WASA WATER TESTING LABORATORY

A water quality analysis laboratory has been established at Rawal Water Filtration Plant to regularly monitor and analyze the quality of water supplied through Rawal Lake Water Filtration Plant, Over Head Reservoirs of Khanpur Dam, Hypo chlorinators installed on contaminated tube wells, Mini Water Filtration Plants installed by the TMA in the Jurisdiction of WASA, tube wells located in different areas of Rawalpindi city, and to analysis the quality of water in the distribution system as it reaches the consumer's tap. The present staff for regular water quality monitoring from different water sources includes:

- Junior Research Officer
- Lab. Assistant
- Two Helpers

The water quality parameters being tested in the laboratory of Rawal Lake Filtration plant are as under.

Serial No.	Water Quality Parameter
	Physical Parameters
1	Appearance
2	Color
3	Odor
4	Taste
5	Temperature
6	Turbidity
	Chemical Parameters
7	pH
8	Alkalinity
9	Hardness as $CaCO_3$
10	Electrical Conductivity
11	Sulphate
12	Calcium
13	Magnesium
14	Total Dissolved Solids
15	Chlorides
16	Residual Chlorine
17	Nitrate as NO_3^-

18	Nitrite as NO_2^-
	Bacteriological Parameters
19	Total Coliform Count
20	Fecal Coliform Count
	Toxic Substances
21	Arsenic as As $^{+3/+5}$
22	Cyanide as CN^-

The chemicals and other apparatus used for the water quality testing are purchased as and when required by WASA's own sources. The details of the chemicals and other necessaries are given as below.

Sr. No.	**CHEMICALS / NECESSARIES**
1	Lauryl Sulfate Broth, M-ENDO AGAR
2	Absorbent Pad (47 mm)
3	Cellulose mixed filter (47 mm)
4	EDTA
5	Sulphiric Acid
6	Eriochrome Black T
7	Mercuric oxide
8	Buffer Solution
9	Arsenic Kit
10	Nitrate Kit
11	Iron Kit
12	Cyanide Kit
13	Turbidity meter
14	pH meter
15	TDS/Conductance/Chlorides meter
16	Residual Chlorine Kit
17	Phenolphthalein Indicator

WATER QUALITY MONITORING PLAN

To prepare plan for regular and periodic monitoring of water quality for surface and ground water sources of WASA, Rawalpindi by dividing the city into various zones.

Objectives

- To review the existing quality of ground/surface water sources including reservoirs (overhead & underground) and the water supplied through the WASA distribution system and community tanks /Taps.
- Identification of sampling points for water quality analysis.
- To suggest remedial measures for improving the water quality

Scope of Work

- To prepare plan for regular and periodic monitoring of water quality for surface and ground water sources of WASA, Rawalpindi by dividing the city into various zones.
- To Reinforce the capacity of WASA Water Testing Laboratory at Rawal Lake Filtration Plant by making adequate recommendations for provision of lacking facilities in order to make it capable of carrying out in-house testing of physical, chemical, bacteriological & heavy metals.
- To provide training to WASA staff for taking water samples & analysis techniques.

A Water Quality Plan has been prepared for regular monitoring of surface and ground water by dividing Rawalpindi city into various zones as shown in Annexure-C. In each zone three Union Councils will be monitored simultaneously in a week. Four samples will be taken, one at the tube well and three at consumer end. Furthermore we also monitor the water quality of Mini Filtration Plants, under ground and over head reservoirs in these Union Councils. This monitoring will be changed periodically. A Water Quality monitoring plan is given as below.

ZONING OF TUBE WELLS

No.	Zones	Total No's of T.Wells	No's of T.Wells to be Sampled	T. Wells Nos & Locations
1	I	26	3	Will be changed periodically. (First location shown on next slide)
2	II	26	3	
3	III	26	3	
4	IV	26	3	
5	V	26	3	
6	VI	26	3	
7	VII	26	3	
8	VIII	26	3	
9	IX	26	3	
10	X	30	3	
Total	10	264	30	