

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
(SOUTHERN ZONE BENCH, CHENNAI)
IN
ORIGINAL APPLICATION NO. 395 OF 2013 (SZ)**

REPORT SUBMITTED BY THE ENVIRONMENT DEPARTMENT

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Dated at Chennai on this the 25th day of November 2021.

M/s. E.K.KUMARESAN

Standing Counsel for State Government of Kerala - NGT(SZ) Chennai Bench



GOVERNMENT OF KERALA

Department

NoA3/108/2020/Envt

09/06/2021, Thiruvananthapuram

From

Additional Chief Secretary to Government

To

Adv. E. Kumaresan ,
Standing Counsel,
National Green Tribunal South Zone,
Chennai.

Sir,

Sub: Environment Department- Order dated 05/11/2020 in OA No395/2013- request to seek additional time to comply the order

Ref: 1.)Order dated 05/11/2020 in OA No395/2013 of Hon. National Green Tribunal , South Zone ,Chennai.

2)G.O.(Rt) No.02/2021/Envt dated 05.01.2021 of Envt(A) Dept

3).Govt letter of even number dated 24/02/2021.

I am directed to invite your attention to the reference cited . The Hon'ble National Green Tribunal vide order dated 5-11-2020 in OA 395/2013, directed the Chief Secretary and the Principal Secretary to come up with a proper action plan to solve the pollution problems of river Periyar. Government vide order cited above constituted a committee consisting of officers from the Irrigation Department, Local Self Government Department , Director Of Industries and Commerce and Kerala State Pollution Control Board for preparing a holistic Action Plan on Periyar.

The first meeting of the committee was held on 29.01.2021. Due to the pandemic situation that followed and as model code of conduct in connection with the Legislative Assembly election were in force, the next meeting of the Committee could be convened only on 14.05.2021. The holistic action plan can only be prepared based on the extensive study report / recommendations of the Supervisory Committee constituted by the Hon'ble Tribunal. The Supervisory Committee is yet to file the final report. The interim report on the basis of the actions taken so far is enclosed herewith . The interim report on the basis of the actions taken so far is enclosed herewith .

In these circumstances, I am to request you to move the Hon'ble National Green Tribunal for extension of time by three months for submission of the holistic action plan by the State Government .

Yours Faithfully,
Sharmila C
Joint Secretary

For Secretary to Government.

Approved for issue,



Section Officer

(3)

Minutes of the first meeting on 29.01.2021 of the Committee constituted for preparing comprehensive action plan (in O.A.395/2013) on behalf of the State for the abatement of Periyar River pollution

The first meeting of the committee constituted by the Govt. to prepare the action plan to solve the abatement of Periyar river pollution, started at 3pm on 29.01.2021. The following members were attended in the meeting through VC.

1. Sri. Rajesh, SE, Irrigation Central Circle, Thrissur (Member)
2. Sri. Biju P. Abraham, General Manager, DIC, Ernakulam (Member)
3. Smt. Shobana Kumari B., SE, LSGD (Member)
4. Smt. Shahana, AEE, (on behalf of the Chief Environmental Engineer, KSPCB, RO, EKM)
5. Smt. Premaletha S., Environmental Engineer, KSPCB, Head Office. (Member Convenor)

In addition to the above the following field officers of the Board were also present in the VC.

1. Sri. Eby Vargese, Environmental Engineers District Office, Idukki
2. Smt. Suseela Nair, V.A., EE, DO, TSR
3. Sri. Sajeesh Joy, AEE, ESC, Eloor

At the outset, the Member Secretary explained the necessity of convening this meeting and the role of the committee as detailed below:

The Hon'ble NGT after observing the report of the Chairman, SLMC in O. A.395/2013, vide order dated 04.02.2020, directed the Chief Secretary and the Principal Secretary, Environment Department to come up with a proper action plan to solve the pollution problems of river Periyar. In compliance with the order the State Pollution Control Board submitted to NGT that a holistic approach is needed to solve the problem of Periyar pollution and it can be enabled only with the co-operation of different Govt. departments including Industries Department, Irrigation Department, Local Self Govt. Department etc. The Chief Secretary, Govt. of Kerala also submitted report to NGT that the pollution aspects of Periyar can be addressed comprehensively, only with the effective co-operation of various Govt. departments and the action plan will be evolved with the active participation of all departments/authorities and that the report will be filed by the State through the Environment Department. NGT accepted the reports of the State Govt. and KSPCB in its order dated 05.11.2020 in O A 395/2013 and

directed to submit the action taken reports by respective departments, the State Govt. are directed to submit the action taken reports by respective departments and progress reports and action plan on or before 26.02.2021. And the Government accorded sanction to constitute a committee with the above listed members vide order dated 05.01.2021.

There are other three cases O A 396/2013, O A 242/2016, O A 262/2017 pending before the NGT in respect of pollution caused to river Periyar. As directed by the NGT combined committee constituted is looking into the issues in these O.As. and the combined committee is to come up with a definite action plan based on field inspections and assessment of the present scenario of pollution along Periyar. The phase 1 and 2 inspection and monitoring by the combined committee is over.

As per the NGT order dated 21.01.2019 a Joint Committee constituted and directed them to go into the aspects on the basis of observations made by the Chairman, SLMC and to come up with a plan for remedying the situation in an effective manner and to submit report to the Tribunal.

Smt. Shahana, AEE, RO, Ernakulam reported the following regarding the status of combined committee inspections:

- i) Phase 1: Combined Committee inspection and monitoring of industries/establishments, river streams and drains reaching Periyar river stretch in Idukki district is over and awaiting for analysis reports of pesticides and heavy metals.
- ii) Phase 2: Combined Committee inspection and monitoring river streams and drains in the river stretch starting from Neriyamangalam to Kodungallure in Ernakulam and Thrissur district is also completed and analysis reports of pesticides and heavy metals.
- iii) Phase 3: Inspection and monitoring of industries/establishments and river streams in the remaining area in Ernakulam and Thrissur districts is pending

Sri Sajeesh Joy, AEE, Environmental Surveillance Centre opined that the support of LSGD and Irrigation Department is essential for identifying sources and drains along the Periyar river stretch.

After discussion the following decisions were taken

1. As the river Periyar transverses through the three districts in the State, vizIdukki, Ernakulam and Thrissur the support of concerned local bodies are essential in the preparation of the action plan. The SE, LSGD shall consult with the Govt. Secretaries of LSGD (Urban) and LSGD and include the Secretaries of concerned Local bodies along the stretches of Periyar river and report further nominations needed to include in the committee.
2. As per the order of the Hon'ble Supreme Court /NGT the minimum flow in rivers especially in summer season is to be maintained by the Irrigation Department. The SEE, Irrigation shall appraise the matter to the higher level officers concerned as the matter pertains to release of water from dam. The possibility of plugging unauthorized discharges with the support from the Irrigation department is also to be looked into.
3. To address the industrial pollution, the General Manager, DIC shall come up with the plan for the requirement of ETPs to Industries in the area and evolve proposals for CETPs if necessary in specified industrial areas. Officers from concerned industries, if needed, shall be nominated after consulting with the Govt.

Though the comprehensive action plan could be completed only after completing the phase 3 inspections/monitoring by the combined committee, the Member Secretary suggested that this committee members shall take parallel actions pertaining to respective departments and come up with concrete proposals and suggestions for the abatement of river Periyar in the next meeting. Also the committee members should have a vigorous contact with the member convener with respect to the finalization of the Action Plan in time.


MEMBER SECRETARY

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Minutes of the second meeting on 14.05.2021 of the Committee constituted for evolving comprehensive action plan on behalf of the State for the abatement of Periyar river pollution

The second meeting of the committee started at 11.00 pm on 14.05.2021 through VC. Following members were joined the meeting.

1. Smt. Sandhya, Executive Engineer(on behalf of SEE, Irrigation (Member)
2. Smt. Sudersana, Deputy Director (on behalf of GM,DIC, Ernakulam (Member)
3. Smt. ShobanaKumari B., SE, LSGD(Member)
4. Sri. Baiju M.A, CEE, RO,KSPCB(Member)
5. Smt. Premaletha S., Environmental Engineer, KSPCB, Head Office, (Member Convenor)

In addition to the above the following field officers of the Board were also present in the VC.

1. Sri. EbyVargese,EE,DO, Idukki
2. Smt. Soumya, AEE, DO, TSR
3. Smt. Vinaya, SEE,ESC,Eloor
4. Sri. Sajeesh Joy, AEE, ESC,Eloor
5. Sri. Dinesh, EE, DO2,EKM
6. Smt. Sreelekshmi, EE,DO1,EKM
7. Smt. Shahana, AEE,RO,EKM

Sri Baiju M. A., CEE, KSPCB in his welcome speech gave a brief introduction to the importance of the meeting. He explained about the origin of O A 395/2013. He added that there are two committees constituted by NGT in different O.As (Joint Committee in OA 395 of 2013 for Idukki Case & Supervised Committee in OA 396 of 2013 for Eloor-Kuzhikkandom thodu) and is to come up with a definite action plan based on field inspections and assessment of the present scenario of pollution along Periyar. Thereafter, the Hon'ble NGT approved the constitution of the Combined Committee where officials from CPCB, NEERI, SEIAA, DM and KSPCB is to overlook the matter. He also pointed out that an action plan was already prepared by the Board as part of compliance with the order in O A. 673/2018 for Periyar river



rejuvenation along Ernakulam District area of transverse, the action points of which are being followed up by the DLTC.

The Committee constituted by the Govt. is to evolve holistic action plan in line with the recommendations of the CPCB Supervised Committee/ Combined Committee. Hon'ble NGT already directed to submit the action taken reports by respective departments. The State Govt. also is directed to submit the action taken reports and progress reports and holistic action plan to Hon'ble Tribunal through the Environment Department.

In the light of the first meeting, the Committee observed the actions taken so far by the respective Departments:

1. LSGD, Superintendent Engineer, LSGD (Smt. ShobanaKumari B)

Periyar river transverses through three districts such as Idukki, Ernakulam and Thrissur and 47 Local Bodies are on the banks of the river. Though she appraised the urgency and necessity to the concerned engineering wings of LSGD in this area as decided in the first meeting convened by the Member Secretary on 29.01.2021, the COVID pandemic situation followed by modal code of conduct in connection with Legislative Assembly election delayed the progress of follow up action. The engineering section of LSGD is able to implement the projects which are approved and recommended by the Council/Committee and hence the engineering wing has the limitation to evolve action plans as its own and she opined that it would be better if the concerned President/Secretary of the Local Body to directly involved in the matter. The SE further suggested that SE, Kochi Corporation; Executive Engineers of District Panchayaths of Idukki, Thrissur and Ernakulam also to be included in the Committee.

The Chief Environmental Engineer commented on this suggestion as follows,

In the first meeting itself it was made clear that it is the duty of the SE to coordinate the activities of the LSGDs along the banks of river Periyar and the delay already occurred in the coordination has to be addressed accordingly. It is also suggested that though the second wave of COVID – 19 pandemic seems to be severe, the coordination activities shall be accelerated and a report shall be submitted immediately why these activities are getting delayed. Since the Govt. entrusted the SE, Engineering Wing of LSGD the responsibility of coordination of activities of LSGDs, she has to directly interact with the Secretaries of Local Bodies or any other officials and complete the procedures without any further delay.

2. Department of Irrigation, (Smt. Sandhya, Executive Engineer, Irrigation)

- a) Joint inspections were conducted with PCB officials and operated the shutters as and when required and if situation warrants
- b) De-silting process already been done with SDRF fund and remaining will be done on getting approval of Govt.fund.
- c) For the identification of unauthorized discharge to the irrigation canal (Edayattuchaal) 11 lakh rupees sanctioned and the tendering is on the way.
- d) Construction of walkway, ring roads etc. at the Periyar River bank at industrial belt as proposed in the action plan in connection with O A 673/2018 is not completed as not obtained sanction and considering this as NGT matter, long term plan and estimate was submitted to higher-ups for approval.
- e) In order to identify the unauthorized pipeline/discharge by closing the navigation channel, an estimate of 4.5 lakh rupees was submitted for approval.
- f) While discussing the matter of maintaining minimum flow maintenance by the Department the suggestion raised that when situation warrants opening of shutters of dams, it would be better to be mutually informed by PCB and Irrigation Department so that timely actions pertaining to each can be taken. The SEE, ESC Eloor will forward monitoring results of Eloor area to Irrigation Department and the SEE, Irrigation department will ensure that the Order of the Hon'ble NGT in OA 498 of 2015 is satisfactorily addressed with respect to Periyar river. The SEE, Irrigation department also agreed to transfer shutter operation protocol well in advance.

During discussion the CEE asked them to submit a time bound proposal so that those details could be submitted to Chief Secretary and Hon'ble NGT.

3. District Industries Centre (Smt. Sudersana, Deputy Director, DIC)

The implementation of CETP at Edayar industrial area is progressing as part of compliance on O.A. 673/2018 and assessing the progress in separate meetings. The KWA has already been entrusted for this project and the ESC Eloor already given sufficient data to KWA.

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The CEE asked to make available the list of authorized IDAs/DPs with possibility of discharge of effluent to the Periyar directly/indirectly and detailed study shall be conducted to provide common ETP/STP in the respective industrial areas.

4. KSPCB (Sri.Baiju M.A, CEE)

Monitoring of entire stretch of Periyar river is actually planned to be completed in three phases. The Phase 1 and Phase 2 inspection and sampling completed and the river water quality against designated-best-use parameters, for primary use, are in desirable limit and no considerable pollution is noticed except organic load. But post monsoon monitoring is also to be done at these stations and if needed along other stations also. Due to the spread of second wave of COVID-19 the third phase monitoring could not be started. The schedule for inspection and sampling is to be decided in the next meeting of the Combined committee which will be convened soon and the SEE, ESC is entrusted for this. Soon after the monitoring report will be finalized and will be submitted to Hon'ble NGT and to Environment department.

Towards the end of the meeting discussion was conducted with the respective officers of District Offices and heard their suggestions. The CEE, RO requested to submit reports pertaining to their area of jurisdiction to the RO, EKM for including in the Supervised committee report.

The meeting ended at 12.30 pm.



CHIEF ENVIRONMENTAL ENGINEER

(For and On behalf of the Committee)



Annexure 3

Specific actions taken and proposed action plans as per the latest order dated 05.11.2020 of the Hon'ble NGT in OA 395 of 2013

The Order dated 19.08.2020 of the Hon'ble NGT IN O.A no. 395 of 2013 specifically insisted to report actions initiated on following Points [Point 11 - "In the meantime, the Chief Secretary and the Pricipal Secretary for Environment of State of Kerala are directed to come with proper action plan for preventing such activities as projected by the State Level Monitoring Committee in the report"]

It may be noted that these issues are explicitly related to Kochi where Eloor -Edayar area is located and Environmental Surveillance Centre is looking after monitoring and inspections etc.

1. Eloor - Edayar Stretch (Aluva - Varappuzha)

No.	Activity/ finding in SLMC Chairman's report	Comments of the Board	Action plan (Updated in May 2021)
1	Report in Hindu dated 15.03.2019 regarding green film in Periyar d/s of Regulator cum bridge; SLMC Chairman visits on 17.03.2019; directs water sample to be collected and analysed; analysis report not made available	Incidents of colour change of river water to black at the upstream side of Pathalam bund is a common phenomenon during summer season. During this season, the river turns black in colour with foul smell in the upstream portion of the bund. At the time of opening of the bund, the blackish water with sediments is flushed off to downstream causing fish death on the downstream side. This phenomenon is noted regularly while the opening of the shutters of the regulator. The Pathalam Regulator bund is constructed and	All communications including analysis reports, if any involved, will be given in writing along with copies of documents. After all, there are several units especially chemical industries along the banks of the river and there are possible chances of discharges. But all the industrial units are operating with valid consents and the effluent discharge have to conform to the standards

	<p>operated by Irrigation Department. The bund is kept closed during summer for preventing salt water intrusion. Irrigation Department opens the bund only if there is increase in chloride content in fresh water. The level of water in the river during this season will be very low. The huge consumption of water by various industries, hospitals etc from the river cause further reduction in water level. The closing of bund in summer results in stagnation of river water and restricts the flow of entire river. Stagnation of water in the river results in the accumulation of entire waste flowing up to the bund. The restriction of environmental flow of river and stagnation results in accumulation of wastes and stratification of river water. Top layer of river water will be having abundant dissolved oxygen whereas at lower level the dissolved oxygen content will be low. Low levels of oxygen level at bottom creates anaerobic condition at the bottom. This increases the organic load in the sediments in the river which causes the blackish colour of River. The opening of bund at this stage allows the sediments and water having low oxygen level to flow downstream all of sudden creating a shock load at entire downstream area. This will result in oxygen depletion in entire downstream causing fish death</p>	
<p>stipulated by the Board for inland water discharges. Being an industrial area there are chances for continuous operation of industrial units. Hence PCB is closely watching the units by providing a District level office there. Very recently, an officer in the rank of Senior Environmental Engineer has been appointed in the ESC for close coordination of the activities.</p> <p>1. Updated actions taken by the concerned office are as follows</p> <p>There are only five industries having direct discharge of treated effluent to the Edayar stretch of River Periyar and all these industries are regularly monitoring by the Board. Some of these industries are connected to the Online Continuous Effluent Monitoring System (OCEMS) of the Board for the effective monitoring. Some of the industries are reusing/ recycling their treated effluent or disposing it through soak pit and</p>		

	<p>downstream.</p> <p>Regular River monitoring is being conducted along this stretch of Periyar by the Board's office at Eloor. There are several analysis reports based on the monitoring conducted by the Board, which reveals high levels of organic load in the River in this area (especially in the bottom portion of the river upstream of Pathalam bund) and also low levels of Dissolved Oxygen. Organic load reaches the river through various drains originating from various townships which include discharges from domestic as well as commercial establishments. Different studies of the Board point to the need to prevent accumulation of organic load in the river. From the reports, it is understood that the black discoloration of River is due to high levels of organic load accumulation upstream of the shutters and oxygen depletion.</p> <p>The Board had conducted microbiological examination of sample of stagnated river water in the upstream side of Pathalam bund. The analysis reports reveals the presence of marine algae 'Platymonas.SP' which results the algal bloom in river causing 'Eutrophication' phenomenon. The algal bloom is mainly caused due to abundance of micronutrients</p>	<p>those industries are under the close observation.</p> <p>a) Direction was given to M/s CMRL to provide permanent line for the discharge of treated effluent to the downstream side of the bund in river and they had complied with the direction.</p> <p>b) It was noticed that there is a chance of industrial discharge to the irrigation canal which connects the Edayattuchal paddy fields and the River Periyar and specific directions had given to the Irrigation Department to find out the industrial discharge, if any. The follow up actions had been taken by the Irrigation department and the KSPCB.</p> <p>c) Regularly monitoring the stormwater drains pass through the industrial area and necessary follow up actions are being taken.</p> <p>2. Directions given to industries with proofs</p> <p>a) Closure orders were given to the following industries in Edayar Industrial</p>
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	<p>(mainly Nitrogen and Phosphorus) which in turn is due to the accumulation of wastes containing nutrients. In the presence of abundant sunlight and micronutrients, algal bloom occurs. This can be prevented if environmental flow is maintained in the river irrespective of season. The flow will ensure that organic load reaching the river does not accumulate. If the environmental flow of river is not maintained in the lean period, it causes the increase in organic load in river which in turn changes the colour of river and result in recurring fish death in the future also. At the time of closing of shutters, the organic loads get accumulated upstream of the shutters creating oxygen depletion and anaerobic condition at the bottom of River which causes Hydrogen Sulphide generation which is the major reason for foul smell.</p>	<p>area because of the improper functioning of their ETP/ not confirming the standards specified by the Board for the discharge of treated effluent.</p> <ol style="list-style-type: none"> 1. Sunrise TSR 2. Euro Polymers 3. Essar Enterprises 4. Biocon Fertilizers Pvt Ltd 5. Ambedkar Lime Industries 6. Global Traders
<p>2</p> <p>Screen shot of river depicting colour change and fish kill received by SLMC Chn from Malayala Manorama journalist on 01.04.2020; telephonic direction to CEE, EKM to inspect and take follow</p>	<p>The reason for colour change of river water during summer months is as explained above. The colour change occurred during April in summer. After visiting the river Periyar and nearby areas as per directions of the SLMC Chn, a consolidated report was sent to Chairman SLMC on 20.04.2020. Specific details of industries which were in operation during Lockdown were illustrated in addition to certain actions already</p>	<p>In future also, details of specific environmental issues will be discussed with SLMC without any hindrance. The action proposed by PCB will naturally resolve the issue. The Irrigation Department shall be addressed to maintain environmental flow as ordered by the Hon'ble NGT in OA 498/2015</p>

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<p>up action; CEE informed that sample taken for analysis and provides same explanation as given earlier</p>	<p>taken to monitor the river. Environment Surveillance Centre (ESC) is being operated 24x7 basis. Regular monitoring of Periyar river is being conducted and timely actions are being taken to conduct inspection of industrial establishments from where chances for unauthorised discharges are there. On finding any abnormality or violations, specific actions are being taken which include issue of Show Cause Notices, Copies of all the communications are already forwarded to SLMC also for information.</p> <p>It may also be noted that the major pollution related problems in river are noted during summer season after closing of Pathalam, Manjummal and Purapallikkavu regulators. The major issues noted are change of colour of river to black upstream of the regulators, odour in river water and also sometimes fish death due to lower dissolved oxygen levels. The same issues repeatedly occur every year. Many letters/ notices were issued to Irrigation Department and also several higher-level discussions were completed with Higher Officials of the Irrigation Department to ensure minimum flow in the river so as to avoid the stagnation of river and subsequent fish kill. The Irrigation Department has to take immediate action to solve this issue</p>	<p>which is not effected till date satisfactorily. It may be also be noted that the silt deposited along the upstream part of Pathalam Bund shall be remediated immediately.</p> <p>1. As and when pollution issues are observed, PCB is regularly/actively intervened and necessary actions are being taken.</p> <p>2. Surveillance squad is regularly conducting inspections especially during odd hours. But second wave of COVID spread delayed such activities.</p>
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	<p>purposes. Board also conducted microbiological analysis of river water samples and noted that the same phenomenon 'Algal Bloom' in the upstream of Manjummal bund. It is also noted that at the end of summer after first rain, huge quantity to organic load containing decayed vegetations from paddy fields in Muttam yard area contributes high level of BOD to the Thumbungalthodu. Unauthorized dumping of sewage and sewage is suspected to be dumped in these areas during odd hours. Reuse of this land as paddy field again can prevent water stagnation, formation of high BOD and depletion of oxygen. Natural streams in this area need to be conserved. Severity of pollution increases as water flow decreases during dry season. Fish deaths are also reported in Muttar River (Edamula) at the confluence point of Edappallythodu.</p>	<p>being taken.</p>
<p>4</p>	<p>Brought the issue of pollution of Periyar to the notice of Chn of KSPCB; received message that it was noted and was intending to visit the site</p>	<p>It may be noted that the order of the Hon'ble High Court is specific that since the Periyar river is being monitored by experts in the field of Environment (CPCB, NEERI, SEIAA, and SPCB) no need of separate officials to further</p>

<p>on 22.4.20 along with two scientists outside the board and collect samples for analysis; nothing heard about the same later</p>	<p>accumulation of organic matter at the upstream of Pathalam bund is correct. The CWRDM results in water samples with respect to heavy metals are found to be almost matching with KSPCB reports. It is identified that the Dissolved oxygen levels in bottom portion of the river are found to be very less compared to the surface level which is a usual phenomenon. The bottom of river is anoxic and oxygen levels increases towards surface which shows the stratification of river due to oxygen depletion by stagnation of water due to bund. These reports were submitted before the Hon'ble High Court.</p>	<p>monitor. 1. First and second phases of river monitoring by combined committee constituted as per the orders of the Hon'ble NGT in OA 396/2017 and OA 395 of 2013 are over and mapping is being completed. 2. Will decide schedule of monitoring for third phase of monitoring (Post monsoon) in the next meeting of the combined committee.</p>
<p>Specific direction of the Hon'ble NGT in OA 498 is not complied with till date to settle the issue of regular fish kill especially during summer as the minimum flow is not maintained at that time. Specific notices were issued to different officials of Irrigation department on several occasions insisting them to operate the regulator properly to ensure minimum environmental flow is maintained in the river.</p>	<p>Board had received complaint against the discharge of untreated effluent in the drain near the Green Earth Technology behind the M/s Sigma Fertilisers. Since, the</p>	<p>Board will ensure that consent is given to the unit only after satisfactory completion of ETP.</p>
<p>5</p>	<p>Behind Zigma, a bonemeal unit, drainage with no clue about its</p>	

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	<p>origin was seen. The drainage is flowing through the rear side of the bonemeal unit and along the premises of Green Earth. The drainage exits at an overgrown pit in the premises of Green Earth near its southern compound wall. This drainage was found with septic, sewage and other effluents and is suspected to be leading to the upstream of the river.</p>	<p>industrial estate is under the ownership of the DIC, Board has given directions to Industries Department to take action for the closing of drainage immediately. Board had issued stop memo to the unit M/s Green Earth Technology directing them to stop the activities till they obtain Board's consent to operate. Meanwhile, M/s Green Earth Technology had filed a petition before Hon'ble High Court praying the revoke of stop memo. The case was disposed directing EE, ESC Eloor to inspect the industry and verify whether the industry collected the wastewater for trial run and based on inspection decision to be taken in revoking the stop memo. Based on the enquiry EE, ESC Eloor had inspected the unit and directions issued to industry that Consent to Operate will be issued only after the installation of all necessary tanks for the treatment. At present, the industry is not operational and installation of treatment units are progressing.</p>	<p>1. Still continuing the same procedure</p>
6	<p>In a reclaimed portion of the Chakkarachal paddy field, a pipe was seen laid through which reddish</p>	<p>Board had received many public complaints regarding the discharge of effluent to the canal/drain connecting Periyar River and Edayattuachaal paddy field. The canal is passing through the Edayar industrial area. The</p>	<p>Action shall be initiated to take up the matter with Irrigation Department and Industries Department 1. Joint inspections of KSPCB,</p>

<p>and orange coloured thick water was seen flowing to the river. At the other end of the paddy field no water was seen to flow through this pipe. The deduction is that underground pipes are laid starting from some industrial units which ultimately discharge industrial wastes illegally to the river through this pipeline. Correlation is required through investigation</p>	<p>canal is laid by Irrigation Department for transport of water from Periyar river to Edayattuhaal paddy field. Since, the canal is concealed Board officials are not able to verify whether any unauthorized pipelines are laid from the industries discharging to the drain/canal. The canal is joining river Periyar at the upstream of Pathalam bund regulator. The discharge of any sewage/trade effluent to this canal will ultimately reach the river Periyar at upstream of Pathalam bund causing the diminishing of river water quality. Board had conducted detailed enquiry in the area and collected water samples from the drain. The analysis report shows presence of effluent in the canal which may be due to illegal discharges. The sources of discharges to river if any have to be identified and stopped so as to prevent river pollution and improve water quality. As the canal is concealed, at present, the Board cannot identify illegal discharges into it. Also, stringent actions need to be taken against the violating industries. Board had issued directions to Superintending Engineer, Irrigation Department to make canal/drain accessible for inspection or provide inspection chambers/manholes at definite intervals along the entire stretch of drain so as to identify unauthorized</p>	<p>Irrigation Department and Industries Department were conducted on 11.01.2021 and 21.01.2021 to find out the unauthorised discharge industrial effluent to the irrigation canal. Since no such discharges could be identified during the physical inspections in the inspection chambers of the canal, directions were given to the Irrigation department to make canal/ drain accessible for inspection or provide more inspection chambers/ manholes at definite intervals along the entire stretch of drain so as to identify unauthorized pipelines if any laid from the industries to the Canal. Irrigation department informed that Technical sanction was already got for the project and waiting for the Financial sanction.</p>
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	<p>pipelines if any laid from the industries to the Canal.</p> <p>In this case the DIC also was instructed to provide necessary action to ensure that no such illegal discharges are occurring along the drain which is reported to be provided for lift irrigation towards the paddy filed. (But no details are received till date from any government agencies.)</p>	
<p>7</p> <p>Yeoman Bone & Allied Products does not have ETP. Septic and sewage effluents often pumped into drain on the road along the side of the compound wall of the unit which ultimately reaches the river</p>	<p>M/s Yomen and Allied Products is a bone meal industry. The industry is not generating any effluent. The cooked bones are boiled and tallow separated and the bones then dried and crushed and sold. It's not an effluent generating industry. Board had found that discharge of wash water from their hand washing area to the drain. Notice issued to the unit accordingly.</p>	<p>Will be thoroughly checked by PCB.</p> <p>1. The company was inspected and specific directions were given to provide separate Septic tank- soak pit system for the domestic wash water generated in the unit and to remove the water taps on the road side (wash water from this area were directed to the storm water drain and ultimately reaches the river). Company had complied with these directions and was verified by the Board. Now the unit is functioning satisfactorily.</p>

8	<p>Effluents from Premier Ferro Alloys are discharged through a pipeline to the drainage constructed on the road along the side of the compound wall of the unit which ultimately reaches the river through KuthuThodu.</p>	<p>M/s Premium Ferro alloy is a rolling mill unit. The industry is not an effluent generating industry. But, incident on discharge of domestic waste water from labour camps was noted in the unit. The septic tank constructed for the disposal of wash water from the bathrooms had overflowed and it was discharged to the nearby drain. Board had immediately taken action to redress the issue. The industry constructed high capacity septic tank soak pit for the disposal of wash water and also constructed delay pond in their storm water outlet. Board had issued notices and several directions to the unit in this regard and also continuously monitoring the operation if the industry,</p>	<p>Close follow up will be ensured by PCB</p> <p>d) Noticed defects were rectified and now the unit is functioning satisfactorily. (Specific directions had been given to M/s Premium Ferro Alloys to stop the wastewater discharge to the stormwater drains (which reaches the River Periyar through the Kuthuthodu canal). They have provided separate Septic tank- soak pit system for Canteen wastewater and delay ponds for stormwater.)</p>
9	<p>No information received on follow up actions taken regarding the incident of the vehicle which was seized pumping effluents into open well.</p>	<p>An incident of unauthorized discharge of waste water to Periyar river occurred and the Eloor office of the Board had conducted enquiry on the complaint and also collected legal samples from the tanker. The analysis report shows that it as untreated effluent. Board had immediately provided the legal sample result to SHO, Einanipuram Police station and requested to conduct investigation to find out the violators. Police had filed case in this regard and prepared FIR.</p>	<p>Close follow up will be ensured</p> <p>1. Affidavit was filed in the OA and WP C in the HC. Now pending with HC and Tribunal</p>
10	<p>Criminal complaint filed</p>	<p>Case is still pending at Lower Court</p>	<p>Case is progressing</p>

	by the Board against Kalamassery Municipality; no follow up action on the part of the board to bring this matter to the attention of the Court.		
11	KMML - pollution due to acidic leachate not followed up Material balance study		
12	No follow up action regarding pollution from CMRL Material balance study	M/s CMRL is a rutile manufacturing unit. The unit is discharging their treated effluent to River Periyar at the downstream of Pathalam bund. There were complaints from the environmentalists against the discharge and other pollution from the units at the upstream portion of Pathalam Bund. Board had found that the pipeline laid by the industry for discharge of treated effluent is leaking and treated effluent is seen leaked near the pipeline area. Board had given directions to the unit to replace the old pipeline and also to replace the flexible hose laid to discharge treated effluent. The Board's directions, have been complied with.	Continuous monitoring and surveillance shall be ensured by PCB 1. The unit had completed permanent treated effluent discharge pipes to downstream of Pathalam Bund 2. Another unit named M/s TMS Leathers was issued with a closure intention notice for not complying with the direction and the Board is planning to issue closure order to this unit for their inactions.

Other matters

As per the order of the Hon'ble NGT in OA 606 of 2018 several meetings of SLMC were convened and decided to select model cities to bring them under the status of fully compliance of the environmental related Rules. Since the Board is facing acute shortage of permanent staffs especially technical officers and laboratory staffs, a decision was taken to appoint temporary technical assistants on contract basis for the inventory preparation of insidustries and establishments located in these LSGDs which are selected as model cities. Actually the time allowed was for six months. Thereafter, though on contract basis sufficient number of technical staffs were appointed in each district office as the Hon'ble Tribunal specifically insisted that all the units which are coming under the regime of different environmental Rules shall be brought to the consent purview. Unfortunately, the restrictions imposed due to the outbreak of pandemic COVID - 19 delayed all such activities. However, the Board is now effectively entrusted all the district level officers to bring all the industries/establishments under the purview of consent/authorizations.

However as per the recent order in OA 395 of 2013 the

	<p>Hon'ble Tribunal entrusted the Supervised Committee in OA 396 to close monitoring of Periyar issues. Since three Committees (For OA 396, OA 262 & OA 395) are there to address the issues of Periyar Pollution, as decided meeting was convened on 22.10.2020 at Regional Office, Ernakulam to coordinate the activities and decided to inspect entire stretch of Periyar river immediately and a time line is fixed.</p>	
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2. Idukki Stretch (Idukki-Munnar-Neriamangalam).

It may be noted that the OA 395 of 2013 was originated from these area where rampant dumping of Hospital and slaughterhouse wastes were observed. Specific actions with respect to implementation of rules are initiated and on identifying continuous violations, EC was assessed and reported to Member Secretary for actions. Details submitted by the Environmental Engineer, Idukki as updated status are attached as **Annexure 1(1)**

3. Perumbavoor Stretch (Neriamangalam-Marampilly)

Stretch is starting from Neriamangalam and ending at Marampilly. The Environmental Engineer is reporting that no specific discharges are found except sewage from local body areas.

4. Ernakulam Stretch (Marampilly-Aluva)

The Periyar stretch from Marampilly to Kalamassery comes under the purview of District Office-1 Ernakulam (Ernakulam Area). The major sources of pollution at this area are mainly the contamination of untreated sewage generated from the town ships, hotels, flats etc. However

some industries such as rice mills, Ankamaly industrial estates are also present which may indirectly reach the river through various drains. There are about 136 no. of establishments are identified which directly linked with river.

There are about 50 establishments including industries, hotels, hospitals and flats identified banks of river Periyar. Apart from this, rice mill industries are also operating which is indirectly linked to river. This office had initiated steps to control pollution problems in the river.

Action taken

1. Inspected M/s Petunia tower at Aluva Desam. STP of the apartment not operational. Operating without Board's consent and adequate STP. Notice issued to the builder for violation.

2. Inspected lulu mall. STP operating. STP meeting standards.

3. Closure direction issued to Elite Foods, Kalamssery for discharging untreated effluent to the Periyar. Now, they had rectified the defects ETP operating. Inspected the unit and verified the compliance.

4. Notice issued to M/s Cake House, industrial estate Kalamassery for discharge of untreated effluent to the drain reaching Periyar river. The company had taken steps to install ETP.

5. The ETP installed at market not operational. Inspected and direction issued to the Secretary, Kalamssery municipality for making ETP operational. The matter was also informed to the SEE, ESC Eloor and Sup Engineer, Irrigation since; it is one of action in Periyar river action plan.

6. SFS aqua green lat inspected and the ensured STP operating effectively.

7. M/s Always rubex, Athani inspected and verified the operation of ETP. ETP operating and meeting standards.

8. All rice mill units inspected and notice issued to all defaulters where ETP found non operational. Meeting also conducted with rice mill units and directed them to take steps to make ETP operational.

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9. Conducted public hearing in connection with KMRL project on integrated water transport system which include installation of common STPs.

5. Thrissur Stretch (Kottappuram- Munambam)

The river stretch in Thrissur district starting from Kottappuram to Azhikode is about 5 km. The flow of the river in this stretch is affected by high tides and low tides. Reverse flow could be observed at the time of high tide during the time of monitoring. The water is generally saline in nature. Hence it is not used for other purposes.

In compliance with the NGT order in OA 395/2013, a survey was conducted, and identified 56 effluent generating industries situated in the vicinity of tributaries and drains leading to Periyar river and the details were uploaded in the ENVICLEAN app. The establishments which were found working without the consent of the Board were issued direction to apply for the consent of the Board and those which were working without adequate treatment facilities were directed to provide the same.

During the inspection no direct discharge to drains/ tributaries were observed from these units. Out of the 56 units 42 units now possess valid consent of the Board. The application submitted by the 13 units are under processing. The local bodies through which these drains are passing are,

- a. Kodungallur Municipality,
- b. Mala,
- c. Kuzhoor,
- d. Annamanada
- e. Eriyad panchayths.

Kodungallur Municipality is having centralised facility like aerobic and windrow composting for treating biodegradable waste from public places and decentralised facilities in households. Door to door collection is arranged for collecting segregated dry waste. At present 85% of houses and

30% of establishments are covered under this project. There are 44 temporary working MCF in Municipal area and one RRF with a capacity of 2 MTD. Construction of 2 RRF each having capacity of 2 MTD and 7 MCF and 22 temporary MCF are attaining completions. In the case of panchayaths, the non compliance in implementing the rules has been brought to the notice of the DLMC, and the DLMC chairman entrusted DDP to take initiative in this regard.

It may also be noted that there are specific actions initiated by the Government to clean up certain streams in addition to other streams which are flowing through the city. The "Integrated Urban Regenerated Water Transport Project" (IURWTS) is a creative proposal by the Government details of which are as follows,

"The project involves rejuvenation of 5 canals running through the heart of the urban fabric of Kochi Corporation and occupying nearly one-third of the corporation area. The overall objective was to improve inland Transport in the canal systems and have an intermodal connectivity with an integration of the Rail Metro and Water Metro. The restoration of canals and urban regeneration is aimed at restructuring the urban fabric and renewal of the urban economy and thereby overall improvement of city's image".

More details are as follows,

"Kochi Metro Rail Limited (KMRL) have been entrusted the work of Integrated Urban Regeneration and Water Transport System (IURWTS) in Kochi by the Government of Kerala. The proposed project envisages the development of the Edappally Canal (11.2"3 km), Thevara — Perandoor Canal (9.8 km), Chilavanoor Canal (11.15 km), Thevara Canal (1.405 km) and Market Canal (0.664 km) in Kochi. The major aim of the project is to regenerate the urban area in and around the canals, rehabilitate the slum dwellers, and make use of the commercial area in the vicinity of the canal along with creation of tourism destinations and navigation through the canals.

As a part of the project the following activities are proposed to be carried out

- *Dredging & Cutting*
- *Bank Protection*
- *Reconstruction of Cross Structures and Foot Over Bridges*
- *Sanitary Sewer Line & STPs*
- *Sanitation Facilities*
- *Jetties*
- *Infrastructure Development*
- *Beautification of canals including Tourism & Sports Park*

On successful implementation of the proposed project will lead to Cleaner and Greener Environment, better drainage, sewage & rain water harvesting systems, effective and enhanced connectivity from various locations, improved landscape around the facility, reduced risk of potential flooding near the canals, properly treated and reused the sewage water from the facilities and circulate the treated water etc".