Central Pollution Control Board
South Zone Office, Bengaluru-560079

Water Quality Monitoring Programme

CHECK LIST / INSPECTION REPORT

1.	Name & address of the State Board:	Karnataka State Pollution Control Board # 436/D, Opp. To Royal Inn Hotel KRS Road, Metagalli, Mysore – 570 016
	(i) Head Office:	Karnataka State Pollution Control Board Parisara Bhavan 5th Floor, 49 Church Street Bengaluru – 560 001
	(ii) Address of the Central/Regional: Office Laboratory	Karnataka State Pollution Control Board # 436/D, Opp. To Royal Inn Hotel KRS Road, Metagalli, Mysore – 570 016
2.	Name & Designation of Contact: Person	Dr. P. Niranjan Regional Officer Mob. No.: 9448350868 Fax.: 0821 2519411 & email ID.: mys1@kspcb.gov.in
3.	Number of Stations allocated (Please provide details in enclosed Annexure (A)	GEMS ☐ NWMP ☐ GAP ☐
4.	Sampling: (i) Name & Designation of Persons involved	(i) Sh. Siddaiah, Field Assistant (ii) Sh. Lakshmana, Field Assistant (iii) Ms. Bindu, Analyst (iv) Ms. Vinita, Analyst
	(ii) Sample container used:	White Polyethylene/Coloured Polyethylene/ Glass

(i) Sampling Accessories Availability : (tick as √)

Water Sampler	☐	Kit Bag	☐	DO Kit	☐
DO Meter	☐	Multianalyser	☐	Ice Box	☐
Current Meter	☐	Measuring tape	☐		
Float Balls	☐	Stickers/Adhesive tape/Labels	☐		

(ii) Samples collected from :

(a) Mid stream / bank

(b) Surface / Sub-Surface at ……. Depth

(iii) Bacteriological sample :

Glass bottles 125 ml capacity
Approx sample volume collected 75 ml
Top covered with foil / paper / not covered

5. Field Measurement :

(i) Velocity of Flow : Current Meter/Float Method/Chemical Method

(ii) Temperature : a) Mercury Thermometer: 0-50 deg. cent/others

b) Least Count of Thermometer: 1/1 Deg. Cent.

(iii) Dissolved Oxygen : Dissolved Oxygen Meter / Winkler Method
Preliminary fixation : In Field / In Lab
Measurements Analysis: In Field / In Lab

6. Sample Preservation : a) Physico Chemical Analysis Samples : (i) Ice Preserved: Yes/No
(ii) Chemically Preserved: Yes/No
If yes, Chemical used H_2SO_4, HNO_3, HCL

b) Bacteriological Samples : Ice preserved : Yes/No

7. Samples Transportation : In Ice Box / Without Ice Box

8. Post-Sampling Storage : Refrigerated till completion of Analysis Yes/No

9. Physico Chemical Analysis : Please provide details in Annexure (B)

(i) Source of Distilled Water : Self Prepared / Purchased from Market
Type of Distillation: Metal / Glass / Any other Unit
Conductivity : 5 μmhos / cm

(ii) Analytical Balance : Single Pan / Double Pan
Digital / Weight Loading
Performance : Satisfactory / Unsatisfactory

Readability : 0.001-500 g Satisfactory / Unsatisfactory

10. Bacteriological Examination :

a) Technique : Multiple Tube / Membrane Filter

b) Media Used for:
Presumptive Test ----------
Total Coliform ----------
Faecal Coliform ----------
Total Plate Count ----------
Faecal Streptococci ----------

c) Analytical Facilities Available: (Tick as √)

Inoculation Chamber : ☐ Laminar Flow ☐

UV Tube ☐ Cotton Wool ☐

Autoclave ☐ Incubator Water Bath ☐

Inoculation Loop ☐ Burner / Sprit Lamp ☐

Utensils for media preparation ☐

LPG gas ☐ Colony counter ☐

Rectify spirit ☐

d) Sterilization adopted for (Tick as √)

Sampling bottle ☐ Pipettes ☐

Inoculation loop ☐ Culture Media ☐

Dilution Water ☐ Culture Tube ☐

Culture Plates ☐ with Media

With Media

e) Coliform Test (MPN test)

(i) Presumptive test performed ☐ Yes / No

(ii) Confirmative test performed ☐ Yes / No

(a) No. of Dilution adopted: upto 10^{-3}

(b) No. of Culture tube taken for each dilution: 5 tube

(c) Culture tubes 44.5°C for faecal Coliform
Incubated at 37°C for total Coliform

f) Precautions taken during inoculation ☐ Yes / No

☐ Manual / Computerized

11. Analytical Result

a)

b) Data Reports Proper / Improper

c) Data Submission Regular / Irregular

d) Any Report prepared for Internal use (provide one copy each): No

12. In addition to compulsory parameters specify special parameters for each station and suggest change in frequency in Annexure 'C' wherever felt necessary.

13. Enclose a map of the river showing location of sampling points and effluent outfalls (industrial and domestic) with distances.

14. At all the station (except impact station) ensure homogeneity of the river at the sampling location by checking conductivity (or chloride) over the cross section (avoiding stagnant water near the bank).
(Provided information in Annexure 'D')

15. Name of stations inspected:

S. No.	Station Code	Name of Station
1.	3576	Cauvery river (water intake point for Mysore city)
2.	3582	Hebbal Lake
3.	3583	Kukkarahalli Lake
4.	3584	Dalavai Lake
5.	3585	Yennehole Lake
6.	3586	Lingambudhi Lake
7.	3587	Shettykere Lake
8.	3588	Karanji Lake

Annexure 'A'

Central Pollution Control Board

Location Details of Monitoring Stations

State Board Karnataka, Central / Regional Lab Mysore regional Office, KSPCB.

Name of Stations GEMS / MINARS / GAP	Station Code	Latitude	Longitude	25 km Radius catchment area use	Water use classification Drinking water/ Bathing/ wild-Life/ Irrigation	Approx. distance from Lab to Sampling Station	Approx. approach time to Sampling Station from Lab	Mode of Transportation/ approach Bicycle/ Auto/ Car/ Bus/ Train	Significance of station/ Impact/ Baseline/ Trend (Please Ref. Footnote)
Cauvery River/MINARS	3576	N=12^{0}21'03.6''	E= 76^{0}37'38.3''	Water supply intake point of Mysore city	Drinking water	18 Km	20 Min.	Car	Impact
Hebbal Lake/NWMP	3582	N=12^{0}21'38.4''	E= 76^{0}36'35.6''	-------	Irrigation	2 Km	4 Min.	Car	Baseline
Kukkarahalli Lake/NWMP	3583	N=12^{0}21'25.4''	E= 76^{0}36'39.7''	-------	Water is not used for any purpose. It is a tourist place	7.6 Km	18 Min.	Car	Baseline
Dalavai Lake/NWMP	3584	N=12^{0}14'59.9''	E= 76^{0}39'30.8''	--------	Irrigation	15 Km	32 Min.	Car	Impact
Yennehole Lake/NWMP	3585	N=12^{0}12'31.9''	E= 76^{0}38'22.8''	---------	Irrigation	15.7 Km	28 min. (Via ring road)	Car	Impact
Lingambudhi Lake/NWMP	3587	N=12^{0}16'5.5''	E= 76^{0}36'45.4''	---------	Irrigation	17.3 Km	27 min. (Via ring road)	Car	Impact

Shettykere Lake/NW MP	3587	N=12^{0}14$'$18.1$''$	E= 76^{0}39$'$39.5$''$	----------	Irrigation	16.9 Km	35 min.	Car	Impact
Karanji Lake/NW MP	3588	N=12^{0}18$'$6.3$''$	E= 76^{0}40$'$18.8$''$	----------	Water is not used for any purpose. It is a tourist place	12 Km	22 min. (via ring road)	Car	Baseline

Footnote :

Baseline :- Determine the quality of water in its natural state i.e. these stations are located at a place where the water quality is not influenced by human activities.

Impact :- Assess the impact of activities by man upon the quality of the water & its suitability for required uses e.g. water intake point, bathing ghats etc.

Trend :- Keep under observation the sources and pathway of specified pollutants. These stations are used to assess the water quality and its trend over a period of time. (for trend stations homogeneity of the river is to be ensured at sampling location by checking conductivity across the cross-section).

Annexure 'B'

Central Pollution Control Board

PHYSICO – CHEMICAL ANALYSIS

Sl. No.	Parameter	Method (Tick the method used as √)	Instrument (make / model)	Comments on analytical procedure
1.	pH	i) Colorimetric ii) pH strips iii) pH meter		
2.	Conductivity	i) Conductivity ii) Any other		
3.	Turbidity	i) NTU ii) JTU		
4.	Calcium	i) Titrimetric ii) Flame photometric		
5.	Sulphate	i) Gravimetric ii) Turbidimetric		
6.	Sodium	i) Flame Emission Photometric ii) A.A.S.		
7.	Phosphates	i) ANSA ii) Vanadomolybdo Phosphoric Acid iii) Stannous Chloride iv) Ascorbic Acid v) Automated Ascorbic Acid Reduction		
8.	Alkalinity	i) Titrimetric ii) Electrometric		
9.	Chlorides	i) Argentometric ii) Mercuric Nitrate iii) Phenometric iv) Automated Ferricyanide		

10.	Boron	i) Curcumin ii) Carmine			
11.	B.O.D.	i) Dilution Method ii) Other – Winklers method	Temp. of incubator/ water bath 27 ^{o}C for 3 days		
12.	C.O.D.	i) Open reflux ii) Closed reflux titrimetric iii) Close reflux colorimetric			Reflux Time …… hr.
13.	Ammonia	i) Nesslerization (Direct) ii) Nesslerization (Distillation) iii) Distillation following titration iv) Ammonia selective electrode v) Phenate method vi) Other			
14.	Nitrate	i) UV Spectrophotometer ii) Electrode iii) Cadmium reduction iv) Chromotropic Acid v) Davarda's alloy Reduction			
15.	Nitrite	i) NED Dihydrochloride ii) Other	NA		
16.	T.K.N.	i) Macro-kjeldahl ii) Semi-micro-kjeldahl			
17.	T.D.S.	i) Dried at 180 ^{o}C			
18.	F.D.S.	i) Ignited at 550 ^{o}C			

Give details of parameters being analysed (other than mentioned above): **Fe, Cu, Zn, Ni, Pb, Mn, Cd, Cr and Heavy metals.**

Time in days for completion of analysis after sample collection: **15 days.**

Annexure 'C'

Central Pollution Control Board

RECOMMENDATIONS FOR CHANGE OF FREQUENCY AND SPECIAL PARAMETERS

Name of Station	Station Code	Specific parameters recommended if necessary (like – heavy metals (specific metals) pesticides, cyanide, phenol etc.	Justification for recommendation of specific parameters	Change of frequency recommended		Justification for proposed change in frequency
				Present	Proposed	

Annexure 'D'

Central Pollution Control Board

COMMENTS AND FOLLOW - UP

The following observations have been made during visit at **Karnataka** State Pollution Control Board, **Mysore Regional Office Laboratory** from **CPCB, South Zonal Office Bengaluru.**

(i) The sampling stations located appropriately : Yes / No

(ii) If shifting of any sampling location is required provide following details (Attach separate sheet if space is not sufficient) : Yes / No

Sl. No.	Name and code no. of old location	Name of alternate new location	Reasons for shifting

(iii) Name of non-operational stations and reason thereof: **Nil, all the stations are in operations**

(iv) Deficiencies in Monitoring Programme (sampling, transportation & analysis) observed (Attach sheet if space is not sufficient) and changes suggested (to be communicated to State Board with a copy to CPCB Head Office along with the duly-filled check list)

1. **Samplings were done near the river bank and samples were taken on surface of river.**
2. **Ice box was used for preserving the sample, but without ice in the container.**
3. **Samplings were transported either by Car or Bus from sampling point to Laboratory for 90 km distance.**
4. **For complete analysis of parameters, laboratory is taking 15 days time.**
5. **The KSPCB regional Office Laboratory of KSPCB Mysore, is receiving 90 samples per month from different districts of Karnataka, which is causing delay in analysis and work load on analysts this may also leads to analytical error.**

Signature of Inspection Team:

I.A. Kadar
Sr. Technician

Poornima B. M.
Sc. B

Photo graphs showing NWMP stations located in Mysore district

Fig No. 1: Sampling at Hebbal Lake (SC – 3582)

Fig No. 2: Sampling at Kukkarahalli Lake (SC – 3583), this lake is a tourist place and this water is not used for any purpose.

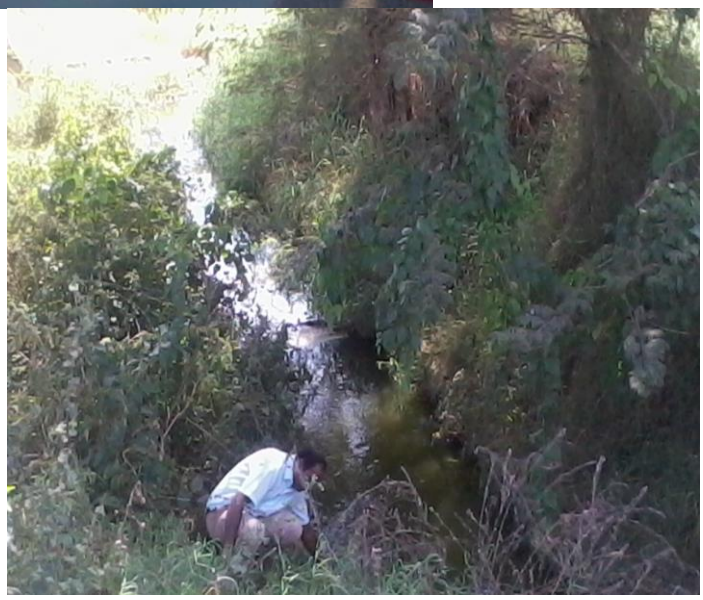

Fig No. 3: Sampling at Karanji Lake (SC- 3588) this lake is a tourist place and this water is not being used for any purpose.

Fig No. 4: Sampling at Dalavai Lake (SC- 3584), the treated sewage joins this lake and the water is used for irrigation purpose

Fig No. 5: Sampling at Shettykere Lake (SC-3587)
This water is being used for irrigation purpose is

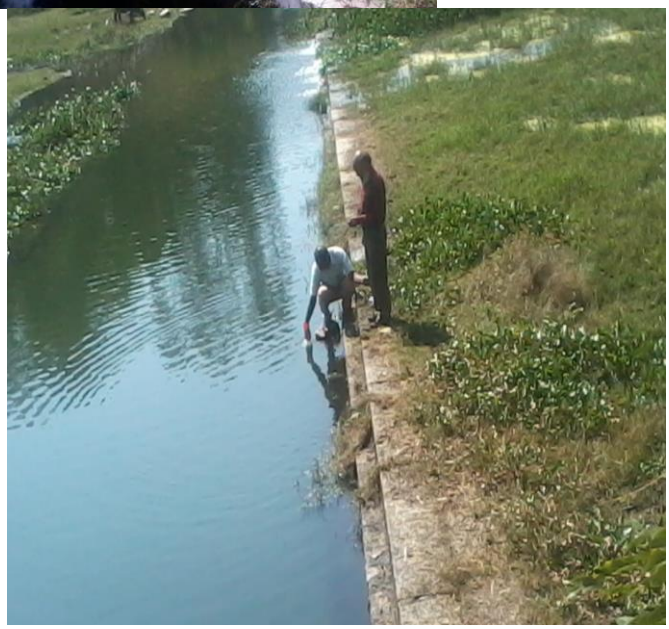

Fig No. 6: Sampling at Yennehole Lake (SC-3585)
the treated sewage joins this lake and the water being used for irrigation purpose

Fig No. 7: Sampling at Lingambudhi Lake (SC-3586), this lake has been severely polluted by immersing Ganesha idol dur