station (South) 750 KLD STP is proposed to be commenced by October 2024. For the time being the railway was asked to provide temporary facilities for the treatment of wastewater generated from railway station and housing complex. For the STP at Aluva railway station, proposal of permanent STP of 50 kLD is under processing for final sanction and meanwhile temporary STP of 30 kLD proposed and expected to be completed by 31.10.2023. The proposed 350 kLD STP at Ernakulam North (Town) is expected to be completed by March 2024. The matter is being followed up.
- In 5 MLD STP at Elamkulam of Kerala Water Authority, co-treatment started on July 2023. Kochi Corporation reported that byelaw for tracking and registration of tankers was approved by the Council and 92 vehicles have been registered. Action is also being taken for providing temporary measures like Phytoid waste water treatment technology by NEERI. Accordingly NEERI was addressed and online presentation was conducted on 13.03.23 by NEERI to the officials of the local body, Suchitwa Mission and KSPCB. Field visit was conducted by NEERI along with officials of KWA, KSPCB, Suchitwa Mission, LSGIs during 11/05/2023 to 13/05/2023. Proposal for feasibility study submitted by NEERI and order issued. NEERI, Nagpur then furnished a proposal for the feasibility study on the development of process package of treatment of domestic sewage for meeting the environmental compliance at Edappally canal and Perandoor canal at Ernakulam and Pallikalar at Kollam district for an amount of Rs 45 lakhs and this proposal was approved by the Board and draft MOU has been submitted.
- Instruction was also given for the full utilization of Common STP at Guruvayur and Kureepuzha and they are taking steps for registering of tankers and byelaw approval.

- Action is also taken for the rejuvenation of Amayizhinajan thodu, Ulloor thodu, Pattom thodu in Karamana catchment. Action is also taken to provide Jhokasou treatment at Rajaji Nagar slum area.
- As per the meeting chaired by Chief Secretary on 05.09.2023 it was asked to do a sanitation survey on the drains reaching Akkulam Veli lake and its watershed by Socio Economic Unit Foundation (SEUF). As per the request SEUF gave a proposal for the rejuvenation of Akkulam Veli lake and its watershed. For doing sanitation survey a training programs have been conducted by SEUF on 07/10/2023 to Environmental Engineering students (M.Tech) in CET and to NSS volunteers with support of KSPCB. Sanitation survey is progressing.
 - At the district of Kollam, Manichithodu and Thoppil kadav are stretches where major pollution was reported. A site visit was conducted on 12/06/2023, 30/06/2023 and sewage contamination was observed. Direction was given to stop septage discharge near Santhinagar to Kollam Corporation, District Collector & Police. . For rejuvenation of Thoppil kadav, it was decided to conduct a Survey by Engineering Colleges..
- VC Meeting with 3 Engineering Colleges was conducted on this regard. it was decided to conduct survey to identify hotspot using A-SAN app, along the streches of Manichithodu and TS Canal. Based on the meeting, it is decided to conduct a preliminary meeting to ensure co-ordination of the project and to assign specific areas of responsibility to each organization involved. Each institution was asked prepare a list of students who are willing to involve in this project. A preliminary meeting was organized on 27.10.2023 at 12 Noon with Engineering colleges.
- As per the decision of 6th Monitoring Committee Meeting held on 22.07.2023, combined study by Board and Irrigation Department to be conducted to find the scientific reason for the colour change in the downstream of Pathalam bund. A meeting was conducted in this regard on 01/11/2023 chaired by MS, KSPCB. The members from CUSAT, Sree Sankaracharya University attended the meeting

Besides above , the following action were taken by LSGI for liquid waste management:

- District Level Inspection Committee for checking the feasibility of proposal for setting up FSTPs in degraded land was constituted as per GO (Rt) No. 2558/2022/LSGD dated 21.10.2022.
- 36 sites have been identified across the State for setting up FSTPs by the Technical Committee and site reports prepared. For one project, construction started. DPR submitted for one project, for 11 projects, DPC approved for 26 projects. Action is being taken.
- IEC campaign by way of Jalsabhas and transect walk by volunteers, students and local communities across water bodies to gauge pollution and develop community understanding of the dangers of inadequate liquid waste management to the health of water bodies was conducted in all local bodies, both rural and urban.
- Technical experts and agencies for Liquid Waste Management have been empanelled. Malam bhootham –intensive campaign to highlight the dangers of faecal contamination and the urgent in intervention, has been launched
- In situ expertise is being encouraged through capacity building of structural engineers and other motivated civil engineers within LSGD, so as to able to undertake the projects on their own.

- Self Help Groups. Micro enterprises are being mobilized and trained to take on the O&M of such projects.
- Liquid waste management projects have been included in the panel of projects for regular priority review by the Honorable CM, so as to resolve interdepartmental, financial and other policy issues in taking these projects forward expeditiously.

Progress in Action plans

- CSTPs / STPs were completed as per the Action Plan submitted –
 1. STP of capacity 5 MLD at Medical College, Thiruvananthapuram,
 2. 3 MLD at Chakkamkandam, Guruvayur, Thrissur.
 3. 5 MLD at Elamkulam with septage treatment facility at Kochi,Ernakulam
 4. 0.01 MLD FSTP at Kalpetta, Wayanad
 5. 0.01 MLD STP at Mattampuram, Thrissur
 6. 0.75 MLD STP owned by GCDA,Kaloor stadium
 7. 1 MLD STP at Padanappalam, Kannur
 8. 2 MLD STP at Kozhikode medical College.

Details of existing STPs/ Common STPs/ common Septage treatment plants in the State :

- 107 MLD STP in Thiruvananthapuram District at Muttathara (Activated Sludge with extended aeration process). The present sewerage system cover 43 out of 100 wards of Thiruvananthapuram corporation area either partly or fully. 75% of capacity of the 107 MLD STP is utilized. Completion of ongoing works will enhance the utilization by 15%.Co processing of septage is also taking place. Control room is available for tanker transportation of septage. Letter issued to KWA for full utilization of common STP in Thiruvananthapuram District at Muttathara. Copy enclosed.
- Considering the contamination of Karamana river and for providing sewerage systems for the 19 wards on the bank of this river, DPR prepared and submitted to GoK on 16.10.2021 for issuing AS under RKI. Sewer laying work of this 19 wards can be finished by 31/12/23, subject to the availability of funds. DPR for the remaining 81 wards for the full capacity utilisation of 107 MLD STP is under preparation. DPR for sewerage system in cluster 1 comprising Attukal, Ambalathara, Kalady, Kalippankulam, Kamaleswaram was forwarded to ministry of Jalsakthi on 24.11.2022 for funding under NRCD.
- Medical College 5MLD STP Works of 5MLD STP under AMRUT for Medical College, Thiruvananthapuram completed and started functioning from Sep 2021. This STP is exclusively for Thiruvananthapuram Medical college campus. Letter have been issued for full utilization of STP. The present load is 2.5 MLD and on connecting two buildings to this STP the load comes to 4 MLD.

- 5 MLD STP (NEW PLANT) at Elamkulam is functional. Dilution tank constructed and co treatment of septage started from 4/8/2023. AS received for extra network for 1.75 MLD for an amount of Rs. 63.91 crores under RKI for the full utilization of plant and the work has been tendered.
- 3 MLD STP at Guruvayur (Activated sludge process)-The Guruvayoor Sewerage Project is planned to provide an effective sewerage system for the thickly populated area under Guruvayoor Municipality. The work completed and is functioning from September 2021. Length of network is approximately 7 km.Action is being taken for the complete utilization of STP.Dilution tank constructed for co treatment and trial run started. Instructions issued for full utilization of STP.
- 2 MLD STP –completed & inaugurated on 05.10.2023. O & M agreement to be signed between the Medical College and the Contractor.

Sl No.	City/Town	STP location	STP Installed capacity	Utilization	Status
1	Thiruvananthapuram(P RS)	I.Common Sewage Treatment Plant, Muttathara, Trivandrum maintained by Kerala Water Authority (Co Processing facility for septage)	107 MLD (Activated Sludge Process)	80 MLD	Operational (pH-7, TSS- 22,BOD-3.6, COD- 16, oil and grease- BDL, Faecal Coliform- absent as per analysis report dated 04/09/2023. DPR preparation of uncovered area of Corporation is under progress. On completion of ongoing works and on implementation of DPR under preparation, full utilization of 107 MLD can be achieved .Two DPRs submitted to GoK for AS. Directions issued to KWA for full utilization of plant

		2.STP at Medical College, Thiruvananthapuram -Phase I & II (PRS)	5MLD(MBBR)	1.7 MLD	pH -6.6, TSS-80mg/l,BOD-17.7 mg/l,COD-56mg/l,oil and grease – BDL, total Coliform-4000cfu/100ml, faecal Coliform-3000cfu/100ml.Total Coliform and faecal Coliform not within permissible limits. It is designed only for medical college campus.
2	Pathanamthitta	3.Sewage Treatment Plant at Sannidhanam (5MLD) Maintained Travancore Devaswom Board	5 MLD (UASB and SBR)	3.5 MLD	Seasonally Operated during festival season. Instructions given.
		4.Sewage Treatment Plant at Pamba(3.5 MLD) maintained by Travancore Devaswom Board	3.5 MLD (Coagulation & settling)	3.5 MLD	Seasonally Operated during festival season.Instructions given.
3	Alappuzha	5.DEWATS system, Chathanad(For 50houses in slum area)	25 KLD (Anaerobic Baffle Reactor)	25 KLD	Operational
4	Kottayam	6.STP for Houseboat (0.09 MLD)at Kumarakom maintained by DTPC , Kottayam	0.09MLD (Activated Sludge Process)	0.09 MLD	Operating with (pH- 6.6, COD - 88 mg/l, BOD - 28 mg/l, SS - 14mg/l, Oil & Grease-BDL). The quality of effluent conforming to standards.
5	Ernakulam	7.STP owned by Greater Cochin Development Authority, Marine drive, Kochi (0.45 MLD)	0.9 MLD (Activated Sludge Process)	0.9 MLD	Proposed to augment to 2MLD Operational.

	8.Septage Treatment Plant at Brahmapuram, Kochi Corporation, Ernakulam	0.1MLD(MBBR)	0.1 MLD	pH-6.88, BOD-2.1mg/l, COD-8mg/l,SS-BDL,Phosphates-0.008, Sulphates-21.15mg/l, Sulphides-BDL, Ammonical Nitrogen – BDL, Faecal Coliform-nil,Faecal Streptococci-8 cfu/100ml. All Parameters except faecal streptococci are within limits as per analysis report of 17.10.2023
	9.Septage Treatment Plant at Wellington Island, Kochi Corporation	0.1MLD(MBBR)	0.1 MLD	Operational
	10. STP at Elamkulam, Kochi (AMRUT)	5.0 MLD(MBBR) with Co treatment 24 KLD	3MLD	1782 House hold connected. Septage Treatment started on 04/08/2023 Sewerage network under Scrutiny and Technical sanction to be obtained
	11.STP owned by GCDA, International Stadium Kaloore	0.75MLD(Activated Sludge Process)	0.05 MLD	Operational According to analysis report of sample collected on 07/09/2023 the value of faecal Coliform(1800cfu/100ml) exceeded the

					standard limits stipulated by KSPCB. Also notice was issued to GCDA seeking explanation for not complying with the standards. It was also directed to install online monitoring system in the CSTP for the parameters pH, BOD, SS
		12 STP at Kalamassery, Market, Kalamassery Municipality (PRS)	10 KLD		Operational
6	Idukki	13. Sewage treatment Plant at Comfort station, Adimaly Grama Panchayat, Idukki	0.01 MLD		Started functioning Electro coagulation
7	Thrissur	14. Sewage treatment Plant at Guruvayur, Thrissur District	3 MLD (Activated Sludge Process)	0.5MLD	Operational. (pH-8.01, BOD-16.88 mg/l, COD-44mg/l, SS-4.65 mg/l, Oil & Grease-0.89mg/l, FC-350 as per analysis report of sample collected on 21/08/2023 Instructions given for full utilization of treated effluent and for utilizing treated water. Planning to reuse the treated effluent for gardening and

					sepatge dilution. Construction work of dilution tank completed. Tank Steps are been taken to give more sewer connections to bridge the gap between utilized and unutilized capacity. Bye-law prepared for septage collection is under scrutiny in the ULB. AMRUT-2.0: Council has approved the proposal for upgradation of 3 MLD STP (at Chakkamkandam) to 5 MLD STP (septage co-treatment) AMRUT-1.0: Specification of the vehicle to be modified by the ULB as per site conditions.
		15.FSTP at Mattampuram	0.01 MLD(Biological)	Started functioning	BOD- 3.2mg/l,COD- 12mg/l, Ammonical Nitrogen- 0.343,total nitrogen- 2.436. Started functioning. PCB issued permission for conducting trial run. A s on analysis report on 21/08/2023.

					Letter to be issued to Mattampuram for full utilization.
		16.Revamping of 35 KLD STP at Kuriyanchira Slaughter House Corporation , Thrissur	0.035 MLD (MBBR)	0.035 MLD	Operational
8	Malappuram (PRS)	17.Sewage treatment Plant at Malappuram Municipal Bus stand	0.03 MLD(MBBR)	0.03 MLD	Consent application is submitted for the revamping activities.Application has been returned for clarification. Action plan prepared through KWA.
		18.Sewage treatment Plant-at Tirur (fish market)	0.045 MLD (Biological)		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
		19.STP at Municipal Bus Stand, Tirur (PRS)	0.05 MLD(Biological)	Completed	Work completed, send letter to Suchitwa mission for technical evaluation and approvals, Preparing for trial run.
		20. ETP in Fish Market, Ponnundam GP	0.01 MLD(Anaerobic)	Plant is working.	Operational

		Malappuram			
9	Kozhikode (PRS)	21. STP at Kozhikkode Medical College. 22. Common Sewage Treatment Plant at Narayana nagaram, near stadium, Vatakara, Opp. New bus stand	2 MLD 0.1MLD (MBBR)	0.1MLD	Operational Operational
10	Kannur	23. Sewage treatment Plant at Taliparambu (0.5MLD) Taliparambu Municipality, Kannur 24. STP at old age home Kannur 25. STP at Padannappalam	0.5MLD (Activated Sludge Process) 0.010 1 MLD	0.5MLD	Operational. MBBR (Operational) RMBR
11	Wayanad	26. Sewage Treatment Plant at Hospital, SulthanBathery Wayanad 27. FSTP at Kalpetta	0.14 MLD (MBBR) 0.01MLD (Biological)	0.05 MLD 0.01 MLD	Operational Operational

Details of under construction of major ETPs / STPs in the State

No.	Location	Capacity of the plant in MLD	Physical Progress in %	Status of I&D or House sewer connections	Incremental progress	Completion Time line
1	STP at Kureepuzha-Phase I & II, Kollam (AMRUT)	12	86%	21358 house sewer connections are envisaged as per the new sewer work added (balance of KSUDP).	AMRUT-1.0: Physical progress - 84% Bore-well installation work has been completed for Septage Co-treatment. There is no progress because an issue was there with the contractor and now the issue was solved. As sewage line was not completed, action such as byelaws, registration of tankers are to be done. Electro mechanical work was under progress.	31.12.2023
2&3	STPs at Medical College with Septage Treatment, Kozhikode (AMRUT)	1MLD	90%	Only the buildings inside the Medical College campus will be connected.	1 MLD STP - work has been hindered due to collapse of soil and related protest of the Medical College students. Work to be restarted after starting the retaining wall work. Agreement was signed for the retaining wall work on 05.10.2023 and the work to started.	31.12.2023
4	FSTP at Cherthala Municipality, Alappuzha (IMPACT KERALA Ltd)	250KLD Septage TP	60%		Civil works are almost completed. The work is not progressing for 7 months, but now it is restarted	

5	STP at General Hospital, Thrissur (AMRUT-1.0)	0.36	65%	Only the buildings in the General Hospital campus will be connected.	First contractor put off the work and new contractor took the work. Now the work is in progress.	31.01.2024
6	STP at General Hospital, Alappuzha	0.24	99%	Only the buildings inside the General Hospital campus will be connected.	Trial run completed. To be commissioned. 1 building to be connected.	31.12.2023
7	190 KLD STP at Pathanapuram Market and Shopping Mall	0.1	37% completed	Cover slab of Oil and grease trap tanks are completed. Manhole construction is on-going.		30.05.2024
8	STP at Pambad Housing Colony Malappuram Municipality, Malappuram	0.110	99 % Completed	Tendering for panel board completed. Electrical works completed.	Directions given to complete all works	30/12/2023
9	Wastewater treatment plant at Kuttiyadi government taluk hospital, Kozhikode	0.080	82%	RE has been prepared. Electric works will be started after passing RE.	Works are in progress	31.01.2024
10	Taluk Hospital Adimaly, Adimaly Block	0.060	99%	Trial run on-going	.	30/12/2023

	Panchayath, Idukki					
11	Construction of 45 KLD waste water treatment plant at Kalpetta Government Ayurveda Hospital DP, Wayanad	0.045	65% work completed	The district panchayath took the decision to terminate the existing company, and give instructions to prepare a new estimate for balance work with the help of EE (LID & EW). Then complete the rest of the work with a Govt. agency in this field	Machineries has been supplied and civil work completed	30/04/2024
12	STP at Chitumala Old Age Home. Chitumala BP, Kollam	0.015	90% Completed	Committee has decided to avoid tendering and complete the balance work with an accredited agency IRTC. The estimate submitted by accredited agency is not satisfactory to the LB and to be placed in council for decision.		31/01/2024
13	STP at CHC Cherpu BP, Thrissur	0.01	94% Completed	Civil work completed. Electrical works except pump fixing are		31/01/2024

				completed.		
14	FSTP at Munnar, Idukki	50KLD	5%	Due to a court case, work stopped temporarily		
15	190 KLD STP at Pathanapuram Market and Shopping Mall	0.190	38 %	O&G trap and manhole construction completed. Part bill submitted.		31/05/2024
16	Fecal Septage Treatment Plant for Munnar Grama Panchayath, Idukki	0.05	5%	Due to a court case, work stopped temporarily.		

1. Details of proposed ETPs/ STPs in the State

No.	Location	Capacity of the STP proposed in MLD	Status of Project (at DPR Stage/ Under Tendering/ Work to be Awarded)	Incremental progress	Likely Date of Completion of DPR preparation
1	4 STPs are coming up under the KMRL's Integrated Water transport System project at Elamkulam(17.5MLD), Vennala(24MLD), Muttar(16.5 MLD) Perandur(19 MLD)	17.5+24+16.5+19=77	To be tendered	DPR for sewerline at Muttar, Perandur, Vennala, Elamkulam forwarded to Ministry of Jalasakthi vide letter dated 31/01/2023 for funding under NRCP. KIIFB issued provisional sanction for	

				funding the project : TRAN – 23 CIN001-11: Integrated Urban Regeneration and Water Transport System in Kochi-Elamkulam Sewerage Project”, vide Government Order (Ms) No. 07/2018/CSIND dated 12.11.2018	
2	27 MLD STP with 49.76 km Sewerage network at Sarovaram, Kozhikode	27	DPR Stage	DPR of 27MLD STP with 49.76 km Sewerage Network at Sarovaram (in KWA land) for Rs 164.2 Crores submitted to Corporation on 13/3/2023 and DPR of sewerage network for 61.71 km Kozhikkode Corporation submitted on 26.4.23 for Administrative Sanction under AMRUT2.0. As suggested by the AMRUT SMMU the DPR is under revision	
3	Sewage Treatment Plant and Sewerage System for Ponnani Municipality (Harbour Zone)	7.12	DPR in PRICE 3 Submitted to Govt and RKI for AS on 17/10/2022	DPR Submitted to Government of Kerala and RKI for AS on 17/10/2022	

4	Sewerage system for Thiruvananthapuram Corporation-Cluster 1 Attukal, Ambalathara, Kaladi, Kalipankulam & Kamaleswaram	7.0(for utilizing existing 107 MLD)	DPR in PRICE 3 Submitted to Govt and RKI for AS on 15/10/2022	DPR was forwarded to Ministry of Jalsakthi on 24.11.2022 for funding under NRCP.	
5	STP at sewerage system in Zone A,Package A,Avikkal thodu ,Kozhikode (AMRUT) (PRS	7.0	Started but stalled: The Council held on 27.06.2023 decided to terminate the existing contracts and retender the STP works. Revised estimate was accepted by the 10 th SLTC held on 30.09.2023 for placing in the next SHPSC.	*The judgment of the Munsiff Court on OS No. 459/ 2022 is to be obtained. * To be placed in the next SHPSC for approval for inclusion in the SWAP-3of AMRUT-2.0.	31.03.2025
6	Sewerage system (with STP) in Zone A, Package B, Kothi, Kozhikode(AMRUT) (PRS)	6	AS to be issued: *The Munsiff Court disposed the case, OS No. 450/ 2022, in favour of the ULB. * The Hon'ble High Court disposed the case, WPC No. 40164/ 2022, in favour of the ULB. * Since the price escalation request of the Contractor can't be considered the 27 th SLTC held on 10.05.2023 directed the ULB to furnish their opinion regarding cancelling the existing contracts and retendering the works. * The Council held on 27.06.2023 decided to terminate the existing contracts and retender the STP works. Revised estimate was accepted by the 10 th SLTC held on 30.09.2023 for placing in the next SHPSC.	* The judgment of the Munsiff Court on OS No.217/ 2022 is to be obtained. * Revised estimate was accepted by the 10 th SLTC held on 30.09.2023 for placing in the next SHPSC.	31.03.2025

7	Sewerage system for Pattambi municipality	5.4	DPR Submitted to Government of Kerala and RKI	DPR Submitted to Government of Kerala and RKI for AS on 06/08/2022	
8	STP with septage co-treatment at Elamkulam (AMRUT-2.0)	5	* The 5th SHPSC held on 02/03/23 approved the issuance of AS and G.O (711) dated 25.03.2023 was issued.	TS was issued by KWA Work to be tendered.	31.03.2025
9	Sewerage system for Ponnani municipality(Kottathara Zone) with STP of capacity 4.2 MLD	4.2	DPR in PRICE 3 Submitted to Govt	DPR Submitted to Government of Kerala and RKI for AS on 20/10/2022	
10	Sewerage system for Haripad municipality(Kottathara Zone) with STP of capacity 4.2 MLD	3.8	DPR Submitted to Government of Kerala and RKI	DPR Submitted to Government of Kerala and RKI for AS on 01/09/2022	
11	Decentralized Sewerage Scheme (with STP), Thrissur Corporation	2.5	<i>AS to be issued:</i> * To be retendered after obtaining permission from the Govt. for constructing the STP at the proposed location (Paddy Land). * The 28 th SLTC held on 14.06.2023 recommended LLMC to give clearance for the STP since the Agriculture Dept. has not furnished proof that the proposed site for the STP is coming under the Ramsar site category. *The LLMC held on 25.07.2023 decided to approve the change in category of the proposed land.	*The LLMC held on 25.07.2023 decided to approve the change in category of the proposed land * Request is to be submitted by the ULB to the SLMC for changing the category of the proposed land. Decision of SLMC is awaited for placing the project in the SLTC/ SHPSC for approval for inclusion in the SWAP-3 of AMRUT-2.0.	31.03.2025
12	Sewerage System for Kattappana Municipality	1.76	DPR Submitted to Government of Kerala and RKI	DPR Submitted to Government of Kerala and RKI for AS on 19/09/2022	

13	Sewerage System for Aluva –Zone 1	1.72	DPR Submitted to Government of Kerala and RKI for AS on 20/08/2022	DPR Submitted to Government of Kerala and RKI for AS on 20/08/2022	
14	STP at Ottappalam Municipality, Palakkad District (IMPACT KERALA Ltd)	1.50MLD Co-treatment	G.O(Rt)No.165/2023/LSGD dtd 19.01.2023 received regarding tender acceptance & Revised Administrative Sanction from Govt. Tender file uploaded to KIIFB PFMS on 21.01.2023 and KIIFB approved the same. Selection notice to be issued. Agreement executed with contractor on 22-3-23. Contractor has to submit vetted design and drawings within 2 months and , has sought time extension for the same.Survey conducted by contractor for finalizing network design. Letters to concerned authorities submitted for NOC/road cutting permission related to network. District collector convened meeting to sort out issues on 17/8/23. .Issue regarding Railway NOC being sorted out. Site handed over on 16/10/23. Preliminary works initiated at site. STP Design vetting being done from IIT, Jodhpur.	DPR approved by KIIFB.	

15	STP at Decentralised Sewerage System - Kochi Corporation Div-16 (AMRUT)	1.1	<i>Awarded but not started:</i> * There is public protest against the project. Public stopped the starting of soil investigation work on 28/04/22. * A public meeting was conducted in the presence of the Hon'ble Mayor on 02.08.2023 to resolve the public protest * Soil testing was started on 09.08.2023 but was stopped again by the protestors on 10.08.2023.	The work was started on 25.11.2023 with the help of the Police.	30.06.2024
16	STP at Wadakkanchery Municipality, Thrissur (IMPACT KERALA Ltd) (PRS)	1.00MLD Co-treatment	Initially planned at Puramboke land. NOC to be obtained from district collector. Now municipality planning for decentralized plants at different locations which needs to be finalized in consultation with PCB. Municipality to submit DPR accordingly. Not yet submitted.	DPR to be prepared.	-
17	STP at Kunnamkulam Municipality, Thrissur (IMPACT KERALA Ltd)	1.00MLD Co-treatment	Letter received from the Municipality on 28.12.2022 with Council resolution that Municipality is not going ahead with the Project. Letter forwarded to CEO, KIIFB and ACS, LSGD regarding cancellation of the project on 11.01.2023. ACS directed Municipality to find place for LWM projects. Municipality informed	DPR approved by KIIFB	

			that they have not considered anything further on this regard.		
18	STP at Palayad Taliparamba municipality, Kannur	1	At DPR Stage	For the project land has to be purchased. The municipality is interested in buying the land of the weavers society. Need to submit reports regarding the land acquisition. Reports are under preparation	
19	STP at Mayyand GP, Kollam (IMPACT KERALA Ltd)	590KLD Co-treatment	RKI issued AS on 4/3/2022. Formal approval given by Technical committee for tendering. Tender published. Date of opening 7/6/23. No bids received. Retender published on 4/7/2023. Date extended upto 18/8/23 based on requests. Technical bid opened on 22/8/23. 3 bids received. Initial scrutiny completed. 1 bid rejected. Bidders Technical	DPR approved by RKI.	-

			presentation conducted on 10/10/23 before technical experts. Clarification sought from them and obtained. PQ evaluation finalized. Financial bid of 2 qualified bidders opened on 2/11/23. 8 th Tender Acceptance Committee held on 14/11/23 approved selection of L1 bidder. Selection notice to be issued		
20	DPR on STP at District Hospital, Tirur, Malappuram	0.5	At DPR Stage	DPR under verification stage	
21	STP at Vadakara Municipality, Kozhikkode (IMPACT KERALA Ltd) (PRS)	0.5 MLD Sewage TP 20KLD FSTP 20KLD	DPR appraisal ongoing in KIIFB. Present council decided to drop FSTP and include another STP at the proposed FSTP site. Consultant modifying DPR as per that. Land issue. Unnotified land conversion required at Narayananagaram and ownership details not received for Thazhangadi. Reminder to Municipality given. Not yet submitted.	DPR approved by RKI	-

22	STP at General Hospital, Thrissur (AMRUT) (PRS)	0.36	Awarded but not Started- Agreement was executed on 14/10/2020. Consent. Submission of additional performance guarantee	Additional performance guarantee to be submitted by the Contractor	30.09.2023
23	STP at Athani, Wadakkanchery Municipality, Trissur (PRS)	350 KLD STP	Site identified. DPR under preparation	DPR approved by RKI	-
24	Taluk Hospital Thiruvalla, Thiruvalla Municipality, Pathanamthitta	0.225	At tendering stage	Vetting process in progress. Letter issued towards DPR preparation consultancy regd assistance in procurement	
25	STP for Idukki district hospital and district Ayurveda hospital, Thodupuzha municipality, Idukki	0.205	Tendered	Project modified as DPR for Taluk hospital alone with reduced capacity. DPR submitted to LB	
26	District Hospital Perunthalmanna, District Panchayath, Malappuram	0.200	At DPR Stage	DPR under correction by agency	
27	200 KLD Sewage Treatment Plant - Mattannur Municipality - Reg	0.2	At DPR stage	Soft copy sent to SSM. DPR under verification at SSM	
28	200 KLD Wastewater treatment plant at Tata Trust Govt Hospital, Kasargod	0.2	At DPR Stage	Local body decided to hand over the work of DPR preparation to another agency	

29	General Hospital, Irinjalakuda Municipality , Thrissur (PRS)	0.150	At DPR Stage	DPR correction in progress by the agency	
30	Eco-Friendly wastewater Treatment Plant (140 KLD) for Women and Children Hospital Ponnani Municipality, Malappuram	0.14	At DPR Stage	DBOT Tendering in process. Fund for the project has been sanctioned and the fund transferred to KWA.	
31	135 KLD Capacity decentralized sullage Treatment plant at Uppala Town Mangalpadi, Kasaragod	0.135	At DPR Stage	Access was not available. NOC obtained from department concerned. DPR correction in progress	
32	STP at hospital, Pazhayangadi, Kannur	0.120	At DPR Stage	Project vetting completed Agency has submitted a rough cost estimate for electrical components. Steps for issuing TS are in progress	
33	FSTP at Ramavarmapuram , Thrissur (AMRUT) (PRS)	0.1 MLD	<i>Tendered but not awarded:</i> * The Contractor had requested the ULB to relieve them from the project citing reasons like financial crisis and increase in material & labour cost due to Covid pandemic. * The Council held on 29/01/22 decided to retender the work (TSP limited competitive tender). * The estimate recast as per DSR-2018 is to be approved. The corrected estimate & details were submitted to CE, LSGD office on 20/08/22. * The Technical		* TS dated 19.10.2023 was issued by the CE, LSGD. * Agreement to be executed with the contractor. 30.06.2024

			Committee held on 17/10/22 directed to tender the work with the technology kept as open. * Tender was floated by the ULB on 24/12/22 with 09/01/23 as the last date of bid submission & 11/01/23 as the date of bid opening. Last date of bid submission & date of opening were extended till 13/01/23 & 16/01/23 respectively as per the request of a prospective bidder. Only 1 bid was received, hence, retendered (2nd) on 18/01/23 with 25/01/23 as last date & 28/01/23 as date of opening. Again, only one bid was received. The ULB invited quotations on 09/02/23 with 15/02/23 as the last date of submission. Three quotations were received. * The ULB selected the technical bid submitted by M/s. SEUF. Vetted design & technology details were submitted by SEUF on 19.07.2023. The same were submitted to the CE, LSGD (letter dated 02.08.2023) for placing in the Technical Committee. * The Technical Committee held on 23.08.2023 approved the technology and recommended issuance of TS.		
34	FSTP at Yakkara, Palakkad Municipality	0.1 MLD	<i>Tendered but not awarded:</i> * The Cabinet Meeting of the Govt. held on 02/02/22	* 29th SLTC held on 07.11.2023 accepted the proposal for AS revision. To be placed in the next	30.06.2024

			decided to allow 70 Cents of land inside Palakkad Medical College Campus for the construction of the septage plant. Govt. Order, dated 04/03/22, was issued by Revenue Dept. allocating 70 Cents of land for the work. * The Contractor informed vide letter dated 31/03/22 that they are not willing to go ahead with the work due to financial crisis & increase in material & labour cost due to Covid pandemic. * Counter affidavit was filed by the ULB regarding the petitions (WPC-14660/ 2022 & WPC-15105/ 2022) filed in the Hon' High Court against the construction of the Septage Plant. * The Council held on 12/07/22 decided to take further action based on the judgment of the Hon' High Court. * The judgment of the Hon' High Court disposing the petitions filed by the protestors in favour of the ULB was obtained on 15/11/22. * The Core Committee of the ULB held on 26/11/22 decided to select new consultant for preparation of revised DPR and the Council held on 16/12/22 gave consent for the same. * The ULB had approached IRTC for preparation of DPR but the response given by IRTC was not satisfactory for the ULB. Hence the Core	SHPSC * The Technical committee held on 20.11.2023 approved the L1 bid * TS to be issued by the CE, LSGD.	
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			Committee held on 06/01/23 decided to approach CDD for preparation of the DPR. The Core Committee held on 01.02.2023 & the Council held on 25.02.2023 gave approval to transfer the project to AMRUT-2.0. The Council held on 11.03.2023 gave consent for the preliminary proposal (40 KLD) given by M/s. CDD. * The 27th SLTC directed the ULB to maintain the project in AMRUT-1.0 as the mission period has been extended. * The Core Committee of the ULB held on 27.05.2023 decided to float tender for DPR Consultant as the project cost & O & M cost as per CDD's proposal is high and can't be borne by the ULB. The Committee also decided to maintain the capacity as 100 KLD. * The 28th SLTC held on 14.06.2023 directed the ULB to float a tender for executing the work in DBOT mode instead of floating a tender for a DPR Consultant. The Core Committee held on 19.06.2023 agreed with the suggestion of the SLTC. * Tender (DBO) was floated by the ULB on 08.08.2023 with 24.08.2023 as due date but the same has been extended upto 05.09.2023 as per the request of prospective bidders. 3 bids were received & 2 qualified.	
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			Financial bid was opened on 11.09.2023. Technical committee members visited the works done in Coimbatore by the L1 (Sainath Envirotech). * The Council held on 30.09.2023 approved the bid received.		
35	FSTP at Chellora, Kannur Corporation (AMRUT)	0.1 MLD	<i>Awarded but not started.</i> * Agreement was signed with M/s. IRTC to execute the project in DBOT mode. DPR to be submitted by M/s. IRTC. * DPR was submitted by IRTC on 30.06.2023. The same was approved by the council held on 25.07.2023. The ULB has directed M/s. IRTC to get the design vetted.	DPR submitted by IRTC was approved by the council held on 25.07.2023 * The ULB has directed IRTC to get the design vetted * The legacy waste removal from the proposed site is expected to be completed by Nov-23. The legacy waste removal from the proposed site is expected to be completed by Nov-2023. * Agenda has been placed in the 29th SLTC scheduled on 07.11.2023 for revision of AS. To be placed in the next SHPSC	30.06.2024
36	CHC Alathur, Alathur Block Panchayat, Palakkad	0.090	At DPR Stage	Since there issue regarding land availability and the suitability of proposed plant, board meetings at LB level were conducted. Decided to call for tender with prefabricated STP plant agencies.	
37	Taluk Hospital Pampady, Pampady Block panchayat,	0.085	At Tendering stage	TS received, tendering	-

	Kottayam			completed. KSPCB consent to establish proceedings in progress	
38	65 KLD Sewage Treatment Plant at Taluk Head Quarters Hospital Vythiri, Kalpetta Block Panchayat, Wayanad	0.065	At DPR Stage	Agency submitted New estimate and DPR to LB	
39	ETP at Tirur Municipality	0.060	At DPR Stage	LB to submit the revised DPR with revised DPC form	
40	FSTP at Varkala Municipality, Thiruvananthapuram (IMPACT KERALA Ltd)	50 KLD FSTP	RKI issued AS on 28/2/2022. Structural Scrutiny entrusted to CET on 17.05.2022. Fire NoC applied on 30.06.2022. Objection raised during site inspection. PCB NOC received on 21.05.22. Structural scrutiny received on 08.02.2023. Fire NOC issue sorted out as letter received from Fire dept that NOC not needed. Formal approval accorded by technical committee for proceeding with tendering. Tender documents modified. Tender published on 3/7/2023. Date of opening 4/9/23.	DPR approved by RKI and tender published	

			5 bids received. Under technical evaluation. Initial PQ evaluation completed. 1 bidder rejected. Bidders Technical presentation conducted on 4/11/23 before technical experts. Clarifications sought by experts. To be obtained by 30/11/23 for finalization of PQ evaluation.		
41	STP at Thottumadi Colony, Alappuzha	0.05	<i>Tendered but not awarded</i> The detailed engineering report submitted by the bidder was discussed in the Technical Committee held on 21/01/23 & the Committee directed the ULB to get the design & drawings vetted by an IIT or NIT. The ULB submitted the design & drawings to IIT Palakkad for vetting on 07/02/23. IIT officials visited the site.	Report on design vetting is awaited from IIT Palakkad for placing in the Technical Committee for approval of the bid received.	30.06.2024
42	Taluk Hospital , Neeleswaram Municipality Kasaragod	0.040	At tendering stage	TS issued, Tendering process delayed due to issues regarding rate changes in Price software. BOQ for Tendering under preparation	
43	ETP at Kodimatha, Kottayam Municipality	0.030	At DPR Stage	Revised DPR submitted to District Suchitwa Mission and returned for	

				correction	
44	ETP for slaughter house, Marakkadavu, Ernakulam	0.030	At DPR Stage	DPR under correction by the agency	
45	STP at private bus station, Kothayikkunnu, Thodupuzha municipality Idukki	0.03	Tendering stage.	TS issued.	
46	Mobile Septage Units- 2 nos, Alappuzha (AMRUT-1.0)	0.02 (0.01 *2 nos.)	<i>Tendered but not awarded:</i> * Work tendered 5 times but no bids received. * ULB's Technical Committee held on 30/06/22 decided to request the Technical Committee for Sewerage works to relax the payment terms so that bidder participation can be increased. * The Technical Committee for SEW & SEP works held on 26/08/22 decided to call for quotations without changing the payment terms. * Quotations were called for by the ULB with 15/11/22 as the last date of submission. One quotation received. In this regard a meeting was held by the CE, LSGD on 21/12/22 with the bidder and the ULB officials. * The detailed engineering report submitted by the bidder was discussed in the Technical Committee held on 21/01/23 & the Committee directed the ULB to get the design & drawings vetted by an IIT or NIT. The ULB	* 29th SLTC held on 07.11.2023 accepted the proposal for revision of AS. To be placed in the next SHPSC.	31.03.2024

			submitted the design & drawings to IIT Palakkad for vetting on 13/02/23. A joint meeting was held by the ULB on 05/05/23 with the officials of IIT & the bidder. Design vetting report was submitted by the IIT Palakkad on 31/07/23. * The design vetting report was submitted to the CE, LSGD on 05.08.2023 for placing in the Technical Committee. The Technical Committee held on 23.08.2023 approved the technology and recommended the revision of the AS.		
47	ETP at Tirur Municipality Slaughter house	0.030	At DPR Stage	TS issued. Tendering is in progress	
48	35 KLD STP at Ramavarma District ayurveda hospital, Thrissur	0.035	At DPR stage	DPR under correction by the agency	

- The status of compliance of remaining STPs less than 30 KLD is attached as enclosure 1.

IV.Details of Industrial Pollution:

- Total registered industrial and non industrial units – 154931
- 56045 consents issued from 2020 onwards- More industries are brought under consent purview

- 23,279 effluent generating units (large and medium=461; Small scale-17487) (as per dossier)
- The Board issue consent only after ensuring providing of treatment system and is monitored.
- OCEMS facility provided in 39 industries and are linked to the SPCB/CPCB servers. In case of exceedance follow up is done.
- Quantity of effluent generated from the industries in MLD: $169.838 + 0.636 = 170.464$
- Quantity of Hazardous Sludge generated from the Industries in TPA : 2584.572
- Number of industrial units connected to CETP: As per the available data-64 nos
- Number and total capacity of CETPs (details of existing/under construction /proposed)

I. 11 nos of CETPs are functional (Total Capacity – 11.245 MLD), 1 CETP having capacity 0.25 MLD not operational due to non availability of waste water.

II. Proposed CETPs –2 nos. (Total Capacity- 3.1MLD).

4.1.Details of existing/under construction/proposed CETPs in the State

<i>CETP Name</i>	<i>Treatment Capacity</i>	<i>Operational Capacity</i>	<i>Status (Whether Operational or Non operational)</i>	<i>Number of member units</i>	<i>Number of complying units</i>	<i>Whether complying with parameters</i>
Kinfra Apparel Park, St. Xavier's College P.O, Thumba, Thiruvananthapuram	4.5 MLD	4.5MLD	Operational	10		Faecal Coliform is not complying within limits according to analysis report on 04/09/2023
CETP, KINFRA, Elamannoor, Pathanamthitta	0.22 MLD	30 cubic metre per day	Operational	4	4	All parameters are within limits 21/09/2023
Mega FoodPark. Aroor Alappuzha	2MLD	0.5MLD	Operational	6		Parameters complied within limits
Sea Food	0.3 MLD	0.3	Operation	10		Parameters complied

Park (India) Ltd., Aroor, Alappuzha		MLD	al			within limits
SEZ,Kakkanad , Cochin Special Economic Zone Ernakulam	1.6 M L D	1.6ML D				Parameters complied within limits
Kinfra Small Industries Park Nellad, Mazhuvanoor, Ernakulam – 686 721	0.4 M L D	0.4 MLD	Operation al	15		Legal sample collected from the final outlet of CETP ,Kinfra, Nellad on 21.07.2023 shows that parameters such as BOD, COD, phosphates, sulphides,phenoli c compounds and iron are not within permissible limits

Rubber Park India Private Limited, Common Effluent Treatment Plant, 2A, Kaudileeyam, Rubber Park, Valayanchirangara, Ernakulam - 683556	0.25 MLD	0.25 MLD	Operation al	17 Units + Dormitory and Canteen		Parameters not complied within limits. Show cause notice issued.
CSEZ, Kakkanad, Cochin Special Economic Zone Ernakulam	1 MLD		Operational		All units com plyi ng	Discharge standards complying
Kinfra Techno Industrial Park, Kakkanchery Chelambara P.O, Malappuram	0.675 MLD	0.675 MLD	Operational	17	17	Parameters complied within limits
Kinfra Textile Centre, Nadukani, Pallivayal P.O, Thaliparambu, Kannur - 670 142	0.2 MLD	0.2 MLD	Operational	2	2	Parameters complied within limits

Construction of 6 KLD ETP for Kumali Slaughter House Kumali GP, Idukki	0.006 MLD		Operational			
CETP, Industrial department, Aroor			Proposed CETP (Court case pending regarding allotted land)			NA
CETP, Chandiroor	1.5 MLD		Proposed CETP			NA

Effluent Treatment Plants

Kasargod

Sl. No.	Industry Name	Type	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal	ETP Units	Date of monitoring	Limiting Standards	Latest analysis report	Conforming to Standards or not if not steps taken
1	<u>Govt. District Hospital Kanhangad</u>	<u>Hospital</u>	<u>0.25</u>	0.2	<u>Soak Pit</u>	SEPTIC TANK	19.10.23	pH 5.5-9, SS-100 l		
2	<u>Vpk Motors</u>	<u>Service Station</u>	<u>0.00575</u>	<u>0.005</u>	<u>Soak Pit</u>	ETP	20.10.2023	PH-6.5-8.5, BOD-30, TOTAL SUSPENDED SOLIDS-100, OIL AND GREASE-10, COD-250	Analysis report yet to be obtained	

Ernakulam District

Sl. No.	Industry Name	Industry Type	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal	ETP Units	Date of monitoring	Limiting Standards	Latest analysis report	Conforming to Standards or not if not steps taken
1	<u>The Fertilisers And Chemicals Travancore Ltd-Cochin Division,</u>	<u>Fertiliser</u>	<u>4.1</u>		<u>Chithrapuzha</u>	<u>equalisation, flash mixer, clarification, collection, on pit, lime slurry tank, chemical mixing, guard pond, delapond</u>	<u>17.10.2023</u>	<u>pH-5.5-9.0, BOD-20mg/L, COD-250mg/L, Oil & grease-5mg/L, SS-100mg/L, Phosphates-30mg/L, Ammoniacal Nitrogen-75mg/L</u>	<u>pH-6.38, BOD-13.8mg/L, COD-40mg/L, Oil & grease-BDL, SS-177.2mg/L, Phosphates-0.32mg/L, Ammoniacal Nitrogen-50.87mg/L</u>	<u>SS exceeded from the limit</u>
2	<u>Hindustan Organic Chemicals Ltd.</u>	<u>Chemical</u>	<u>2.3</u>		<u>Chitrapuzha/Reuse</u>		<u>17.10.2023</u>	<u>pH-6.5-8.5, BOD-30mg/L, COD-</u>	<u>pH-7.98, BOD-8.4mg/L, COD-40mg/L,</u>	<u>All the parameters are conforming to the</u>

							<u>250m</u> <u>g/L,Oil</u> <u>&</u> <u>grease</u> <u>=</u> <u>10mg/</u> <u>L,TSS-</u> <u>100m</u> <u>g/L,Ph</u> <u>enolic</u> <u>Comp</u> <u>ounds</u> <u>=</u> <u>5mg/L</u>	<u>Oil &</u> <u>grease-</u> <u>BDL,TSS-</u> <u>10.4mg/</u> <u>L,Phenoli</u> <u>c</u> <u>Compou</u> <u>nds-BDL</u>	standards
Pathanamthitta District									

Sl. No.	Industry Name	Industry Type	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal	ETP Units	Date of monitoring	Limiting Standards	Latest analysis report	Conforming to Standard or not if not steps taken
1	Greentech Solutions and Innovations, Payyanallor P.O Adoor	Rendering Plant				ETP	24.1 1.20 23	pH - 6.5 to 8.5, BOD-30, TSS - 10, COD - 50, O&G - 1	pH - 6.7, BOD-12, TSS - 16, COD- 48, O&G - BDL	All parameters are within the limit
2	Anila Food Products, Kadapra	Food Processing				ETP	25.1 1.20 23	pH - 5.5 to 9.0, TSS - 100, BOD - 30, O&G - 10	pH -6.5, TSS - 88, BOD - 32, O&G -9.2	BOD exceeded the limit

V. Solid Waste Management:

Total number of Urban Local Bodies and their Population: 93 Urban Local Bodies (6 Corporation and 87 Municipalities) , Total Urban Population : 79,36,885 (As per 2011 Census)

- Current Municipal Solid Waste Generation :3472 TPD (Urban local bodies- Based on population)

- Processing Capacity : 3231 TPD

- Gap in Municipal Solid Waste Management : 241 TPD

(The reduction in gap is due to the inclusion of recently commissioned rendering plants for processing the chicken waste . There is no live dump sites in the state . the quantity of 342 TPD is disposed through household facilities like compost pits and however action is being taken to divert it in the proposed centralized facility)

The District wise number of units are given below;

- 8 Waste to energy plants in progress (DPR stage-1 no, Tendering stage-1 no, Bid evaluation stage- 2 nos. , Initial stage of construction-2 nos, Land identified-2 nos)

- The Additional Chief Secretary ,Local Self Department has submitted the action taken Report on the implementation of Solid Waste Management in the state. Status report of Local self Government department is submitted herewith.

1. Status of proposed Waste- to- Energy Plants

Status report of Waste to Energy Plant				
Sl. No.	Waste to Energyplant	Land Identified	Procured	Status
1	Kozhikode Njاليانparambu	Kozhikode corporation	(Govt. land)12.67acre at Njاليانparabu	- Work awarded to Zonta Infratech Private Limited for the construction of Waste to Energy Plant. - Consent to establish was issued to Malabar Waste Management Private Limited on 12-8-2020 with a validity upto 30-6-2023 for the generation of 6MW electricity and 20T of compost. - Biomining of legacy waste is 75% complete. The total area for biomining is 1.8 acres. - All licenses from the corresponding departments were obtained for the construction of waste to energy plant. Preliminary site work started. Financial closure is expected to be achieved by the end of the month. Work will be started only after monsoon.
2	Kannur Chelora	Kannur Corporation	(Govt. Land) 9.7 acres at Chelora	- Work of WtE plant can be started only after the work of biomining is carried out. WtE plant is proposed in 9.7 acres of land after clearing the legacy waste. - Tendering completed and DPR prepared by Blue planet. Consent application is yet to be received. - For biomining, volume of legacy waste – 1,22,844 m3 (NIT). First given to Zonta and they asked to revise the amount of biomining. Again retendered and identified a suitable contractor, Jan-Adhar Sevabhavi Sanstha. Bio mining already started. Agreement to be executed Biomining is already started (6500) cum is biominced (50%).
3.	Palakkad Kanjikode	Palakkad Municipality	Land taken over from Kerala State Electricity Board Ltd. in advance possession 15 acres at Kanjikode	- Blue Planet Palakkad Waste Solutions Private Limited was formed to take up the development of the project. - Consent to establish was issued on 21-12-2021 to the project with a validity upto 30-11-2023. 200T of municipal solid waste will be processed.

4	Kollam Kureepuzha	Kollam Corporation	7.05 acres at Kureepuzha (Govt. land)	- The SPV constituted for setting up of the Waste to Energy Plant of Kollam Corporation, - M/s. Venad Waste Management Private Limited had applied for Consent to Establish on 09.09.2021. The proposed waste to energy plant is bio methanation based and is having a capacity of 200 TPD. - Consent to establish was issued to project on 10-1-2022 with a validity upto 9-1-2025 for the production of 8.165TPD of compressed biogas from 200TPD of municipal solid wastes - Biomining of legacy waste completed. - Financial closure for waste to energy plant is expected to be achieved by December 2022.
5	Ernakulam Brahmapuram	Kochi corporation	20 acres at Brahmapuram (Govt. land)	- Bio mining of legacy waste is progressing. 25% completed. - For construction of Waste to Energy plant, work order was issued to M/s. Zonta Infra Tech. A meeting was convened on Hon'ble Minister chamber on 17/12/2022 ,and decision as follows. - Corporation has been exempted from paying annual installment for 20 acres of land, which has been leased out to KSIDC for waste to Energy plant under public private partnership from subsequent annual fund. - Tipping fee amount shall be obtained by increasing user fee collection from residential area and also by enhancing property tax by 8%.. - Above decision has put to council for approval.
6	Thrissur	Thrissur corporation		Land is yet to be Identified .Biomining 45% completed.
7	Malappuram	Malappuram municipality	8.09 acres of land at Kurumbathoor village in Tirur Taluk	8.09 acres of land identified by District Administration at Kurumbathur village. Tirur taluk for setting up of WtE plant. The land is under possession of KSIDC. Details of this are reported to be submitted to Government already by LR Deputy Collector.
8	Thiruvananthapuram	Thiruvananthapuram Corporation		Land is not yet identified.

1. Status Report of Bio mining in the State of Kerala

In Kerala there are no live dump sites. 58 old dumpsites were identified in different parts of the State. Out of which 21 were bioremediated. Bio-mining of legacy waste is progressing at various stages in the remaining 37 dump sites.

In the State, for a Regional Sanitary Landfill 25 acre of land has been earmarked by KINFRA at site of FACT at Ernakulam and action is being carried out to set up. Another secured landfill is under construction in Attingal Municipality.

Bio mining of dumpsites

<i>Description</i>	<i>As on 01.12.2022</i>	<i>As on 13.10.2023</i>
Number of Dumpsites Identified	44	58
Remaining dumpsites to be bio-mined	26	37
a.Dumpsites where bio-mining is progressing	6	10
b.Number of dumpsites to be biomined	20	27 (work order: 3, tender proceedings: 5 Tender process initiated: 19)
Fund earmarked	15.15 crore	
Fund utilized		13.7 crore

Clearing of dump sites - Processing sites

<i>Sl.</i>	<i>Location</i>	<i>Status of Bioremediation</i>
1	<i>Attingal, TVM</i>	75% remediated, process ongoing.
2	<i>Sarvodayapuram, ALP</i>	45% remediated.
3	<i>Vadavathoor, KTM</i>	8000 m3 dumpsite cleared in Phase 1, project taken up as KSWMP and 2 crore SBM(U) project in Phase 2.
4	<i>Brahmapuram, EKM</i>	Work retendered, Remediation work allotted to 'M/s Bhoomi'.
5	<i>Laloor, TSR</i>	80% completed.

6	Njaliparambu, KKD	Zone 3 biomining completed.
7	Chavakkad, TSR	75% completed.
8	Chelora, KNR	76 m3 remediated and bill passed. 25 tonne RDF given to cement factory (Karnataka).
9	Ottapalam, PKLD	Ist phase completed, II phase- Levels prepared and report send to CE office for TS.
10	Kodungallur, TSR	Work started and 25 % remediated

2. Status of Solid waste management System

As per the Solid Waste Management Rules, 2016, 100% door to door collection from households and establishments is to be done. This includes treatment in the centralized and de-centralized systems. Centralized Windrow composting system exists at Brahmapuram, Kochi and at Njaliyan parambu, Kozhikode. However household level decentralized solid waste management facilities do exist at Kochi and Kozhikode Corporation. 100% D2D collection of dry waste is achieved for households in 93 urban local bodies as in October, 2022. Haritha Karma Sena is working in 92 urban local bodies and 923 Grama Panchayaths for collection of dry waste . For wet wastes disposal decentralized treatment methods such as aero bins, pipe compost, compost pits, kitchen bins, biogas plants etc. are followed. Dry wastes are collected, segregated and disposed through recyclers. In Kerala there are 214 plastic recycling units, 21 Steel mills, and 7 craft paper units. Non-recyclable plastic waste is shredded in the RRFs and is used for the tarring of PWD and LSGD roads. During the period 2016-2023, Clean Kerala Company Limited (CKCL) has produced 34443.142 T of shredded plastics and given to various agencies (NHAI- 12-18 T, PWD-947.76 T, LSGI-1151.2 T). The total length of polymerized road constructed during this period using shredded plastic is 3838.04 km. 1174 MCFs and 204 Resource recovery facilities have been provided in LSGIs (Status as on April 2023) . The status report on the progress achieved from 2019-2022 is given as Annexure III -c

Haritha Karma Sena (HKS), an enterprise group formed through the State Poverty Eradication Mission (Kudumbasree) has been engaged for the Door-to-Door collection. The enterprise group is designed to have two persons for each ward for door-to-door collection of non-biodegradable waste on a regular basis and to help in managing the household institutional-community systems for composting biodegradable waste. The user fee is fixed by the respective local government depending on the services rendered and based on the guidelines issued vide G.O(Rt)No.2420/2017/ LSGD dated 15.07.2017. In order to sustain the operation of the door-to-door collection system, Government provided a Viability Gap Fund (VGF) support initially so as to make up the shortage of user fee collection in the initial stages such that each member of the group get at least minimum wage decided by the government.

The status of the present facilities for the treatment of biodegradable waste is given below.

1. Status of facility for treatment of Biodegradable waste

The Government of Kerala has taken efforts to implement the Solid Waste Management Rules, 2016 in the State. There are 6 Corporations, 87 Municipalities and 941 GPs in the State. The Kerala State Pollution Control Board (KSPSCB) issued repeated directions to all local bodies to ensure compliance of the Solid Waste Management Rules, 2016. 3472 TPD of solid waste is generated from the cities and towns. The status of the present facilities is given below:

Existing waste management facilities

<i>FACILITY</i>	<i>TYPE OF PLANT</i>	<i>NUMBER</i>	<i>LOCATION</i>	<i>CAPACITY (TPD)</i>
Composting Facilities				
Centralized Plants	WINDROW COMPOSTING PLANT (LARGE)	1	Kochi Corporation	25
		1	Kozhikode Corporation	100
		TOTAL	2	125
	WINDROW COMPOSTING PLANT (SMALL)	1	Attingal	15
		1	Adoor	1
		1	Kothamangalam	4
		1	North Paravur	1
		1	Chalakudy	2
		1	Irinjalakuda	4
		1	Kodungaloor	4
		1	Guruvayoor	5
		1	Kunnamkulam	9
		1	Wadakancherry	10
		1	Palakkad Municipality	10
		1	Chittur Thattamangalam	5

		1	Pattambi	3
		1	Shornur	5
		1	Ottapalam	5
		1	Kalpetta	4
		1	Mattanur	2
		1	Koothuparamba	5
		1	Iritty	2
		1	Thaliparambu	1.5
	TOTAL	21		97.5

<i>FACILITY</i>	<i>TYPE OF PLANT</i>	<i>NUMBER</i>	<i>LOCATION</i>	<i>CAPACITY (TPD)</i>
<i>Centralized Plants</i>	VERMI COMPOSTING PLANT (SMALL)	1	Attingal	0.25
		1	Kattapana	0.5
		1	Mattannur	5
		1	North Paravur	1
		1	Chavakkad	2
		1	Chalakkudy	0.5
		1	Koothuparamba	1
		1	Perinthalmanna	2
		1	Manjeri	0.5

	TOTAL	9		12.75
Community Facility	AEROBIC COMPOSTING UNIT	773		443.39
INSTITUTIONAL FACILITIES	SMALL COMPOSTING DEVICES	28406		20
	OWC	1	Angamaly	0.5
		3	Thrissur corporation	16
		1	Kayamkulam	10
	TOTAL	5		26.5
Household Level	Composting devices	349815		699.63
	Compost Pits	476530		476.53
	TOTAL	826345		1176.16
COMPOSTING FACILITIES TOTAL		855538		1900.3 TPD

BIOMETHANATION FACILITIES				
FACILITY	TYPE OF PLANT	NUMBER	LOCATION	CAPACITY (TPD)
Centralized Facilities	Large capacity Biogas plants	1	Thodupuzha	8
		1	Manjeri	10
		1	Perinthalmanna	2
		1	Kattappana	5
	TOTAL	4		25
Community Level	TOTAL	117		58
Household Level	TOTAL	77070		385.35
BIOMETHANATION FACILITIES (TOTAL)		77191		469
Non Bio waste management				
NBD waste collected by ULBs			614 TPD	

NBW collected by authorized waste collectors		60 TPD	
<i>Plastic/ NBD waste (Recycling)</i>			696 TPD
Waste management capacity for the state			3927.55 TPD

Sanitary landfill

The non-usable, non-recyclable, non-biodegradable, non-combustible and non-reactive inert waste and preprocessing rejects and residues from waste processing facilities shall only go to sanitary landfill and its specifications are given in zi of Rule 15 of the Solid Waste Management Rules, 2016.

In the State, for a Regional Sanitary Landfill 25 acre of land has been earmarked by KINFRA at site of FACT at Ernakulam and action is being carried out to set up. Another secured landfill is under construction in Attingal Municipality.

1. Rendering plant

Kerala state has more than 16,000 poultry stalls where around 18 lakh poultry are slaughtered and sold daily and it is estimated that about 1,080 TPD of poultry waste is produced. Policy framework to deal with the issues arising out of inappropriate management of chicken waste was issued vide GO(Ms.) No. 227/2021/LSGD dated 07.10.2021. These guidelines are intended to standardize facility requirement, procedure for licensing and operation of Poultry Meat Stalls in all Local bodies, regulate the approval, licensing and operation of Poultry waste rendering plants based on the quantity of waste generated and to develop a monitoring mechanism for the implementation of these regulations. A District Level Facilitation and Monitoring Committee (DLFMC) as per guidelines by GO (Ms.) No. 227/2021/LSGD dated 07.10.2021 constituted at all the districts to regulate the approval of proposed/existing rendering plants.

In Kerala there are 44 rendering plants with a capacity of 862.25 TPD. These units have been commissioned during the review period with the continuous efforts from various Departments in the State. The District wise number of units are given below;

DETAILS OF RENDERING PLANTS

Rendering Plants		
District	No .of Units	Capacity
Thiruvananthapuram	0	0
Kollam	3	

		81
Pathanamthitta	1	0
Alappuzha	0	0
Kottayam	0	0
Idukki	0	0
Ernakulam	6	156
Thrissur	2	6
Palakkad	7	103.25
Malappuram	24	302
Kozhikode	1	30
Wayanad	0	0
Kannur	2	44
Kasargod	2	

		110
	48	862.25

2. GPS tracking systems

Local Self Governments (LSGs) are engaging Clean Kerala Company Limited (CKCL) and private agencies for the collection and movement of waste to recycling/disposal facilities from collection centres/dumpsites. The Hon'ble National Green Tribunal in O.A.No.100/2021 'Dumping of Garbage foiled near Annamalai, trucks seized', directed on 29-7-2021 to create a mechanism for registering the vehicles which are entrusted with carrying waste to be disposed at designated dumpsites or treatment facilities, in order to supervise and to track the movement of such vehicles to find out whether the waste that is being entrusted to them is really reaching the designated treatment facility centers. Accordingly, LSGD issued Govt. Order G.O.(Rt.)No.1673/2021/LSGD dated 06/09/2021 regarding guidelines for registering vehicles transporting waste.

Letters were given to all District Collectors in Kerala, GST Commissioner, Excise Commissioner, Transport Commissioner, CPCB, Secretary to Government, Environmental Department, ACS LSGD to prevent and to take action regarding illegal transport of waste to Tamil Nadu. Letter was also given to DGP for vigil monitoring in check post. The honorable NGT vide order dated 24.12.2021 in OA 100/2021 directed to consider developing the possibility of a continuous online monitoring system to monitor the total input of raw materials procured, produced, how it is being used and disposed. In this connection, agency has been identified for developing online vehicle tracking mechanism following the tender procedure. Responsive web application for Pollution Control Board and waste generators. Android app for drivers, generators, and receptors are included in the scope of work. SRS was received and matter is being followed up.

VI. Bio-medical Waste Management:

As per Annual Report in the whole state for the year 2022-23:

- Total Bio-medical generation: 62122.78 kg/day
- No. of Hospitals and Health Care Facilities: 17122
- Existing Total Bio- Medical treatment capacity (captive and CBMW) : 79.637 TPD
- Total Bio-Medical waste treated : 40.2 TPD (Common- 36817 kg/D + Captive- 3.39 TPD)

Board has entrusted Council of Scientific and Industrial Research organization, National Institute for Interdisciplinary Science and Technology (CSIR-NIIST) for conducting a detailed assessment of healthcare facilities in the Kerala state. The works include field inspection, field data collection, estimation of gap and for projected/ extrapolated requirements of CBWTF'S for next ten years and entered into an agreement.

VII. Hazardous Waste Management:

As per Annual Report in the whole state for the year 2022-23:

- Total Hazardous Waste generation: 46674.8567 Metric Tonne/year
- Total hazardous waste recycled: 3376.2752 Metric Tonne/year
- Total hazardous waste utilized: 11.88 Metric Tonne/year
- No. of Industries generating Hazardous waste: 2186
- Treatment Capacity of all TSDFs in the State: 27,50,000 MTA for 45 years
- Total hazardous waste treated (captive and Common) : 43272.46 Tonne/year

VIII . Plastic Waste Management:

- Total Plastic Waste generation: 71000 TPA(as per annual report in the whole state for the year 2021-22).
- Material Collection Facility – 1201 nos.; Resource Recovery Facility- 137 nos.
- Gap between current status and desirable level : 2641.8 TPA

IX. Details of Alternate Treatment Technology being adopted by the State/UT:

- Decentralized Wastewater Treatment System (DEWATS) system coupled with Phyto- remediation was provided in a slum area, Chathanad in Alappuzha, Kerala. The system consists of Anaerobic baffle reactor, planted gravel filter. Waste water from the houses in the colony is collected through pipe line and then it enters the anaerobic baffle reactor and then it is passed through planted gravel filter and treated sewage is discharged into drain (Photos of the same enclosed in AnnexureIII-g)

The Hon'ble NGT issued directions for bioremediation/ phytoremediation for the treatment of sewage. In OA 673/2018, the Oversight Committee submitted suggestions for controlling pollution due to sewage.

Centre for Water Resources Development and Management, Kozhikode submitted "proposal for the study of sewer infiltration into water resources via isotopic tracing and treatment of liquid waste by constructed wetland" submitted to Indian National Committee on Ground Water(INCGW) on 25-10-2021, a response is awaited from the INCGW.

Demonstration projects regarding phyto remediation at a relatively much lower cost with the help of environment experts so that these proposed projects could be realistically remodelled.

There is lack of expertise on phyto remediation projects. Though there are model project on phytoremediation in other states such as at Golf Links, Hyderabad, such models shall be showcased and action is highly needed for transfer of technology of such projects and to strengthen the environmental experts in our State. Online Presentation by NEERI was conducted on 13.03.2023 and site visit by NEERI officials conducted from 11/05/2023 to 13/05/2023. Proposal for feasibility study submitted by NEERI and order issued. NEERI, Nagpur then furnished a proposal for the feasibility study on the development of process package of treatment of domestic sewage for meeting the environmental compliance at Edappally canal and Perandoor canal at Ernakulam and Pallikalar at Kollam district for an amount of Rs 45 lakhs and this proposal was approved by the Board and draft MOU has been submitted.

The Ministry of water resources Jal Sakthi gave the reference of Mr. Kamal Tiwari, Chief Operating Officer, Daiki Axis India pvt. Ltd. For providing Jokhasou technology. Accordingly Mr. Kamal Tiwari visited Rajaji Nagar and Poojappura central jail in Trivandrum with the officials of Trivandrum corporation, Kerala Water Authority and KSPCB. Further a video conference was conducted on 24/08/2023. In the meeting it was decided to constitute a committee for the establishment of Jhokhasou model treatment plant at Rajaji Nagar Thiruvananthapuram.

As per MPRs in compliance to the Order of Hon'ble NGT in O.A.673/2018, the State requests for expertise aid in in-situ treatment.

X. Identification of polluting sources including drains contributing to river pollution and action as per Hon'ble NGT order on in-situ treatment:

- Polluting sources including drains contributing to river pollution were already identified and according to that action plans were prepared and submitted to CPCB. STPs were proposed in the action plans wherever necessary. Measures for management of waste were also incorporated in the action plans. In situ primary treatment were proposed for the river stretches Bharathapuzha and Pamba in the action plans. As part of the Cochin Metro Rail Limited's Integrated water transported system project 4 STPs are proposed at Elamkulam, Vennala, Muttar, and Perandur for treating the water coming through drains and discharging treated water to water bodies. DPR for sewer line at Muttar, Perandoor, Vennala, Elamkulam was forwarded to Ministry of Jalsakthi on 31.01.2023 for funding under NRCP.

XI. Details of Nodal Officer appointed by Chief Secretary in the State/UT:

Vide G.O.(Rt)No.93/2020/WRD dated 28.01.2020 Government of Kerala nominated Deputy Secretary (Projects), Water Resource Department as the nodal authority, Government of Kerala for monitoring the compliance of the directions in the order on fortnightly basis and to maintain record of progress and to act as an accountable person to the Chief Secretary for the purpose.

Vide G.O.(Rt)No.223/2020/WRD dated 12.03.2020 Government of Kerala appointed a monitoring committee comprising of Additional Chief Secretary, Water Resources Department as Chairperson and Principal Secretary, LSGD,

XII. Details of meetings carried under the Chairmanship Chief of Secretary in the State/UT:

Regarding OA 514/2019 (Solid Waste Management) Chief Secretary convened meetings on 22.09.2020 and 25.09.2020 Regarding OA 804/17 (Implementation of Hazardous and Other Waste Management Rules, 2016) Chief Secretary convened meeting of 16/10/2020. Additional Chief Secretary Labour Department had convened 1st meeting on the same for Chief Secretary on 09/10/2020. Meeting of State Level Advisory Committee (SLAC) on Waste Management, chaired by Chief Secretary is being conducted in the State regularly to discuss the various matters. 38 such meetings were conducted in Kerala so far. Last SLAC meeting was conducted on 12.02.2021.

Meetings were held by the Chief Secretary on 11-12-2020, 30-03-2021 and 05-04- 2021 with the Stake holder Departments/ Authorities, to review the progress in implementation of the projects taken up on the basis of orders of the Hon'ble National Green Tribunal in O.A. No. 673 of 2018(PZ).

RRC Meetings were held on 28/05/2021 and 23/06/2021 and Review meeting was held by the Chief Secretary on 31-05-2021. RRC meeting convened on 22.07.2021. Review meeting was held by the Chief Secretary on 27.07.2021. RRC meeting convened on 02.09.2021 and Review meeting was held by Chief Secretary on 09.09.2021. RRC meeting convened on 01.10.2021 and Review meeting was convened by Chief Secretary on 23.10.2021. RRC meeting convened on 29.11.2021 and Review meeting was convened by Chief Secretary on 16.12.2021. RRC meeting convened on 13.01.2022 and Review meeting was convened by Chief Secretary on 27.01.2022. RRC meetings convened on 23.02.2022, 01.04.2022, 15.07.2022, 13.10.2022, 2/12/2022, 08.02.2023, 13.04.2023, 20.05.2023, 11.08.2023, 11.10.2023.

Review meetings were convened by Chief Secretary on 31.03.2022, 19.04.2022, 26.5.2022, 21.6.2022, 15.07.2022 & 23.08.2022, 18/10/2022 & 21.12.2022, 09.02.2023, 31/07/2023, 06.11.2023.

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

Latest Monthly Progress Report and Analysis report of 21 Polluted River Stretches as per October 2023 are attached as Annexure I.

XIV Action against identified polluters, law violators and officers responsible for failure for vigorous monitoring:

1176 notices under the provisions of Water Act has been issued from the Board to apartments/ hotels/houseboats/ industrial units as having no valid consent from the Board/ no sewage treatment plant / non functional sewage treatment plant so far. List of the units is submitted as Annexure-6. In Alappuzha district a total of 790 notices were issued including Closure Intention Notice and Consent Withdrawal Intention Notice were issued to 624 houseboats, 112 Closure Intention Notices and 54 Show Cause Notices were issued other units including peeling shed/ resorts/ hotels for illegal discharge (unauthorized units)

coming into the water bodies and to Vembanad lake. A total of 167 apartments/ restaurants are served notice in Ernakulam district. In Kottayam notices were issued to 215 units including 106 house boats and 109 apartments/ hotels/restaurants/ auditorium/ lodge/ service station/ nursing homes. In Kollam district 2 Closure Intention Notice and 2 show cause notices were issued to units functioning without Consent & functioning STP. Direction was also issued Neendakara secretary as wastewater discharge noticed from fish peeling sheds in Neendakara. List enclosed in Annexure III-i. Show cause notice issued to 2 corporations & 7 municipalities for isolations under Water Act and show cause notice for not imposing environmental compensation was issued to 2 corporations and 6 municipalities and hearing conducted on 07/09/2023.

XV Ground water regulation:

As per the consolidated report submitted in O.A.No.496/2016, the Ground water Department is implementing a "Scheme for Ground water Conservation and Recharge". Under this scheme, rain water collected from the roof-top is harvested for recharging the aquifer through dug wells and recharge pits. The recharging of deep aquifers through bore wells is also being experimented. The total budget outlay during the period 2019- 2020 was 450 lakhs. It is estimated that there are about 65 Lakhs dug wells in Kerala and the ground water extractions by means of traditional dug wells are prevalent source of fresh water. There are number of public dug wells left abandoned and needs renovation. These dug wells can be considered as suitable stretches to recharge ground water. The Central Groundwater Board has prepared a Block wise master plan in 2015 to take up artificial groundwater recharge to groundwater. The same can be used as a guideline to stream line groundwater recharge activities of the Department.

The State Government has enacted the Kerala Groundwater (Control and Regulation) act 2002 to provide for the conservation of groundwater and for the regulation and control for its extraction and its use in Kerala. The State Groundwater Authority has been constituted on 16.01.2004 to notify the area where groundwater abstraction is to be regulated. As per the Act Groundwater User' refers to the person who are using ground water from a pumping well (> 1.5 HP for Open dug wells and > 3 HP for BW/TW) for any purpose including domestic purpose. In notified blocks of the state, permission required for the construction of new groundwater abstraction structures.

The Groundwater Department has been conducting mass awareness programmes to public., students, people's representatives, government officials etc. on groundwater conservation and management in all Districts under the Plan Scheme "Control and Regulation of Groundwater Exploitation for the effective groundwater management. During the last 4 years, the department has conducted more than 100 numbers of awareness programs across the State.

The Ministry of Water Resources ,River Development & Ganga Rejuvenation (Central Groundwater Authority) has recently issued a new guide lines to regulate and control groundwater extraction in the country in pursuance of the directions of Hon'ble National Green Tribunal and the powers conferred under section 5 of the Environment (Protection) act, 1986 (29 of 1986) dated 24th December 2020.

Irrigation in Kerala is classified into two schemes.

1. Major Irrigation and Medium Irrigation
2. Minor Irrigation

As per the classification followed by the department, schemes having a cultivable command area upto 2000 ha are treated as minor irrigation works. Medium irrigation works are those with irrigable command area of more than 2000 ha, but less than 10,000 ha. Those schemes above 10,000 ha are classified as Major irrigation schemes. Surface flow irrigation method is currently practiced in Kerala. As the department is more focusing on effective utilization of available water for irrigation as well as for its efficient use, new types of irrigation methods like micro/community irrigation for cash crops and horticulture are proposed under this scheme.

1. Major Irrigation and Medium Irrigation

The Irrigation department develops and maintains major and medium irrigation schemes/projects across the state. The primary activity of the Department is providing irrigation facility to the farmers of the State through its system comprising reservoirs, main canals, branch canals, feeder canals and other related infrastructure. The department maintains water distribution through the canal system. Water distribution is being carried out based on the cropping pattern of a particular area and a water distribution calendar prepared and approved by a committee headed by the District Collector with members of farming community, other stake holders and department officials. For proper distribution and maintenance of the canals Water Users Association (WUA)/ Farmers Association plays an important role.

2. Minor Irrigation

Minor Irrigation schemes are divided into Class-I and Class-II depending on the ayacut served. Schemes serving above 50 Ha up to 2000 Ha are classified as MI Class-I. Lift irrigation schemes are also Minor irrigation schemes serving at least 40 Ha. Aims to Construct RCBs, SWEGBs, ponds, VCBs, check dams, salt water barriers, storage weirs, cross bars, and protection works etc.

- MI Class-I schemes Minor works like improvements to tanks and rivulet, construction of check dams, sluices, regulators, bunds, vented crossbars, salt water barriers, layout of channels and drainage structures etc are usually undertaken under MI Class-I schemes.
- MI Class-II Schemes Minor irrigation works including construction of vented cross bars, canals, improvements to natural drains etc are taken up under this scheme.
- Lift Irrigation

- Lifting of water is required for irrigating fertile land at a higher elevation where gravity flow of stored water is not possible. Although mechanical lifting is required, these schemes are very useful and serve the marginal farmers of the State.
- Optimum utilization of water by supplying designed quantity
- Works involving lifting of water with a command area not less than 40 hectares come under this category.
- This will increase in the ground water table in high altitude areas, Ensure water availability to farmers before the cropping period.
- This will reduce agricultural loss in high altitude areas due to water scarcity, their by reducing distress to farmers.
- At present the Irrigation Department has under its control 450 Lift Irrigation Scheme (LI schemes) with a total Ayacut of 43170ha.
- Micro Irrigation
- Micro-irrigation system is a modern method of irrigation in which water is delivered slowly. Usually in the form of discrete droplets, continuous drops, streams, etc. Micro-irrigation system is popular these days for its low cost and water-efficiency.
- The benefits of micro irrigation and precision farming are well demonstrated with an average increase in yield by three times. Pepper as a case in point shows enhancement from 1.9 kg/wine to 6/wine on precision agriculture. Coconut also shows increase in productivity to 150 nuts per plant as against 45 without precision irrigation support.
- In the coming year department is planning to implement atleast one micro irrigation scheme in each district with the coordination of line departments and farmers. Steps are initiated to identify the location as well as crops in coordination with the agriculture department.

XVII Rain Water Harvesting:

In compliance with the Hon'ble NGT Order dated 11.09.2019 in O.A. No. 496/2016, the consolidated report of Kerala State regarding the present status of the implementation and action plans on rain water Harvesting for conservation of water was submitted by the Kerala State Government on 27.11.2019.

The State Groundwater Department has been implementing a scheme for Groundwater Conservation and Recharge under plan fund made available since 2004-05. The project

component includes roof top rainwater harvesting for groundwater recharge through dug wells, recharge pits, bore wells and recharge shafts and construction of subsurface dykes and small check dams on micro water shed basis. The recharge schemes are being implemented as a long term measures to achieve

sustainable groundwater development in the State. The Department is engaged in recharging groundwater through roof top rain water harvesting in public buildings and government schools and giving priority to implement such structures in notified blocks. The Department has successfully implemented roof top rainwater harvesting through recharge pits to enhance groundwater levels of dug wells in the Kattakkada Constituency of Thiruvananthapuram District. The Constituency was officially declared in November 14th 2019 as the first assembly constituency in Kerala to implement artificial groundwater recharging structures in all Government schools and offices. The State Groundwater Department has implemented 169 nos of recharge pit/direct dug well recharge schemes, 4 check dams and one sub surface dyke during the 12th plan period. In the 13th plan period as on October 2020, the Department has completed 370 nos of recharge pit/dug well recharge schemes and 18 nos of bore well recharge schemes.

The Department has also taken initiatives to implement roof top rainwater harvesting structures in order to replenish the aquifer system in Chittur (Over-Exploited), Malampuzha and Kasaragod (Critical) blocks under Jal Shakti Abhiyan Programme by Ministry of Jal Shakti Government of India.

XVIII Demarcation of Floodplain and removal of illegal encroachment:

- Kerala receives about 90% of the annual rainfall during the monsoon months from June to August and from October to November. The remaining period from December to May is practically dry. Most of the rain water received during monsoon period flows to sea within 48 hours of rainfall due to the character of the geographic terrain of the state.
- State Disaster Management plan 2016 was prepared by National Centre for Earth Science Studies in 1:50,000 scale using satellite images.
- Based on the request of central water commission, Government of Kerala constituted Regional Committee for scientific assessment of Flood prone areas in Kerala.
- Flood-level marking for the flood affected rivers has been carried out. Steps have been taken for conducting the studies regarding Flood plain Zoning. Due to the peculiar topography and dense population, evacuation of people from these zones is difficult.

Flood plain zoning is considered as an effective measure for flood management. As far as Kerala is concerned, the topography and total number of rivers, major lakes and other water bodies are entirely different compared to other states. Since Kerala has 44 rivers, except three rivers, all are west flowing; that is about every 14 km (average) there is a river. It may please be noted that the width of Kerala varying from roughly 30 to 120 km, and the total geographical area is 38863 km². Kerala is the 21st largest Indian state by area. As per census of 2011 the density of population per square kilometer is 859. By considering the above facts, implementation of zonation and demarcation of priority areas/non development zones will affect the populace of Kerala or leads to displacement from their ancestral settlement. This is why the Model Bill of 1975 issued by CWC has not been implemented in Kerala. However intensive contour may delineate and notification of limits of flood plains through LSGIs is a possible way out as far as Kerala is concerned to avoid future developmental activities in such area, for which a policy decision is necessary.

Desilting:- Flood havoc in 2018 & 2019 very much affected the storage capacity of several regulators and check dams due to the accumulation of silt/ sand and other debris. In some cases, the proper functioning of the regulators become halted due to the accumulation of the above said materials.

Vide G.O (Rf) No.50/2019/WRD dt 08-11-2019 Government issued AS for desilting of 6 structures, namely:-

1. Cheruthuruthy check dam
2. Changanamkunnu regulator
3. Manjummel regulator
4. Purappallikavu regulator
5. Velliyankallu regulator cum bridge
6. Pookkottumana regulator cum bridge

The work for desilting of 6 regulators/ check dams were tendered and the works are in different stages.

Along with irrigation structures action were taken to desilt the dams as a pilot project to enhance the storage capacity which results more outflows and ground water recharge. Mangalam dam, Chulliyar dam, Meenkara dam and Walayar dam are the four dams listed. Apart from the above Irrigation department has initiated action to prepare an inventory of the present status of all the rivers in Kerala by entrusting the job to Executive Engineers. The primary objective is to find out the obstructions to free flow in rivers. It is expected to complete the process within a month and draft reports/ status reports were also be ready. As a follow up, the department intends to desilt the river stretches which need urgent action to avoid flooding in the vicinity; by utilising the amount announced in the Budget.

Encroachments can be assessed after detailed survey with the help of Revenue Department. Executive Engineers entrusted with ownership of rivers have been directed to identify the encroachments along rivers and prepare a list at the earliest. Public Grievance report form has been developed in department website.

XIX.Maintaining minimum e-flow of river:

- As per order of the Hon'ble NGT dated 9/8/2017 in O.A.no 498/2015 it is mandatory to maintain 15% - 20% of average lean season flow.
- For lean flow calculation the process of data collection for the last 25 years of all 44 rivers during summer months ie. from January to May is been undertaken.
- Study of individual rivers needs to be considered for maintaining e- flow during lean season. Storage structures/diversion structures needs to be proposed at certain locations to regulate the flow.

As per order of the Hon'ble NGT Order in OA no.498/2015 it is mandatory to maintain 15%-20% of average lean season flow in the river. E-flow can be assessed in many ways. Hydrological methods and holistic methods are generally used for this purpose. A good Hydrological data is maintained at IDRB Chief Engineers office at Vikas Bhavan. Steps have been initiated to collect last 25 years average flow details of all 44 rivers during summer season, ie from January to May.

As per Order in OA 498/2015 Hon. NGT has directed all States to maintain 15-20 % of the average lean season flow of that river. Ministry of Water resources, RD& Ganga Rejuvenation issued a notification (SO.5195 (E) dated 9.10.2018) to maintain e-flow in River Ganga. Hon'ble NGT order has given some relaxation to states, which are unable to adhere to the average percentage fixed as e-flow. CE (I&A), & CE (IDRB) made discussion in this regard and action has been taken by IDRB to compile the last 25 years discharge of rivers. As per the report of Kerala State Disaster Management Authority (KSDMA) nearly 15% of the land area of the state prone to flood. On two (2) occasions, GOI (CWC) and Ministry of

Environment Forest and climate change had circulated model bill on (i) Flood Plain Zoning (1975) (II) River Regulation Zone (2015). Considering the already enacted regulations viz i) Forest area ii) Coastal Regulation Zone (CRZ), the topography of the state, high population density, and number of rivers, Government has not yet taken a policy decision in this matter. The State Government has sent the apprehension of the State to GOI with regard to River Regulation Zone Bill.

As per the direction of the Additional Chief Secretary (WRD), meetings were conducted with Chief Engineer, IDRB to discuss the availability of historical data. To carry forward the study of e-flow a training was arranged on 12.09.2021 to the engineers entrusted for e-flow calculation. A review meeting in this regard was also conducted on 01.10.2021 and in the meeting it was decided to calculate e-flow of the rivers, Meenachil and Manimala as pilot project. Data collection for Manimala river completed. Data collection for Meenachil, Kadalundi, Karamana and Vamanapuram is in progress.

E-flow for forty rivers out of 40 have been worked out.

: It was decided in the last RRC meeting that an expert committee to be constituted to recalculate the e-flow. Accordingly an initial discussion of the technical committee has been convened and it has been decided to recalculate the e-flow for the rivers on the revised methodology. Secretary WRD directed (08/2023) to conduct a meeting with KSEB authorities, to collect required data for the e Flow calculation. Also details of dam, ground water, amount of water ejected out from hydro electric projects in various seasons are to be collected for the calculation of flow. For these, ***the Expert committee framed for vetting e Flow needs to be restructured to include representatives from KSEB, Fisheries, Environmental Scientists***, etc. Hence we have requested to the above departments to nominate suitable officials from their department /institution who have expertise in e-flow analysis/who can contribute to the same to be included in the Expert Committee. Follow-ups are going on

XX.Plantation activities along the rivers

Proposal submitted by Irrigation Department. Waiting for approval.

XXI Development of bio-diversity park:

As per the action plan for Kallai River, a bio park in Kozhikode district is proposed by Irrigation Department and as per the action plan of Karamana river, Bio diversity park at Karamana is implemented by Irrigation Department and 96% work is now completed and remaining work is in progress. Also, for other action plans of polluted river stretches, proposals are submitted by Irrigation Department and action is initiated. As stipulated by the Biological Diversity Act 2002, Biodiversity Management Committees (BMC) are mandated with conservation of Biodiversity in their localities. In Kerala BMCs has being established at all 3 tiers of local bodies. As part of the 13th five year plan, KSBB had started a project to empower Local Self Government Biodiversity Management Committee (BMC) as Model BMC to conserve Biodiversity by providing a minimal assistance of Rs 5.00 lakh. The lists of various projects relating to river bank conservation by planting suitable species/ biodiversity parks in the river banks being undertaken by BMCs during the last two years are given below:

- Ayiroor Grama panchayat, Pathanamthitta– Planting of Homonoiariparia along the banks of Pamba River
- Ayarkunnam Grama panchayat, Kottayam - Conservation of Homonoiariparia along the banks of Meenachil River.

- Mariyapuram Grama panchayat, Idukki - Harithapuram park- Eco restoration and conservation of Periyar River bank severely damaged due to flood.
- Kottur Grama panchayat, Kozhikode - (a) Establishment of Biodiversity Park near Kuttiyadi river (b) Biodiversity gardens (50 units)
- Vanimel Grama panchayat, Kozhikode - Conservation of Vanimel riverbank
- Kurumathur Grama panchayat, Kannur – (a) Afforestation along tributaries of river banks of Kuttikol river, Valapattanamriver (b) Planting of Pandanus along canal banks
- Muzhakunnu Grama panchayat, Kannur – Puzhayora Oushada SughandhaUdyanam along the banks of Aralam river.

As part of Rebuild Kerala Initiative a project on Riverine Biodiversity Rejuvenation of Pamba for an amount of Rs 200 crore is being undertaken. The project aims at Protecting riverbanks and conservation of riparian vegetation using locally available plants. The major activities on going are:

- Restoration of riparian vegetation on degraded river banks in selected 10 Grama Panchayats (Ayiroor, Cherukol, Kozhenchery, Ranni- Angadi, Ranni- Pazhavangadi, Ranni, Ranni-Perunad, Vadasserikkara, VechoochiraandNaranammoozhi) belonging to three Block Panchayats viz., Elanthoor, Koipuram and Ranni in Pathanamthitta district
- About 77,000 saplings of 93 species of riparian plants are being planted along a stretch of 93km.
- Ensure sustainable livelihood for the local people through providing training for developing microenterprises and establishing nursery of native species. Develop a sustainable community based management model of conservation of aquatic ecosystems.
- To create awareness and sensitize local population and students for promotion of riparian ecosystem services.

XXII.Reuse of Treated Water:

Possibility of utilizing the treated effluent for irrigation, gardening, industries, construction and recharge are being explored. The DPR for tertiary treatment of effluents of STP at Muttathara is ready and in TS stage.

XXIII.Model River being adopted by the State & Action proposed for achieving the bathing quality standards:

Tirur-Ponnani River, Malappuram

XXIV.Status of Preparation of Action Plan by the 13 Coastal States:

As per the NGT order in O.A 829/2019 dated 22.06.2020 regarding the remedial action to restore sea water quality along the Indian Coastal areas, the Hon'ble NGT ordered that "All States/UTs through their concerned departments such as Urban/Rural Development, Irrigation & Public Health, Local Bodies, Environment, etc. may ensure formulation and execution of plans for sewage treatment and utilization of treated sewage effluent with respect to each city, town and village, adhering to the timeline as directed by Hon'ble Supreme Court. STPs must meet the prescribed standards, including

fecal coli form . CPCB may further continue efforts on compilation of River Basin-wise data. Action plans be firmed up with Budgets/Financial tie up.” In compliance with the order, CPCB instructed that the State PCB shall associate National Centre for Coastal Research, Chennai under Ministry of Earth Science for monitoring and assessment of coastal water within the jurisdiction of the Kerala State up to 5 km from shore and to evolve strategies for protection of the coastal areas in association with Coastal Zone Management Authority in the State and Prepare time bound comprehensive action plan along with implementing agency in consultation with Kerala State Coastal Zone Management Authority for control of coastal pollution in Kerala State. Also the State Government has instructed the Board to prepare action plan by consulting CUSAT .Based on this, the Member Secretary of Kerala State Pollution Control Board has conducted meeting with officials of CUSAT, National Centre for Coastal Research, Kerala State Coastal Zone Management Authority and also with the field level officers through video conferencing.. The Action plan was forwarded to CPCB. CPCB put forward some suggestions and requested to modify the action plan upon concurrence with River Rejuvenation Committee. So, the Coastal Action Plan prepared has been forwarded to the concerned Stakeholder Departments for their remarks. Meetings in this regard convened on 23.07.2021 and 02.08.2021. The modified Coastal Action Plan was approved by RRC and the same has been submitted before State Govt. for approval. The Coastal Action Plan was submitted to CPCB with the approval of State Govt.

XXV. Regulation of Mining Activities in the State/UT:

Indian parliament has enacted the Mines & Minerals (Development & Regulation) Act, 1957 and it stipulates for the conservation, prudent and discriminate exploitation of minerals with a view

to secure maximum benefit to the community. In exercise of powers conferred by section 13 of Mines and Minerals (Development & Regulation) Act 1957, the Central Government has framed the Mineral concession Rules, 1960. The Central Government has also framed the Mineral Conservation and Development Rules, 1988 in exercise of the powers conferred by section 18 of the Act. These Rules are applicable to all minerals except coal, atomic minerals and minor minerals. The powers of framing rules for minor minerals have been delegated to the State under section 15 of the mines Act. In exercise of the powers conferred by section 15 (1) of the Act the State has framed the Kerala Minor Mineral Concession Rules 2015 and Kerala Minerals (Prevention of Illegal Mining, Storage and Transportation) Rules 2015 for the regulation and extraction of minor minerals. The Central Government in exercise of powers conferred by section 18 of the Act has also framed the Granite Conservation and Development Rules, 1999 for conservation & systematic development and scientific mining of the granite resources. The grant of reconnaissance permit, prospecting license or mining lease are governed by the central Act. The State with the prior approval of the Government of India grants permission for reconnaissance permit, prospecting license or mining lease for major minerals. The state Government issue quarrying permits and leases for minor Minerals based on the Kerala Minor Mineral Concession Rules, 2015. Other Acts and Rules which govern the mineral administration of India applicable to the State are the following:

- The Mines Act, 1952 (Act 35 to 1952)
- The Mines Rules, 1955 (35 of 1952)
- The Metalliferous Mines Regulations, 1961
- The Mines Rescue Rules, 1985

- Mines Vocational Training Rules, 1966
- Payment of wages (Mines Rules , 1966)
- Payment of undisbursed wages (mines rules, 1989)
- The Indian Explosive Act, 1884
- Air (Prevention & Control of Pollution) Act, 1981(14 of 1981)
- Environment (protection) Act, 1986 (29 of 1986)
- Indian Registration Act, 1908 (Central Act of Act 16 of 1908)
- Kerala Protection of River Banks and Regulation of Removal of Sand Act, 2001
- Kerala paddy field and wetland conservation Act, 2008.
- Kerala Panchayath Act.

There is no large scale mining activity in Kerala as in other parts of the country. Almost all the mines are open cast and limited in areal extent. The important mines of major minerals are china clay, laterite/bauxite, limestone and lime shell. Mineral sands and silica sand are excavated by scooping and quartz is being extracted by taking trenches and pits. The important minor minerals in the state are granite, building stones, dimension stone, laterite, tile/brick clay and ordinary sand. The state owns mineral deposits like placers, china clay (kaolin), limestone, silica sand, bauxite, graphite, iron ore, granite etc.

The major mineral based industries like Indian Rare Earths Ltd. (Chavara), Kerala Minerals and Metals Ltd. (Chavara), Malabar cements (Walayar), Travancore cements Ltd. (Kottayam), Kerala ceramics (Kundara) Travancore Titanium products Ltd. And English Indian Clays Ltd, Thiruvananthapuram, Excel Glass Industry, Alappuzha, KeralaClays and Ceramic Products Ltd. (Pazhayangadi) are some of the mineral based industries working in the State since several years. A number of tile based industries are also functioning mainly in Thrissur and Kozhikode districts.

In exercise of the powers conferred by section 15(1) of the Mines and Mineral (Development & Regulation) Act, 1957, the State has framed the Kerala Minor Mineral Concession Rules 1967 for regulating the extraction of minor minerals. The State with prior approval of the Govt. of India grants permission for reconnaissance permit, prospecting license or mining lease for the first schedule minerals on first cum first served basis. In addition to EIA requirements as stipulated by the Central Govt, an EIA report is insisted on all mining activities before granting mining lease. No quarrying permits or leases are granted in the State unless there is a Mining plan duly approved by the competent authority. Afforestation of the reclaimed areas is promoted. Environment Rehabilitation is insisted in all mining projects.

The Kerala District Mineral Foundation Rules 2018 has been formed with an objective to work for the interest and benefit of persons and area affected by mining related

operations. The permissible activities under District Mineral Foundation includes among other things, developing sources of irrigation, development alternate sources of energy and rain water harvesting, conservation measures of biodiversity of the affected areas.

The expert study in all selected quarries in Kerala was carried out with one day for ambient air quality measurement (without the operation of quarry) and next day with the operation of the quarry. Individual site reports with the observations on dust, noise and mine pit water quality was prepared by the

monitoring team of 24 25 KSPCB for all the nine quarry sites. Combined site report of all nine quarries is annexed as Annexure iii

XXVI. Action taken status with regard to directions issued for prohibition of immersion of idols, puja materials and other items of religious offerings in rivers & other water bodies in particular during the occasion of festivals

- Regarding the Ganesh Utsav celebration and immersion of idols ,it may kindly be noted this is not widely practiced in the State of Kerala. The Board had instructed the District offices to conduct monitoring of water bodies where immersion of idols is practiced on a large scale. Water quality was carried out in three stages-pre immersion, during immersion & post immersion periods. A press release was also issued by the Board in connection with the festival for information of the public on the guidelines for immersion, issued by CPCB. In Kerala idol immersion are not celebrated as a major festival. The Govt. take steps to avoid water pollution due to immersion of idols. If to celebrate natural clay and colours are being used and that too in artificial ponds arranged by local authorities
- During Sabarimala festival season, there is a traditional celebration “Pettathullal”, for the same the pilgrims will apply coloured Kumkum on their body. It was directed that only natural colours shall be used for the celebration. Separate arrangement like shower bath are provided for carrying out bath after the celebration, inorder to avoid the reach of coloured water into the main waterbody. The waste water from the shower bath location will be treated in ETP provided.

XXVII Current status of water quality of rivers based on draft revised categorisation of CPCB

- Out of 21 stretches, the following 11 stretches delisted from PRS. Mogral- at Kasaragod,Kuppam, Peruvamba, Ramapuram, Kavvayi- at Kannur,Bharathapuzha, Bhavani- at Palakkad,Kutiyadi-Kozhikode, Kecheri, Karuvannur, Puzhakkal- at Thrissur
- Due to improvement in water quality priority class of the following 4 rivers has been shifted to lower priority class. No priority I rivers in Kerala now.
Karamana, at Thiruvananthapuram- Priority III (from Priority-I) Manimala at Alappuzha – Priority V (from Priority IV)
Pamba at Pathanamthitta – Priority V (from Priority IV) Kadambrayar at Ernakulam –Priority V (from PriorityIV)

Shiva

MEMBER SECRETARY

Status of compliance of ETPs less than 30 KLD

1	CHC Sooranadu, Sasthancotta Block Panchath, Kollam	0.028	At Tendering Stage	Tendering process is in progress	
2	CHC Kadayiruppu ,Vadavukode Block Panchayath , Ernakulam	0.025	At DPR Stage	DPR send back to LSGI for corrections	
3	STP at Community Health Centre Pazhayannoor Block Panchayath ,Thirssur	0.025	Tendering Stage	Retendering process under progress	
4& 5	Mobile Septage Units- 2 nos, Alappuzha (AMRUT)	0.02 (0.01 *2 nos.)	Tendered but not awarded: The quotation received was discussed in the Technical Committee held on 21/01/23 & the Committee directed the ULB to get the design & drawings vetted by an IIT / NIT. The ULB submitted the design & drawings to IIT Palakkad for vetting on 13/02/23. A joint meeting was held by the ULB on 05/05/2023 with officials of IIT and the Bidder. Design vetting report was submitted by the IIT Palakkad on 31/07/2023. The design vetting report was submitted to the CE, LSGD on 05.08.2023 for placing in the Technical Committee. The Technical Committee held on 23.08.2023 approved the technology and recommended the revision of the AS.	* The design vetting report was submitted to CE, LSGD on 05/08/2023 for placing in the Technical committee * The technical committee held on 23.08.2023 approved the technology and recommended the revision of AS	31.12.20 23
6	Sewage Treatment Plant 20 KLD at Shopping Complex cum multiplex Theatre, Kallumutti, Irutti Payam, Grama Panchayath I, Kannur	0.02	65%	Second allotment of fund is awaiting	31/02/20 24
7	STP for Convention Centre ,Pinarayi GramaPanchayath,	0.02	60%	The Panchayath	31/02/2 024

	Kannur			board meeting decided to execute the mechanical works through IRTC Palakkad(Accredited Agency).	
8	STP at Ottuppara Market, Wadakkanchery Municipality, Trissur (IMPACT KERALA Ltd) (PRS)	18 KLD STP	DPR submitted to KIIFB as a part of the project "Modernisation of Ottuppara Market in Wadakkanchery Municipality".	DPR Approved by KIIFB	-
9	STP at Shatabdhi Mandiram, Alappuzha (AMRUT) (PRS)	0.015	To be cancelled: The Council held on 29/10/22 decided to cancel the work. The SLTC held on 24/12/2022 recommended the same to the SHPSC.	*The 32nd SHPSC held on 23/01/23 approved the cancellation of work since the Shathabdi Mandiram will be covered under the sewerage sector proposal planned under AMRUT-2.0.	-
10	STP at Athani market, Wadakkanchery Municipality, Trissur (PRS) (IMPACT KERALA Ltd)	13.9 KLD STP	.	DPR Approved by KIIFB, KIIFB Proceedings awaited	-
12	ETP 10 KLD Capacity, Nedumangad Municipality, Thiruvananthapuram	0.01	At Tendering stage	TS issued	
13	Eco Friendly waste water Treatment plant 10 KLD in vettam Community Health centre , Tirur BP	0.01	At DPR Stage	Agency selection completed. DPR preparation initiated.	

14	10 KLD Sewage Treatment Plant at EMS Memorial Municipal Town Hall, Koyilandy Municipality, Kozhikkode	0.01	At DPR Stage	This was included in the list of projects to be handed over to KWA. KWA prepared DPR. Funds to be transferred as deposit for carrying out the work.	
15	STP at Fish market, Payyannur Municipality, Kannur (PRS)	10 KLD STP	Technical committee verified the project. Suggested modification. DPR modification is going on	DPR modification is going on	-
16	STP at old age home, Kannur	0.010	Tendering Stage	TS issued	
17	DPR for perumba fish market Payyanur Municipality, Kannur	0.01	At DPR Stage	New DPC project form taken and balance amount will be transferred to KWA from Municipality as they receive the fund	
18	Waste water treatment plant at K R Narayanan memorial hall, Adat GP	0.0065	At DPR stage	DPR revision work is progressing	
19	ETP of 2 KLD at Konnamkulam Milk Production Cooperative Society	0.002	At DPR Stage	Under technical scrutiny	
20	Waste water Treatment (90 KLD) System for coastal housing and Tsunmai resettlement facility at karikuzhi mayyanad Grama Panchayath , Kollam	0.09	At DPR Stage	Transferred to KIIFB	

21	Taluk Hospital Thiruvalla ,Thiruvalla Municipality, Pathanamthitta	0.09	At DPR Stage	Under technical scrutiny	
22	CHC Alathoor, Alathoor Block Panchath , Palakkad	0.09	At DPR Stage	DPR under verification at Block Panchayath-project having issue with land availability	
23	Taluk Hospital Pambady, Pambady Block panchayath , Kottayam	0.085	At DPR Stage	Under technical scrutiny	
24	The wastewater treatment plant at Kuttiyadi Government taluk hospital, Kozhikode	0.08	Tendering stage		31.01.2024
25	ETP at Tirur Municipality	0.060	At DPR Stage	DPR returned to LSGI	
26	Eco Friendly waste water Treatment Plant (140 KLD) for Women and Children Hospital Ponnani Municipality, Malappuram	0.14	At DPR Stage	Fund for the project has been sanctioned and and the fund transferred to KWA	
27	65 KLD Sewage Treatment Plant at Taluk Head Quarters Hospital Vithiri, Kalpetta BP, Wayanad	0.065	At DPR Stage	Agency prepared the new estimate and submitted	
28	STP at Thottumadi Colony, Alappuzha (AMRUT)	0.05	<i>Tendered but not awarded:</i> * Bid received in the 4th tender to be finalized. The ULB's Technical Committee held on 30/06/22 decided to recommend the lowest bid to the Technical Committee for Sewerage works for approval of the bid along with revised TS & for checking the reliability of O & M quoted by the bidder	*The Technical Committee for SEW & SEP works held on 26/08/22 approved the technology. Detailed engineering report is to be collected by the ULB from the	

				bidder.	
29	Septage Treatment Plant for Munnar Grama Panchayath, Idukki	0.05	5%	Due to a court case work stopped temporarily.	
30	Taluk Hospital ,Neelaswaram, Kasaragod	0.040	At DPR Stage	Revised AS awaited	
31	ETP at Kodimatha, Kottayam Municipality	0.030	At DPR Stage	Agency is revising the DPR with the new process flow given from SSM.	
32	Sewage Treatment plant at Private Bus stand, Thodupuzha Municipality , Idukki	0.030	Tendering stage	TC held on 16.09.23 decided to give sanction to the recast estimate	
33	ETP for slaughter house, Marakkadavu, Ernakulam	0.030	At DPR Stage	DPR under correction by agency	
34	ETP at Govt Ayurvedic Hospital, Talayad, Panangad Grama Panchayath, Kozhikode	0.03	At DPR Stage	Submitted in TC held on 29.11.2023. Correction points will be intimated to agency and LB	
35	CHC, Sooranad Sasthamcotta Block Panchayat, Kollam	0.028	At DPR Stage	DPR returned to LSGI- Planning to do tender for DPR Preparation	
36	CHC Kadayiruppu, Vadavucode Block Panchayat, Ernakulam	0.025	At DPR Stage	Agency submitted revised drawing to LB. LB preparing estimate in Price software	
37	STP at Community Health Centre Pazhayannur Block Panchayat, Thirssur	0.025	At tendering stage	Retendered. Work awarded. Preliminary work	

				initiated.	
38	STP for Convention Centre, Pinaryi Grama Panchayath, Kannur	0.02	60% works are completed	Site inspection completed by the agency and report preparation in progress.	30/04/2024
39	Sewage Treatment Plant 20 KLD at Shopping Complex cum multiplex Theatre, Kallumutti, Irutti Payam, Grama Panchayat, Kannur	0.02	65% completed.	Suchitwa Mission has to release fund to LB. Second allotment of fund is awaiting. Fund received at SM. Proceedings for issuing the amount is ongoing. Second allotment of funds is awaiting.	30/04/2024
40	10 KLD Sewage Treatment Plant at EMS Memorial Municipal Town Hall, Koyilandy Municipality, Kozhikode	0.01	At Tendering Stage	Municipality fund transferred to KWA, Trivandrum. Work yet to be started	
41	DPR for Perumba fish market, Payyanur Municipality, Kannur	0.010	At DPR Stage	Balance amount will be transferred shortly to KWA from Municipality as they receive the fund	
42	Eco- friendly waste water Treatment plant 10 KLD in Vettam community Health center, Tirur BP	0.01	At DPR Stage	Agency selection completed. DPR preparation in progress	
43	STP at CHC Mullassery Block Panchayat Thrissur	0.01	At DPR Stage	Project dropped	

44	ETP 10 KLD Capacity, Nedumangad Municipality, Thiruvananthapuram	0.01	At TS Stage.	TS issued. Tendering process completed.	
45	Waste water treatment plant at K.R Narayanan memorial hall, Adat GP	0.0065	At DPR stage	D PR revision work is under progress by the agency	
46	CHC, Mangalpady, Manjeshwar Block Panchayath, Kasragod	0.014		New project taken. Project revised as Mangalpady taluk hospital	
47	11 KLD effluent treatment plant at Kuravilangad Fish market, Kuravilangad Grama Panchayat, Kottayam	0.011		New project taken and DPC approved	

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 Sept 2023	Progress in the month of Oct 2023	Progress in the month of Nov 2023	% 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 Kuriyathi completed. Pumping main of Pattoor, Kannammoola and Enchakkal included in long term works
2.1.2	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pump house by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump Sets	Kerala Water Authority	May 2020				100%	a. Completed 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%	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%	0.1%	0.1%	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					To be arranged	Land Aquisition in progress-1Nos	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				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. DPR of cluster X comprising of wards Shangumugham, Vettucaud, Vallakadavu, Beemapalli (part), Beemapalli East (part), Valiyathura and Kadakampally is under preparation. For getting AS under AMRUT 2.0, DPR of Cluster 1 Zone I&2 and Zone 3&4 submitted corporation.
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

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(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 • 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 • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	NA	-

	(viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi) Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		- Yes, Going On Yes, Going On Yes, Going On
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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)	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 Collction				

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					

C (b) (ii)	Green Protocol implementation in all Offices institution & Public function	Mannar, Kadapra/ Niranam Panchayat	31.05.2020	100%				100%	
D(a)	Issues relating to E-flow, maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department	30.11.2020						
D (b)	Irrigation practices	Irrigation department	30.04.2020						
E	Awareness programmes for sections of public	Kerala State Pollution Control Board	31.05.2020						
C	Management of municipal, plastic, hazardous, biomedical and electrical waste	LSGD	31.03.2021						

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 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					
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					

MONTHLY ANALYSIS REPORT OF POLLUTED RIVER STRETCHES NOVEMBER-2023

STATION: MANNAR

SamplingDate: 04.11.2023

SI. No	PARAMETERS	ITTINAYARKKADAVU BRIDGE KUTTAMPEROOR	KOTTAKAL KADAVU BRIDGE KORATTIKADAVU	PARUMALA BRIDGE	MANNAR BRIDGE
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

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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 • 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
	• Monitoring at State level must take place	22.01.2020	NIL
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	22.01.2020 Fortnightly commencing	NIL

6. 1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic	21.12.2019 2020-2021 2019-2020 2020-2021 2020-2021	Drains contributing to river pollution were identified. The drains are seasonal and water quality is above the required limit, no in situ. Proposal for setting up an FSTP by Chengannur municipality is initiated. Since the area does not contain any industry, no requirement of any CETP, this action. Plan revised. 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. No groundwater pollution is noted in the area action yet to be initiated.
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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**

SI NO	BOTTLE NO.	Name of Drains	PH	BOD	TC	FC
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 • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii) Ground water regulation		
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	(viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi) Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		
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ACTION PLAN FOR RIVER 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 immediately. Electrical work is reserved for retendering. Investments have been made for mechanical related work. Currently STP is working partially, therefore steps have been taken to speed	The construction work of STP at Advaita Ashram is in progress. The agreement for the civil works has been completed at present and the work will start immediately. Electrical work is reserved for retendering. Investments have been made for mechanical related work. Currently STP is working partially, therefore steps have been taken to speed		

				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 exisiting 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.	Kalamasser y 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. cleared 2022, 5 persons 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.		

				office. Permission not received. Irrigation Division has submitted estimates for rehabilitation of the following streams under Ernakulam. 1. Kuthuthodu (IRR/IA/EST/8495/2022_5_8_7) Rs. 74.40 lakh 2.Edathodu (IRR/IA/EST/8495/2022_5_11_10) Rs. 9/- lakh These works have not been approved.The cleaning of Vliyachal canal and Erazhichal in Eloor municipality is in progress under Minor irrigation department.	Permission not received. Irrigation Division has submitted estimates for rehabilitation of the following streams under Ernakulam. 1. Kuthuthodu (IRR/IA/EST/8495/2022_5_8_7) Rs. 74.40 lakh 2.Edathodu (IRR/IA/EST/8495/2022_5_11_10) Rs. 9/- lakh These works have not been approved.The cleaning of Vliyachal canal and Erazhichal in Eloor municipality is in progress under Minor irrigation department.	Permission not received. Irrigation Division has submitted estimates for rehabilitation of the following streams under Ernakulam. 1. Kuthuthodu (IRR/IA/EST/8495/2022_5_8_7) Rs. 74.40 lakh 2.Edathodu (IRR/IA/EST/8495/2022_5_11_10) Rs. 9/- lakh These works have not been approved.The cleaning of Vliyachal canal and Erazhichal in Eloor municipality is in progress under Minor irrigation department.		
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				

				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				
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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 years	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	2020	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 November 2023	% 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 Tahsildar 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, ELOOR
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, ELOOR
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

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KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
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

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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	"		

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KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
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, ELOOR
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

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KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
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 - Specifying accountability of nodal authorities not below the Secretary level - Chief Secretaries may have an accountable person attached in their office for this purpose.		
	Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to - Secretary, Ministry of Jal Shakti - Member Secretary, CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Last updated report submitted was on November 27, 2023 (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. (ii) Malappuram municipality – 30KLD. Consent application is submitted for the revamping activities. Application has been returned for clarification. Action plan prepared through KWA (iii) NIL (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. (v) Attached Analysis Report for the month of November 2023. More activities are progressing under the “Thelineer Ozhukum Navakeralam” scheme
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(vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii) Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ), (x) Rain water harvesting, (xi) Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment	(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. (vii) NA (viii) Complying (ix) NA (x) Complying (xi) Complying (xii) NA (xiii) NA
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ACTION PLAN FOR RIVER KADALUNDI, MALAPPURAM, KERALA

1.	MALAPPURAM MUNICIPALITY-SHORT TERM SOLID & LIQUID WASTE MANAGEMENT ACTION PLAN							
No.	Activity	Implementing agency	Time line	Progress in the month of September2023	Progress in the month of October2023	Progress in the month of November2023	% of works completed	Details of works remaining
1.1	Slaughter house and Poultry house	Malappuram Municipality	July 2022	No progress	No progress	No progress	0%	No progress
1.2	Valiyathodu Cleaning - 8 Km length	Malappuram Municipality	completed	completed	completed	completed	completed	completed
1.3	Installation of screening net in the Valiyathodu	Malappuram Municipality	completed	completed	completed	completed	completed	completed
1.4	Identification of polluting points in Kadalundi river & awareness campaign - River walk(puzhanadatham – 15 km length)	Malappuram Municipality	completed	completed	completed	completed	completed	completed
1.5	Sanitation facility and treatment of waste water in the markets - Treatment plant	Malappuram Municipality	completed	completed	completed	completed	completed	completed

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 March 2020	Completed In progress	Completed In progress	Completed 40 mini MCF has been approved	Completed completed	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, Hattijarpally 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 Municipal area	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 September 2023	Progress in the month of October 2023	Progress in the month of November 2023	% works completed	Details of works remaining

3.1.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier status : As 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%)	Ground water Department		<i>No action included in the approved action plan to be performed by Ground Water Department</i>	<i>No action included in the approved action plan to be performed by Ground Water Department</i>	<i>No action included in the approved action plan to be performed by Ground Water Department</i>		
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3.2	Ground water recharging / rain water harvesting (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.)	Ground water Department		<i>No action included in the approved action plan to be performed by Ground Water Department</i>				
3.3	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or handpumps (Earlier status : Groundwater Department has 6 observation dug wells and 14 bore wells in the river stretch. (report attached) (Map No: 7 attached))	Ground water Department		<i>No action included in the approved action plan to be performed by Ground Water Department</i>				

3.4	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status : The total irrigation draft in the area ranges from 979.683 - 1857.49 ha.m.)	Ground water Department		<i>No action included in the approved action plan to be performed by Ground Water Department</i>				
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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 • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (i) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (ii) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	Last updated report submitted was on ,2023 November28 (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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	(iii) <u>Status of CETPs</u> Details of Existing CESTP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii) Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ),		(vi) Actions are being initiated to prevent illegal waste dumping. BMW are being disposed scientifically through IMAGE. Municipality have MRF, MCF facilities (vii) NA (viii) Complying (ix) NA (x) Complying (xi) Complying (xii) NA (xiii) Reported that encroachment survey is completed and now the process of laying survey stones is in progress.
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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		
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ACTION PLAN FOR RIVER TIRUR, KERALA

1. IRRIGATION DEPARTMENT								
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 2023	November 2023		
1.1.1	Strengthening the right side bund of Tirur-Ponnani Puzha at Porur, ward no. I Tirur Municipality	Irrigation Department	6 Months	In Progress	Investigation work report of the collective regulator has been received and the estimate will be prepared in connection with it.	progressing	28%	Date of completion as per agreement is 26.12.2023
1.1.2	Cleaning and development of old Ponnani Thodu 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 IDRB concluded to conduct a detailed 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 October 2023	Progress during month of November 2023	% 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 and 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	completed	completed	completed	100	NIL

5.GROUND WATER DEPARTMENT

No.	Activity	Implementing agency	Time line	Progress in the month of September	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.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier status: As per Groundwater resources of Kerala, 2017 estimate a total number of 2 blocks (Tirur and Kuttippuram) comes under the Tirur river basin. These two blocks are semi-critical blocks and the stage of groundwater extraction ranges from 77.75 % to 77.92%)	Ground water Department Therefore, to regulate ground water resources in this area, no permission is granted for packaged drinking water industries or any other water induced industries	NA	No permits issued	No permits issued	No permits issued	NA	NA
5.2	Ground water recharging / rain water harvesting (Earlier status: The average pre -monsoon groundwater level ranges from 6.14mbgl - 8.49 mbgl.)	NA	NA		NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NA	NA
5.3	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	Ground water Department No observation well along the river stretches)			NA		NA	NA
5.4	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status: The total irrigation draft in the area ranges from 49.14 - 870.97	Ground water Department No Data Available. No Updation after			NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER DEPARTMENT	NO ACTION INCLUDE UNDER THIS PLAN BY GROUND WATER	NA	NA

	ha.m.)	GEC 2017. (Report not published)				DEPARTMENT		
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 ● Specifying accountability of nodal authorities not below the secretary level ● Chief secretaries may have an accountable Person attached in their office for this purpose		
	● Monitoring at the state level must take place		

5	Progress report may be furnished by the state/UTs to ● Secretary,ministry of Jal Shakti ● Member secretary,CPCB		
5.1	Progress report may be comprised of details along with completion timeline on: (i) Identification of polluting source including drains contributing to river pollution and action as per NGT order on in situ treatment. (ii) <u>status of STPs,I&D and sewage networks</u> Details of Existing Infrastructure,Gap Analysis,Proposed along with completion timeline (iii) <u>status of CETPs</u> Details of existing CETP and ETP infrastructure,Gap analysis,proposed along with completion timeline,No.of industries and complying status. (iv) <u>status of solid waste management&details of processing facilities</u> Details of existing infrastructure,Gap analysis proposed along with completion timeline (v) Latest water quality of polluted river,its tributaries,drains with flow details and ground water quality in the catchment of polluted river; (vi) preventing dumping of waste and scientific waste management including bio-medical waste plastic waste and decentralizing waste processing,including waste		

	generated from hotels,ashrams etc. (vii) Ground water regulation (viii) Adopting good irrigation practices (ix) protection and management of flood plain zones(FPZ), (x) Rainwater harvesting (xi) Maintaining minimum environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up bio diversity parks on flood plains by removing encroachment		Monthly progress report enclosed
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ACTION PLAN FOR RIVER KALLAYI , KERALA

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

							stopped due to a stay order from the Munsif Court. For both the proposals work can be restarted only after resolving court case.		
8	Implementation of STP at Kottoli (13.5 MLD)					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.	27 MLD STP and 220 KLD FSTP as a co-treatment, with an associated network of 50km		

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, Thamarassery, 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 NOVEMBER 2023	%Work completed	Details of work remaining
1	Transportation of waste management to refinement unit	Konnari Advanced Polymers Limited	2022-23				Completed	100%	
2	Cleaning of Cherupuzha (Kuniyakadav to Thenghilakadav)	Mavoor GP	2022-23				Completed	100%	1500 mtr
3	Valayannor Thodu cleaning	MGNREGS	2022-23				Completed		115 mtr
4	Arayancode kalchira Thodu Cleaning	MGNREGS	2022-23				On going		115 mtr
5	Vellaram Kandi Chirakkal thazham thodu	Mavoor GP	2023-24				completed	100%	
6	Ring compost	Mavoor GP	2023-24				On going		
7	Kadayan thodu	MGNREGS	2023-24				completed	100%	

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

OLAVNNA GRAMAPANCHAYAT

N o	Activity	Implementing Agency	Time line	Progressing the month Of 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

N o	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 has1observation 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, LINK ROAD, KOZHIKODE - 673 002

ANALYSIS REPORT OF RIVER WATER

Report 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	µmhos/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 .

21/12/23
 Scientist in charge

DE1
 DA 603
 21/12/23

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	Feacal Coliforms	cfu/100ml	440
9	Feacal 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



ജില്ലാ ഓഫീസ്, ആലപ്പുഴ

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

KERALA STATE POLLUTION CONTROL BOARD

DISTRICT OFFICE, ALAPPUZHA

എസ്.എൻ.വി.സദനം, ന്യൂ ചാത്തനാട്, ഹെഡ് പോസ്റ്റ് ഓഫീസ്, ആലപ്പുഴ - 688001

SNV Sadhanam, New Chathanad, Head Post Office, Alappuzha - 688001

E-mail: alpy.pcb@gmail.com Telephone : 0477 - 2235384 web: www.keralapcb.nic.in



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ഓൺലൈനിൽ അപേക്ഷകൾ സമർപ്പിക്കുന്നതിന് www.krcnms.nic.in എന്ന വെബ്സൈറ്റ് ഉപയോഗിക്കുക.

“ഭരണഭാഷ - മാതൃഭാഷ”

In reply please refer to:- പിസിബി/എഎൽപി/റ്റിജി-421/19

16.12.2023

പ്രേഷിതൻ

എൻവയോൺമെന്റൽ എഞ്ചിനീയർ

സ്വീകർത്താവ്

മെമ്പർ സെക്രട്ടറി

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്,

ആസ്ഥാന ഓഫീസ്,

പട്ടം, തിരുവനന്തപുരം.

വിഷയം: പമ്പാ - മണിമല നദികളുടെ നവംബർ 2023 ലെ മാസ-പുരോഗതി റിപ്പോർട്ട് സമർപ്പിക്കുന്നത് -സംബന്ധിച്ച്.

സർ,

മേൽ വിഷയത്തിലേക്ക് അങ്ങയുടെ ശ്രദ്ധ ക്ഷണിക്കുന്നു. പമ്പാ - മണിമല നദികളുടെ നവംബർ 2023 ലെ മാസ-പുരോഗതി റിപ്പോർട്ട് അങ്ങയുടെ അറിവിലേക്കും തുടർനടപടികൾക്കുമായി ഇതോടൊപ്പം ഉള്ളടക്കം ചെയ്യുന്നു.



വിശ്വസ്തതയോടെ,

[Signature]

എൻവയോൺമെന്റൽ എഞ്ചിനീയർ.

എൻവയോൺമെന്റൽ എഞ്ചിനീയർ
കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്
ജില്ലാ കാര്യാലയം, ആലപ്പുഴ

ഉള്ളടക്കം: മേൽപ്രകാരം .



കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

മഹജ്ജിക് സ്ക്വയർ, മൂന്നാം നില, പരവട്ടാനി, ഒല്ലൂക്കര പി.ഒ., തൃശ്ശൂർ - 680655

KERALA STATE POLLUTION CONTROL BOARD

Majestic Square, 3rd Floor, Paravattani, Ollukkara P.O., Thrissur - 680655

PCB/TSR/GEN/142/19

Date: 21/12/2023

From

Environmental Engineer

To

The Member Secretary,
Kerala State Pollution Control Board,
Head Office, Thiruvananthapuram.

Sub :- Polluted river stretches – reg.

Madam,

Pulikkakakadavu stretch of Chalakudy river was identified as the new polluted river stretch in Thrissur District as per CPCB study report, 2022. Pulikkakaduvu is already a SWMP station (C5) of chalakudy river. By analyzing last three years (2021-2023) data in Pulikkakaduvu monitoring station, BOD values have not exceeded 3 mg/L (Copy enclosed). Hence, Pulikkakadavu station may be exempted from the list. Consolidated report of other SWMP monitoring stations of Chalakudy river-Peringal, Vettilapara, Kanjirapilly, Chalakudy and Palapuzha kadavu is also attached herewith for your reference.



Yours faithfully,

ENVIRONMENTAL ENGINEER

CONSOLIDATED REPORT OF PERINGAL VETTILAPARA, CHALAKUDY & PARIYARAM (2021 – 2023)

Station Code & Name: C5:PULIKKAKADAVU						
MONTH	2021		2022		2023	
	BOD	FC	BOD	FC	BOD	FC
JAN	2	400	1.9	-	2.14	300
FEB	0.9	200	1.9	-	2.98	50
MAR	0.4	100	1	-	1.60	450
APR	0.4	100	1.54	-	0.32	NIL
MAY	0.4	100	1.19	-	2.54	400
JUN	1.5	-	2.5	200	1.06	100
JUL	0.9	-	2.82	200	1.89	150
AUG	0.9	-	1.73	400	2.50	150
SEP	2.3	-	1.28	400	1.15	NIL
OCT	1.6	-	1.87	50	2.10	NIL
NOV	2.2	-	1.55	400	2.70	100
DEC	2.3	-	0.81	200	2.54	50



CONSOLIDATED REPORT OF PERINGAL, VETILAPARA, CHALAKUDY & PARIYARAM (2021 - 2023)

Station Code & Name: C1:PERINGAL						
MONTH	2021		2022		2023	
	BOD	FC	BOD	FC	BOD	FC
JAN	1.4	400	0.7	-	2.65	300
FEB	1.9	-	2.2	-	1.87	50
MAR	1.2	-	1.05	-	2.58	50
APR	1.2	-	1.2	400	0.64	50
MAY	-	-	2.1	300	1.28	50
JUN	1	-	1.82	300	3.04	50
JUL	1.8	-	0.51	NIL	1.62	200
AUG	1.1	-	1.97	200	1.80	150
SEP	2.1	-	1.6	300	1.90	NIL
OCT	2.5	-	0.27	100	1.53	NIL
NOV	1.6	-	0.48	150	0.58	NIL
DEC	1.6	-	0.48	150	0.94	100



CONSOLIDATED REPORT OF PERINGAL, VETTILAPARA, CHALAKUDY & PARIYARAM (2021 – 2023)

Station Code & Name: C2:VETTILAPARA							
MONTH	2021		2022		2023		
	BOD	FC	BOD	FC	BOD	FC	
JAN	2	100	1.3	-	1.56	100	
FEB	0.7	100	1.4	-	2.13	50	
MAR	1.8	500	1	-	1.22	100	
APR	2.4	100	2.16	400	1.01	50	
MAY	-	-	2.3	100	2.89	50	
JUN	1.5	-	1.3	300	1.97	100	
JUL	1	-	0.64	NIL	1.72	250	
AUG	1.1	-	1.92	200	2.70	200	
SEP	1.5	-	2.05	300	1.35	NIL	
OCT	2.1	-	0.53	NIL	1.21	NIL	
NOV	1.7	-	1.06	150	1.01	NIL	
DEC	1.2	-	1.06	150	2.12	NIL	



CONSOLIDATED REPORT OF PERINGAL, VETTELAPARA, CHALAKUDY & PARIYARAM (2021 – 2023)

Station Code & Name: C3:KANJIRAPPILLY

MONTH	2021		2022		2023	
	BOD	FC	BOD	FC	BOD	FC
JAN	0.4	100	1.4	-	1.86	200
FEB	1.9	NIL	1.7	-	2.24	50
MAR	0.62.1	100	1.05	-	1.44	400
APR	0.6	100	1.66	-	1.06	50
MAY	1.5	-	1.55	-	2.40	NIL
JUN	1.1	-	1.78	100	0.85	50
JUL	0.9	-	0.58	NIL	1.72	100
AUG	2.3	-	0.53	300	2.38	400
SEP	0.7	-	0.32	400	1.50	150
OCT	1.7	-	0.69	NIL	1.27	150
NOV	2.2	-	2.34	50	2.96	NIL
DEC	-	-	2.34	50	1.59	100



CONSOLIDATED REPORT OF PERINGAL, VETTILAPARA, CHALAKUDY & PARIYARAM (2021 – 2023)

Station Code & Name: C4:CHALAKUDY						
MONTH	2021		2022		2023	
	BOD	FC	BOD	FC	BOD	FC
JAN	0.9	NIL	1.7	-	1.94	200
FEB	1.8	300	2.1	-	1.75	50
MAR	0.9	100	1.6	-	1.81	300
APR	1.3	NIL	2.01	500	0.75	NIL
MAY	—	-	2.22	-	1.22	250
JUN	1	-	1.36	400	2.08	50
JUL	1.7	-	0.64	100	2.22	300
AUG	1.5	-	1.3	400	1.70	200
SEP	2.5	-	1.34	500	2.20	200
OCT	2.3	-	0.8	100	1.11	50
NOV	1.1	-	0.81	50	1.27	50
DEC	2	-	0.81	50	1.53	150



CONSOLIDATED REPORT OF PERINGAL, VETTILAPARA, CHALAKUDY & PARIYARAM (2021 – 2023)

Station Code & Name: C6:Palpuzhakadavu						
MONTH	2021		2022		2023	
	BOD	FC	BOD	FC	BOD	FC
JAN	0.8	NIL	1.4	-	2.66	300
FEB	1.7	NIL	1.5	-	1.49	50
MAR	2.1	200	1.4	-	2.56	150
APR	2.1	NIL	2.5	200	0.53	NIL
MAY	2	200	2.09	200	2.56	400
JUN	1.4	-	1.43	300	1.06	100
JUL	1.7	-	1.67	NIL	1.75	150
AUG	1	-	1.28	300	2.17	200
SEP	1.6	-	1.54	300	3	NIL
OCT	2.4	-	0.8	100	2.65	200
NOV	1.2	-	1.81	400	1.8	50
DEC	2.4	-	1.71	300	3.07	100



**OA 673 ൽ 22.11.2023 തീയതിയിൽ സുപ്രണ്ടിംഗ് എഞ്ചിനീയർ, ഇറിഗേഷൻ വകുപ്പ്-
നോർത്ത് സർക്കിളിന്റെ അധ്യക്ഷതയിൽ വീഡിയോ കോൺഫറൻസ് വഴി നടത്തിയ
42-ാമത് DLTC മീറ്റിങ്ങിന്റെ മിനുട്ട്സ്.**

ഹാജരായവർ

1. ശ്രീമതി.സുജാത (അസിസ്റ്റന്റ് എക്സിക്യൂട്ടീവ് എഞ്ചിനീയർ, ഇറിഗേഷൻ വകുപ്പ്).
2. ശ്രീ.ഷെമിൻ (ഓവർസീയർ, മലപ്പുറം മുനിസിപ്പാലിറ്റി)
3. ശ്രീ.അബ്ദുൾ ഹമീദ് (ഹെൽത്ത് ഇൻസ്പെക്ടർ, മലപ്പുറം മുനിസിപ്പാലിറ്റി)
4. ശ്രീ. ജീവരാജ് (ഹെൽത്ത് സുപ്രവൈസർ, തിരൂർ മുനിസിപ്പാലിറ്റി)
5. ശ്രീ.സുബാഷ് (ഹെൽത്ത് ഇൻസ്പെക്ടർ, ചെറിയമുണ്ടം ഗ്രാമപഞ്ചായത്ത്)
6. ശ്രീ.വിജിത്ത് (ഹൈഡ്രോളജിസ്റ്റ്, ഗൗണ്ട് വാട്ടർ വാകുപ്പ്, മലപ്പുറം)
7. ശ്രീ.വിനീത് (ടെക്നിക്കൽ എക്സ്പേർട്ട്, ശുചിത്വമിഷൻ)
8. ശ്രീ.ഉദയകുമാർ (സീനിയർ ക്ലാർക്ക്, റവന്യൂ ഡിവിഷണൽ ഓഫീസ്, തിരൂർ)
9. ശ്രീ.ദിൽഷാദ് (അസിസ്റ്റന്റ് എഞ്ചിനീയർ, ഇറിഗേഷൻ വകുപ്പ്, കൂട്ടായി)
10. ശ്രീമതി. ചഞ്ചൽ((അസിസ്റ്റന്റ് എഞ്ചിനീയർ, മേജർ തിരൂർ)
11. ശ്രീ.വരുൺ നാരായണൻ.ജി (എൻവയോൺമെന്റൽ എഞ്ചിനീയർ, കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്, ജില്ലാ ഓഫീസ്, മലപ്പുറം)
12. ശ്രീമതി.ബസ്ലി ബഷീർ (അസിസ്റ്റന്റ് എഞ്ചിനീയർ, കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്, ജില്ലാ ഓഫീസ്, മലപ്പുറം)
13. ശ്രീമതി.സൗദ ബീവി.വി.സി. (ജൂനിയർ സയന്റിഫിക് അസിസ്റ്റന്റ്, കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്, ജില്ലാ ഓഫീസ്, മലപ്പുറം.)
14. ശ്രീമതി.ദീപ.സി.കെ(അസിസ്റ്റന്റ് സയന്റിസ്റ്റ്, കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്, ജില്ലാ ഓഫീസ്, മലപ്പുറം.)

DLTC ചെയർമാൻ (എസ്ഇഇ, ഇറിഗേഷൻ)-ന്റെ അഭാവത്തിൽ അസിസ്റ്റന്റ് എക്സിക്യൂട്ടീവ് എഞ്ചിനീയർ ശ്രീമതി. സുജാതയുടെ അധ്യക്ഷതയിൽ 3pm ന് വീഡിയോ കോൺഫറൻസ് ആരംഭിച്ചു. ആദ്യമായി മലിനീകരണ നിയന്ത്രണ ബോർഡ് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ NGT OA673/2018-ന്റെ ഭാഗമായിട്ട് നടത്തുന്ന 42-ാമത് DLTC മീറ്റിങ്ങിലേക്ക് എല്ലാവരെയും സ്വാഗതം ചെയ്തു.

കഴിഞ്ഞ DLTC മീറ്റിങ്ങിൽ പങ്കെടുക്കാത്ത മംഗലം, വെട്ടം ഗ്രാമ പഞ്ചായത്തുകൾക്ക് നിർദ്ദേശ കത്ത് കൊടുത്തിരുന്നോ എന്ന് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഇറിഗേഷൻ വകുപ്പിലെ എക്സിക്യൂട്ടീവ് എഞ്ചിനീയർ ശ്രീമതി. സുജാതയോട് ആരാഞ്ഞു. കൂടാതെ ശുചിത്വമിഷൻ മീറ്റിംഗ് ലിങ്ക് അയച്ചിട്ടുണ്ടോ എന്നും ചോദിക്കുകയുണ്ടായി.

ആദ്യമായി ഇറിഗേഷൻ വകുപ്പിന്റെ പ്രവർത്തന പുരോഗതിയാണ് വിലയിരുത്തിയത്. കഴിഞ്ഞതവണ റിപ്പോർട്ട് ചെയ്ത പുരോഗതി എൻവയോൺമെന്റൽ എഞ്ചിനീയർ വായിച്ചുകേൾപ്പിക്കുകയുണ്ടായി. ഇതിൽ എന്തെങ്കിലും പുരോഗതി ഉണ്ടായിട്ടുണ്ടോ എന്ന് കൂട്ടായി അസിസ്റ്റന്റ് എഞ്ചിനീയർ ശ്രീ.ദിൽഷാദിനോട് അന്വേഷിക്കുകയുണ്ടായി. കൂട്ടായി റെഗുലേറ്ററിന്റെ ഇൻവെസ്റ്റിഗേഷൻ വർക്ക് റിപ്പോർട്ട് ലഭിച്ചിട്ടുണ്ടെന്നും, അതുമായി ബന്ധപ്പെട്ട് എസ്റ്റിമേറ്റ് തയ്യാറാക്കുകയും തിരുവനന്തപുരത്ത് 24.11.2023-ന് നടക്കുന്ന മീറ്റിംഗിൽ പങ്കെടുക്കുകയും അതിലെ തീരുമാനപ്രകാരമായിരിക്കും വർക്ക് മുന്നോട്ട് പോകുക എന്നും ശ്രീ.ദിൽഷാദ് അറിയിച്ചു. തിരുർ-പൊന്നാനി പാലയുടെ ബണ്ട് ശക്തിപ്പെടുത്തുന്നതിനായുള്ള വർക്കിൽ യാതൊരു പുരോഗതിയും ഉണ്ടായിട്ടില്ലെന്നാണ് മേജർ ഇറിഗേഷൻ വകുപ്പ് തിരുർ അസിസ്റ്റന്റ് എഞ്ചിനീയർ, ശ്രീമതി.ചഞ്ചൽ അറിയിച്ചത്. വർക്കിനാവശ്യമായ സാമഗ്രികൾ ഇറക്കിയിട്ടുണ്ടെന്നും, ഡിസംബർ ആദ്യവാരം വർക്ക് തുടങ്ങാമെന്നും, ഡിസംബർ അവസാനത്തോടുകൂടി തന്നെ വർക്ക് തീർക്കുവാൻ സാധിക്കുമെന്നുമാണ് ശ്രീമതി.ചഞ്ചൽ അറിയിച്ചത്.

അടുത്തതായി മലപ്പുറം മുനിസിപ്പൽ ബസ് സ്റ്റാന്റ് STP യുടെ വർക്കുമായി ബന്ധപ്പെട്ട വിവരങ്ങളെക്കുറിച്ച് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ മലപ്പുറം മുനിസിപ്പാലിറ്റി ഹെൽത്ത് ഇൻസ്പെക്ടർ ശ്രീ.അബ്ദുൾ ഹമീദിനോട് ചോദിച്ചറിയുകയുണ്ടായി. മലിനീകരണ നിയന്ത്രണ ബോർഡിലേക്ക് നൽകിയിട്ടുള്ള അപേക്ഷ റീസബ്മിറ്റ് ചെയ്യാത്തതിനെക്കുറിച്ചും ചോദിക്കുകയുണ്ടായി. യൂണിറ്റുടമകളുമായി മുനിസിപ്പാലിറ്റി സെക്രട്ടറി സംസാരിച്ചപ്പോൾ STP പ്രവർത്തനക്ഷമമാകുന്ന മുറക്ക് മാത്രമേ കരാർ വെക്കാൻ തയ്യാറാകൂ എന്നാണ് സെക്രട്ടറിയോട് യൂണിറ്റുടമകൾ പറഞ്ഞതെന്നും, ഹെൽത്ത് ഇൻസ്പെക്ടർ അറിയിക്കുകയുണ്ടായി. 2017ൽ തുടങ്ങിയ പ്ലാന്റാണെന്നും നിലവിൽ പല യൂണിറ്റുകൾക്കും സ്വന്തമായി ETP ഉള്ളതാണെന്നും ആയതിനാൽ എത്ര യൂണിറ്റുകൾ തയ്യാറാണെന്നും വെള്ളത്തിന്റെ ലഭ്യത എത്രയാണെന്നും അറിയാൻ വേണ്ടിയാണ് കരാർ വെക്കണമെന്ന് പറഞ്ഞതെന്നും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഓർമ്മപ്പെടുത്തുകയുണ്ടായി. കൂടാതെ ആക്ഷൻ പ്ലാൻ കൃത്യമായാൽ മാത്രമേ മലിനീകരിക്കപ്പെട്ട പുഴകളുടെ പട്ടികയിൽ നിന്ന് തിരുർ/കടലുണ്ടി പുഴകളെ ഒഴിവാക്കുന്നതിനായി നടപടികൾ സ്വീകരിക്കാൻ മുകളിലോട്ട് കത്ത് കൊടുക്കുവാൻ സാധിക്കുകയുള്ളൂ എന്നും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ അറിയിക്കുകയുണ്ടായി. കഴിഞ്ഞ ദിവസം മനോരമ പത്രത്തിൽ വന്ന വാർത്ത “മലിനീകരണ നിയന്ത്രണ ബോർഡിന്റെ ഉപദേശം ചോദിച്ചിട്ട് ഒരു വർഷമായി” എന്ന തലക്കെട്ടുള്ള വാർത്തയെക്കുറിച്ച് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ മലപ്പുറം മുനിസിപ്പാലിറ്റി ഹെൽത്ത് ഇൻസ്പെക്ടറോട് വിശദീകരണം ചോദിക്കുകയുണ്ടായി. അനുമതിക്കായുള്ള അപേക്ഷ പ്രോപ്പർ ആയാൽ മാത്രമേ നടപടികൾ എടുക്കാൻ

പറ്റുകയുള്ളൂ എന്നും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഓർമ്മപ്പെടുത്തുകയുണ്ടായി. പത്രത്തിൽ കൊടുത്ത വാർത്ത നഗരസഭ അറിയില്ലെന്നാണ് ഹെൽത്ത് ഇൻസ്പെക്ടർ അറിയിച്ചത്. 06.11.2023-ൽ ചീഫ് സെക്രട്ടറിയുടെ അധ്യക്ഷതയിൽ നടന്ന മീറ്റിങ്ങിൽ പാമ്പാട് STP യുടെ വർക്ക് മുനിസിപ്പാലിറ്റി മുഖേനയാണ് ചെയ്യുന്നതെന്നാണ് അറിയാൻ കഴിഞ്ഞത്. എന്നാൽ കഴിഞ്ഞ DLTC മീറ്റിങ്ങിൽ മുനിസിപ്പാലിറ്റിക്ക് യാതൊരു വിവരവും പ്രസ്തുത STPയെക്കുറിച്ചില്ലെന്നാണ് അറിയിച്ചത്. പ്രസ്തുത വിഷയത്തെക്കുറിച്ച് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഹെൽത്ത് ഇൻസ്പെക്ടറോട് വിശദീകരണം ആവശ്യപ്പെട്ടു. മുനിസിപ്പൽ എഞ്ചിനീയർ ആണ് വർക്ക് ചെയ്യുന്നതെന്നാണ് ഹെൽത്ത് ഇൻസ്പെക്ടർ അറിയിച്ചത്. ഇങ്ങനെ മൂടന്തൻ ന്യായങ്ങൾ പറഞ്ഞാൽ NGTയുടെ മുന്നിൽ കോടികൾ പിഴ അടക്കേണ്ടിവരുമെന്നും, അത്തരം കാര്യങ്ങളിലേക്ക് പോകാതിരിക്കാനാണ് തുടർച്ചയായി മാസംതോറും മീറ്റിംഗ് കൂടുന്നതും, കൃത്യമായി നിർദ്ദേശങ്ങൾ തരുന്നതെന്നും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഓർമ്മപ്പെടുത്തി. മലപ്പുറം മുനിസിപ്പാലിറ്റി ഓവർസിയർ ശ്രീ.ഷെമിൻ എന്നവരോട് മലപ്പുറം ബസ് സ്റ്റാന്റ് STP, പാമ്പാട് STP യുടെ നിലവിലെ അവസ്ഥയെക്കുറിച്ച് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ചോദിക്കുകയുണ്ടായി. പാമ്പാട് STP വർക്ക് 98% പൂർത്തീകരിച്ചിട്ടുണ്ടെന്നും, പാമ്പാട് ബോർഡിന്റെ വർക്ക് കൂടി ചെയ്യാനുണ്ടെന്നുമാണ് ഓവർസിയർ ശ്രീ.ഷെമിൻ അറിയിച്ചത്. മുനിസിപ്പാലിറ്റിയിൽ വേസ്റ്റ് മാനേജ്മെന്റുമായി ബന്ധപ്പെട്ട് ചെയ്യുന്ന കാര്യങ്ങൾ എന്തൊക്കെയാണെന്ന് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഹെൽത്ത് ഇൻസ്പെക്ടറോട് ചോദിക്കുകയുണ്ടായി. ഹരിതകർമ്മസേന, സ്കാഡുകൾ എന്നിവയുടെ പ്രവർത്തനത്തെക്കുറിച്ചും പുഴയിലേക്ക് മാലിന്യ നിക്ഷേപം തടയാനുള്ള സംവിധാനം ഉറപ്പുവരുത്തേണ്ടതിനെക്കുറിച്ചും, എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ചോദിക്കുകയുണ്ടായി. പാമ്പാട് STP , ബസ് സ്റ്റാന്റ് STP, ഇവയുടെ പ്രവർത്തനത്തിലും മലപ്പുറം മുനിസിപ്പാലിറ്റി പ്രത്യേകം ശ്രദ്ധ ചെലുത്തണമെന്നും എത്രയും പെട്ടെന്ന് അടുത്ത മീറ്റിങ്ങ് നടക്കുന്നതിനുമുമ്പെ തന്നെ അനുമതിക്കായുള്ള അപേക്ഷ സമർപ്പിക്കണമെന്നും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ നിർദ്ദേശിച്ചു.

അടുത്തതായി തിരുർ മുനിസിപ്പാലിറ്റി മത്സ്യ മാർക്കറ്റ് ETPയുടെ പ്രവർത്തന പുരോഗതി വിലയിരുത്താൻ എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഹെൽത്ത് സൂപ്പർ വൈസർ ശ്രീ.ജീവരാജനോട് ആവശ്യപ്പെട്ടു. തിരുർ മുനിസിപ്പാലിറ്റി മത്സ്യ മാർക്കറ്റ് ETPയുടെ പ്രവർത്തനത്തിനായി ടെണ്ടർ വിളിച്ചതിൽ O&M രേഖപ്പെടുത്തിയിരുന്നില്ലെന്നും, അതിനാൽ O&M കൂടി ഉൾപ്പെടുത്തി പിന്നീട് കരാർ കൊടുക്കുകയും, അതിൽ എറണാകുളത്തുള്ള ഒരു കമ്പനി മാത്രമാണ് പങ്കെടുത്തതെന്നും ശ്രീ.ജീവരാജ് അറിയിക്കുകയുണ്ടായി. വെള്ളം ടെസ്റ്റ് ചെയ്ത് റിസൾട്ട് നോക്കിയതിനുശേഷം മാത്രമേ O&M കുറിച്ച് പറയാൻ പറ്റൂ, എന്നാണ് കമ്പനി അറിയിച്ചതെന്നും, അതുപ്രകാരം മാർക്കറ്റിലെ വെള്ളം ടെസ്റ്റ് ചെയ്തതിൽ

അമോണിയത്തിന്റെ അംശം അധികമായി കാണുകയും ചെയ്തു. അമോണിയം സംയുക്തങ്ങൾ കൂടുതൽ ആയതിനാൽ electro coagulation രീതി കൊണ്ട് മാത്രം മലിനീകരണ നിയന്ത്രണ ബോർഡിന്റെ നിർദ്ദിഷ്ട പരാമീറ്ററുകൾ അനുവദനീയമായി പരിധിയിൽ എത്തുകയില്ലെന്നാണ് കമ്പനി അറിയിച്ചത്. അതുകൊണ്ട് ETPയുടെ അവസാന സ്റ്റേജ് വർക്ക് ചെയ്യുന്നതിനായി O&M 90000/Month + GST - ഇത്രയും തുക വരുമെന്നും, ഈ ഒരു വലിയ തുക സാങ്കേതിക സമിതിയുടെ റിപ്പോർട്ടില്ലാതെ അനുമതി കൊടുക്കാൻ പറ്റില്ലെന്നുമാണ് ഹെൽത്ത് ഇൻസ്പെക്ടർ ശ്രീ.ജീവരാജ് അറിയിച്ചത്. മത്സ്യമാർക്കറ്റ് വ്യാപാരികൾ WP(C) ഫയൽ ചെയ്തതിനാൽ, എത്രയും വേഗം ETPപ്രവർത്തനസജ്ജമാക്കാനുള്ള നടപടി സ്വീകരിക്കുമെന്ന് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ നിർദ്ദേശിച്ചു. 09.11.2023 തീയതിയിൽ മലിനീകരണ നിയന്ത്രണ ബോർഡ് ഓഫീസിൽ നിന്നും STP കളിൽ നടത്തിയ പരിശോധനയിൽ ബസ് സ്റ്റാന്റ് STP പ്രൈമറി ട്രീറ്റ്മെന്റ് മാത്രമേ നടത്തിയിട്ടുള്ളൂ എന്നും, മലിനജലം തൊട്ടടുത്ത പറമ്പിലേക്കാണ് ഒഴുകുന്നതായി കാണപ്പെട്ടതെന്നും, electro coagulation, ultra filtration ഇതൊന്നും ചെയ്തിട്ടില്ലെന്നും കാണുകയുണ്ടായി. നിലവിൽ ഒരു പ്ലാന്റ് ഉണ്ടായിട്ടും തൊട്ടടുത്ത പറമ്പിലേക്ക് വെള്ളം തുറന്നു വിടുന്നത് ദോഷം ചെയ്യുമെന്നും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഓർമ്മപ്പെടുത്തി.

തിരുർ മത്സ്യ മാർക്കറ്റ് ETP, ബസ് സ്റ്റാന്റ് STP, പൊൻമുണ്ടം പഞ്ചായത്തിലെ STP, മലപ്പുറം ബസ്സ്റ്റാന്റ് STP, പാമ്പാട് STP എന്നിവയുടെ നിലവിലെ അവസ്ഥയെക്കുറിച്ച് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ശുചിത്വമിഷൻ ടെക്നിക്കൽ എസ്ക്പേർട്ട് ശ്രീ.വിനീതിനോട് ചോദിച്ചറിയുകയുണ്ടായി.

അടുത്തതായി മംഗലം ഗ്രാമപഞ്ചായത്ത് ആക്ഷൻ പ്ലാൻ പുരോഗതിയാണ് വിലയിരുത്തിയത്. സി.സി.ടി.വി, രാത്രികാല സ്കാഡുകൾ എന്നിവയുടെ പ്രവർത്തനങ്ങളെക്കുറിച്ചും തിരുർ പൊന്നാനി പുഴയുടെ side protection work പുരോഗതി എൻവയോൺമെന്റൽ എഞ്ചിനീയർ മംഗലം പഞ്ചായത്ത് സെക്രട്ടറി ശ്രീ.ബീരാൻകുട്ടിയോട് ചോദിച്ചറിയുകയുണ്ടായി. side protection work audit എതിർപ്പ് കാരണം പുരോഗതിയൊന്നും ഉണ്ടായിട്ടില്ലെന്നാണ് സെക്രട്ടറി അറിയിച്ചത്.

അടുത്തതായി ചെറിയമുണ്ടം ഗ്രാമപഞ്ചായത്ത് ആക്ഷൻ പ്ലാനുമായി ബന്ധപ്പെട്ട പ്രവർത്തന പുരോഗതിയാണ് വിലയിരുത്തിയത്. എല്ലാ പ്രവർത്തനങ്ങളും നേരത്തെ ചെയ്ത് തീർത്തിട്ടുള്ളതാണെന്നും, ചെറിയമുണ്ടം ഗ്രാമപഞ്ചായത്ത് ഹെൽത്ത് ഇൻസ്പെക്ടർ ശ്രീ.സുഭാഷ് അറിയിക്കുകയുണ്ടായി.

വെട്ടം ഗ്രാമപഞ്ചായത്ത് സി.സി.ടി.വി ക്യാമറ സ്ഥാപിക്കുന്നതിനെക്കുറിച്ചും സ്കാഡുകളുടെ പ്രവർത്തനത്തെക്കുറിച്ചും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ വെട്ടം ഗ്രാമപഞ്ചായത്ത് സീനിയർ ക്ലർക്ക് ശ്രീ.രജീഷിനോട് ചോദിച്ചറിയുകയുണ്ടായി. 5 ക്യാമറ പ്രവർത്തിക്കുന്നുണ്ടെന്നും, ഫെൻസിങ്ങ് ചെയ്യാനില്ലെന്നും, കൂടാതെ

21.11.2023-ന് 25000 രൂപ പിഴ ചുമത്തേണ്ടതായി വന്നിട്ടുണ്ടെന്നും ശ്രീ.രജീഷ് അറിയിച്ചു.

അവസാനമായി റവന്യൂ ഡിവിഷണൽ ഓഫീസുമായി ബന്ധപ്പെട്ട Encroachment സർവ്വേയുടെ പുരോഗതിയാണ് വിലയിരുത്തിയത്. കഴിഞ്ഞ DLTC മീറ്റിങ്ങിൽ Encroachment സർവ്വേയുടെ വിശദാംശങ്ങൾ അറിയുന്നതിനായി RDO ഓഫീസിലേക്ക് കത്ത് കൊടുക്കാൻ നിർദ്ദേശിച്ചിരുന്നെന്നും, കൊടുത്തിട്ടുണ്ടോ എന്ന വിവരം എൻവയോൺമെന്റൽ എഞ്ചിനീയർ ഇറിഗേഷൻ വകുപ്പ് അസിസ്റ്റന്റ് എക്സിക്യൂട്ടീവ് എഞ്ചിനീയർ ശ്രീമതി.സുജാതയോട് ചോദിക്കുകയുണ്ടായി. കത്ത് കൊടുത്തിട്ടുണ്ടെന്നും, സർവ്വേ വിവരങ്ങൾ ലഭിച്ചിട്ടില്ലെന്നുമാണ് ശ്രീമതി.സുജാത അറിയിച്ചത്. സർവ്വേയുമായി ബന്ധപ്പെട്ട വിവരങ്ങൾ എത്രയും പെട്ടെന്ന് കൊടുക്കണമെന്ന് എൻവയോൺമെന്റൽ എഞ്ചിനീയർ RDO ഓഫീസിലെ സീനിയർ ക്ലർക്ക് ശ്രീ.ഉദയകുമാറിനോട് ആവശ്യപ്പെട്ടു.

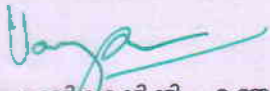
അടുത്തതായി ഗ്രൗണ്ട് വാട്ടർ വകുപ്പിന് ആക്ഷൻ പ്ലാനിൽ പ്രത്യേകിച്ച് ഒന്നും ചെയ്യാനില്ലെന്നാണ് ഹൈഡ്രോളജിസ്റ്റ് ശ്രീ.വിജിത് അറിയിച്ചത്.

തലക്കാട് ഗ്രാമപഞ്ചായത്ത് മീറ്റിങ്ങിൽ പങ്കെടുത്തില്ല.

മീറ്റിംഗിൽ പങ്കെടുത്ത എല്ലാവർക്കും എൻവയോൺമെന്റൽ എഞ്ചിനീയർ നന്ദി പറഞ്ഞു.

3.40 pm - ന് വീഡിയോ കോൺഫറൻസ് അവസാനിച്ചു.

മലപ്പുറം
22.11.2023


എൻവയോൺമെന്റൽ എഞ്ചിനീയർ



KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

ജില്ലാ ഓഫീസ്, പാലക്കാട്

DISTRICT OFFICE, PALAKKAD

NEAR DISTRICT PANCHAYATH OFFICE, PALAKKAD - 678 001

www.keralapcb.nic.in

Phone : 0491 - 2505542

E-mail : kspcbpalakkad@gmail.com

In reply please refer to: PCB/PLKD/TG-204/ pollu-DLTC/2019

Date: 06.12.2023

From

Environmental Engineer

To

The Member Secretary
Kerala State Pollution Control Board
Thiruvananthapuram

Ref: PCB/HO/EE3/NGT/673/2018/03/2019 dated 03.07.2019 from Member Secretary

Sub: - Polluted River Stretch Monitoring Programme Data Reg :-

Sir,

As per the water quality report by CPCB- Polluted River Stretches for restoration of water quality 2022, Bharathapuzha and Bhavani river were delisted and new polluted river stretches are added in Palakkad district. The new polluted river stretches are Korayar At Kanjikode and Kalpathy puzha at Kalpathy. Samples were collected from these two points and analysed. DLTC Meeting will conduct in December and collect action plan from every stake holder departments for the rejuvenation of the polluted river stretches. I am forwarding herewith the data of Polluted River Stretch Monitoring Programme of River Korayar at Kanjikode and River Kalpathy at Kalpathy conducted during the month of November 2023 for information and further necessary action.

Yours faithfully,

ENVIRONMENTAL ENGINEER

Encl: As above



KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

മലയാളം ഭാഷാ ഏജൻസി

DISTRICT OFFICE, KOZHIKODE

3rd FLOOR, ZAMORIN'S SQUARE, LINK ROAD, KOZHIKODE - 673 002

Ph: 0495-2300745

kspcb.kerala.gov.in



PCB/KKD/DO/GEN/ Polluted River Stretches/2018

Date: 15.12.2023

From

The Environmental Engineer

To

The Member Secretary,
Head Office,
Thiruvananthapuram.



Sub:- **Monthly Progress Report on Polluted river stretches** called for by
Ministry of Jal Shakthi.

Sir/Madam,

I am forwarding herewith the monthly progress report on Polluted river stretches for the Month of **November 2023** in the prescribed format separately for Kallai Polluted river stretches.

Yours faithfully,

ENVIRONMENTAL ENGINEER.

Copy to :

Chief Environmental Engineer,
Regional Office, Kozhikode.

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
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* Out of the 100 wards in Thiruvananthapuram Corporation, 43 wards (Blocks A to E) are fully/Partially covered with sewerage facility. For 35 Wards (Blocks F to R) design of sewerage network available but this needs modification in lieu of the change in demography and for the balance 22 wards new designs are to be prepared. The long term measures are envisaged to cover the entire ward the Thiruvananthapuram Corporation. For preparing DPR/DER for rehabilitation of existing sewerage system and for establishing sewerage system for uncovered areas of Thiruvananthapuram Corporation, AS has been obtained under RKI (Govt. of Kerala) and preparation of DPR in progress.

Solid Waste Management

Long Term measures proposed by Thiruvananthapuram	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
3.2.1 Acquire 58 acres of land and rehabilitate 8150 families from the banks of River		5 Years					Dropped
3.2.2 SDM 2.0 Action plan prepared and submitted.	Thiruvananthapuram Corporation						
3.2.3 KSWMD 5.14Crore works submitted to DPC.							

Desilting and Development

3.3.1 Development package for Parvathy/Pathanar	Irrigation department included in KIFB by KWL includes cleaning of canal	3 Years	100%	100%		100%	Phase I (First half) removal of hyacinth completed Veli to Kadimankayal (Ch 16.00 to Ch27.00). Executed by Inland Navigation . Aakkulam Mommattumukku cleaning works 100% completed by KWL - for an amount of 45 Lakhs (3 Months). Now department work is started for clearing.
3.3.2 De-silting and development of AmayizhanchanThodu		1.5 Years	15%	20%		20%	On going
3.3.3 Improvements to Thekkenekara canal and de-silting-	Irrigation Department	1 Year					Flood mitigation work completed
3.3.4 Karimadam tank improvements, de-silting sheet piling/under preparation and providing fencing		1.5 Years	15%	20%		20%	Flood mitigation works ongoing
3.3.5 Development of Karamana basin		1.5 Years					Desilting of river completed. E-flow statement