Preliminary Notes on Visit to Water Resource Board, Colombo

Kevin J. Cunningham[1]

[1]U.S. Geological Survey, 3110 SW 9th Avenue, Fort Lauderdale, Florida, 33315 USA

Date of visit: Friday September 23, 2005

1. Visited the WRB library, reviewed the most current bibliography of publications (published ca. 1999), and purchased 2 publications: Arumugam, S., 1969, Water Resources of Ceylon, 415 p. and Arumugam, S. (compiler), 1974, Studies on Groundwater in Sri Lanka (Ceylon), 126 p. Cost of each publication was about $2US. The WRB does not have a web site and no publications are digitized, all are paper copy and the older publications are composed of "delicate" aging paper. I recommended that the WRB initiate a website that includes a means for purchase of publications, so that their publications can be more widely available.

Figure 1. Offices of the Water Resources Board in Colombo.

2. Visited water chemistry and microbiology laboratories. The WRB continuously monitors the water chemistry of a number of wells at Jaffna (150), Koggala (25), Vavuniya (80), and Welioya (25). It is not known if they are monitoring any other specific sites. Appendix I shows the types of water chemistry done monthly at the Columbo laboratory on the water samples collected from the four sites above. Also, if a municipality requests microbiologic analyses, the Columbo laboratory is set up to produce *E. coli* and total coliform counts. The microbiologic lab has no

other analytical capabilities. Any municipality in Sri Lanka requesting microbiological analyses must pay for the services. It is unclear if the four municipalities mentioned above are paying for the water chemistry analyses.

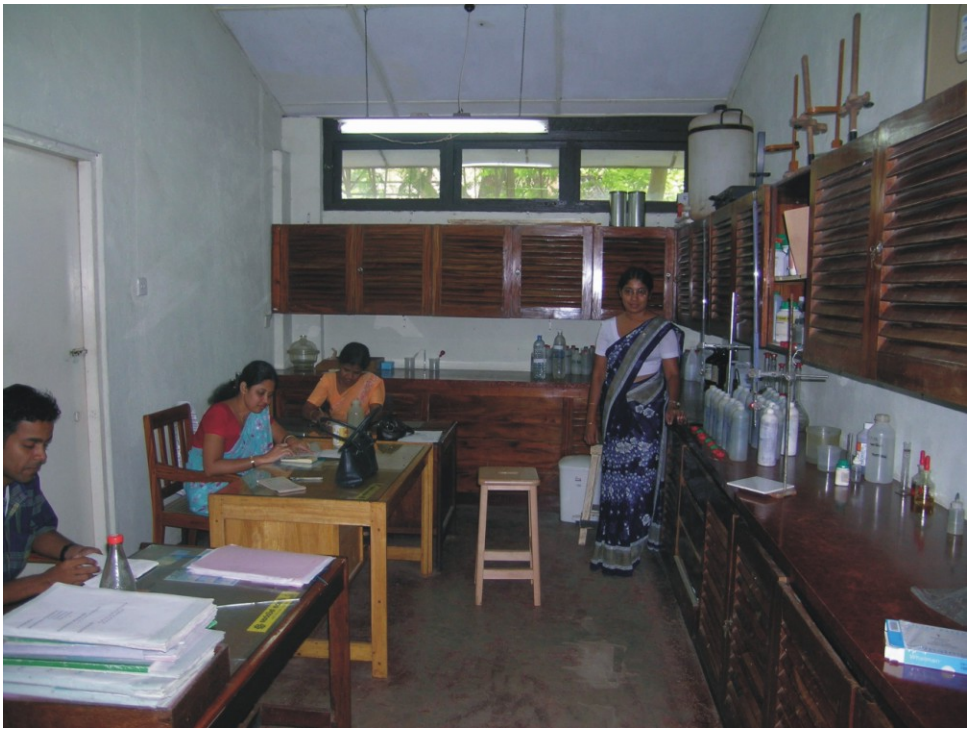

Figure 2. Part of the water chemistry laboratory at the Water Resources Board in Colombo.

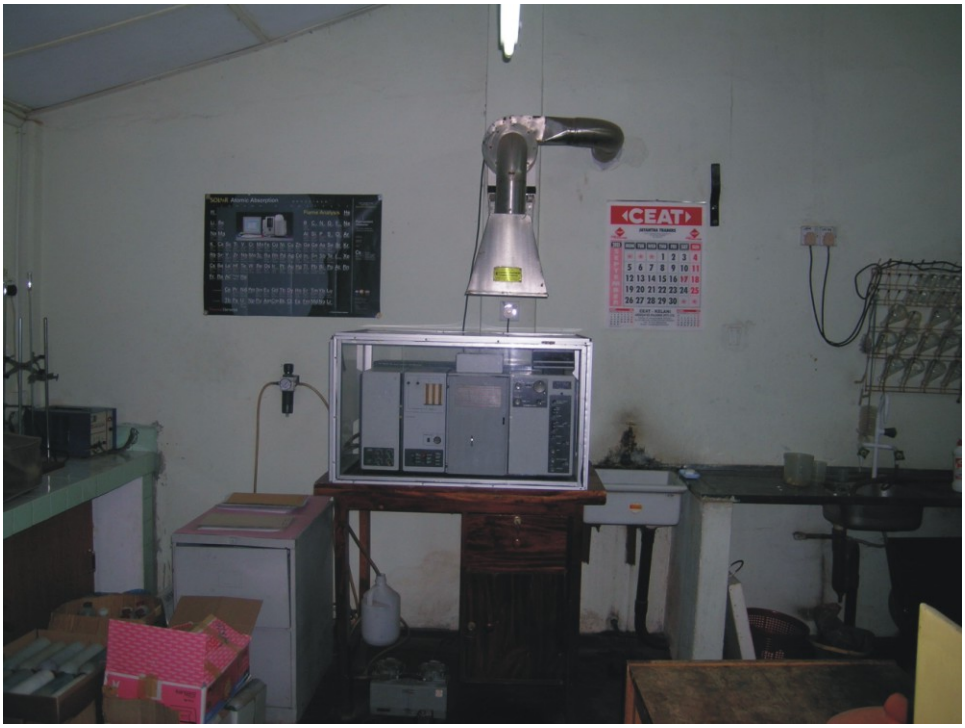

Figure 3. Atomic absorption spectrometer for measuring specific cations.
At the water chemistry laboratory of the Water Resources Board in Colombo.

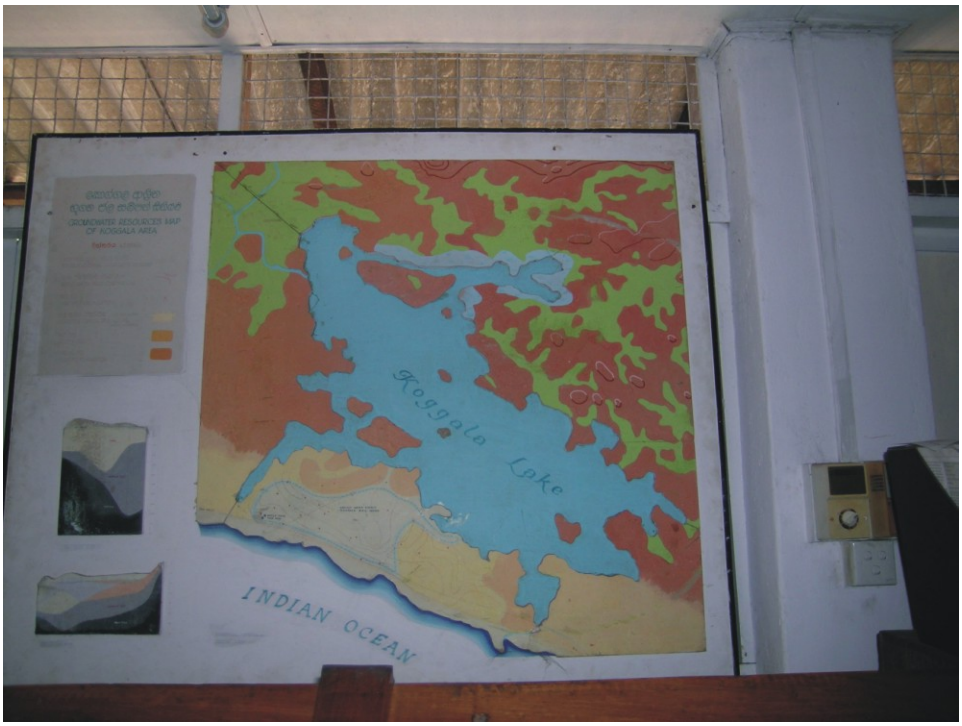

Figure 4. Map on wall in Water Resources Board library. Koggala Lake area in southern coastal Sri Lanka that was impacted by the 2004 tsunami. The Koggala WRB well field is currently monitored and studied by staff at the Colombo WRB office.

3. WRB showed photos of well cleaning in one eastern coastal area that the WRB conducted after the tsunami—this involved about 800 wells in one municipality. WRB reported that the well cleaning improved water quality of these wells.
4. WRB soon plans to buy and use a groundwater modeling software package.

Appendix I:

WATER RESOURCES BOARD
LBORATORY

REPORT ON CHEMICAL EXAMINATION OF WATER

P.O.Box 34
2A, Gregory's Avenue
Colombo - 07

General : 2697050/2694835
Fax : 0112-696429/0112-696894
E-mail : wrbmiwm@slt net.lk

1.Name and address of sender :

2. Sample No :
3. Laboratory Reference No. :
4. District :
5. Location :

6. Project :
7. Source :
8. Purpose :
9. Date & Time of collection :
10. Date & Time of arrival at Laboratory :

Substance or Characteristic	Results	SLS drinking water standards 614 : 1983 part 1	
		Maximum Desirable level	**Maximum Permissible level**
Appearance			
Temperature (C^0)			
Turbidity in NTU		**38 NTU**	**152 NTU**
pH (lab)		**7.0 to 8.5**	**6.5 to 9.0**
Electrical conductivity in µs/cm (lab)		**750**	**3500**
Total Hardness in mg/l as ($CaCO_3$)		**250**	**600**
Total Alkalinity in mg/l as ($CaCO_3$)		**200**	**400**
Total Dissolved solids in mg/l (calculated)		**500**	**2000**
Calcium in mg/l (as Ca)		**100**	**240**
Magnesium in mg/l (as Mg)		**30 mg/l if SO_4=250 150 mg/l if SO_4<250 mg/l**	**140**
Iron (Total) in mg/l (as Fe)		**.3**	**1.0**
Chloride in mg/l (as Cl)		**200**	**1200**
Sulphate in mg/l (as SO_4)		**200**	**400**
Fluoride in mg/l (as F)		**.6**	**1.5**

This report is issued for the information at the client. It shall not be published in total or in part without the written authority of the Chairman, Water Resources Board. This report is limited specifically to this specimen.

Remarks :
Date : .....

.....
Chemist

Water chemistry report used by the Water Resources Board of Sri Lanka in Colombo.