

4354

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

IN

ORIGINAL APPLICATION No. 693 of 2023

Petitioner : Suo Motu

Versus

Respondent(s) : The State of Kerala

**AFFIDAVIT SUBMITTED BY THE CHAIRPERSON ON BEHALF
OF KERALA STATE POLLUTION CONTROL BOARD**

Adv. Jogy Scaria

ADDITIONAL STANDING COUNSEL FOR THE RESPONDENT

4355

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

IN

ORIGINAL APPLICATION No. 693 of 2023

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VOLUME-I

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Dated this the 2nd day of May, 2025.

Adv. Jogy Scaria

ADDITIONAL STANDING COUNSEL FOR THE RESPONDENT:

**BEFORE THE NATIONAL GREEN TRIBUNAL
(PRINCIPAL BENCH), NEW DELHI**

OA No. 693/2023

In the matter of:

**News Item titled "Pollution Control Boards are the weak link" appearing in
Deccan Herald dated 24.10.2023.**

**COMPLIANCE AFFIDAVIT FILED BY THE KERALA STATE
POLLUTION CONTROL BOARD IN COMPLIANCE OF ORDER
DATED 28.01.2025**

I, Er. Sreekala S. aged 54 years working as Chairperson, Kerala State Pollution Control Board, Head Office, Thiruvananthapuram, do hereby solemnly affirm and state as follows:

1. I am the present Chairperson, Kerala State Pollution Control Board (hereinafter referred to as **Board**), Thiruvananthapuram. I am aware of the facts affirmed by me in this Affidavit. I am swearing that this is the report based on the best of my knowledge, information and belief and the facts revealed from the records.

2. It is respectfully submitted that the above OA is registered in Suo motu exercise of the power on the basis of the News Item titled "**Pollution Control Boards are the weak link**" appeared in Deccan Herald on October 24, 2023. The Hon'ble NGT in the Order dated 28.01.2025 directed State PCBs/PCCs to file affidavits disclosing the status of the upgradation of the laboratory infrastructure.

3. It is respectfully submitted that in view of this, CPCB vide Letter No. PCP/NGT/693 of 2023/2023-24 dated 14.02.2025 directed all the

SPCBs/PCCs to submit to CPCB the status of filling of vacant posts and Laboratory Analytical Facilities in the formats supplied by CPCB.

4. It is respectfully submitted that in compliance with the above NGT Order and CPCB letter dated 14.02.2025 the following information are furnished. The status of filling of vacant posts is attached as **Annexure-1**. The details of Laboratory analytical facilities are attached as **Annexure-2**.

All the facts stated above are true to the best of my knowledge, information and belief.

Dated this the 2nd day of May, 2025.




CHAIRPERSON
SREEKALA S.
CHAIRPERSON

4358

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

IN

ORIGINAL APPLICATION No. 693 of 2023

Petitioner : Suo Motu

Versus

Respondent(s) : The State of Kerala

VOLUME-II

Index

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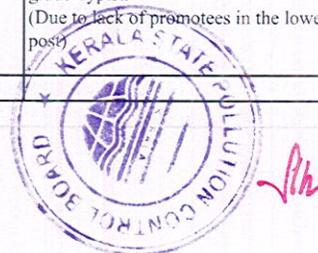
Dated this the 2nd day of May, 2025.

Adv. Jogy Scaria

ADDITIONAL STANDING COUNSEL FOR THE RESPONDENT

PART A: STATUS OF FILLING OF VACANT POSTS									
Name of the Board: KERALA STATE POLLUTION CONTROL BOARD									
Category of post	Status of Sanctioned posts in Number				Details of current vacancies in number(permanent staff)	Action Taken (Approval of the Govt., Engagement agency, Advertisement, Exam date etc.)	Will the vacancy be filled by 30.4.2025?, (say Yes or No)	If not, the time line and reason for delay may be mentioned.	
	Sanctioned	Vacancy as on 11.09.'24	Filled after 11.09.'24	Current Vacancy					
a) Scientific	91	17	Nil	17	a) Direct	6	Awaiting PSC appointments. (5 posts were managing with daily wage staff)	No	Reported to KPSC 6 months
					b) Promotion	11	2 posts were Promotion post of ES (Due to lack of promotees in the lower post)	No	Government has been addressed for granting permission for filling the vacancy through Deputation.
							9 posts were Promotion post of AES (Due to lack of promotees in the lower post) (Out of 11 post 2 were occupied by deputation staff)		Government has been addressed for granting permission for filling the vacancy through Deputation.
c) Deputation									
b) Engineering	138	4	1	5	a) Direct	4	Awaiting PSC appointments	Yes	Appointment order has been issued for 3 vacancies
					b) Promotion	1	AEE post is currently vacant with effect from 11.04.2025. File under processing for degrading this post to AE post.		
					c) Deputation	Nil			
c) Administration	196	8	Nil	21	a) Direct	18	Assistant - 1 vacancy (managing with daily wage staff)	Yes	File under processing for reporting vacancy to Kerala PSC
							LD Typist- 3 vacancy (2 posts were managing with daily wage staff)	No	File under processing for reporting vacancy to Kerala PSC
							Office attendant -7 Awaiting for PSC Appointments. (managing with daily wage staff)	Yes	
							Watcher - 4 vacancy (1 post is managing with daily wage staff). (Other posts were managing with security staff)	No	Direct Recruitment by the Board. Now we are outsourcing through Security Agency.
							Part Time sweeper -3 (managing with daily wage staff)	No	File under processing
					b) Promotion	3	2 posts were Promotion post of selection grade Assistant (Due to lack of promotees in the lower post)	No	Can be filled by June 2025
		1 post was Promotion post of Selection grade Typist. (Due to lack of promotees in the lower post)	No	Due to lack of promotees in the lower post					
c) Deputation					Nil				

Specific remarks, if any:



SREEKALA S.
CHAIRPERSON

Name of the Board: Kerala State Pollution Control Board - Summary Sheet				
PART I: Facility available for monitoring of environmental parameters:				
S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced)
A. Sample Matrix / Group of Water and Wastewater				
(a) Physical Tests				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
(b) Inorganic Tests				
(i) General & Non-metallic				
1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	Yes		
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	Yes		
15	Total Residual chlorine (TRC)	Yes		
(ii) Trace Metals Tests				
1	Aluminium (Al)	Yes		
2	Arsenic (As) Total	Yes		
3	Barium	Yes		
4	Boron	Yes		
5	Chromium (Cr) Hexavalent	Yes		
6	Chromium (Cr) Total	Yes		
7	Cadmium (Cd)	Yes		
8	Cobalt (Co)	Yes		
9	Copper (Cu)	Yes		
10	Iron (Fe)	Yes		
11	Lead (Pb)	Yes		
12	Manganese (Mn)	Yes		
13	Mercury (Hg)	Yes		
14	Nickel (Ni)	Yes		
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	Yes		
18	Zinc (Zn)	Yes		
19	Selenium (Se)	Yes		



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(c) Organics (General) and Trace Organics Tests				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C ₆ H ₅ OH	Yes		
5	Benzopyrene	Yes		
6	Pesticides			
6.a	Organochlorine Pesticides (OCPs) Tests			
i	Aldrin	Yes		
ii	Alpha Endosulphan	Yes		
iii	p,p'-DDT	Yes		
iv	Alpha-HCH	Yes		
v	Beta HCH	Yes		
vi	Beta Endosulphan	Yes		
vii	Gama-HCH	Yes		
viii	o,p'-DDT	Yes		
ix	p,p'-DDE	No	Standard not available	Procurement under progress
6.b	Organophosphorus Pesticides (OPPs) Tests			
i	Malathion	Yes		
ii	Methyl parathion	Yes		
iii	Chlorpyrifos	Yes		
iv	Dimethoate	Yes		
v	Dieldrin	Yes		
vi	Ethion	Yes		
(d) Microbiological Tests				
1	Total Coliform	Yes		
2	Faecal Coliform	Yes		
3	E. Coli	Yes		
4	Faecal Streptococci	Yes		
(e) Toxicological Tests				
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes		
B. Sample Matrix / Group of Solid / Solid Waste				
(a) Soil / Sediment / Compost Tests				
1	Cation Exchange Capacity (CEC)	Yes		
2	Electrical Conductivity (EC)	Yes		
3	Organic carbon (Chemical Method)	Yes		
4	pH	Yes		
5	Soil moisture	Yes		
6	Total nitrogen	Yes		
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	Yes		
(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests				
1	Corrosivity	No	6 Months	Specification under preparation
2	Ignitability (Flash Point)	Yes		
3	Loss on Drying at 1050C (% Moisture Content)	Yes		
4	Loss on Drying at 5500C (% Organic Content)	Yes		
5	pH	Yes		
6	Organic carbon/matter (Chemical Method)	Yes		
7	Calorific Value	Yes		
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)	Yes		
C. Sample Matrix / Group of Analytes: Air				



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(a) Ambient Air				
1	Nitrogen dioxide as NO ₂	Yes		
2	Sulphur dioxide (SO ₂)	Yes		
3	Particulate matter (PM10)	Yes		
4	Particulate matter (PM2.5)	Yes		
5	Carbon Monoxide	No	Six months	Spec finalized
6	Ozone	Yes		
7	Benzene	Yes		
8	Ammonia	Yes		
9	Metals in Particulate Matter, Pb	Yes		
10	Metals in Particulate Matter, As	Yes		
11	Metals in Particulate Matter, Ni	Yes		
12	Particulate Benzo-a-Pyrene (BaP)	Yes		
(b) Stack Gas / Stationary Source Emission				
1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	Yes		
4	Carbon Monoxide (NDIR based Method)	Yes		
5	Temperature	Yes		
6	Moisture	Yes		
7	Oxygen	Yes		
8	Oxides of Nitrogen	Yes		
9	Halides (HCL/HF)	Yes		
(c) Noise Level				
1	Ambient Noise level measurement (20 to 140 dB)	Yes		
2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes		
(d) Meteorological Monitoring				
1	Ambient Temperature	Yes		
2	Wind direction	Yes		
3	Wind speed	Yes		
4	Relative Humidity	Yes		
5	Mixing Height	Yes		
Specific remarks, if any:				
PART II: Details of Laboratory Infrastructure (Instruments and Equipment)				
S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced)
A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes				
a) Mandatory Requirements				
1	Portable / Pen type pH meter / pH strip	Yes		Available in District Offices - TVM, KLM, ALP, KTM, EKM DO-2, EKM-ESC, TSR, PKD, WYD and KNR
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	Yes		
3	Electrical Conductivity meter pen type	Yes		Available in District Offices - ALP and KTM



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4	Flow meter / Physical flow measuring	No	Three months	Specification finalized
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	Yes		
10	Scoop / shovel	Yes		
11	Auger / core sampler	Yes		Available in Regional Lab KKD and ESC - EKM
b) Optional Requirements				
1	Bottom Sampler / Depth sampler	Yes		Available in Regional lab KKD, District Offices - TVPM , KLM, PTA, ALP, KTM, IDK, ESC, TSR, PKD, KNR and KSD
2	Chloroscope for residual chlorine	No		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	Yes		Available in District Offices - TVPM
4	Ekman Dredge	Yes		Available in District Office - ALP
B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring				
a) Mandatory Requirements				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (*4 Nos)	Yes		
3	High Volume Sampler (SPM) (4 Nos)	Yes		
4	Handy Sampler with set of glass impingers (*2 Nos)	Yes		
5	Low Volume Sampler (LVS)	Yes		
6	Tedler bags different sizes	No	one year	Spec under preparation
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	Yes		
8	Nitrogen Cylinder portable	Yes		
9	Activated Charcoal tubes/ Tenex	Yes		
10	Barometer (Digital)	Yes		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	Yes		
14	Orsat Apparatus	No		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		



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16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		Available in Regional lab KKD, District Offices - TVPM , KLM, PTA, EKM-DO2, ESC, TSR and KNR
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level (Noise) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No		
22	Polyurethane Foam PUF Sampler	No		
b) Optional Requirements				
1	Anemometer	Yes		Available in CAAQMS
2	Weather Monitoring system	Yes		Available in CAAQMS
3	Wind speed/wind direction monitor	Yes		Available in CAAQMS
4	Continuous Ambient Air Monitoring System, Fixed	Yes		Available in CAAQMS
5	Continuous PM10 Analyzer	Yes		Available in CAAQMS
6	Continuous Ambient Air Monitoring System, Mobile	Yes		Available in CAAQMS
7	Continuous PM2.5 analyzer	Yes		Available in CAAQMS
8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer	Yes		Available in CAAQMS
9	Ambient Ozone Analyzer	Yes		Available in CAAQMS
10	Ambient BTEX Analyzer	Yes		Available in CAAQMS
11	Multipoint Gas Calibration system	Yes		Available in CAAQMS
12	Ambient Sulphur Dioxide analyzer	Yes		Available in CAAQMS
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	Yes		Available in CAAQMS
14	Total Hydrocarbon analyzer	Yes		Available in CAAQMS
15	Ambient Ammonia analyzer	Yes		Available in CAAQMS
16	Zero Gas Generator	Yes		Available in CAAQMS
17	Synthetic Air Cylinder	Yes		Available in CAAQMS
18	Calibration Gas Cylinders, SO2, NO, CO, NH3B ,enzene and Toluene One each with stainless steel Regulators	Yes		Available in CAAQMS
19	Continuous emission monitoring equipment	Yes		Available in CAAQMS
20	19 inch Rack mounting system for air analyzers	Yes		Available in CAAQMS
21	Dry Gas Meter	Yes		Available in CAAQMS
22	Diesel Exhaust analyzer	No		
23	Exhaust CO/HC analyzer with Sampling Probe	No		
24	Automated Noise Monitoring System	Yes		Available in District Office - TVPM, Central Lab
25	Integrating Sound level meter	No		
26	Continuous PM10& PM2.5 Monitoring Analyzer TEOM system	Yes		Available in CAAQMS
27	Top loading orifice kit for calibration of HVS	Yes		Available in CAAQMS
28	Permeation tubes (SO2, NO-NO2-NOx,NH3, BTX)	No		
C. List of Equipment required for processing of Environmental Samples:				
a) Mandatory Requirements				
1	Accelerated Solvent Extraction (ASE) System	No	Six months	Specification under preparation



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2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	Yes		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	Yes		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No	Three months	Specification under preparation
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No	Three months	Specification under preparation
14	Laboratory Grinder	No	Three months	Specification under preparation
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	Yes		
17	Mechanical Shaker	Yes		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	Yes		
19	Microbial culture refrigerator	Yes		
20	Microwave Digester with 16 vessels/ Hot Plate	Yes		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		
22	Phenol distillation assembly (3)	No	Three months	Specification under preparation
23	Plate counter, Manual/Automatic	Yes		
24	Digestion Chambers/ Fume hood	Yes		
25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities) up to 5, 10, 25 & 50 ml	Yes		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	No	Three months	Specification under preparation
29	Arsenic / Fluoride Glass Distillation assemblies	No	Three months	Specification under preparation
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	Yes		
32	Hot plates (small, Medium and Large) (*2 nos.)	Yes		
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	No	Six months	Specification under preparation
35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	Yes		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	Yes		



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38	Separating funnel shaker	Yes		Available in District Offices - KTM, ESC and WYD*
39	Soxhlet Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPME Extraction system	Yes		
41	Thermometer (Alcohol)	Yes		
42	Dry & wet bulb Thermometer	Yes		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	Yes		
44	Ultra sonic water bath- Capacity 3 litre	Yes		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No	Six months	Specification under preparation

D. Analytical Instruments at Environmental Laboratories

a) Mandatory Requirements

1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	Yes		
2	Binocular Stereo Zoom Microscope	Yes		
3	Bomb Calorimeter	Yes		
4	BTX Analyzer with BTX calibrator	No	Six months	Specification under preparation
5	Colony counter	Yes		
6	Conductivity meter- 2 nos.	Yes		
7	Environment conditioning chamber	Yes		
8	Digital Burettes- 50 ml*2, 100 ml*2	Yes		
9	Dissolved Oxygen Meter (Bench model)	No		
10	Flame Photometer	Yes		
11	Flash Point Apparatus	Yes		
12	Gas Chromatograph Mass Spectrometer	Yes		
13	High Performance Liquid Chromatograph (HPLC)	Yes		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	Yes		
15	Ion Chromatograph Anion & Cations	No	One year	Specification under preparation
16	Methane and Non Methane (NMHC) Analyzer	No	One year	Specification under preparation
17	Microscope – 100x	Yes		
18	Microscope Binocular Research	Yes		
19	CO (NDIR based) Analyzer	No	One year	Spec approved by Technical committee
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	Yes		
23	Spectrophotometer Visible (Portable)	No		
24	TKN Analyzer semi-automatic with aluminum block digester	Yes		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No		

b) Optional Requirements



(Handwritten signature)

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1	Automatic Titration Assembly	Yes		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No	One year	
3	EDXRF Analyzer/WDXRF Analyzer	No	One year	
4	Fourier-transform infrared Spectrometer (FTIR)	No	One year	
5	Flocculator (Jar testing apparatus)	No	One year	
6	Toxic Gas Analyzer	Yes		
7	Organic Halogen (AOX/TOX) Analyzer	No	One year	
8	TOC Analyzer	Yes		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No	One year	
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No	One and half year	
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No	One and half year	Specification finalized
Specific remarks, if any:				
* Manual-type separating funnel shakers are available in these district offices.				



SREEKALA S.
CHAIRPERSON

LABORATORY ANALYTICAL FACILITIES

Name of the Board: KERALA STATE POLLUTION CONTROL BOARD

1. Central Lab Ernakulam (EKM)

PART I: Facility available for monitoring of environmental parameters:

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced)
A. Sample Matrix / Group of Water and Wastewater				
(a) Physical Tests				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
(b) Inorganic Tests				
(i) General & Non-metallic				
1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	Yes		
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	Yes		
15	Total Residual chlorine (TRC)	Yes		
(ii) Trace Metals Tests				
1	Aluminium (Al)	Yes		
2	Arsenic (As) Total	Yes		
3	Barium	Yes		
4	Boron	Yes		
5	Chromium (Cr) Hexavalent	Yes		



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6	Chromium (Cr) Total	Yes		
7	Cadmium (Cd)	Yes		
8	Cobalt (Co)	Yes		
9	Copper (Cu)	Yes		
10	Iron (Fe)	Yes		
11	Lead (Pb)	Yes		
12	Manganese (Mn)	Yes		
13	Mercury (Hg)	Yes		
14	Nickel (Ni)	Yes		
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	Yes		
18	Zinc (Zn)	Yes		
19	Selenium (Se)	Yes		
(c) Organics (General) and Trace Organics Tests				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C ₆ H ₅ OH	Yes		
5	Benzopyrene	Yes		
6	Pesticides			
6.a	Organochlorine Pesticides (OCPs) Tests			
i	Aldrin	Yes		
ii	Alpha Endosulphan	Yes		
iii	p,p'-DDT	Yes		
iv	Alpha-HCH	Yes		
v	Beta HCH	Yes		
vi	Beta Endosulphan	Yes		
vii	Gama-HCH	Yes		
viii	o,p'-DDT	Yes		
ix	p,p'-DDE	No	Standard not available	Procurement under progress
6.b	Organophosphorus Pesticides (OPPs) Tests			
i	Malathion	Yes		
ii	Methyl parathion	Yes		
iii	Chlorpyrifos	Yes		
iv	Dimethoate	Yes		
v	Dieldrin	Yes		
vi	Ethion	Yes		
(d) Microbiological Tests				
1	Total Coliform	Yes		
2	Faecal Coliform	Yes		
3	E. Coli	Yes		
4	Faecal Streptococci	Yes		
(e) Toxicological Tests				
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes		
B. Sample Matrix / Group of Solid / Solid Waste				
(a) Soil / Sediment / Compost Tests				
1	Cation Exchange Capacity (CEC)	Yes		
2	Electrical Conductivity (EC)	Yes		
3	Organic carbon (Chemical Method)	Yes		
4	pH	Yes		



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5	Soil moisture	Yes		
6	Total nitrogen	Yes		
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	Yes		
(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests				
1	Corrosivity	No	6 Months	Specification under preparation
2	Ignitability (Flash Point)	Yes		
3	Loss on Drying at 1050C (% Moisture Content)	Yes		
4	Loss on Drying at 5500C (% Organic Content)	Yes		
5	pH	Yes		
6	Organic carbon/matter (Chemical Method)	Yes		
7	Calorific Value	Yes		
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)	Yes		
C. Sample Matrix / Group of Analytes: Air				
(a) Ambient Air				
1	Nitrogen dioxide as NO2	Yes		
2	Sulphur dioxide (SO2)	Yes		
3	Particulate matter (PM10)	Yes		
4	Particulate matter (PM2.5)	Yes		
5	Carbon Monoxide	No	Six months	Spec finalized
6	Ozone	Yes		
7	Benzene	Yes		
8	Ammonia	Yes		
9	Metals in Particulate Matter, Pb	Yes		
10	Metals in Particulate Matter, As	Yes		
11	Metals in Particulate Matter, Ni	Yes		
12	Particulate Benzo-a-Pyrene (BaP)	Yes		
(b) Stack Gas / Stationary Source Emission				
1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	Yes		
4	Carbon Monoxide (NDIR based Method)	Yes		
5	Temperature	Yes		
6	Moisture	Yes		
7	Oxygen	Yes		
8	Oxides of Nitrogen	Yes		
9	Halides (HCL/HF)	Yes		
(c) Noise Level				
1	Ambient Noise level measurement (20 to 140 dB)	Yes		
2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes		
(d) Meteorological Monitoring				
1	Ambient Temperature	Yes		
2	Wind direction	Yes		
3	Wind speed	Yes		
4	Relative Humidity	Yes		
5	Mixing Height	Yes		
PART II: Details of Laboratory Infrastructure (Instruments and Equipment)				



S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced)
A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes				
a) Mandatory Requirements				
1	Portable / Pen type pH meter / pH strip	No	Three months	Specification finalized
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	Yes		
3	Electrical Conductivity meter pen type	No	Three months	Specification finalized
4	Flow meter / Physical flow measuring	No	Three months	Specification finalized
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	Yes		
10	Scoop / shovel	Yes		
11	Auger / core sampler	No	Six months	Specification under preparation
b) Optional Requirements				
1	Bottom Sampler / Depth sampler	No		
2	Chloroscope for residual chlorine	No		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	No		
4	Ekman Dredge	No		
B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring				
a) Mandatory Requirements				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes		
3	High Volume Sampler (SPM) (4 Nos)	Yes		
4	Handy Sampler with set of glass impingers (*2 Nos)	Yes		
5	Low Volume Sampler (LVS)	Yes		
6	Tedler bags different sizes	No	one year	Spec under preparation
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	Yes		
8	Nitrogen Cylinder portable	Yes		
9	Activated Charcoal tubes/ Tenex	Yes		
10	Barometer (Digital)	Yes		



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11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	Yes		
14	Orsat Apparatus	No	six months	Specification under preparation
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	No	Six months	Specification under preparation
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level (Noise) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No	One year	Specification under preparation
22	Polyurethane Foam PUF Sampler	No	Six months	Specification under preparation
b) Optional Requirements				
1	Anemometer	Yes		Available in CAAQMS
2	Weather Monitoring system	Yes		Available in CAAQMS
3	Wind speed/wind direction monitor	Yes		Available in CAAQMS
4	Continuous Ambient Air Monitoring System, Fixed	Yes		Available in CAAQMS
5	Continuous PM10 Analyzer	Yes		Available in CAAQMS
6	Continuous Ambient Air Monitoring System, Mobile	Yes		Available in CAAQMS
7	Continuous PM2.5 analyzer	Yes		Available in CAAQMS
8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer)	Yes		Available in CAAQMS
9	Ambient Ozone Analyzer	Yes		Available in CAAQMS
10	Ambient BTEX Analyzer	Yes		Available in CAAQMS
11	Multipoint Gas Calibration system	Yes		Available in CAAQMS
12	Ambient Sulphur Dioxide analyzer	Yes		Available in CAAQMS
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	Yes		Available in CAAQMS
14	Total Hydrocarbon analyzer	Yes		Available in CAAQMS
15	Ambient Ammonia analyzer	Yes		Available in CAAQMS
16	Zero Gas Generator	Yes		Available in CAAQMS



17	Synthetic Air Cylinder	Yes		Available in CAAQMS
18	Calibration Gas Cylinders, SO ₂ , NO, CO, NH ₃ , Benzene and Toluene One each with stainless steel Regulators	Yes		Available in CAAQMS
19	Continuous emission monitoring equipment	Yes		Available in CAAQMS
20	19 inch Rack mounting system for air analyzers	Yes		Available in CAAQMS
21	Dry Gas Meter	Yes		Available in CAAQMS
22	Diesel Exhaust analyzer	No		
23	Exhaust CO/HC analyzer with Sampling Probe	No		
24	Automated Noise Monitoring System	Yes		
25	Integrating Sound level meter	No		
26	Continuous PM ₁₀ & PM _{2.5} Monitoring Analyzer TEOM system	Yes		Available in CAAQMS
27	Top loading orifice kit for calibration of HVS	Yes		Available in CAAQMS
28	Permeation tubes (SO ₂ , NO-NO ₂ -NO _x , NH ₃ , BTX)	No		

C. List of Equipment required for processing of Environmental Samples:

a) Mandatory Requirements

1	Accelerated Solvent Extraction (ASE) System	No	Six months	Specification under preparation
2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	Yes		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	Yes		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No	Three months	Specification under preparation
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No	Three months	Specification under preparation
14	Laboratory Grinder	No	Three months	Specification under preparation
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	Yes		
17	Mechanical Shaker	Yes		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	Yes		
19	Microbial culture refrigerator	Yes		
20	Microwave Digester with 16 vessels/ Hot Plate	Yes		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		



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22	Phenol distillation assembly (3)	No	Three months	Specification under preparation
23	Plate counter, Manual/Automatic	Yes		
24	Digestion Chambers/ Fume hood	Yes		
25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities) up to 5, 10, 25 & 50 ml	Yes		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	No	Three months	Specification under preparation
29	Arsenic / Fluoride Glass Distillation assemblies	No	Three months	Specification under preparation
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	Yes		
32	Hot plates (small, Medium and Large) (*2 nos.)	Yes		
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	No	Six months	Specification under preparation
35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	Yes		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	Yes		
38	Separating funnel shaker	No	Six months	Specification under preparation
39	Soxhlet Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPME Extraction system	Yes		
41	Thermometer (Alcohol)	Yes		
42	Dry & wet bulb Thermometer	Yes		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	Yes		
44	Ultra sonic water bath- Capacity 3 litre	Yes		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No	Six months	Specification under preparation

D. Analytical Instruments at Environmental Laboratories

a) Mandatory Requirements

1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	Yes		
2	Binocular Stereo Zoom Microscope	Yes		
3	Bomb Calorimeter	Yes		
4	BTX Analyzer with BTX calibrator	No	Six months	Specification under preparation
5	Colony counter	Yes		
6	Conductivity meter- 2 nos.	Yes		
7	Environment conditioning chamber	Yes		
8	Digital Burettes- 50 ml*2, 100 ml*2	Yes		



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9	Dissolved Oxygen Meter (Bench model)	No	Six months	Specification under preparation
10	Flame Photometer	Yes		
11	Flash Point Apparatus	Yes		
12	Gas Chromatograph Mass Spectrometer	Yes		
13	High Performance Liquid Chromatograph (HPLC)	Yes		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	Yes		
15	Ion Chromatograph Anion & Cations	No	One year	Specification under preparation
16	Methane and Non Methane (NMHC) Analyzer	No	One year	Specification under preparation
17	Microscope – 100x	Yes		
18	Microscope Binocular Research	Yes		
19	CO (NDIR based) Analyzer	No	One year	Spec approved by Technical committee
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	Yes		
23	Spectrophotometer Visible (Portable)	No	One year	Specification under preparation
24	TKN Analyzer semi-automatic with aluminum block digester	Yes		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No	six months	Specification under preparation
b) Optional Requirements				
1	Automatic Titration Assembly	Yes		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No	One year	
3	EDXRF Analyzer/WDXRF Analyzer	No	One year	
4	Fourier-transform infrared Spectrometer (FTIR)	No	One year	
5	Flocculator (Jar testing apparatus)	No	One year	
6	Toxic Gas Analyzer	Yes		
7	Organic Halogen (AOX/TOX) Analyzer	No	One year	
8	TOC Analyzer	Yes		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No	One year	
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No	One and half year	
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No	One and half year	Specification finalized



PART III: DETAILS OF LABORATORIES ESTABLISHED UNDER THE WATER (P & CP) ACT, 1974

Laboratory established by the Board, as per Section 17 (2) of Water Act - Nos.				Laboratories / Institutes specified by State Govt., as State Water Laboratory as per Section 52 (1) of Water Act (other than those set up by Board) - Nos								NABL Accreditation			EPA Recognition		
No. of Laboratories established / recognised	No. of Laboratories (out of those given in column No. (1)) notified in Official Gazette	No. of remaining Laboratories Planned for Notification (out of those laboratories given in column No.(1)).	Time line required for notification of Laboratories given in column No. (3) (in months)	No. of Laboratories established / specified		No. of Laboratories (out of those given in column No. (5 & 6)) notified in Official Gazette		No. of remaining Laboratories Planned for Notification (out of those laboratories given in column No. (5 & 6)).		Time line required for notification of Laboratories given in column No. (9 & 10) (in months)		No. of Board's Laboratories 17 (2)	No. of State Water Laboratories 52(1)		No. of Board's Laboratories 17 (2)	No. of State Water Laboratories 52(1)	
				Govt.	Pvt.	Govt.	Pvt.	Govt.	Pvt.	Govt.	Pvt.		Govt.	Pvt.		Govt.	Pvt.
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
16*				**	**							1	**	**	1	**	**

*The latest office established with laboratory as per GO (MS) No. 140/12/Env. dated: 25.09.2012 of GoK **No data available with the Board.

PART IV: DETAILS OF LABORATORIES ESTABLISHED UNDER THE AIR (P & CP) ACT, 1981

Laboratory established by the Board, as per Section 17 (2) of Air Act - Nos.				Laboratories / Institutes specified by State Govt., as State Air Laboratory as per Section 28 (1) of Air Act (other than those set up by Board) - Nos								NABL Accreditation			EPA Recognition		
No. of Laboratories established / recognised	No. of Laboratories (out of those given in column No. (1)) notified in Official Gazette	No. of remaining Laboratories Planned for Notification (out of those laboratories given in column No.(1)).	Time line required for notification of Laboratories given in column No. (3) (in months)	No. of Laboratories established / specified		No. of Laboratories (out of those given in column No. (5 & 6)) notified in Official Gazette		No. of remaining Laboratories Planned for Notification (out of those laboratories given in column No. (5 & 6)).		Time line required for notification of Laboratories given in column No. (9 & 10) (in months)		No. of Board's Laboratories 17 (2)	No. of State Water Laboratories 28(1)		No. of Board's Laboratories 17 (2)	No. of State Water Laboratories 28(1)	
				Govt.	Pvt.	Govt.	Pvt.	Govt.	Pvt.	Govt.	Pvt.		Govt.	Pvt.		Govt.	Pvt.
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
16*				**	**							1	**	**	1	**	**

*The latest office established with laboratory as per GO (MS) No. 140/12/Env. dated: 25.09.2012 of GoK **No data available with the Board.

PART V: DETAILS OF LABORATORIES PARTICIPATED ON ANALYTICAL QUALITY CONTROL AND QUALITY ASSURANCE CONDUCTED BY CPCB IN RESPECT OF WATER QUALITY PARAMETERS

S. No.	Laboratory with address	No. of Parameters in AQC Exercise				Number of Parameters Attempted				% Parameters Successful			
		33rd Exercise	34th Exercise	35th Exercise	36th Exercise	33rd Exercise	34th Exercise	35th Exercise	36th Exercise	33rd Exercise	34th Exercise	35th Exercise	36th Exercise
1	Central Lab - Ernakulam	Heavy metals No: of metals 8-10	Physiochemical No: of parameters -Set (A)-11	Pesticides (OCPs & OPPs) 11	Physiochemical No: of parameters -Set (B)-10	9	11	7	No intimation has been received from the CPCB	77.78	63.64	85.71	No intimation has been received from the CPCB



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Note: 33rd Exercise (Metals) held in 2020-2021,
34th Exercise (General and Physico-Chemical parameters) held in 2021-2022
35th Exercise (Pesticides) held in 2023
36th Exercise (General and Physico-Chemical parameters) held in 2023-2024

PART VI: DETAILS OF LABORATORIES PARTICIPATED ON PROFICIENCY TESTING (PT) PERFORMANCE
(Information to be given for last 3 years)

S. No.	Name of Laboratory with address	Year of PT participation	PT Sample Provider (Name and Address)	Number of Parameters in Accreditation Scope	Number of Parameters for which Laboratory participated in PT exercise	Number of Parameter with Satisfactory Results
1	Central Lab - Ernakulam	2022	1. M/s. Green Economy Initiatives Pvt. Ltd, Mohali, Punjab. 2. M/s. Envirocare Labs Pvt. Ltd, Thane Mumbai.	61	32	30
		2023	1. M/s. Green Economy Initiatives Pvt. Ltd, Mohali, Punjab. 2. M/s. Envirocare Labs Pvt. Ltd, Thane Mumbai.	61	56	46
		2024	1. M/s. Green Economy Initiatives Pvt. Ltd, Mohali, Punjab. 2. M/s. Envirocare Labs Pvt. Ltd, Thane Mumbai. 3. Aashvi Proficiency testing & analytical Service Ahmedabad, Gujarath 4. Fare labs Pvt.Ltd ,Haryana	63	45	35



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