

BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

Original Application No. 208 of 2025 (SZ)

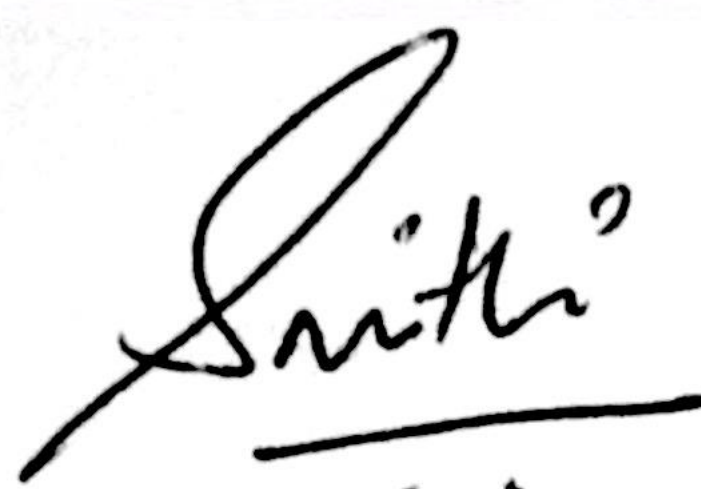
Applicant : Tribunal on its own motion Suo Moto based on the news items published in *The Hindu* dated 22.08.2025 under the caption

“Well water could be source of infection for PAM cases:

Versus

Respondent(s) : Kerala State Pollution Control Board & Others

Report filed by The Chief Environmental Engineer, Regional Office, Kozhikode for and on behalf of the 1st Respondent, Kerala State Pollution Control Board in Original Application No. 208 of 2025 (SZ)



Adv. Remasmrithi. V.K

ADDITIONAL STANDING COUNSEL

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VOLUME I

Index

Sl No.	Description	Pages
1	Report filed by The Chief Environmental Engineer, Regional Office, Kozhikode for and on behalf of the 1st Respondent, Kerala State Pollution Control Board in Original Application No. 208 of 2025 (SZ)	1-4

Date this the 30th day of December, 2025

Adv. Remasmrithi. V.K

Additional Standing Counsel

BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

Original Application No. 208 of 2025 (SZ)

Applicant : Tribunal on its own motion Suo Moto based on the news items published in *The Hindu* dated 22.08.2025 under the caption "*Well water could be source of infection for PAM cases:*"

Versus

Respondent(s) : Kerala State Pollution Control Board & Others

VOLUME I

Index

Sl No.	Description	Pages
1	Annexure I- The copy of the letter sent to District Medical Officer	5
2	Annexure II – The letter received from District Medical Officer dated 22.11.2025	7
3	Annexure III- The analysis report of the well water samples	16

Date this the 30th day of December, 2025

Adv. Remasmrithi. V.K

Additional Standing Counsel

BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

Original Application No. 208 of 2025 (SZ)

**REPORT FILED BY THE CHIEF ENVIRONMENTAL ENGINEER,
REGIONAL OFFICE, KOZHICODE FOR AND ON BEHALF OF THE
1ST RESPONDENT, KERALA STATE POLLUTION CONTROL BOARD**

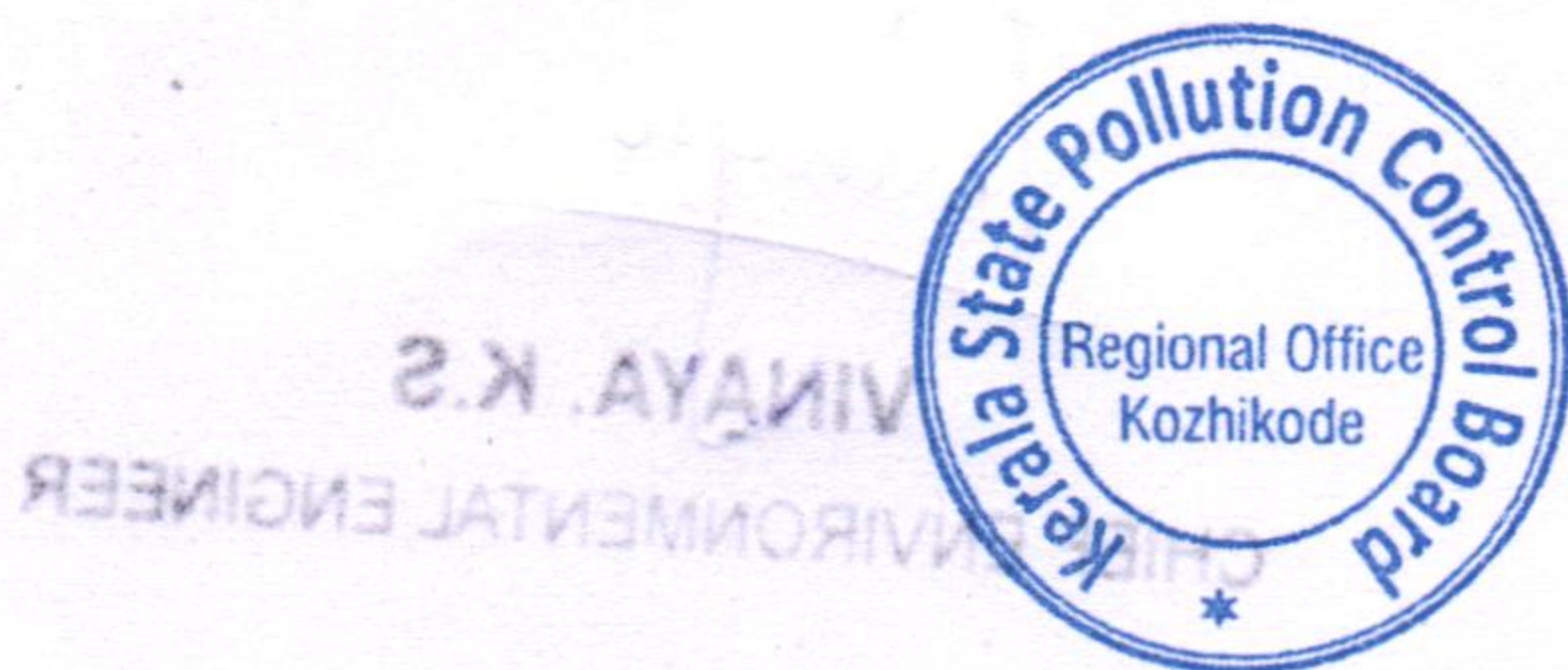
I, Vinaya KS , aged 55 years, W/o Sri. K. R. Manoj, Chief Environmental Engineer, Kerala State Pollution Control Board, Regional Office, Kozhikode, do hereby solemnly affirm and state as follows:

1. I am the Chief Environmental Engineer of Regional Office of Kerala State Pollution Control Board at Kozhikode and I am filing the report on Behalf of the Kerala State Pollution Control Board (hereinafter referred to as Board), in accordance with the Hon'ble National Green Tribunal in Original Application No. 208 of 2025 (SZ), vide order dated 09.10.2025. I am swearing this report based on the best of my knowledge, information and belief and the facts revealed from the records.
2. The above Original Application has been registered suo motu by the Hon'ble Tribunal based on the news item published in *The Hindu* dated 22.08.2025 under the caption "*Well water could be source of infection for PAM cases: officials.*" The matter pertains to suspected contamination of well water leading to cases of **Primary Amoebic Meningoencephalitis (PAM)** reported in Kozhikode District.



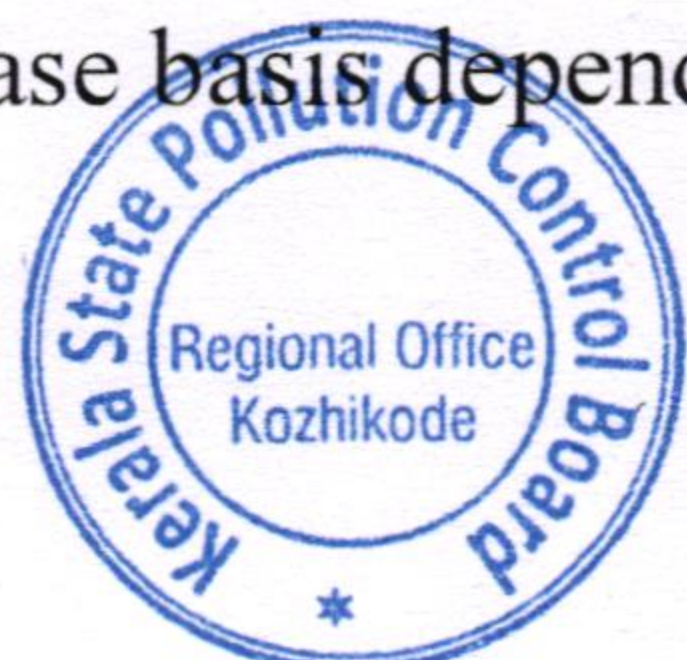
Vinaya
VINAYA. K.S
CHIEF ENVIRONMENTAL ENGINEER

3. On receipt of the directions, the matter was examined by the Regional Office, Kozhikode. The District Medical Officer, Kozhikode has been contacted to obtain information regarding the locations of the reported PAM cases. A letter No. PCBRKD/97/2023-AE2 dated 04.11.2025 has been sent to the DMO, requesting details of the affected areas and other relevant information to enable verification and conduct of inspection from this office. The copy of the letter is enclosed herewith as **ANNEXURE I**.
4. The District Medical Officer has furnished the requested information on 17.11.2025. As per their communication, a scientific research study titled “Amoebic Meningo-encephalitis outbreak in Kerala, 2025” is ongoing and being conducted by the Health Department in collaboration with ICMR–National Institute of Epidemiology across four districts of Kerala, namely Kozhikode, Malappuram, Kollam and Thiruvananthapuram. The field level data collection has been completed in Kozhikode and continues in the other districts, and the final outcomes are awaited. The report further indicates that comprehensive public health and mitigation measures have been carried out, including house visits, water sampling, chlorination drives etc. The copy of the report is enclosed herewith as **ANNEXURE II**.
5. Based on the information provided by the Health Department, well water samples were collected by the Board from five houses where positive indications relating to free-living amoeba were earlier reported. It is submitted that the Kerala State Pollution Control Board laboratory currently does not have the facility to test for free-living amoeba. It is further informed that the Health Department has already tested such samples for amoeba through the State Public Health Laboratory, Thiruvananthapuram. Therefore, the Board has carried out analysis of general water quality parameters for the samples collected.



Vinaya
VINAYA. K.S
CHIEF ENVIRONMENTAL ENGINEER

6. The general parameters are analyzed and it is observed that most of the well water samples exhibit microbiological contamination, as indicated by the presence of Total Coliform and Fecal Coliform in all the samples tested. This confirms that the water is not suitable for drinking without adequate treatment. The physicochemical parameters are within normal ranges, and no unusual variations were detected; however, the bacteriological findings clearly indicate fecal contamination of the wells, possibly arising from nearby septic tanks, soak pits or surface runoff.
7. It is also respectfully submitted that, while the presence of *E. coli* is generally considered an indicator of recent fecal contamination, there is no established scientific correlation between *E. coli* levels and the presence of free-living amoebae such as *Naegleria fowleri* which causes PAM. Therefore, coliform results cannot be used to infer the presence or absence of amoeba. The copy of the analysis report is enclosed herewith as **ANNEXURE III**.
8. Based on the analytical results available with the Board, it is concluded that the wells tested are bacteriologically contaminated; however, the Board is not in a position to scientifically conclude that the well water is the source of infection for the PAM cases. Confirmation of amoebic contamination requires organism-specific testing through specialized laboratories, and such testing facilities are not available in the laboratories of the Kerala State Pollution Control Board.
9. The Board also submits that routine groundwater quality monitoring is being carried out in Kozhikode District, wherein well water samples are collected from four schools and four panchayats and from one pond on a rotational basis and the sampling locations being changed once every three months to the next set of schools, panchayats and pond. In addition to that, water samples are analyzed whenever a complaint is received from the public against well water pollution. Necessary directions and advisory measures are being issued on a case-to-case basis depending on the test findings and site conditions.



Vinaya
VINAYA. K.S
CHIEF ENVIRONMENTAL ENGINEER

Dated this the 30 th day of December, 2025.



Vinaya
Vinaya K S

Chief Environmental Engineer

Solemnly affirmed and signed by the deponent who is known to me on this
.....day of December, 2025.

Vinaya K.S.
VINAYA K.S.
CHIEF ENVIRONMENTAL ENGINEER



ANNEXURE I



KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

കോഴിക്കോട് റീജണൽ ഓഫീസ്
REGIONAL OFFICE, KOZHIKODE

Phone: 2300744 (CEE); Telefax: 2300745, 46, 47 www.keralapcb.org

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

Ref No. PCBRKD/97/2023-AE2

Date: 04.11.2025

From
The Chief Environmental Engineer

To
The District Medical Officer
Kozhikode

Sub: Request for Furnishing Location and Analytical Details of Well Water in
Connection with NGT O.A. No. 208/2025 (SZ) – Reg.

Ref:
Order dated 09.10.2025 of the Hon'ble National Green Tribunal, Southern
Zone, Chennai, in O.A. No. 208/2025 (SZ).

Sir/ Madam,

Kind attention is invited to the subject cited above. The Hon'ble National
Green Tribunal (Southern Zone), Chennai, has taken up Suo Motu Original
Application No. 208/2025 (SZ), based on the news item published in The Hindu
dated 22.08.2025, which reported that well water could be a possible source of
infection for Primary Amoebic Meningoencephalitis (PAM) cases in Kozhikode
District.

The Hon'ble Tribunal has directed the Kerala State Pollution Control Board
to file an affidavit before the Southern Zonal Bench of the Tribunal.

In connection with the preparation of the said affidavit to be submitted
before the Hon'ble Tribunal, it is requested to kindly furnish the following



information available with your office:

1. The exact location and address of the well(s) where the presence of *Naegleria fowleri* or any amoebic organism were detected.
2. Copies of the laboratory test results or reports confirming the presence of the organism, indicating the sampling date, testing agency/laboratory, and methodology used.
3. Any observations or conclusions drawn by the Health Department linking the well water to the PAM cases reported.
4. Details of remedial or preventive measures (such as disinfection, chlorination, or public advisories) initiated by the Department after detection.
5. Any ongoing surveillance, sampling related to water sources in the affected area.

The above details may kindly be forwarded to this office without delay to facilitate submission of a comprehensive report to the Hon'ble Tribunal within the stipulated period.

Your's faithfully

Vinayes

CHIEF ENVIRONMENTAL ENGINEER

Copy to :

The Member Secretary
Kerala State Pollution Control Board
Thiruvananthapuram



ANNEXURE II



ജില്ലാ മെഡിക്കൽ ഓഫീസ്(ആരോഗ്യം) കോഴിക്കോട്
സിവിൽ സ്റ്റേഷൻ (പി.ഒ)- 673020-ഫോൺ 0495 2370494
ഇമെയിൽ - dmokkd.hsd@kerala.gov.in, dmohkozhikode@gmail.com

നമ്പർ:DMOH-KKD/6742/2025-C2

തീയതി : 22-11-2025

സ്വീകർത്താവ്

ചീഫ് എൻവയോൺമെന്റ് എൻജിനീയർ,
കേരള സ്റ്റേറ്റ് പൊലുഷൻ കൺട്രോൾ ബോർഡ്,
റീജണൽ ഓഫീസ്, കോഴിക്കോട്.

സർ,

വിഷയം - ജില്ലാ മെഡിക്കൽ ഓഫീസ് (ആരോഗ്യം)കോഴിക്കോട് -അമീബിക് മസ്തിഷ്കജ്വരവുമായി ബന്ധപ്പെട്ട ആവശ്യപ്പെട്ട വിവരങ്ങൾ നൽകുന്നത്-സംബന്ധിച്ച്.

സൂചന - താങ്കളുടെ 4 .11. 2025 തീയതിയിലെ PCBRKD /97/2023 - AE2നമ്പർ കത്ത്.

മേൽ സൂചന പ്രകാരം സൗത്ത് സോൺ ട്രിബ്യൂണൽ ആവശ്യപ്പെട്ടപ്രകാരം താങ്കൾ ലഭ്യമാക്കണമെന്നറിയിച്ച അമീബിക് മസ്തിഷ്കജ്വരവുമായി ബന്ധപ്പെട്ട വിവരങ്ങൾ ഇതോടൊന്നിച്ച് ഉള്ളടക്കം ചെയ്ത് അയക്കുന്നു.

ഉള്ളടക്കം : ലഭ്യമായ വിവരങ്ങൾ

വിശ്വസ്തയോടെ,

Signed by

Rajaram Kizhakkandyil
ജില്ലാ മെഡിക്കൽ ഓഫീസർ (ആരോഗ്യം)

Date: 22-11-2025 20:18:32
കോഴിക്കോട്

പകർപ്പ് : - ജില്ലാ സർവ്വെയ്ലൻസ് ഓഫീസർ



File No. DMOH-KKD/6742/2025-C2

DATE : 22.11.2025

To,

The Chief Environmental Engineer
Kerala State Pollution Control Board
Regional Office, Kozhikode

Sir,

Subject: District Medical Office (Health), Kozhikode – Furnishing information related to Primary Amoebic Meningoencephalitis (PAM)

Ref: Letter No. PCBKRD/97/2023-AE2 dated 04.11.2025 from your office.

With reference to the letter cited above, wherein information was sought as per the direction of the Hon'ble Southern Zone Tribunal, the available information related to Primary Amoebic Meningoencephalitis (PAM), as requested, is enclosed herewith for your kind information.

Enclosure : available information

Your's sincerely

Sd/-

District Medical Officer (Health)

Copy to:

District Surveillance Officer

(Translation of Letter No. DMOH-KKD/6742/2025-C2 dated 22.11.2025)

STATE PUBLIC HEALTH AND CLINICAL LABORATORY, TRIVANDRUM
MOLECULAR DIAGNOSIS SECTION

Free living Amoeba PCR Report

Referred from: FHC Omassery

IP/OP No. :

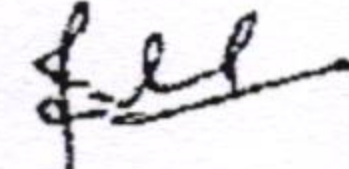
Received on : 09/08/2025

Sl.No:	Name& Address of water sample	LAB ID	Type of water	Test Done	Test Report
1		FLA 90/25	Well water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	
				Balamuthia mandrillaris PCR	Positive
				Naegleria fowleri PCR	Negative
				Vermamoeba Vermiformis PCR	
2		FLA 91/25	Tank water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	
				Balamuthia mandrillaris PCR	
				Naegleria fowleri PCR	
				Vermamoeba Vermiformis PCR	

Remarks : Methodology - qPCR

Free living Amoeba are normally present in the environment and may not cause infection

Date: 13/08/2025


Signature

Ward -13, Omassery panchayath



**STATE PUBLIC HEALTH AND CLINICAL LABORATORY, TRIVANDRUM
MOLECULAR DIAGNOSIS SECTION**

Free living Amoeba PCR Report

Referred from : CHC Thalakkulathur

IP/OP No. :

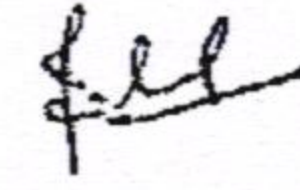
Received on : 25/08/2025

Sl.No:	Name& Address of water sample	LAB ID	Type of water	Test Done	Test Report
1		FLA 141/25	Well Water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	Positive
				Balamuthia mandrillaris PCR	Negative
				Naegleria fowleri PCR	
				Vermamoeba Vermiformis PCR	Positive
2		FLA 142/25	River Water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	
				Balamuthia mandrillaris PCR	
				Naegleria fowleri PCR	
				Vermamoeba Vermiformis PCR	

Remarks Methodology - qPCR

Free living Amoeba are normally present in the environment and may not cause infection

Date : 30/08/2025



Signature

Ward-8, Thalakkulathur panchayath



**STATE PUBLIC HEALTH AND CLINICAL LABORATORY, TRIVANDRUM
MOLECULAR DIAGNOSIS SECTION**

Free living Amoeba PCR Report

Referred from : Taluk Hospital, Thamarassery

IP/OP No. :

Received on : 30/08/2025

Sl.No:	Name & Address of water sample	LAB ID	Type of water	Test Done	Test Report
1		FLA 165/25	Well Water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	Positive
				Balamuthia mandrillaris PCR	Negative
				Nacgleria fowleri PCR	
				Vermamoeba Vermiformis PCR	

Remarks Methodology - qPCR

Free living Amoeba are normally present in the environment and may not cause infection

Date : 03/09/2025



Signature

Ward -3, Thamarassery panchayath



STATE PUBLIC HEALTH AND CLINICAL LABORATORY, TRIVANDRUM
MOLECULAR DIAGNOSIS SECTION

Free living Amoeba PCR Report

Referred from : UHC Ponnankode

IP/OP No. :

Received on : 22/08/2025

Sl.No:	Name& Address of water sample	LAB ID	Type of water	Test Done	Test Report
1		FLA 123/25	Public Well Water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	Positive
				Balamuthia mandrillaris PCR	Negative
				Naegleria fowleri PCR	
				Vermamoeba Vermiformis PCR	



Remarks Methodology - qPCR

Free living Amoeba are normally present in the environment and may not cause infection

Date : 26/08/2025

A handwritten signature in black ink, appearing to be "Jill".

Signature

Division -22, Kovoov
Kozhikode Corporation

STATE PUBLIC HEALTH AND CLINICAL LABORATORY, TRIVANDRUM
MOLECULAR DIAGNOSIS SECTION

Free living Amoeba PCR Report

Referred from : FHC,Ramanattukara

IP/OP No. :

Received on : 17/09/2025

Sl.No:	Name& Address of water sample	LAB ID	Type of water	Test Done	Test Report
1		FLA 258/25	Open Well Water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	Positive
				Balamuthia mandrillaris PCR	Negative
				Naegleria fowleri PCR	



Remarks Methodology - qPCR

Free living amoebae are normally present in water bodies. The detected organisms need not be pathogenic and may not be the cause of infection.

Date: 22/09/2025

[Handwritten Signature]
Signature

Ward - 20, Ramanattukara Municipality

MOLECULAR DIAGNOSIS SECTION

Free living Amoeba PCR Report

Referred from : UHC Panniyankara

IP/OP No. :

Received on : 24/09/2025

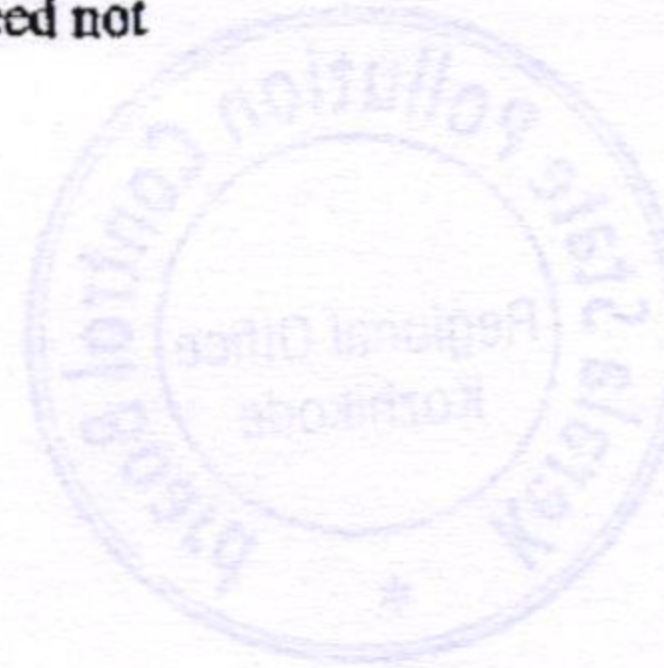
Sl.No:	Name& Address of water sample	LAB ID	Type of water	Test Done	Test Report
1		FLA 331/25	Well Water	Paravahlkampfia francinae PCR	Negative
				Acanthamoeba species PCR	Positive
				Balamuthia mandrillaris PCR	Negative
				Naegleria fowleri PCR	
				Vermamoeba vermiformis	Positive



Remarks : Methodology - qPCR

Free living amoebae are normally present in water bodies. The detected organisms need not be pathogenic and may not be the cause of infection.

Date : 30/09/2025



[Handwritten Signature]

Signature

Division 27-Panniyankara
Kozhikode Corporation

3. Any observations or conclusions drawn by the health department linking the well water to the PAM cases reported

A research study titled "Amoebic Meningo-encephalitis outbreak in Kerala, 2025: A case-control study" conducted by the Health Department, Kerala in association with ICMR-National Institute of Epidemiology is ongoing in four districts of Kerala- Kozhikode, Malappuram, Kollam & Thiruvananthapuram. Field data collection has completed only in Kozhikode and is ongoing in rest of the districts. Hence results are not yet finalized.

4. Details of remedial or preventive measures initiated by the department after detection

All case reported areas were visited by the district RRT and the field RRT and field level control activities such as fever survey, water sample for testing, chlorination, IEC activities, intersectoral meeting etc were done in all case reported areas. Details are given below.

Sl	Field activities	
1	Houses visited	1474
2	Water samples sent for Free Living Amoeba presence	31
3	Chlorination of wells	1217
4	RRT meetings	3
5	Ward Health Sanitation Committee Meeting	3
6	Health education	20
7	Group talk	9

IEC/BCC activities – District level

- Press release
- Radio talk in Kozhikode Akashavani & FM channel
- Awareness video
- Awareness materials and messages (soft copy) disseminated to all panchayat secretaries through JD LSGD
- Awareness classes through peripheral institutions
- Audio message for mike announcement
- Digital posters for social media campaign

5. Any ongoing surveillance, sampling related to water sources in the affected areas

A research study (mentioned in sl 3) is already ongoing in the district and Acute Encephalitis Syndrome (AES) surveillance is strengthened in all case reported areas. Currently no sampling related to water sources is ongoing in the affected areas.



[Signature]
District Surveillance Officer
District Medical Office (Health)
Kozhikode

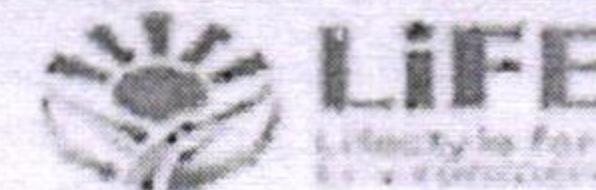
ANNEXURE III



KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

കേരളത്തിലെ റീജണൽ ഓഫീസ്
REGIONAL OFFICE, KOZHIKODE



Phone: 0495-2300744 Mail: pchrakkd@gmail.com Website: kspcb.kerala.gov.in

3rd FLOOR, ZAMORIN'S SQUARE, LINK ROAD, KOZHIKODE - 573 002

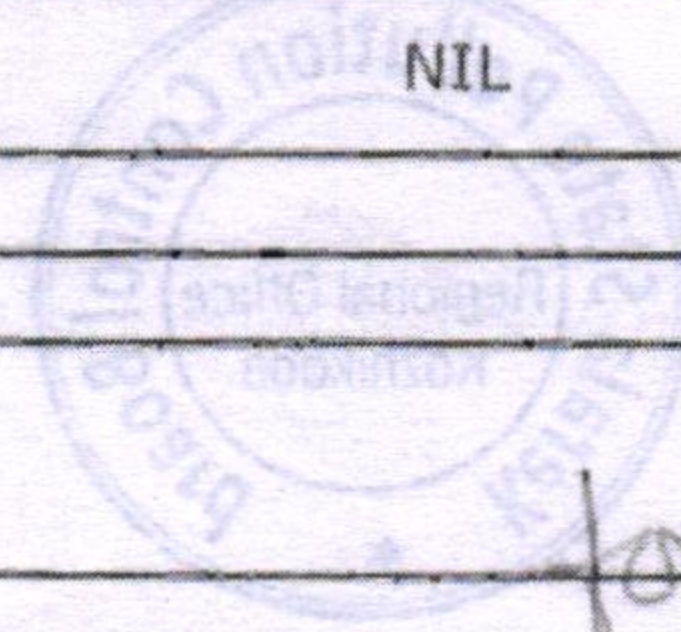
ANALYSIS REPORT OF AMBIENT WATER

Report No.	K R O S 5 8 5 5 / 4	Date:	0 8 1 2 2 0 2 5
Date of Sample Collection	2 1 1 1 2 0 2 5	Date of receipt of the sample	2 2 1 1 2 0 2 5
Time	Hours: NOT GIVEN	Time	Hours:
Sampled by:	AE-2/RO/KKD	Sample ID	CAN 4
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 5855/4
Sample container	PC- 2.5L	Ref.letter No.	PCBRKD/86/2023-AE2
Source:	Well water	Received from:	CEE/RO/KKD
		Period of analysis:	22.11.2025-06.12.2025
Specific sampling location:	WELL WATER OF Mr.HAMSAKOYA,PADINJAREKANDIPA RAMB,PANNIYANKARA.	No. of samples	1
		Analysed by:	SJ/NSS/HPV/AJ
Sample preservation:	Ice box	Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22 nd Ed.)	

Sl no	Parameters	unit	LDL	Method No.	Sample ID	DESIRABLE LIMIT AS PER BIS 10500:2012
					CAN 4	
1	PH		-	APHA 4500H*B	7.03	6.5-8.5
2	COLOUR	HAZEN	5	APHA 2120B	NIL	5
3	TOTAL DISSOLVED SOLIDS	mg/L	14	APHA 2540 C	69.776	500
4	TOTAL HARDNESS	mg/L	2	APHA 2340 C	114	200
5	CALCIUM HARDNESS	mg/L	2	APHA 2340 C	96	-
6	MAGNESIUM HARDNESS	mg/L	2	APHA 2340 C	18	-
7	CHLORIDE	mg/L	2	APHA 4500 CL*B	16	250
8	FLUORIDE	mg/L	0.03	APHA 4500 F*C	BDL	1
9	SULPHATE	mg/L	5	APHA 4500 SO ₄	BDL	200
10	IRON	mg/L	0.02	APHA 3111B	BDL	0.3
11	CONDUCTIVITY	µmhos/cm	0.6	APHA 2510B	124.6	-
12	AMMONIACAL-N	mg/L	0.1	APHA 4500-N,C	BDL	0.5
13	TURBIDITY	NTU	0.4	APHA 2130 B	NIL	1
14	NITRATE as NO ₃	mg/L	0.09	APHA 3500-Mn,B	0.189	45
15	TOTAL COLIFORM	CFU/100ml	1	APHA 9222B	400	SHALL NOT BE DETECTABLE IN ANY 100 ml SAMPLE
16	FECAL COLIFORM	CFU/100ml	1	APHA 9222D	300	
17	TOTAL RESIDUAL CHLORINE	mg/L	0.2	APHA 4500-CI,B	NIL	0.2

Test method variation: None

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



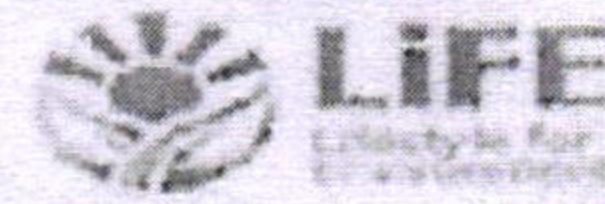
[Signature]
Scientist in charge



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 AMBIENT WATER

Report No.	K R O S 5 8 5 5 / 3	Date:	0 8 1 2 2 0 2 5
Date of Sample Collection	2 1 1 1 2 0 2 5	Date of receipt of the sample	2 2 1 1 2 0 2 5
Time	Hours: NOT GIVEN	Time	Hours:
Sampled by:	AE-2/RO/KKD	Sample ID	CAN 3
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 5855/3
Sample container	PC- 2.5L	Ref.letter No.	PCBRKD/86/2023-AE2
Source:	Well water	Received from:	CEE/RO/KKD
		Period of analysis:	22.11.2025-06.12.2025
Specific sampling location:	PUBLIC WELL LOCATED NEAR NEDUPURATH HOUSE,DIV 22,CHINNANAIR ROAD,KOVOOR, KOZHIKODE	No. of samples	1
		Analysed by:	SJ/NSS/HPV/AJ
Sample preservation:	Ice box	Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22 nd Ed.)	

sl no	Parameters	unit	LDL	Method No.	Sample ID	DESIRABLE LIMIT AS PER BIS 10500:2012
					CAN 3	
1	PH		-	APHA 4500H*B	5.57	6.5-8.5
2	COLOUR	HAZEN	5	APHA 2120B	NIL	5
3	TOTAL DISSOLVED SOLIDS	mg/L	14	APHA 2540 C	11.76	500
4	TOTAL HARDNESS	mg/L	2	APHA 2340 C	12	200
5	CALCIUM HARDNESS	mg/L	2	APHA 2340 C	6	-
6	MAGNESIUM HARDNESS	mg/L	2	APHA 2340 C	6	-
7	CHLORIDE	mg/L	2	APHA 4500 CL*B	14	250
8	FLUORIDE	mg/L	0.03	APHA 4500 F*C	0.0437	1
9	SULPHATE	mg/L	5	APHA 4500 SO ₄	BDL	200
10	IRON	mg/L	0.02	APHA 3111B	BDL	0.3
11	CONDUCTIVITY	µmhos/cm	0.6	APHA 2510B	21	-
12	AMMONIACAL-N	mg/L	0.1	APHA 4500-N,C	BDL	0.5
13	TURBIDITY	NTU	0.4	APHA 2130 B	0.1	1
14	NITRATE as NO ₃	mg/L	0.09	APHA 3500-Mn,B	BDL	45
15	TOTAL COLIFORM	CFU/100ml	1	APHA 9222B	500	SHALL NOT BE DETECTABLE IN ANY 100 ml SAMPLE
16	FECAL COLIFORM	CFU/100ml	1	APHA 9222D	200	
17	TOTAL RESIDUAL CHLORINE	mg/L	0.2	APHA 4500-Cl,B	NIL	0.2

Test method variation: None

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



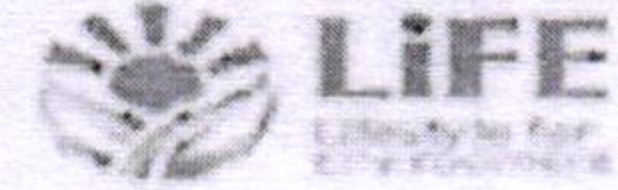
Scientist in charge



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കേരളീയരുടെ നിയമങ്ങൾ ആഹ്ലാദം
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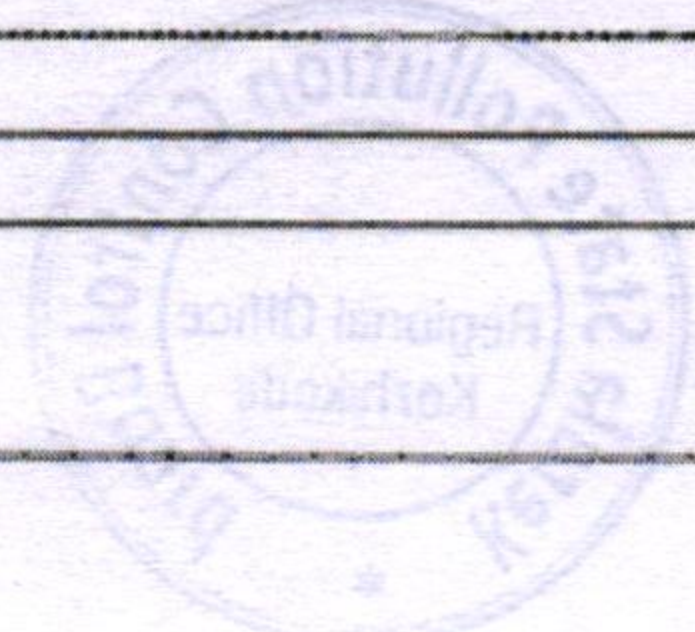
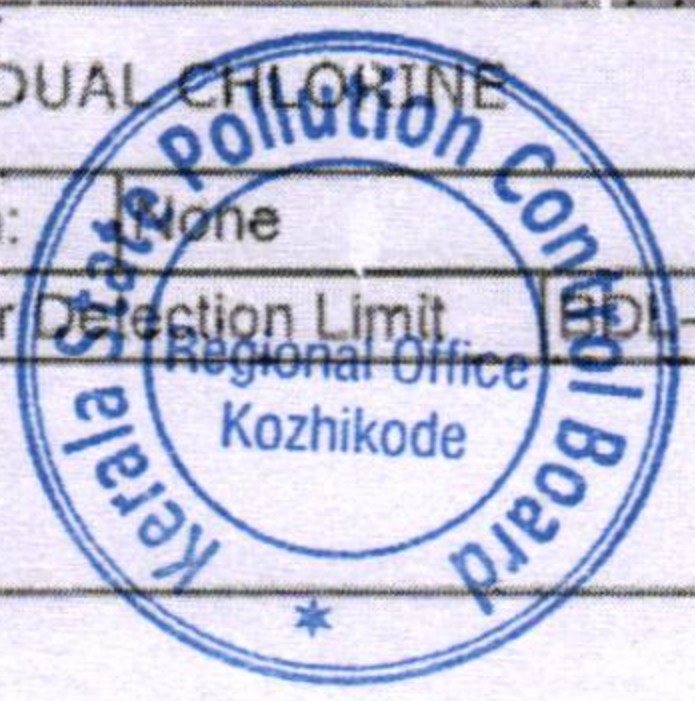
3rd FLOOR, ZAMORIN'S SQUARE, LINK ROAD, KOZHIKODE - 573 002

ANALYSIS REPORT OF AMBIENT WATER

Report No.	K R O S 5 8 5 5 / 2	Date:	0 8 1 2 2 0 2 5
Date of Sample Collection	2 1 1 1 2 0 2 5	Date of receipt of the sample	2 2 1 1 2 0 2 5
Time	Hours: NOT GIVEN	Time	Hours:
Sampled by:	AE-2/RO/KKD	Sample ID	CAN 2
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 5855/2
Sample container	PC- 2.5L	Ref.letter No.	PCBRKD/86/2023-AE2
Source:	Well water	Received from:	CEE/RO/KKD
		Period of analysis:	22.11.2025-06.12.2025
Specific sampling location:	POYOTTUMALA DRINKING WATER PROJECT,KORANGAD, THAMMARASSERY	No. of samples	1
		Analysed by:	SJ/NSS/HPV/AJ
Sample preservation:	Ice box	Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22 nd Ed.)	

sl no	Parameters	unit	LDL	Method No.	Sample ID	DESIRABLE LIMIT AS PER BIS 10500:2012
					CAN 2	
1	PH		-	APHA 4500H ⁺ B	6.01	6.5-8.5
2	COLOUR	HAZEN	5	APHA 2120B	NIL	5
3	TOTAL D'SSOLVED SOLIDS	mg/L	14	APHA 2540 C	30.744	500
4	TOTAL HARDNESS	mg/L	2	APHA 2340 C	20	200
5	CALCIUM HARDNESS	mg/L	2	APHA 2340 C	10	-
6	MAGNESIUM HARDNESS	mg/L	2	APHA 2340 C	10	-
7	CHLORIDE	mg/L	2	APHA 4500 CL ⁻ B	18	250
8	FLUORIDE	mg/L	0.03	APHA 4500 FC	0.2489	1
9	SULPHATE	mg/L	5	APHA 4500 SO ₄	BDL	200
10	IRON	mg/L	0.02	APHA 3111B	BDL	0.3
11	CONDUCTIVITY	µmhos/cm	0.6	APHA 2510B	54.9	-
12	AMMONIACAL-N	mg/L	0.1	APHA 4500-N,C	BDL	0.5
13	TURBIDITY	NTU	0.4	APHA 2130 B	0.9	1
14	NITRATE as NO ₃	mg/L	0.09	APHA 3500-Mn,B	BDL	45
15	TOTAL COLIFORM	CFU/100ml	1	APHA 9222B	NIL	SHALL NOT BE DETECTABLE IN ANY 100 ml SAMPLE
16	FECAL COLIFORM	CFU/100ml	1	APHA 9222D	NIL	
17	TOTAL RESIDUAL CHLORINE	mg/L	0.2	APHA 4500-Cl,B	NIL	0.2

Test method variation: None
 Remarks: LDL-Lower Detection Limit BDL-Below Detection Limit
 Regional Office Kozhikode
 Scientist in charge





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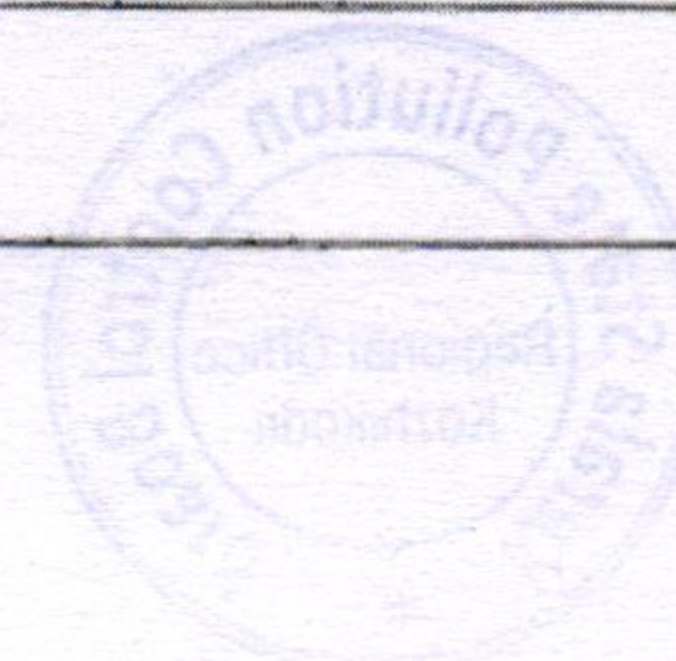
ANALYSIS REPORT OF AMBIENT WATER

Report No.	K R O S 5 8 5 5 / 1	Date:	0 8 1 2 2 0 2 5
Date of Sample Collection	2 1 1 1 2 0 2 5	Date of receipt of the sample	2 2 1 1 2 0 2 5
Time	Hours: NOT GIVEN	Time	Hours:
Sampled by:	AE-2/RO/KKD	Sample ID	CAN 1
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 5855/1
Sample container	PC- 2.5L	Ref.letter No.	PCBRKD/86/2023-AE2
Source:	Well water	Received from:	CEE/RO/KKD
		Period of analysis:	22.11.2025-06.12.2025
Specific sampling location:	WELL WATER SAMPLE OF Mr. NASLOOB,PUTHALATH HOUSE, ANNASSERY,THALAKATHUR.	No. of samples	1
		Analysed by:	SJ/NSS/HPV/AJ
Sample preservation:	Ice box	Method: Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22 nd Ed.)	

sl no	Parameters	unit	LDL	Method No.	Sample ID	DESIRABLE LIMIT AS PER BIS 10500:2012
					CAN 1	
1	PH		-	APHA 4500H*B	6.14	6.5-8.5
2	COLOUR	HAZEN	5	APHA 2120B	NIL	5
3	TOTAL DISSOLVED SOLIDS	mg/L	14	APHA 2540 C	105.112	500
4	TOTAL HARDNESS	mg/L	2	APHA 2340 C	47	200
5	CALCIUM HARDNESS	mg/L	2	APHA 2340 C	39	-
6	MAGNESIUM HARDNESS	mg/L	2	APHA 2340 C	8	-
7	CHLORIDE	mg/L	2	APHA 4500 CL B	40	250
8	FLUORIDE	mg/L	0.03	APHA 4500 FC	0.0917	1
9	SULPHATE	mg/L	5	APHA 4500 SO ₄	BDL	200
10	IRON	mg/L	0.02	APHA 3111B	BDL	0.3
11	CONDUCTIVITY	µmhos/cm	0.6	APHA 2510B	187.7	-
12	AMMONIACAL-N	mg/L	0.1	APHA 4500-N,C	BDL	0.5
13	TURBIDITY	NTU	0.4	APHA 2130 B	0.8	1
14	NITRATE as NO ₃	mg/L	0.09	APHA 3500-Mn,B	BDL	45
15	TOTAL COLIFORM	CFU/100ml	1	APHA 9222B	1900	SHALL NOT BE DETECTABLE IN ANY 100 ml SAMPLE
16	FECAL COLIFORM	CFU/100ml	1	APHA 9222D	1400	
17	TOTAL RESIDUAL CHLORINE	mg/L	0.2	APHA 4500-CI,B	NIL	0.2

Test method variation: None

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



for [Signature]
Scientist in charge



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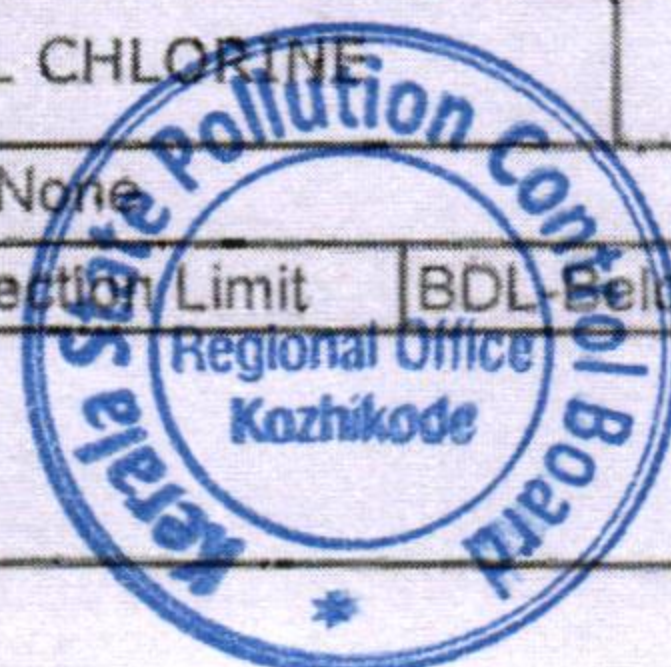
ANALYSIS REPORT OF AMBIENT WATER

Report No.	K R O S 5 8 5 5 / 5	Date:	0 8 1 2 2 0 2 5
Date of Sample Collection	2 2 1 1 2 0 2 5	Date of receipt of the sample	2 4 1 1 2 0 2 5
Time	Hours: NOT GIVEN	Time	Hours:
Sampled by:	AE-2/RO/KKD	Sample ID	CAN 11
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 5855/5
Sample container	PC- 2.5L	Ref.letter No.	PCBRKD/86/2023-AE2
Source:	Well water	Received from:	CEE/RO/KKD
		Period of analysis:	22.11.2025-06.12.2025
Specific sampling location:	WELL WATER OF Sri. PRASOON,KOLLERI, MANAMGODE HOUSE,RAMANATTUKARA.	No. of samples	1
		Analysed by:	SJ/NSS/HPV/AJ
Sample preservation:	Ice box	Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22 nd Ed.)	

sl no	Parameters	unit	LDL	Method No.	Sample ID	DESIRABLE LIMIT AS PER BIS 10500:2012
					CAN 11	
1	PH		-	APHA 4500H*B	5.39	6.5-8.5
2	COLOUR	HAZEN	5	APHA 2120B	NIL	5
3	TOTAL DISSOLVED SOLIDS	mg/L	14	APHA 2540 C	37.688	500
4	TOTAL HARDNESS	mg/L	2	APHA 2340 C	28	200
5	CALCIUM HARDNESS	mg/L	2	APHA 2340 C	20	-
6	MAGNESIUM HARDNESS	mg/L	2	APHA 2340 C	8	-
7	CHLORIDE	mg/L	2	APHA 4500 CL B	24	250
8	FLUORIDE	mg/L	0.03	APHA 4500 F.C	0.0306	1
9	SULPHATE	mg/L	5	APHA 4500 SO ₄	BDL	200
10	IRON	mg/L	0.02	APHA 3111B	BDL	0.3
11	CONDUCTIVITY	µmhos/cm	0.6	APHA 2510B	67.3	-
12	AMMONIACAL-N	mg/L	0.1	APHA 4500-N,C	BDL	0.5
13	TURBIDITY	NTU	0.4	APHA 2130 B	0.6	1
14	NITRATE as NO ₃	mg/L	0.09	APHA 3500-Mn.B	3.509	45
15	TOTAL COLIFORM	CFU/100ml	1	APHA 9222B	NIL	SHALL NOT BE DETECTABLE IN ANY 100 ml SAMPLE
16	FECAL COLIFORM	CFU/100ml	1	APHA 9222D	NIL	
17	TOTAL RESIDUAL CHLORINE	mg/L	0.2	APHA 4500-Cl,B	NIL	0.2

Test method variation: None

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



[Signature]
for Scientist in charge