

# **Annual Report**

## **2013**



**Water Resources Board**

**No. 2A, Hector Kobbekaduwa Mawatha**

**Colombo 07**

**[www.wrb.gov.lk](http://www.wrb.gov.lk)**

# **Annual Report - 2013**

## **Water Resources Board**

### **1. Introduction**

The Water Resources Board was established in 1966 under the Act No. 29 of 1964, as an advisory body to the Minister on all matters concerning the control and utilization of the Water Resources in Sri Lanka.

In 1978, Groundwater Division of the Irrigation Department was transferred to the Water Resources Board and functions of the Board were expanded and commenced the implementation activities.

The Water Resources Board Act was amended and passed by the Parliament in 1999 to enable the Water Resources Board to pay more emphasis on matters pertaining to Groundwater Resources in Sri Lanka.

### **2. Vision**

Adequate access to clean and safe water for all

### **3. Mission**

To advise the government and the people on assessing, conserving, harnessing, developing and frugally utilizing particularly the finite groundwater resources in the country working in close collaboration with the rural society, relevant central and local government departments/ divisions/ authorities/ institutions, national and international organizations, and scientific communities here and abroad.

### **4. Objectives**

- i. Carry out research on groundwater resources of the country.
- ii. Collection of data on groundwater resources and maintain a groundwater data base.
- iii. Carry out hydrogeological surveys
- iv. Awareness creation on the groundwater related issues.
- v. Assessment of groundwater resources.
- vi. Implementation of the activities of the board with the coordination of other institutions
- vii. Groundwater development and management.

## 5. Functions

- i. Carry out research on groundwater resources of Sri Lanka
- ii. Interpretation of data on groundwater resources development
- iii. Carry out hydrogeological surveys to detect groundwater resources
- iv. Identification of groundwater potential zones
- v. Identification of groundwater sources by using geo scientific methods
- vi. Carry out studies for groundwater resources development
- vii. Analysis of water samples, chemically, bacteriologically and for heavy metals
- viii. Collect and maintain groundwater data and preparation of hydrogeological maps

## 6. Director Board

- i. Mr. Bandula Munasinghe - Chairman
- ii. Dr. Sisira Kodagoda - Working Director
- iii. Mr. M.A.P. Hemachandra - Director
- iv. Mr. R.B.C. Rathnamalala - Director
- v. Mr. R.M.C. Rathnayake - Director
- vi. Mr. Asanga Dayaratne - Treasury Representative

### 6.1. Board Meetings

Five (05) Board meetings were held in the year under review.

### 6.2. Audit and Management Committee

- i. Mr. Asanga Dayaratne - Chairman - Treasury Representative
- ii. Dr. Sisira Kodagoda - Member - Working Direct
- iii. Mr. M.A.P. Hemachandra - Member - Director
- iv. Mr. R.B.C. Rathnamala - Member - Director
- v. R.S. Wijesekera - Secretary - General Manager

#### 6.2.1. Audit and Management Committee Meetings

Four (04) audit and management committee meetings were held during the year 2013.

### 6.3. Senior Executive Officers – year 2012

- i. Mr. R.S. Wijesekera - General Manager
- ii. Mr. J. Weerakoon -D.G.M. (Hydrogeology)Retired on 30.06.2013
- iii. Mr. A.B.M. Chandrasiri - Assistant General Manager (Finance)
- iv. Mr. M.A. Pushpakumara - Assistant General Manager (Administration)
- v. Mr. Nihal Wellalage - Assistant General Manager (Drilling)
- vi. Mr. G.R.R. Karunaratne - Assistant General Manager(Hydrogeology)
- vii. Mr. P.P.S.R.K. Pathirana - Assistant General Manager (Operations)
- viii. Mr. M.J. Deshapriya - Assistant General Manager (Engineering)

## **7. Operational Activities Performed in the year 2013**

### **7.1. Treasury Funds**

Under the Treasury funds, the following research studies were conducted with the coordination of Head office and Provincial Offices in year 2013.

- i. Hydrogeological study on the coastal sandy aquifer extending from Colombo to Negombo (see 8.1)
- ii. (Development of groundwater monitoring network in Jaffna Peninsula (see 9.3.1)
- iii. Water quality changes studies in Anuradhapura district (see 10.4.1 )
- iv. Hydrogeological study on limestone aquifer in Mannar district (see 11.8)
- v. Hydrogeological study at Kilinochchi and Vavuniya districts.. (see 9.3.2)
- vi. Study on the possible direct and indirect impacts of climate change on coastal aquifer system in Sri Lanka.

### **7.2. Generated Funds**

On the requests of various Government Institutions, Non-government organizations and Individuals, groundwater development activities were conducted in each province during the year 2013. Hydrogeological Investigations, Pumping Tests, Chemical and Microbiological Analysis of water samples were mainly done in this regard. Details of those works are given under the provincial offices.

### **7.3. Capacity Building**

In 2013, five Hydro-geologists, ten Management Assistants and twelve minor employees were recruited to strengthen the capacity. The Hydro-chemical laboratory of Jaffna Office was newly constructed. The facilities of geophysical and chemical laboratories were upgraded under Treasury funds and Dam safety and water resources development projects. Following equipment is provided to enhance the quality of hydro-geological, hydro-chemical and geophysical surveys conducting by the Hydrogeology Division.

- |                                      |                        |
|--------------------------------------|------------------------|
| (a) Two Nos. Mobile Laboratory Units | (d) Bench to pH Meters |
| (b) Three Nos. Drilling Rigs         | (e) Sterilization OVEN |
| (c) Server (GIS Unit)                |                        |

## **8. Western Province**

### **8.1. Hydrogeological study on the coastal sandy aquifer extending from Colombo to Negombo (Treasury fund)**

#### **8.1.1 Introduction**

Detailed hydrogeological studies of the coastal sandy aquifers extending from Colombo to Negombo have been commenced in 2011. The main aim of the study is to establish groundwater monitoring network with dedicated monitoring test boreholes in order to collect temporal data on groundwater quality changes and water table fluctuation. The test boreholes were expected to construct at most sensitive and vulnerable areas for groundwater deterioration due to over abstraction and industrial and domestic pollution.

#### **8.1.2 Project Objectives**

The project objectives are to identify, develop, manage, allocate and converse the shallow sandy aquifer as to achieve the maximum benefits without harming the environment.

#### **8.1.3 Specific Objectives**

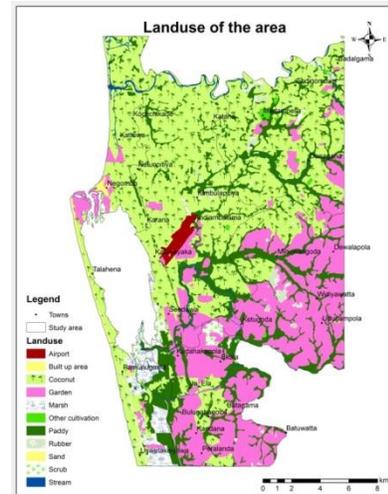
- (1) Identification of aquifer basin geometry, groundwater potentials and water quality in adequate detail.
- (2) Quantification of recharge to the aquifers and to set limits of extraction from the sand aquifer within the study area.
- (3) Design of groundwater monitoring program to asses:
  - a. Environmental impacts due to groundwater extraction.
  - b. The impacts of activities upon the quality of water and its suitability for required use.
- (4) Examination of potential for introducing regulatory mechanism as well as using other instruments for optimum use of groundwater.
- (5) Development of comprehensive data base on groundwater setting out guidelines, norms and criteria for future groundwater development.
- (6) Identification of locations suitable for artificial recharge to groundwater system.

#### **8.1.4 Study Area**

The study area is selected covering the highly urbanized coastal areas of Colombo and Negombo between Maha oya and Bolgoda Oya Rivers. It covers Kochchikade to north and Moratuwa to south and about 20 – 25 km towards inland from western coast as shown in figure 01.



**Figure 1: study area**



**Figure 02: Land Use map of the study area**

### 8.1.5 Activities done in 2013

#### 8.1.5.1 Hydrogeological Investigations

Geophysical investigations were carried out in Gampaha district in various GA divisions. Test tube wells were not constructed in Southern part of the study area in previous year. Therefore more attention was paid to the southern part of the study area for conducting geophysical investigations.

#### 8.1.5.2 Construction of Test Wells and Observation Wells

Purposes of the constructing test wells were identify the subsurface geological conditions, collecting water samples for analysis, identify the aquifer properties of the area. With the help of geophysical investigations suitable locations were selected to construct test tube wells. Under the test well drilling could observed and got an idea about the subsurface geological condition.

#### 8.1.5.3 Test Well Drilling

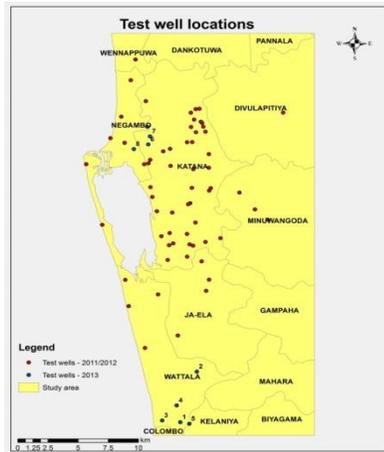
According to the geophysical investigations and field inspections suitable locations were selected for drilling and drilling activities completed in nine locations.

There were two other suitable locations for drilling and drilling activities of those locations will be continued in next steps.

#### 8.1.5.4 Observation Well Drilling

Observation well is also a drilled well, but different from the test tube well with the diameter. It has two inches of diameter. Purpose of constructing observation wells was observe the water level fluctuations during the pumping test which was carried on near test well. Factors such as type of aquifer, its transmissivity, duration of pumping, discharge rate, the length of the screen, and whether the aquifer is stratified or fractured

the position and lengths of the pumping well screen are to be considered when the distance of observation well/s are decided. When selecting the locations for constructing observation wells, it was concerned about the drill log of test tube well and screening was done same as to the test well. Five observation wells were drilled in selected locations



*Figure 03: Test wells constructed in 2012 and 2013*  
**8.1.5.5 Test Pumping**

Two(2) number of pumping tests were completed in 2013. Both of the tests were carried out under 04 main steps.

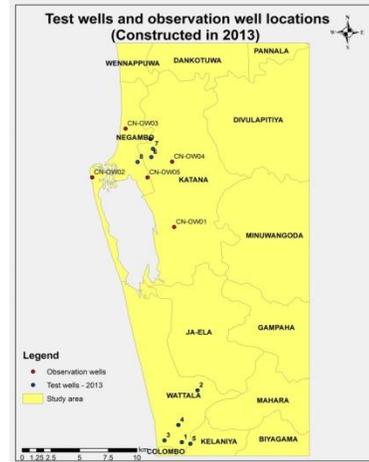
1. Calibration test
2. Step draw down test
3. Constant rate test
4. Recovery test

Under calibration test, instruments were calibrated as a preparation for the test. EC meter, Pump and the valves use for control the discharge rate were calibrated. To decide the step test discharge rates, given flushing yield in the driller’s record was verified by pumping about 15 minutes with the rate of each step. If the maximum rate is not enough to detect the aquifer behavior the rate was increased to get the maximum discharge rate without disturbing the aquifer.

After verifying the discharge rates, step drawdown test was decided for 05 different steps.

From the results of step drawdown test the rate for the constant rate test was decided. From that rate pumping was proceeded for 24 hours.

Recovery of the well is measured after completed the constant rate test until recover the well by 95%.



*Figure 04: Test well and observation wells constructed in 2013*

#### **8.1.5.6 Water sampling**

Under water sampling process, water samples were collected from constructed test wells and in-situ chemical tests were done for 07 chemical parameters (Electrical conductivity, Total dissolved solids, Salinity, pH, Nitrate, Phosphate and Total Iron) for each water sample. Parallel to that process, water levels also measured for the purpose of detecting ground water flow direction. 3 water samples were collected from each well to analyze normal chemical parameters, heavy metals and for Nitrate and phosphate. Acidification was the preservation method. 02 water sampling sessions and 04 water level measuring sessions were done for the year 2013.

#### **8.2. Generated funds work performed under Western province in year 2013**

Head office (Western province) has conducted 181 nos. hydrogeological investigations, 73 nos. construction of tube wells, 31 nos. pumping tests, 816 nos. water samples analysis in chemically and 67 nos. water samples analysis in bacteriologically.

### **9. Northern Province**

#### **9.1. Establishment of a Laboratory**

In 2013, Drying and Sterilizing oven, Bench-top pH meter kit and Bench-top EC meter, Glassware and laboratory safety items were added to already established laboratory of Jaffna office. So, now we have a complete well established laboratory with the facilities to do chemical and bacteriological tests in it.



## **9.2. Dam Safety and Water Resources Planning Project-Component 2**

Phase 2 of this project was going on and under this project, established a long term water quality monitoring network for the Jaffna, Nallur, Chavakachcheri and Pachchilapallai DS Divisions with 37 shallow dug wells and 8 test wells (tube wells). Major works under this project has been completed so far, except final awareness program which is being scheduled to be held in 2014 and future monitoring activities.

## **9.3. Treasury Grant Projects**

There are two projects under the treasury grant funds.

1. Jaffna well monitoring project
2. Vavuniya-Kilinochchi Project (Kilinochchi District)

### **9.3.1. Jaffna Well Monitoring Project**

This water quality monitoring project was an on going project for the Jaffna Peninsula in 2013. Completed the sampling for both wet and dry seasons of 2013 and analyzed. Number of pumping tests has been done to analyze the aquifer properties. Samples were collected from 59 locations. In addition, samples for isotope analysis were collected for groundwater recharge studies with atomic energy authority. Six test wells (tube wells) has been constructed under this project. Also samples from these tube wells were collected and analyzed. Also submitted the Progress report for 2013. Monitoring network for the project area will be established and continue monitoring activities in 2014.

### 9.3.2. Hydrogeological study in Kilinochchi District

This is a part of Vavuniya-Kilinochchi Project started in 2013. Initial Sampling and Chemical analysis has been done. Chemical distribution maps have been prepared. Also submitted the Progress report for 2013. Rest of project activities will be continuing in 2014.

#### Hydrogeological study in Vavuniya district

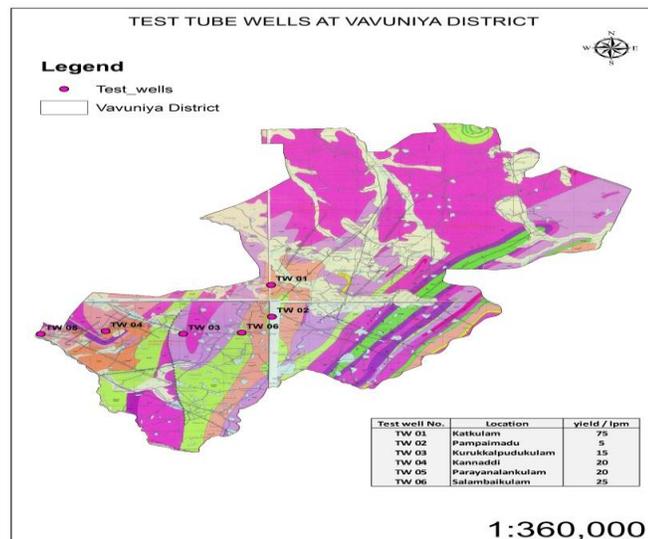
The research was initiated in year 2013 in Vavuniya district under Treasury grant. The project objective is to identify the aquifer parameters, its extensions and demarcates the groundwater potential areas within the Vavuniya district. It is expected to identify the groundwater sources for small scale irrigated agriculture and for drinking purposes of the people in the district with the intention of up grading the living standards of the people. Specific objectives of the study is to identify groundwater potential areas and to see the possibility of developing groundwater sources for future drinking water and small scale irrigated agricultural projects.

21 representative water samples were collected during field survey from dug wells and tube wells and analyzed for fifteen chemical, physical and heavy metals such as Cadmium (Cd), Zinc (Zn), Arsenic (As), Mercury (Hg), Sodium (Na) and Potassium (K).

Six (06) test bore holes were drilled in several places in Vavuniya district. The details of those test bore holes as follows,

**Table 06: Test wells drilled in Anuradhapura district during the year 2013**

Test Bore hole No.	Location
TW 01	Katkulam
TW 02	Pampaimadu
TW 03	Kurukkalpudukulam
TW 04	Kannaddi
TW 05	Parayanalankulam
TW 06	Salambaikulam



#### **9.4. Commercial Activities**

Under this, we have completed 147 full chemical analysis and 17 partials, also 45 bacteriological tests, number of Hydrogeological and Geophysical Investigations and number of pumping tests.

#### **9.5. Drilling Unit**

We have received a new drilling unit with a compressor to our Northern Provincial Office in 2013.

#### **9.6. Lands for offices and Laboratories**

We have received an acre land in Pudhukkadu (in A9 main road), Pachchilppallai division for office and laboratory buildings for our Northern Provincial office, from Land Reform Commission. Fencing of this land has been completed. Now, search of a Land for Jaffna permanent office is still continuing due to lack of land in close proximity to Jaffna town and to A9 road. Also search for a land near Killinochchi town was launched in 2013.

Furthermore, we have given an important attention for Dengue matter as we did in previous year. Held number of Dengue prevention day programs such as cleaning in and out environment of office premises. Also every Friday morning an hour was allocated for that.

### **10. North Central Province**

#### **10.1. Treasury Grant Projects**

##### **Training programmes and Water Clinic**

Water Resources Research and Training Centre undertake awareness and water clinics programs for grass root level officials and rural population to mitigate water related health hazards that affect rural in the dry zone areas under the treasury grant.

##### **10.1.1. Three - days residential training**

Three days residential awareness programmes were conducted at the centre for government officers and village leaders including Grama Niladharies, Samurdhi Development Officers, Public Health Inspectors (PHI), Mid wives, Agricultural Research & Development Officers and Community Health Development Officers. Participants are provided with food and lodging free of charge. Eight numbers of three-day training programs were conducted during the year 2013 and 200 government officers were attended for the program from Anuradhapura, Polonnaruwa and Kurunegala Districts (Table 02) Different subjects related to water have been introduced to participants under the training programme by Water Scientists and Medical professionals in different fields.



Figure 01: Participants at class room



Figure 02: Analysis of water at laboratory.

**Table 02: The details of participants**

District	DS Division	Duty Bearers					
		GN	PHM	SDO	ARO	PHI	DO
Anuradhapura	Galnewa	02	02	06	-	-	-
	Nachchaduwa	09	-	03	05	-	04
	Kekirawa	05	-	02	-	-	-
	Medawachchiya	-	06	07	06	-	01
	Thalawa	02	-	09	-	-	-
	Nochchiyagama	-	02	07	10	05	-
	Rajanganaya	10	-	03	-	-	-
	Manupa	-	04	-	04	01	02
	Thambuththegama	11	-	02	-	-	01
	Ipalogama	-	-	-	04	-	-
	Galenbindunuwewa	-	05	11	05	-	-
	Nenupa	01	-	04	-	-	-
	Horowupathana	-	-	03	-	-	-
	Mihinthale	02	-	-	-	-	-
	Palagala	-	-	02	-	-	-
	Padaviya	02	-	-	02	-	01
	Kebithigollewa	06	-	04	04	-	-
Kahatagasdigilliya	02	-	-	-	-	-	
Rambewa	-	-	02	-	-	-	
Kurunegala	Polpithigama	06	-	-	-	-	-
	Ehetuwewa	02	-	-	-	-	-
<b>Total</b>		<b>60</b>	<b>19</b>	<b>65</b>	<b>40</b>	<b>06</b>	<b>09</b>

PHI : Public Health Inspectors

GN : Grama Niladhari

ARA : Agricultural Research & Production Assistant

PHM : Midwife

SDO : Samurdhi Development Officer

DO : Divisional Officer

### 10.1.2. Water Clinics (Jalasayana)

Farmers, rural population and school children should be educated through the awareness programs to minimize the water borne diseases in the affected areas. With the support of Medical Officers and Duty bearers, community base awareness programs (Jalasayana/water clinic) were conducted in the most affected DS divisions in the Anuradhapura district. Eight Water clinics were conducted at Anuradhapura districts during the year 2013 (Table 03). The “Jalasayanaya” include mainly five folds, namely, distribution of leaflets, presentations, water analysis, distribution of fluoride reducing filters and distribution of set of clay pots.

**Table 03: The details of Water clinics conducted during the year 2013**

S.No	D.S.Division	Location	No of participants Attended	No of water Sample analysed	No of filters distributed	No of clay pots distributed
01	Thalawa	Gambirigaswewa	175	102	16	-
02	Padaviya	Padaviparakramapura	220	155	-	-
03	Medawachchiya	Puhudiwula	120	94	19	15
04	Thirappane	Labunoruwa	130	112	18	15
05	Galenbindunuwewa	Hurulunikawewa	250	144	21	15
06	Medawachchiya	Puleliya	110	71	15	15
07	Thambuththegama	Dematawewa	210	147	27	15
08	Galenbindunuwewa	Galenbindunuwewa	200	129	16	15
<b>Total</b>			<b>1415</b>	<b>954</b>	<b>132</b>	<b>90</b>



Figure 03: Water analysis using Mobile laboratory



Figure 04: Presentation on ‘Water quality’ and distribution of Fluoride reducing filters.

## 10.2 Commercial Activities

During the year 2013, Provincial office has conducted 49 nos. hydrogeological investigations, 21 nos. construction of tube wells, 06nos. pumping tests, 182 nos. water sample analysis, 17 no. hand pumps installation, 02 nos. well cleaning. Further, water quality studies, Awareness program and Water Clinic program were conducted. Total income earned by the North Central province for the year 2013 was Rs. 15 million. The details of the above mentioned activities are as follows;

- 10.2.1** Carry out hydrogeological surveys, tube well drilling and fixing of hand pumps in Vavuniya district in order to supply drinking water for peoples in rural areas under Red Red Cross Society. Number of wells constructed: 12
- 10.2.2.** Carry out hydrogeological surveys, tube well drilling and fixing of hand pumps in order to supply drinking water for peoples in re-settlement area at System-L, Welioya. Number of wells constructed: 10
- 10.2.3.** Carry out detail hydrogeological survey to identify the high groundwater potential zones to supply groundwater for agricultural activities at Kantale under Dole Lanka(Pvt) Ltd.
- 10.2.4.** With the assistance of Community Base Organization (CBO), Productive deep wells were constructed to supply drinking water for peoples in Nochchiyagama, Padaviya, Rambawa, Galnewa, Poonawa and Medawachchiya.
- 10.2.5.** Carry out detail hydrogeological, geophysical and geological studies to identify the environmental issues due to excavations of gravel for development activities at Galenbindunuwewa.

**10.2.6.** Conduct pumping tests for dug wells and deep wells at Matale, Vavuniya and Anuradhapura districts to identify the safe pumping rates of the wells without any adverse effect to the environment.

**10.2.7.** Water samples of the water supply schemes and samples collected from Ministry of Health were tested chemically and bacteriologically by the laboratory affiliated to the provincial Office.

### **10.3. INSTALLATION OF REVERSE OSMOSIS (RO) FILTERS**

In the rural areas of Sri Lanka, majority of people depend on groundwater resources in their day to day activities in which the quality is poor in the dry zone specially in Anuradhapura district due to the presence of excess hardness and fluoride. Low precipitation experienced over a hydrologic year and the high evaporation by the action of direct sunlight on the water bodies causes stagnating of groundwater that is one of the major factors that influence on the presence of higher concentrations of mineral salts in groundwater. Other than that, the influence of lithology and geological structure of the area, overexploitation of groundwater resources that leads to the dying out of aquifers irreversibly and accumulation of ions in the upper soil horizons of a soil profile, causes the higher presence of excess fluoride and hardness in water in these areas. Many people in North Central Province especially in Anuradhapura district have suffered from water borne diseases such as Dental Fluorosis, Skeletal Fluorosis and Chronic Kidney Disease (CKD) over many decades due to continuous consumption of poor quality water for drinking purposes.

Therefore, Water Resources Board has initiated a project to install Reverse Osmosis (RO) filters at schools to obtain safe drinking water for school children and Teachers in affective areas in Anuradhapura district. Fourteen RO filters were installed during the year 2013 and details are as follows;

**Table 04: The list of schools selected for installation of RO filters**

<b>S. No.</b>	<b>Name of School</b>
01	Thammanawa Velusumana Vidyalaya, Seepukulama
02	Puhudivula Vidyalaya, Ataweeragollawa
03	Gemunu Maha Vidyalaya, Yaya 02, Mahakanadarawa
04	Karambankulama Vidyalaya, Kirigalwewa, Medawachchiya
05	Gamini Vidyalaya, Yaya-03, Mahavillachchiya
06	Pahala halmillawa Vidyalaya, Siwalakulama
07	Kidagallegama Vidyalaya, Medawachchiya
08	Thammanakulama Vidyalaya, Thammanakula, Neriyakulama
09	Siridhamma Vidyalaya, Kidawarankulama, poonawa
10	Maradankulama Sri Bodhi Vidyalaya, Maradankadawala, Mihintale
11	Divulwewa Vidyalaya, Hidogama

12	Mahamankadawala Vidyalaya, Elayapaththuwa
13	Parana Halmillawa Vidyalaya, Etaweeragollawa, Medawachchiya
14	Horuvila Vidyalaya, Vilpatthu road, Horuwila



**Figure 05: Reverse Osmosis filter installed at Divulwewa Vidyalaya, Hidogma**

#### **10.4. RESEARCH STUDIES**

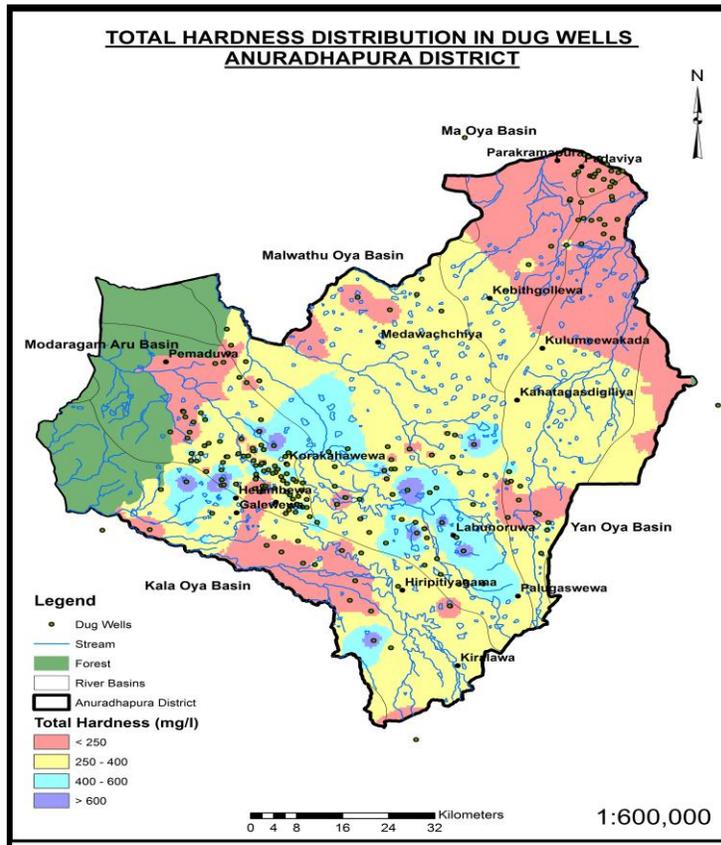
Water Resources Board has initiated the research projects on Water quality and quantity of different aquifer systems in Anuradhapura, Vavuniya and Trincomalee districts. The details of projects conducted in year 2013 are as follows;

##### **10.4.1. Water quality study of aquifer systems and other water bodies in Anuradhapura district**

The study was commenced under treasury grant in year 2011 and detailed studies in Malwathu Oya and Kala oya basins were carried out in year 2013. Main objective of the study is the identification of the water quality distribution in surface, shallow and deep water bodies within Malwathu Oya and kala oya river basins in order to make specific recommendations for further studies on water quality distribution including long-term monitoring.

Total numbers of 82 representative water samples were collected during field survey from dug wells, tube wells, tanks, streams and irrigation were analyzed for fifteen chemical and physical parameters. Additionally, selected samples were analyzed for heavy metals such as Cadmium (Cd), Zinc (Zn), Arsenic (As), Mercury (Hg), Sodium (Na) and Potassium (K).

Under this project, 09 hydrogeological investigations and 09 test wells were drilled in the project area and the details were given in Table 04.



**Table 05: Test wells drilled in Anuradhapura district during the year 2013**

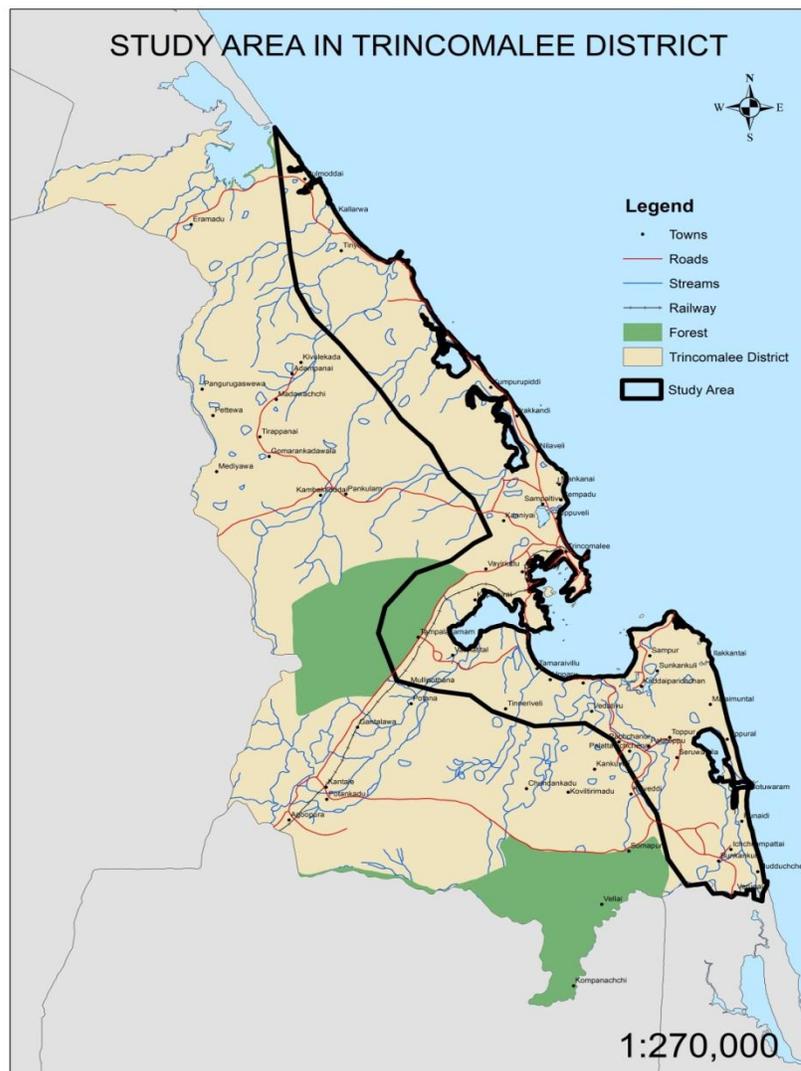
S.No.	DS Division	Village
1	Thalawa	Karagahawewa
2	Palugaswewa	Palugaswewa
3	Thirappane	Labunoruwa
4	Mahawilachchiya	Mahawilachchiya
5	Manupa	Korakahawewa
6	Nochchiyagama	Halambawa
7	Padaviya	parakramapura
8	Thirappane	Alstane
9	Thirappane	Alistane

**10.4.2. The study on the possible direct and indirect impacts of climate change on coastal aquifer system of Sri Lanka**

This study is concentrated to the coastal zone of Trincomalee and the project objective is to identify, the water issues related to the climate change.

Special objectives of the project are,

- To determination changes of the rainfall pattern of the coastal area
  - To identify salinity level changes in coastal aquifer system of Sri Lanka through a proper Groundwater monitoring network
  - To examine potential for introducing regulatory mechanism as well as using other instruments for optimum use of Groundwater
  - To develop comprehensive data base on Groundwater setting out guidelines, norms and criteria for future groundwater development in coastal aquifers.
  - To identify locations suitable for artificial recharge to groundwater system.
- 58 representative water samples were collected during field survey from dug wells and analyzed for fifteen chemical, physical and heavy metals such as Cadmium (Cd), Zinc (Zn), Arsenic (As), Mercury (Hg), Sodium (Na) and Potassium (K).



#### 10.4.4. Groundwater Recharge study in Thirappane cascade in Anuradhapura District.

The study carried out in year 2013 under grant of Ministry of Irrigation and the purpose and the objective of the study are as follows.

1. To Identify the recharge quantity to groundwater table over an hydrologic year due to the precipitation, and seepage and percolation from the tanks of a cascade system.
2. Assessment of seepage lose from tanks that can be used in conjunction with surface water thereby farmers can implement effective water management system during the Yala season where field crops are cultivated with water from wells and tanks.

Following activities were completed during year 2013.

**Table 07: Activaties completed during year 2013.**

S.No.	Activities	Units
01	Collection water samples and analysis for chemical and heavy metals	18
02	Monitoring of dug wells	18
03	Hydrogeological investigation	05
04	Drilling of test holes	02
05	Pumping tests	02
06	Levelling of monitoring wells	18



**Figure 06: Leveling of wells**



**Figure 07: Drilling of test wells**



**Figure 07: Conducting pumping tests**

## **11. North Western Province**

Including government and private parties' hydrogeological activities carried out in the year 2013 as follows. 91 numbers of groundwater investigations, 21 tube wells were drilled and 22 numbers pumping tests were carried out. 02 well cleanings were carried out and 370 water samples were tested and 2 Hand pump installations were carried out. The total income of Provincial office of the year 2013 from January to December, is Rs.22,816,229.00.

The details of the hydrogeological surveys, tube well constructions and hydrogeological studies commenced during the year of 2013 as given below;

- 11.1 Carried out detail hydrogeological surveys, Tube well drilling, hand pump installation, Pumping test and water quality analysis under the Government organization, Private parties and Miner water supply schemes (Community Base Organization) at Puttalam, Anamaduwa, Pallama, Kalpitiya, Mundalama, Battolu Oya, Dankotuwa, Arachchikattuwa, Vanathawilluwa, Madampe, Naththandiya, Pannala and Nawagaththegama DS divisions.
- 11.2 Under the "Dayata Kirula" development programme, the hydrogeological surveys, pumping test and tube well construction were carried out to supply water rural communities at Puttalam District.
- 11.3 The hydrogeological surveys, pumping test and tube well construction were carried out for supply water rural communities at Maha\_Andarawewa, Nawagaththegama areas and water quality analysis were carried out Mundalama area under the World Vision Lanka.



11.4 For the propose new Navy camp at Gagewadiya area a tube well was constructed and carried out 72 hour pumping test including water quality analysis according to the detail hydrogeological survey carried out at previous year.



11.5 For the expected new clinker plant by Holcim Lanka(Pvt.) Ltd, at Akuwakkalu Quarry area an additional tube well was constructed and carried out 72 hour pumping test including water quality analysis according to the detail hydrogeological survey carried out at previous year.

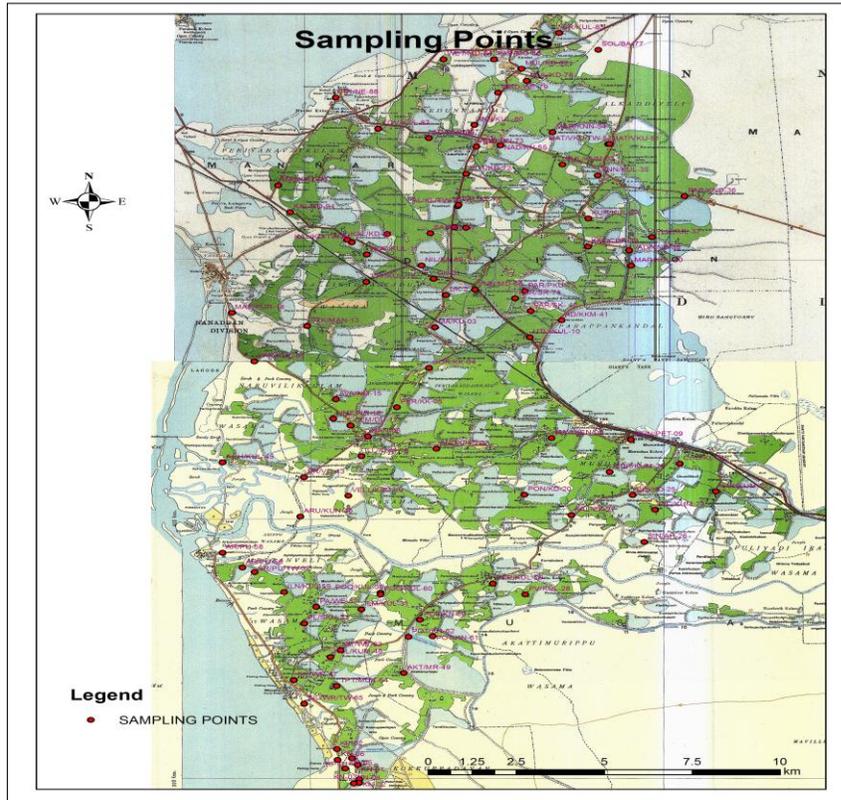
11.6 To provide the details for environmental impact assessments, water quality (Full Chemical & Micro Biological) analysis and well monitoring programms were carried out at Dummalasooroya, Wathuwatta area and Nattandiya, Wathugahamulla area. To study the impact on groundwater in surrounding area due to wastewater removing from the Coco tech export lanka Pvt(Ltd), and Jocobi carbons Lanka Pvt(Ltd) and under the provincial environmental authority, water samples collection and analysis were carried out for study the ground water quality in Bingiriya, Katupotha and Paduwasnuwara DS divisions using mobile laboratory.



11.7 To assess the environmental impact due to the sand mining activities and metal quarry, Hydrogeological and geophysical investigations were carried out at the respective lands and provided technical details for minimized the environmental affect due to these mining activities to the Environmental authority.



- 11.8 Under treasury grant project of Hydrogeological study on limestone aquifer system in Mannar district”, ground water investigations, seven (observation well and test well) drilling, well monitoring programme, water sampling, water quality analysis and leveling programme were conducted for study the high groundwater potential zones, groundwater quality and the geometry of the underneath geological formations in the project area. **The income: ^Rs'872"976'00&**



- 11.9 Under the DSWRPP in Kalpitiya, Puttalam and Vanathawilluwa areas hydrogeological studies were conducted by using 1-D"2-D Resistivity Surveys. Well monitoring programme was carried out including water quality analysis, and maps were prepaid. test bore wells were constructed to long term monitoring activities at Vattakandal, Eththale, Puttalam areas. Similarly organized an awareness programme in Puttalam District secretariat & Kalpitiya DS Office. Also well leveling programme was carried out above area.
- 11.9 Laboratory facilities improved and open the laboratory with new equipments to analysis of heavy metals by using Atomic Absorption Spectrophotometer reserved under the DSWRPP project. This will help to check the quality of drinking water people use in the region. Also it will really helpful to conduct groundwater research activities in the region successfully.



11.10 Painting and renovations has been done in the Provincial office buildings, garden and shrine room. Landscaping and cultivating done for surrounding of the office along with a new sign board.



11.11 Successfully conducted two awareness programs in Kalpitiya and Mahakumbukkadawala District secretariat regarding the sustainable use of groundwater, pollution due to Agrochemicals and the activities of WRB and the importance of ground water respectively.



11.12 A new officer's quarter which has improved facilities for accommodation was opened by GA Puttalam, chairman and General Manager of WRB.



## 12. Southern Province

The following activities were done by the Southern Provincial office located at Hambantota during 2013.

1. A report on rehabilitation of hand pump wells in Hambantota district has prepared and submitted to the Hon. Speaker Chamal Rajapakse by the Chairman.
2. According to the instruction and interfere of the chairman, necessary action was done to be allocated a block of land about ½ acres for Southern provincial office in Hambantota and a plan was prepared to construct a laboratory and provincial office buildings and the approval from the Hambantota Municipal council for this was taken.

3. A hydrogeological survey was done to find out whether there was any impact on Batuwantudawa spring and the surrounding area due to the block out of additional two acres of land in the same area by Access Company in Galle and a report was submitted.
4. A hydrogeological survey was done to find out the impact on ground water in the area due to the block out of 15 acres of land in MoragollaWatta, Pilana, Galle according to the request made by the Prime Land Company. The investigation report was submitted.
5. A hydrogeological survey was done at metal quarry site, to study the impact on ground water. The investigation report was submitted.
6. A ground water investigation was done at Palatupana proposed for a Hotel.
7. According to request made by the Hon. Minister Mahinda Amaraweera, a hydrogeological and geophysical investigation were carried out to find a suitable location for a water supply scheme at Indigahaweal, Thalamporuwa in Angunakolapellassa AGA division.
8. A pumping test was done at the China Railway project, Kakunadura, Matara.

Pumping Test at Matara Kakunadara(Chaina Railway)



9. According to the Establishment of Groundwater Monitoring for Sri Lanka project, data collection of 35 water supply scheme sites in Hambantota district was completed.

### 13. Uva Province

#### Uva Province

1. According to the request made by the Honorable Minister, Irrigation and Water Management Nimal Siripla De Silva, following ground water investigation works, drilling works and hand pump installation works in Badulla district had been completed in 2013 under the ministry funded project.

Serial No.	Location of Ground water investigation	Electorate	Recommendation	Remarks
01	Kotawera Agrarian services , Yahalaarawa	Uwa Paranagama	Selected for hand pump	Abandon well
02	Udaarawa village, Yahalaarawa	Uwa Paranagama	Selected for hand pump	Drilled and hand pump installed
03	Ransirigama Village	Uwa Paranagama	Selected for hand pump	Drilled and hand pump installed
04	Ulugala Village	UwaParanagama	Selected for hand pump	Drilled and hand pump installed
05	Kandagolla Village	Uwa Paranagama	Selected for hand pump	Drilled
06	Downside Village (Ground)	Uwa Paranagama	Rejected	
07	Downside Village (upper part)	Uwa Paranagama	Selected for hand pump	Drilled
08	Maspanna Ayurvedic hospital	Uwa Paranagama	Selected for hand pump	Drilled and hand pump installed
09	Divithotawelakanda	Walimada	Selected for hand pump	Drilled and hand pump installed
10	Dambavinna Sri Saranankara Maha Vidyalaya	Walimada	Selected for hand pump	Drilled and hand pump installed
11	Sri Paramadarsha Purana Viharaya, Mirahawaththa, Nawala	Walimada	Selected for hand pump	Drilled and hand pump installed
12	Mahawangiyapathana Sri Sudarmaramaya, Amunumulla	Walimada	Selected for hand pump	Drilled and hand pump installed
13	Sri Nigrodaramaya Malpotha, Mirahawaththa	Walimada	Selected for hand pump	Drilled and hand pump installed
14	Madagedara Junction, Madagedaragama	Walimada	Selected for hand pump	Drilled and hand pump installed
15	Pahala Dambavinna temple, Dambavinna	Walimada	Selected for hand pump	Drilled and hand pump installed
16	Pahalakadana, Kadana.	Haliela	Selected for hand pump	Drilled and hand pump installed
17	Niliathugoda Community center	Haliela	Selected for hand pump	Drilled and hand pump installed
18	Atampitiya Mahavidyalaya, Atampitiya	Haliela	Selected for hand pump	Drilled and hand pump installed
19	Dinsland Church, Neludanda	Haliela	Selected for hand pump	Drilled and hand pump installed

20	L.D. shop, Anthuduwawala	Haliela	Rejected	
21	Ampitiya Ground, Wewalhinna	Haliela	Rejected	
22	Madagama Aluthgedara Junction, Madagama	Haliela	Selected for hand pump	Drilled and hand pump installed
23	Houses near water board, Mahawaththegama	Haliela	Selected for hand pump	Drilled and hand pump installed
24	Maligathennatamil school, Maligathenna	Haliela	Selected for hand pump	Drilled and hand pump installed
25	Udakovila E. H. kotasa, Landewela	Haliela	Rejected	
26	Digalla Village	Haliela	Selected for hand pump	Drilled
27	Katawela Village	Haliela	Selected for hand pump	
28	Udayagama Buddaprathimawa Asala, Imbulgoda	Haliela	Selected for hand pump	
29	Uduwara Piriwen Viharasthanaya, Uduwara	Haliela	Selected for hand pump	Drilled and hand pump installed
31	Uduwela Maha Vidyalaya	Badulla	Selected for hand pump	
32	Uduwela Barathi Maha Vidyalaya	Badulla	Selected for hand pump	
33	Badulupitiya Ground	Badulla	Selected for hand pump	Drilled and hand pump installed
34	Galkanda Village Upper part	Badulla	Selected for hand pump	Drilled
35	Guruthalawa Muslim Vidyalaya	Walimada	Selected for hand pump	Drilled and hand pump installed
36	School near Boragas PadinawelaJ umma Mosque	Walimada	Rejected	
37	Aggala ulpatha,10 <sup>th</sup> mile post, Kanda ketiya	Viyaluwa	for Abandon well	Drilled and hand pump installed
38	Dikkapitiya School	Walimada	Investigation completed	
39	Aggala Ulpatha 16 <sup>th</sup> mail post, kudumirisketiya	Migahakiwla	For unsuccessful well	Drilled and hand pump installed
40	Soranathota Technical College, Ridipana	Soranathota	Selected for hand pump	Drilled and hand pump installed
41	Wewalhinna Ground, Madagama	Haliela	Rejected	
42	Udawelakovila	Badulla	Selected for hand pump	Drilled and hand pump installed
43	Uwaparanagama Pradeshiya sabawa, Ambagasdowa	Uwa paranagama	Selected for hand pump	Drilled and hand pump installed
44	Somarathna Boudda Madyasthanaya asala	Uwa Paranagama	Rejected	
45	Kumbukgahawaththa kotasa, Kumbukgahawaththa.	Haliela	Rejected	
46	Uwajayagama Village	Haliela	Selected for hand pump	Drilled and hand pump installed
47	Sri Badrakali Amman Kovil,	Haliela	Rejected	

	Bogahamadiththa			
48	BogodaMahaVidyalaya	Haliela	Selected for hand pump	Drilled and hand pump installed
49	Atampitiya town	Haliela	Selected for hand pump	
50	Katugahahandiya, Pattiyagedara	Haliela	Selected for hand pump	Abandon well
51	Near to Nikaathagamawewa, Nikaaththagama	Mahiyanganaya	Rejected	
52	Near to Parani Makulgolla shop	Mahiyanganaya	Selected for hand pump	Drilled and hand pump installed
53	Kolombawaththagama, Hebarawa	Mahiyanganaya	Selected for hand pump	Drilled and hand pump installed
54	Ampitigoda Junction, Ampitigoda	Uwa paranagama	Reject	
55	Maspanna School,	Uwa paranagama	Selected for hand pump	
56	Bandarawela Zonal Irrigation Director Office	Bandarawela	Selected for hand pump	
57	Badulla Central College	Badulla	Selected for hand pump	Drilled and hand pump installed
58	ViharamahadeviBalikaVidyalaya	Badulla	Selected for hand pump	Drilled and hand pump installed
59	Kailagoda Elders home	Badulla	Selected for hand pump	Drilled and hand pump installed
60	KandagollaNawodyaMahaVidyalaya	Badulla	Rejected	
61	NawodyasewanaIlukthanna, Sirimalgoda	Badulla	Rejected	
62	Higurugamuwawaththa, Glanelfeen part	Badulla	Selected for hand pump	
63	VishakaMahaVidyalaya	Badulla	Selected for hand pump	Drilled and hand pump installed
64	SaraswathiMahaVidyalaya	Badulla	Selected for hand pump	

Well cleaning at Niliathugoda (Ministry funded tube well program)



2. A ground water investigation, construction of deep tube well and pumping tests were done at Demodara post office.
3. Following works have been done for the water treatment plant installed at Moneragala Hospital by Water Resources Board.1. Replacement of filter sand 2. Defective filter nozzles 3. Cleaning of aerator and applying epoxy paint 4. Cleaning of delivery pipe line from tube well to treatment plant using high pressure water and air. 5. Water testing for chemicals including heavy metals such as AS, Cd,Pb.
4. Ground water investigation works were carried out and reports were submitted to Dole Lanka Company for selection of suitable sites for water supply of banana cultivation at Demodara in Moneragala district.

5. Ground water investigation works were carried out and reports were submitted to Dole Lanka Company for selection of suitable sites for water supply of banana cultivation at Kudaoya, Thanamalwila.
6. Ground water investigation works were carried out and reports were submitted to IkonKestrel Company for selection of suitable sites for water supply of banana cultivation at Balaharuwa, Thanamalwila.
7. Ground water investigation works were carried out and reports were submitted to Ikon Kestrel Company for selection of suitable sites for water supply of banana cultivation at Nikawewa, Thanamalwila.

Geophysical Investigation at Ambakola ara and Nikawewa site (Ikon Kestrel)



8. Ground water investigation works were carried out and reports were submitted to a nursery of rubber development land at Padiyathalawa.
9. Pumping test of tube well was done at Uma oya resettlement area in Walimada.

10. A groundwater investigation was done for water supply scheme to Dambagahapitiya village in Ridimaliyadda requested by Mahawali Authority.
11. Groundwater investigation works and tube well drilling works were completed for water supply scheme to Meedumpitiya resettlement area requested by AGA, Passara.
12. A groundwater investigation was done at the circuit bungalow of governor at Badulla.
13. A ground water investigation was done for availability of water at Howpay, Kosgama, Belihuloya.
14. According to the Establishment of Groundwater Monitoring for Sri Lanka project, data collection of 28 water supply scheme sites were completed in Moneragala district.
15. According to the Establishment of Groundwater Monitoring for Sri Lanka project, data collection of 05 water supply scheme sites were completed in Nuwaraeliya district.
16. Drilling of a tube well was done at Heritage hotel site at Koslanda

#### **14. Laboratory**

The water samples collected from various projects and private parties were analyzed by the laboratory of the Water Resources Boards and the year under review, 678 samples were analyzed chemically 41 samples were analyzed bacteriologically. 3192 samples were analyzed for heavy metals.

##### **14.1 CHEMICAL /MICROBIOLOGICAL ANALYSIS**

Six hundred seventy eight number of water samples were tested for full chemical analysis & sixty four water samples tested for partial chemical analyses. Forty one numbers of water samples tested for microbiologically during the year 2013. Total Income of the Laboratory in Colombo is 12.6 Million.



**Fig : 1** Chemical Laboratory



**Fig 2 :** Microbiology Laboratory

#### 14.2 HEAVY METAL ANALYSIS (As, Cd, Cr, Pb, Mn, Na, K, Zn etc,....)

Three thousand one hundred ninety two number of heavy analysis were tested in nine hundred forty four water samples. Water samples were received to the Laboratory from the various projects conducted by Water Resources Board and private parties.



**Fig 3:** Instrument (Atomic Absorption Spectrophotometer) using for Heavy metal analysis in water samples.

#### 14.3 IMPROVMENTS:

***DEVELOPMENT OF THE MANAGEMENT SYSTEM OF THE LABORATORY OF WATER RESOURCES BOARD AS PER ISO 17025: 2005 STANDARD.***

It has been decided to implement the ISO 17025: 2005 Laboratory accreditation Scheme for the Water Resources Board, central Laboratory to strengthen and raise the level of services provided by the laboratory with the International Standard. This project was funded by the Dam Safety & Water Resources Planning Project. Industrial Technology Institute (ITI) proceeds as the consulting group for these activities. Project started on 11<sup>th</sup> November 2013 and related work is continuing with Water Resources Board up to now.



**Fig 4 :** UV/VIS Spectrophotometer using for analysis Nitrate, Nitrite, Phosphate, Fluoride, Total Iron etc.....in water samples.)



**Fig 5 :** Conductivity meter using for Electrical Conductivity in water samples.



**Fig 6 :** pH meter using for measure pH values in water samples.



**Fig : 1** Study conducted by the Water Resources Board at Rathupaswela, Gampaha District.

## 15. Dam Safety and Water Resources Planning Project (DSWRPP), Component-2

Over the past few decades, there have been three main state agencies involved in groundwater development in Sri Lanka. They are the Water Resources Board (WRB), National Water Supply and Drainage Board (NWS&DB) and the Agriculture Development Authority (ADA). In addition, a several private drilling companies and donor funded projects also have been engaged in the investigation and development of this resource. In terms of monitoring and data collection, these organizations collect data primarily for their own use although some is shared with other agencies and some is released to the public. However this collected data is mostly limited to deep wells. In most cases, the recorded information is not precisely defined and organized for the use of future purposes. No systematic groundwater monitoring network is in place in Sri Lanka resulting for not being identified potential threats and impacts to both spatially & time variant components of hydrogeological status of aquifers.

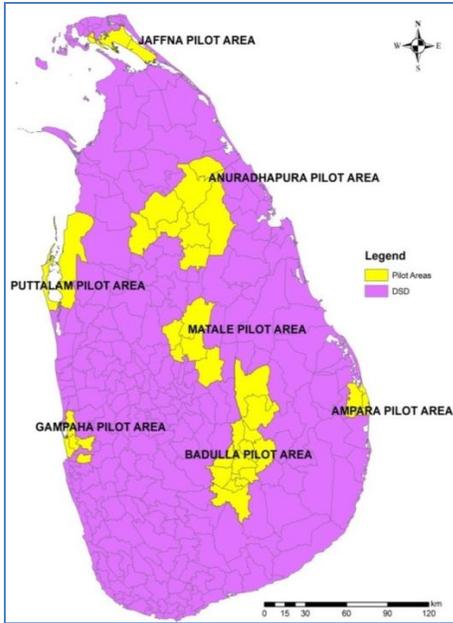
The agency responsible for groundwater management in Sri Lanka is Water Resources Board, which has mainly been engaged in planning and supervision of groundwater exploration and well drilling activities for public and industrial use of the ground water resources. Despite the fact that the WRB has a qualified staff, it has been identified that they must be provided with an external input for planning and implementing a sustainable ground water monitoring program. In this context, the DSWRPP has included a subcomponent for the establishment of long term monitoring network on selected pilot areas with necessary resources assistance and capacity improvement to the implementing agency i.e. WRB.

### Design & Establishment of Groundwater Monitoring networks Under DSWRPP-Component-2:

Considering the need of establishing the groundwater monitoring network in the country to identify the status of the groundwater chemistry and implement a protection mechanism through continuous monitoring, seven no of pilot areas were selected as an initiative under DSWRP project with the technical assistant of Hydrosult Inc. Canada to develop and establish a groundwater monitoring network in the identified areas that deemed to be both impacted and under threat due to the various causes.

The below table indicates the pilot areas and associated issues.

Pilot area	Issues	DSD'S	District and Area (Km <sup>2</sup> ) (Approximately)
Area 01	Bacteriological and Extensive Agriculture pollution	Jaffna Town, Nallur, Tennyumarachchi, South island.	Jaffna peninsula
Area 02	Extensive Agriculture	Kalpitiya	Puttalam 168
Area 03	Over extraction of water from Agro wells	Dambulla, Gelewela, Laggala- Pallegama, Naula, Pallepola	Matale 1200
Area 04	Kidney disease	Medawachchiya, Nuwaragampaltha (central), Kebithigollawa, Rambawewa, Horowpathana, Kahatagasgogiliya Padaviya, Galenbindunuwewa	Anuradhapura 1990
Area 05	Industrial pollution	Gampaha, Ja-ela, Wattala, Biyagama, Katana	Gampaha 376
Area 06	Salinity	Puttalam, Vanathawillu	Puttalam 1012
Area 7	Extensive Agriculture	Samanthurai, Ninthaur, Karathive, Adallachchnai	Ampara



Identified Pilot areas in the country

Various activities were completed under this component during this year too according to the work plan such as water quality sampling and analysis, leveling of monitoring points, test pumping, Test well drilling, groundwater head monitoring, 2D geophysics to identify the subsurface aquifers etc.

### **Awareness programs (Final Phase)**

In addition to the awareness programs held during the initial phase of this study, second round of awareness programs were also conducted in the pilot areas through two categories.

#### **a.) Pilot area level Awareness**

For the initial awareness had before the commencement of the project , the following organization were participated ;

- Divisional Secretariat
- Health Department
- NWSDB
- NGOs & INGOs
- Agriculture and Agrarian Services

In addition to the initial awareness program participants, the Pradhesiya Sabas & provincial council members were attended. These second round of awareness programs are in progress at the pilot areas in order to inform the stakeholders and other state sector officers about the outcomes of the project and the measures to be taken to mitigate the impacts identified by the monitoring program. Such awareness programs were already organized and conducted by Water Resources Board at Anuradhapura and Puttalam pilot areas. In addition, the arrangements are underway to carry out the awareness programs in Jaffna and Ampara as well. In these programs the stakeholders, government officers and other all responsive bodies were aware by WRB on the present status of groundwater resources and requirement for effort to be put in to minimize the threats due to anthropogenic activities.



Fig. : The Awareness programs held at Kalpitiya DS division (DSD level awareness) and Puttalam Pilot area Pilot area level Awareness)

In this context, a follow up activity program was introduced which included a protection plan. The protection plan indicates the entire process and it could be considered as a follow up mitigatory action plan of the project which extends for next two years time period (2013- 2015).



Fig. : The awareness programs held at A'pura Pilot area (Pilot area level Awareness) and Galenbindunuwewa DS division (DSD level awareness)







## b.) Workshop on groundwater management

A national workshop was organized on the theme titled “Issues and Solutions: Groundwater Resources Management in Sri Lanka” by WRB under DSWRPP on 30 July, 2013 at BMICH. Hon. Minister Nimal Siripala De Silva, Ministry of Irrigation and Water Resources Management was participated as the chief guest for the occasion.

The study outputs and findings of each pilot areas were presented by the Hydrogeologists who worked in these Pilot areas under DSWRPP groundwater component. In addition, five technical papers were also presented on the theme of Groundwater management. The proceedings of the workshop is in progress to publish as a workshop journal.



## Capacity Build up at Water Resources Board

In addition to the equipment procured in 2011 and 2012, the followings were procured during the year 2013.

<i>Serial Number</i>	<i>Item</i>
1	Mobile Laboratory unit
2	Drilling Rig
3	Server (GIS Unit)
4	Laboratory Equipment
4a	Measuring Cylinders
4b	Reagent bottles
4c	Glassware
4d	Safety ware
4e	General Laboratory item

4f	Bench top pH meter
4g	Bench top pH meter Bench top pH meter Bench top pH meter Sterilization Oven Sterilization Oven Sterilization Oven
4h	Burette, Flasks, Funnel

## Outcomes of monitoring activities

### Issues identified

Table below provides information on issues and impacts identified during the process of establishing monitoring networks in the pilot areas.

Pilot area	Identified issues/information	Zone (area)	Probable Reason
Gampaha	No <sub>3</sub> pollution	Katana, Biyagama	Poor sanitation
	Acidity of water	Katana, Biyagama, Ja-Ela, Gampaha	Industrial soil characteristics and industrial pollution
	Mn pollution	Biyagama, Ja-Ela	Industrial pollution
	High Groundwater potential zones	Katana(Ambalanmulla)	Associates with two faults zones
Ampara	No <sub>3</sub> pollution	Samanthurai, Irakkamam, Addalachchena, Malwatta, Ninthauvr	Poor sanitation and excessive usage of NO <sub>3</sub> containing fertilizer
	Ion pollution	Central camp, Adalachchena, Malwatta, Ninthavur	Country rock weathering
	PO <sub>4</sub> pollution	All over the pilot area	Excessive agricultural activities
	Slinity	Chavalakkudai, Navithanveli	Sea water intrusion Geological conditions of the area.
	Mn pollution	Navithanveli, Samanthurai and Deegawapi	Usage of pesticides?
	Cd pollution	Navithanveli, Samanthurai and Deegawapi	Usage of pesticides?
Anuradhapura	Fluoride pollution	Kebithigollawa, Kahatagasdigiliya, Padawiya, Galenbidunuwewa	Rock weathering/inherited soil properties
	Total alkalinity		High hardness
	No <sub>3</sub> pollution	Scattered zones	Poor sanitation and fertilizer
Jaffna	No <sub>3</sub> pollution	Kopai, Thirunaveli, Nallur, Kaithadi	Excessive use of fertilizer
	High salinity	Ariyalai	Sea water intrusion?
	Fresh groundwater zones	Iyakkathchi to Kadeikadu	Associate with isolated sand lenses
Puttalam	NO <sub>3</sub> pollution	Kalpitiya, Puttalam town area	Poor sanitation and excessive use of agrochemicals
	PO <sub>4</sub> pollution	Vanathavillu	excessive use of agrochemicals
	Salinity	Aruwakkalu	Seawater intrusion logon influence
Matale	Groundwater depletion in the Agro wells is the key factor to be identified.		
	High fluoride	Dewahuwa, Digampathaha	Rock weathering/ inherited soil characteristics

Table - Outcomes of the monitoring network

The below table represents the wells selected for the monitoring networks of each pilot area as of the end of August 2013. These numbers include the existing wells and new wells drilled under the DSWRPP.

Pilot area	Well type		Monitoring Points
	Deep	Shallow	
Ampara	14	17	31
Anuradhapura	10	30	40
Jaffna		38	38 -46
Matale	9	34	43
Puttalam	16	20	36
Gampaha	15	9	28

Table- Monitoring points selected as at August 2013.

### Established Groundwater Monitoring networks in Pilot areas

Work related to establishment of groundwater monitoring networks has been completed and the monitoring networks of the pilot areas are shown in below.

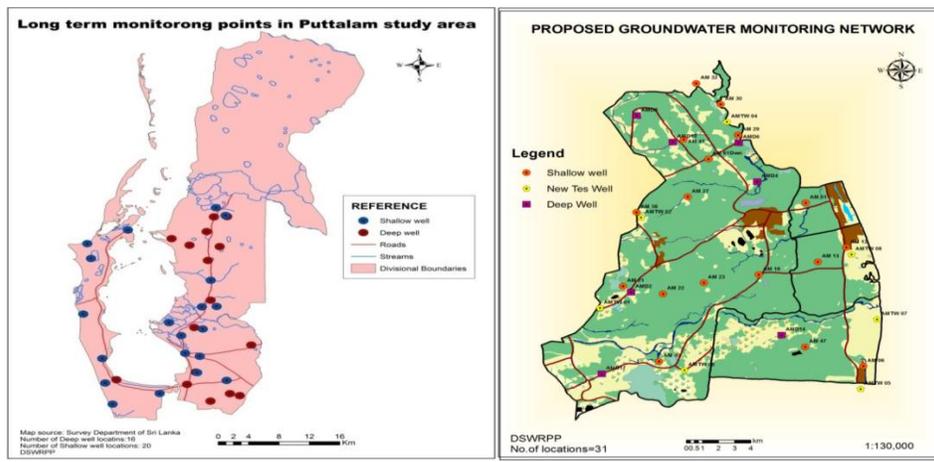


Fig. Monitoring network of the Puttalam and Ampara Pilot areas

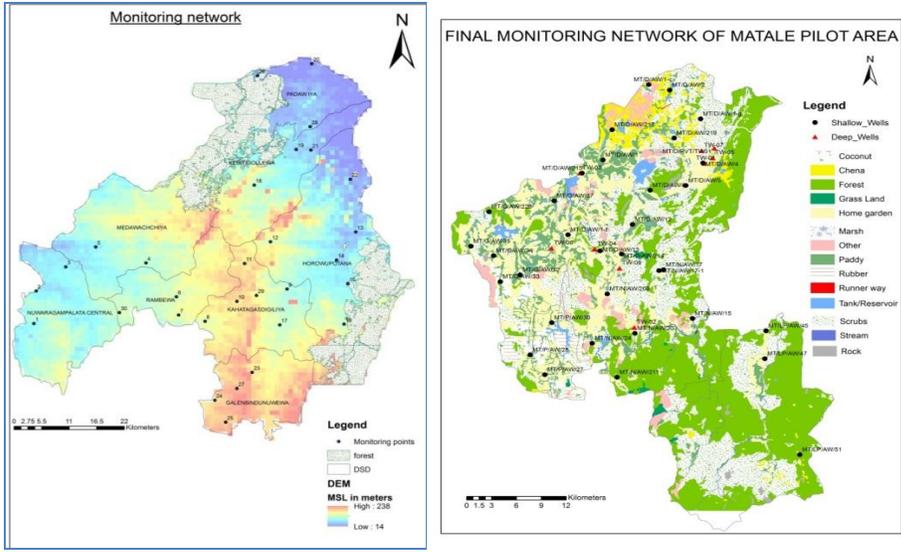


Fig : Monitoring network of the A'pura and Mathale Pilot areas

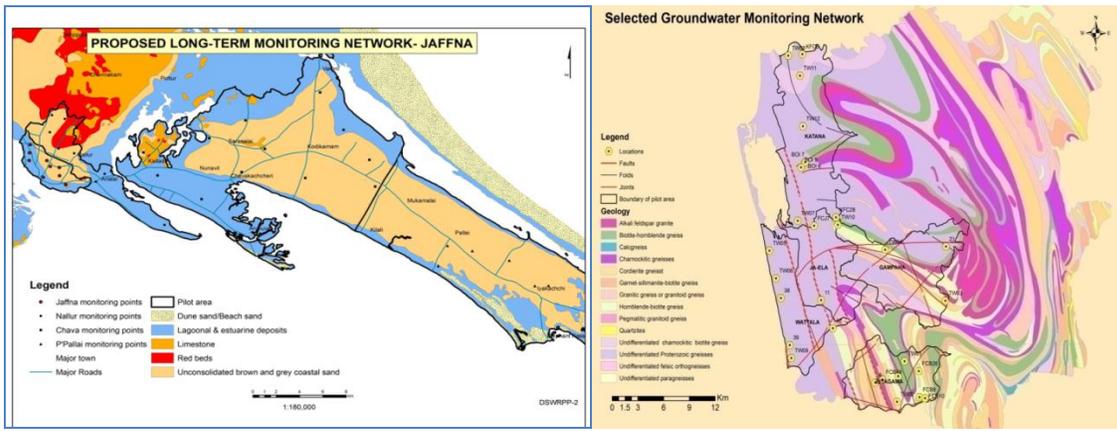


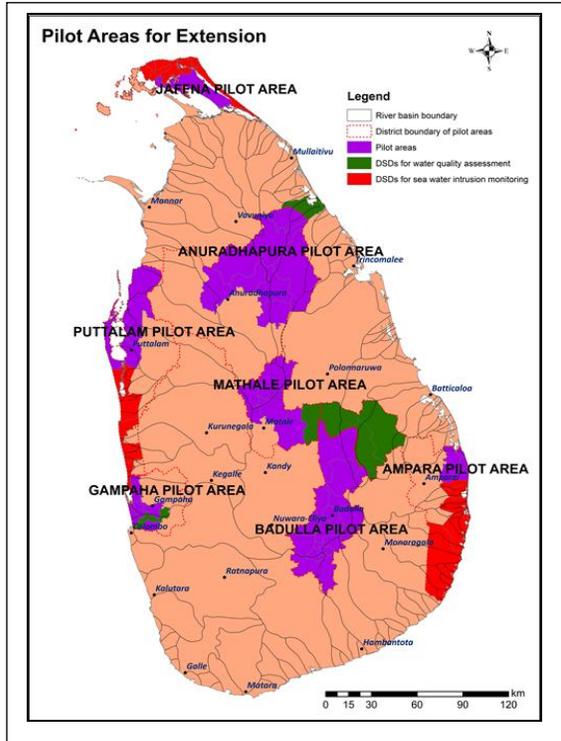
Fig : Monitoring network of the Jaffna and Gampaha Pilot areas

## Final Monitoring networks in Pilot areas

Work related to establishment of groundwater monitoring networks have completed and the necessary awareness on grass root level and subsequent post audit monitoring plan is in progress to minimize the impacts through an approach of awareness and change of altitudes among the framing community as other responsive people which are indirectly responsible for the contamination of groundwater.

## Phase II of the component

The extension phase of this study component is scheduled to implement in 2014-2015 period. The additional areas have been included in the pilot areas as shown below (red & green zones). The project Allocation is 211 Mn rupees and equipment of drilling machineries, laboratory equipment and other hydrogeological equipment are to obtained during this extension program which is an essential in the capacity buildup of WRB.



## Objectives of the extension study

- Establishment of seawater monitoring surveillance lines
- Strengthening of monitoring network with additional areas identified
- Continuation of the long term water quality monitoring through the established monitoring networks

Minimize the impact on groundwater through grass root level awareness with continuous

## 16. Drilling Division

In the year reviewed, 213nos. tube wells and 06nos. test wells were constructed. Further 22 nos. well cleaning were done, 02 nos. tube wells and 12 nos. hand pumps were rehabilitated and 86 nos. hand pumps were installed.

## 17. Construction Work

In the year 2013, the following construction work has been done

- 17.1 Supplying and fixing aluminium doors and windows for new officer' quarters laboratory, office and construction of common bathroom at Provincial Office Puttalam.
- 17.2 Construction of driver's room at Head Office.
- 17.3 Floor Tiling the main building at Head Office
- 17.4 Construction of vehicle garage at Provincial Office Anuradhapura, Korakahawewa.
- 17.5 Fixing weather shades in Circuit Bungalow, Anuradhapura.

## **18. Workshop, Ratmalana**

### **18.1. Minor repairs of vehicles**

30 nos. Minor repairs were done at for the WRB vehicles.

### **18.2. Drilling machine repair Unit**

Repair and maintenance of drilling machinery of the Water Resources Board was done by the drilling machine repair unit. In the past year, service and repair work of all drilling rigs and air compressors were done by this unit. Accordingly, 7 nos. repairs on drilling rigs and 4 no. repairs on air compressors were done.

### **18.3. Mechanical workshop**

In the year 2013, Two wind mills were fabricated. Fabricated 100 Nos. well caps, and name boards for the CN Project and 05 Nos. Holders & Safty Chambers for Water Level Recorders were prepared. Welding and fabricating Rig No.14 Chassy and Jaffna office gate .Single Cab (27-8709) and Rig No.14 tinkering & painting Works also were done. Repairing & servicing of Iron removing plant water filter at Monaragala Hospital.

### **18.4. Vehicle service station**

During the year 2013, 55 nos. vehicles services were done at the Service Station, Ratmalana.

## **19. Internal Audit Division**

Thirteen (13) Nos. audit quarries were submitted and replied eleven (11) Nos. audit quarries which were submitted by the Auditor General's Department during the year 2013

## **20. Finance**

The total income for the year concerned was. Rs. 88 million. For the year 2013, Rs 83.1 million as recurrent and Rs. 15.05 million as capital was received from the treasury. The deficit reported in the year was Rs. 47.3 million.

## **21. Administration**

The total number of staff of the Water Resources Board in the year 2013 was 275 nos. and 05nos. of which were working on contract basis. 11 nos. employees were working on casual basis. In the year concerned, 27 nos. employees were recruited for permanent service. 03 nos. employees were recruited on contract basis and casual basis. In this year, 05 nos. employees were resigned and 11 employees were retired.

## **22. Human Resources Development**

An action was taken to direct the employees to the training courses, in order to improve the productivity of the board. 03nos. employees including executive officers were directed to short training courses and one was directed to certificate course. 05 nos. employees were directed to workshops and seminars and one was directed to a foreign workshops.

## **23. Welfare Facilities**

In the year concerned, under the welfare and death donation scheme, donated Rs. 0.97 million to the welfare society of the Water Resources Board as to provide transport facilities in a death and also to provide welfare facilities and Rs. 0.42 million was supplied to reimburse the expenses incurred for health facilities of the employees of the Board and their family members.

## **24. Fleet of Transport**

In the year concerned, the fleet of transport of the board was comprised with 49 nos. vehicles and out of which 40 nos. vehicles were in running condition. Those were mainly, cabs, cars, jeeps, lorries, tractors and cranes.

## **25. Circuit Bungalow – Anuradhapura**

The purpose of maintaining the circuit bungalow was to provide accommodation for the officers of the Water Resources Board and the Ministry of Irrigation and Water Resources Management in their official tours and spending their leisure time. Addition to that, an action was taken to provide accommodation for other government officers and general public.

## **26. Buddhist Society**

The Buddhist Society of the Water Resources Board was initiated in 05<sup>th</sup> of May 1999. In the year 2013, action was taken to decorate the office premises commemorating the Vesak full moon day and Dansela and Dhamma sermon were organized for the Poson festival to commemorate the members who subjected to death after servicing in the board and presented group of employees to the Wesak Bethi Gee function at the Ministry of Irrigation & Water Resources Management

## **Acknowledgement**

The board is in pleasure to thank and place on record of appreciation to the Minister of Irrigation and Water Resources Management and Deputy Minister of the Ministry of Irrigation and Water Resources Management, Secretary, officers and staff of the same Ministry, all the officers and consultants of the other government departments, board and corporations, foreign and private institutions. The active involvement and the loyal service rendered by the employees of the Water Resources Board are highly acknowledged.

**M.A. Pushpakumara**  
**Asst. General Manager (Admin.)**  
**Water Resources Board**

**Sgd/- Bandula Munasinghe**  
**Chairman**  
**Water Resources Board**  
**No. 2A, Hector Kobbekaduwa Mawatha, Colombo 07.**

20.02. 2014

## WATER RESOURCES BOARD

### Statement of Financial Performance

For the year ended	Note	Actual 2013 Rs.000'	Actual 2012 Rs.000'	Budget 2013 Rs.000'
Revenue from Operating Activities	01	85,848	74,422	58,565
Treasury Grants – Recurrent		83,100	77,280	84,000
Treasury Grants – Capital(Operational)	02	9,879	19,478	46,000
Other Income	03	<u>2,072</u>	<u>4,813</u>	<u>3,420</u>
<b>Total Revenue</b>		<b><u>180,899</u></b>	<b><u>175,993</u></b>	<b><u>191,985</u></b>
Administrative Costs	4.1	(124,772)	(112,751)	(107,305)
Supplies & Requisites	4.2	(45,636)	(31,012)	(18,000)
Contractual Services & Maintenance expenses	4.3	(14,771)	(14,288)	(9,847)
Other Expenses	4.4	(1,447)	(3,105)	(2,780)
Depreciation		(31,266)	(36,206)	(30,000)
Treasury Grants – Capital (Research Studies)	4.5	<u>(9,879)</u>	<u>(22,407)</u>	<u>(46,000)</u>
Total Expenses		<b>(227,771)</b>	<b>(219,769)</b>	<b>(213,932)</b>
<b>Surplus / (Deficit) from Operations</b>		<b>(46,872)</b>	<b>(43,776)</b>	<b>(21,947)</b>
Tax		<u>(2,244)</u>	<u>(36)</u>	<u>-</u>
<b>Surplus / (Deficit) for the period</b>		<b><u>(49,116)</u></b>	<b><u>(43,812)</u></b>	<b><u>(21,947)</u></b>

## WATER RESOURCES BOARD

## Statement of Financial Position

As at 31<sup>st</sup> December,

	Note	2013	2012
	No.	Rs.000'	Rs.000'
<b>ASSETS</b>			
<b>Current Assets</b>			
Cash and cash equivalents	05	5,699	12,937
Trade and other receivables	06	20,321	22,741
Inventories	07	82,762	68,874
Prepayments	08	<u>174</u>	<u>291</u>
		<b><u>108,956</u></b>	<b><u>104,843</u></b>
<b>Non - Current Assets</b>			
Property, Plant & Equipment	09	<u>85,052</u>	<u>120,540</u>
		<b><u>85,052</u></b>	<b><u>120,540</u></b>
		_____	_____
<b>TOTAL ASSETS</b>		<b><u>194,008</u></b>	<b><u>225,383</u></b>
<b>LIABILITIES</b>			
<b>Current Liabilities</b>			
Trade Creditors	10	3,157	6,045
Other Provisions & Payable	11	7,924	5,994
Deferred Income (Advances for Services)	12	<u>16,766</u>	<u>21,137</u>
		<b><u>27,847</u></b>	<b><u>33,176</u></b>
<b>Non Current Liabilities</b>			
Retirement Benefit Obligations	13	71,141	67,419
Staff Security Deposits	14	<u>18</u>	<u>17</u>
		<b><u>71,159</u></b>	<b><u>67,436</u></b>

<b>TOTAL LIABILITIES</b>		<b><u>99,006</u></b>	<b><u>100,612</u></b>
		—	—
<b>NET ASSESTS</b>		<b><u>95,002</u></b>	<b><u>124,771</u></b>
<b>NET ASSESTS / EQUITY</b>			
<b>CAPITAL &amp; RESERVES</b>			
Accumulated Fund	15	201,104	179,801
Other Grants	15	227,109	237,341
Accumulated Profit / (Deficit)	15	(335,774)	(296,360)
Revaluation Reserve	15	<u>2,563</u>	<u>3,989</u>
<b>TOTAL NET ASSESTS / EQUITY</b>		<b><u>95,002</u></b>	<b><u>124,771</u></b>

**The Accounting Polices and the Notes from pages 05 to 16 form on Integral part of these financial statements.**

The Directors are responsible for the preparation & presentation of the Financial Statements. Approved and sinned for on behalf of the Board.

**Sgd. Bandula Munasinghe**

**Sgd. Dr.G.S.A.Kodagoda**

**CHAIRMAN**

**WORKING DIRECTOR**

**14<sup>th</sup> November,2014**

**WATER RESOURCES BOARD**

## Statement of Changes in Net Assets / Equity

As at 31<sup>st</sup> DECEMBER

NOTE : 15

	Accumulated		Other	Revaluation	Accumulated	Total
	Fund		Grants	Reserve	Profit/Deficit	Rs'000 Rs'
	000	Rs' 000	Rs' 000		Rs' 000	
<b>Balance as at 31<sup>st</sup> December 2011</b>	<b>179,601</b>		<b>206,542</b>	<b>3,989</b>	<b>(263,608)</b>	<b>126,524</b>
Adjustments made for prior period events	-		-	-	11,060	11,060
Restated Balance	179,601		206,542	3,989	(252,548)	137,584
<b>Change in Net Asset / Equity for 2012</b>						
Surplus / (Deficit) for the period	-		-	-	(43,812)	(43,812)
Contributions / Additions for the Year	200		30,799	-	-	30,999
<b>Balance as 31<sup>st</sup> December 2012 C/F</b>	<b>179,801</b>		<b>237,341</b>	<b>3,989</b>	<b>(296,360)</b>	<b>124,771</b>
<b>Balance as 31<sup>st</sup> December 2012 B/F</b>	<b>179,801</b>		<b>237,341</b>	<b>3,989</b>	<b>(296,360)</b>	<b>124,771</b>
Adjustments made for prior period events	-		-	-	9,702	9,702
Restated Balance	179,801		237,341	3,989	(286,658)	134,473
<b>Change in Net Assets / Equity for 2013</b>						
Surplus / (Deficit) for the period	-		-	-	(49,116)	(49,116)
Revaluation – Adjustment	-		-	(1,426)	-	(1,426)
Contributions / Additions for the Year	242		-	-	-	242
Contributions / From Other Grants	2,388		(10,232)	-	-	(7,844)
Add / Valuation of Stocks	18,673		-	-	-	18,673
<b>Balance as 31<sup>st</sup> December 2013</b>	<b>201,104</b>		<b>227,109</b>	<b>2,563</b>	<b>(335,774)</b>	<b>95,002</b>

**NOTE :-** Details of other grants are as follows

<b>OTHER GRANTS</b>	<b>Balance as 31.12.2013</b>
	<b>(Rs.000)</b>
JICA	11,973
ADB & NWRA	1,025
Others	24,624
Japanese 2 KR Project	81,476
Amerasian Fund	1,771
DSWRPP Fund	<u>106,240</u>
<b>Total</b>	<b><u><u>227,109</u></u></b>

## CASH FLOW STATEMENT

	2013	2014
	Rs'000	Rs'000
<b>Cash flows from operating activities</b>		
Surplus / [Deficit] for the year before Treasury Grants (Recurrent)	<b>(132,216)</b>	<b>(121,092)</b>
Add: Treasury Grants received (Recurrent)	<u>83,100</u>	<u>77,280</u>
Surplus / (Deficit) for the year	<b>(49,116)</b>	<b>(43,812)</b>
Add: Fund adjustments from projects	4,358	-
Add: Prior Year adjustments	<u>1,345</u>	-
	<b>(43,413)</b>	<b>(43,812)</b>
<b>Non Cash Movements</b>		
Depreciation	31,266	36,205
Increase in Provisions to Gratuity	10,655	8,053
Increase in payables	(5,536)	7,860
Decrease in other Current Assets	4,902	3,119
[Gain] / Losses on sale of Property plant & Equipments	-	(3,050)
Increase in receivables	<u>2,416</u>	<u>43,704</u>
	<u>(8,993)</u>	<u>43,194</u>
<b>Net Cash flows from operating activities</b>	<b>290</b>	<b>(618)</b>
<b>Cash flows from Investing activities</b>		
Proceeds from sale of Property Plant & Equipments	-	3,050
Purchase of Property Plant & Equipment	(838)	(559)
Interest income for security deposits	1	
Payment of gratuity	<u>(6,933)</u>	<u>(3,602)</u>
<b>Net Cash flows from Investing activities</b>	<b>(7,770)</b>	<b>(1,111)</b>

**Cash flows from financing activities**

Government Grant (Capital for Property Plant & Equipments)	<u>242</u>	<u>200</u>
<b>Net Cash flows from financing activities</b>	<b><u>242</u></b>	<b><u>200</u></b>
<b>Net Increase / [decrease] in cash &amp; cash Equivalents</b>	<b>(7,238)</b>	<b>(1,529)</b>
Cash & cash equivalents at beginning of Period	<u>12,937</u>	<u>14,466</u>
<b>Cash &amp; cash equivalents at end of Period</b>	<b><u>5,699</u></b>	<b><u>12,937</u></b>

**• NOTES TO THE CASH FLOW STATEMENT**

01. Cash and cash equivalents consist of cash on hand and balances with banks. Cash and cash equivalents included in the Cash Flow Statement comprise the following statement of Financial Position amounts.

	<b><u>2013</u></b>	<b><u>2012</u></b>
	<b>Rs' 000</b>	<b>Rs' 000</b>
cash on hand and balances with banks	2,451	1,299
Savings with National Saving Bank	<u>3,248</u>	<u>11,638</u>
	<b><u>5,699</u></b>	<b><u>12,937</u></b>

02. Cash flows from Treasury Grant (Capital) for the operational activities are included in the Cash Flows from operating activities.

**WATER RESOURCES BOARD**

## NOTES TO THE FINANCIAL STATEMENTS & ACCOUNTING POLICIES

### 1. Corporate Information

#### General

The Water Resources Board is a (Ref: Circular : PED/03/2013 dated 02.10.2013) statutory Board established in 1966 under the provisions of Act No. 29 of 1964.

#### Principal Activities and Nature of Operations

During the year, the principal activities of the Board Comprised of carryout Hydrogeological Surveys, Construction of Tube Wells, Chemical Analysis of Water Samples, preparation of Groundwater Maps etc.

#### Directors Responsibility Statement

The Board of Directors takes the responsibility for the preparation and presentation of these Financial statements as per the provisions of Sri Lanka public sector Accounting Standards.

#### Address of the Registered office and the Principal Place of the Activities of the Board

No. 02A, HectorKobbekaduwa Mawatha, Colombo 07

#### 2.1. Statement of Compliance

The financial statements of the Water Resources Board are prepared in accordance with the Sri Lanka Public Sector Accounting Standards (SLPSAS) laid down by the Public Sector Accounting Standards Committee of the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) with the participation of the Ministry of Financial & Planning.

The Comparative figures of the previous year have been charged and presented with these Financial Statements.

At present, SLPSAS No. 01, 02 & 03 are being followed. Standard of borrowing cost is not applicable to the Board at present.

#### 2.2. Basis of Preparation

The financial statements are prepared on the Historical Cost Basis.

#### 2.3. Functional and Presentation Currency

These Financial Statements are presented in Sri Lankan Rupees, Which is the Boards Functional Information has been rounded to the nearest thousands unless otherwise specifically indicated.

### 3. Assets and Basis of their Valuation

#### 3.1 Property , Plant & Equipments

Property Plant and Equipments are recorded at cost less accumulated depreciation. The cost of Property , Plant & Equipment is the cost of purchase / revaluation or construction together with any incidental expenses thereon.

#### 3.2 Depreciation

No depreciation is provided in the year of purchase or revaluation and full years depreciation is provided in the year of disposal.

Cont...

## NOTES TO THE FINANCIAL STATEMENTS & ACCOUNTING POLICIES

Depreciation is calculated so as to write off the Cost / Revaluation of Fixed Assets on a Straight – Line Basis over the expected useful lives of the Assets concerned. The principle annual rates used for this purpose are,

Motor Vehicles	25%
Machinery, Tools & Equipments	20%
Laboratory Equipments	20%
Scientific Equipments	20%
Geophysical Maps	20%
Computers	20%
Furniture, fitting & office Equi.	10%
Office Equipment, Computer & Laboratory Equi.Impro.	33 1/3%
Building Improvements	33 1/3%
Machinery & Vehicle Impro.	33 1/3%

### 3.3 Leased Assets

Payments made under operating leases are recognized in statement of Financial Performance on a Straight Line basis over the term of the lease.

### 3.4 Inventories

Inventories consist of vehicle spares, stores materials, machinery spares, fuel and other consumables. The cost of inventories are based on the first – in – first-out (FIFO) principle.

Inventory items identified as zero rated which was granted in previous years are measured at the net realizable value by the committee has been appointed.

### Work in Progress

Work in progress balance of the 2 KR machinery, accounted as inventory stock under machinery spares from years identified as expense of maintenance of machinery due to completion of the major maintenance of machinery.

### 3.5 Receivables

- 1.1. Receivables are stated at the amounts they are estimated to realize.
- 1.2. Bad and Doubtful Debts.

The estimated losses to these debts are based on continuous review of all invoices and claims identified as bad and doubtful.

### 4.1 Accounts payables and Accrued expenses

Trade and other payables are stated at cost.

### Deferred Income

Advances received for services to be rendered are shown as deferred income in the statement of Financial Position until recognize the income.

### 4.2 Provisions

Provisions are made for all obligations existing as at the date of statement of Financial Position.

NOTES TO THE FINANCIAL STATEMENTS &  
ACCOUNTING  
POLICIES

**5. Deferred Liabilities**

**5.1 Retirement Gratuity**

Provisions is made in the Financial Statements for retiring Gratuity, which may fall due for payment of Gratuity Act No.12 of 1983. It is provided one half of the basic salary and statutory allowances for the last month of the financial year for each year of continues service. This item is shown as Non Current Liabilities in the Statement of Financial Position.

**6. Taxation**

**6.1 Tax Expense**

Tax expense Comprises Current and any adjustment to tax payable in respect of previous years.

**6.2 Value added Tax**

Value added Tax is being paid on Cash Basis as the approval granted by the Commissioner of Inland Revenue.

**7. Cash Flow Statement**

The Cash Flow statement is prepared using the indirect method as stipulated in SLPSAS 02 Cash Flow Statement.

**WATER RESOURCES BOARD**

**NOTES TO THE FINANCIAL STATEMENT.**

<b>REVENUE FROM OPERATING ACTIVITIES</b>	<b>Actual</b>	<b>Actual</b>	<b>Actual</b>
	<b>2013</b>	<b>2012</b>	<b>2013</b>
<b>NOTE NO: 01</b>	<b>Rs'000</b>	<b>Rs'000</b>	<b>Rs'000</b>
<b>HYDRO: INVESTIGATIONS / EXPLORATION</b>			
Hydrogeological Survey	10,086	10,653	3,000
Tube Well Construction	55,078	32,883	35,000
Hand Pump Installation	1,263	2,265	5,500
Pumping Tests	3,768	6,406	2,000
Tube Well Cleaning	634	1,121	1,200
Water Sample Analysis	<u>3,614</u>	<u>985</u>	<u>1,500</u>
<b>Sub total</b>	<b><u>74,443</u></b>	<b><u>54,313</u></b>	<b><u>48,200</u></b>
<b>GROUNDWATER MONTORING</b>			
Dam safety Water Resources Planning Project	<u>10,220</u>	<u>17,044</u>	<u>10,000</u>
<b>Sub total</b>	<b><u>10,220</u></b>	<b><u>17,044</u></b>	<b><u>10,000</u></b>
<b>GROUNDWATER DEVELOPMENT</b>			
Ground Water Development	685	3,038	-
Wind Mills	500	-	350
G.I.S. Income	<u>-</u>	<u>27</u>	<u>15</u>
<b>Sub total</b>	<b><u>1,185</u></b>	<b><u>3,065</u></b>	<b><u>365</u></b>
<b>Grand Total</b>	<b><u>85,848</u></b>	<b><u>74,422</u></b>	<b><u>58,565</u></b>

**NOTE NO: 02**

**TREASURY GRANT – CAPITAL**

**(RESEARCH STUDIES - OPERATIONAL)**

Staff Training	-	59	-
Hydrogeological coastal study in Colombo to Negombo	1,925	7,707	9,000
Study in water quality changes in aquifer system – A'pura	3,694	5,866	8,000
Isotopes studies in puttalam Aquifers	-	192	-
Atlas Collection Map	-	128	-
Rehabilitation & Improvement Income	950	523	1,000
Hydrogeological Study in limestones Aquifers in Manner	1,051	2,996	9,000
Jaffna Ground water Monitoring	1,467	694	8,000
Hydrogeological Study in Vavunia and Kilinochchi	589	1,313	9,000
The study on the direct and indirect impacts of climate Changes	<u>203</u>	<u>-</u>	<u>2,000</u>
<b>Total</b>	<b><u>9,879</u></b>	<b><u>19,478</u></b>	<b><u>46,000</u></b>

**NOTE NO: 03**

**OTHER INCOME**

Circuit Bungalow Reservation	186	124	120
Fines & Surcharges	105	157	100
Sundry Income	659	200	200
Dayata Kirula	223	400	500
Disposal Income	-	3,050	1,500
Interests on Loans & Bank Deposits	<u>899</u>	<u>882</u>	<u>1,000</u>
<b>Total</b>	<b><u>2,072</u></b>	<b><u>4,813</u></b>	<b><u>3,420</u></b>

**NOTES TO THE FINANCIAL STATEMENTS CONTD.**

**NOTE NO: 4.1 ADMINISTRATIVE COSTS**

	Actual 2013 Rs'000	Actual 2012 Rs'000	Actual 2013 Rs'000
Salaries & Wages	91,601	82,270	83,000
over time & Holiday Pay	6,359	6,415	4,000
Employees Provident Fund -12%	6,625	6,224	7,200
Employees Trust Fund -12%	1,656	1,556	1,800
Director's Fees	746	768	400

Other Allowances	20	17	30
Gratuity	10,224	8,053	6,000
Traveling – Local	6,603	6,776	4,000
Traveling – Overseas	101	58	50
Welfare & Sports facilities	97	68	175
Medical Scheme	420	433	450
Entertainment	243	93	150
Vacation Leave Encashment	<u>77</u>	<u>20</u>	<u>50</u>
<b>Total</b>	<b><u>124,772</u></b>	<b><u>112,751</u></b>	<b><u>107,30</u></b>

**NOTE NO: 4.2 SUPPLIES REQUISITES**

Fuel & Lubricants	23,910	20,864	10,000
Drilling Works Consumables	16,958	7,486	7,000
Laboratory Consumable & Others	4,197	2,253	500
Other Consumable	<u>571</u>	<u>409</u>	<u>500</u>
<b>Total</b>	<b><u>45,636</u></b>	<b><u>31,012</u></b>	<b><u>18,000</u></b>

**NOTE NO: 4.3 CONTRACTUAL SERVICES & MAINTENANCE EXPENSES**

Postage & Telecommunication	1,134	1,089	1,300
Electricity	2,249	1,783	1,700
Rent, Rates, & Taxes	1,168	936	500
Cash in transit Insurance	3	11	12
Audit Fees	150	150	150
Printing & Publications	234	410	175
Workshop & Seminars	1,317	22	25
Water Bills	151	146	150
Consultancy Charges	55	55	60
Sundry Expenses	395	268	500
Maintenance of Motor Vehicles	3,629	5,017	3,000
Maintenance of Machinery	2,623	1,097	1,000
Maintenance of Office Equipments	1,261	1,026	725
Maintenance of Buildings	<u>402</u>	<u>2,278</u>	<u>550</u>
<b>Total</b>	<b><u>14,771</u></b>	<b><u>14,288</u></b>	<b><u>9,847</u></b>

**NOTE NO: 4.4 OTHER OPERATING EXPENSES**

Stationery & Office Requisites	264	1,224	300
Uniforms	4	182	200
Periodicals & Newspapers	109	119	100
Publicity	293	136	450
Bank charges	178	77	135
Medical Test Charges	38	36	30
Legal Expenses	27	14	100
Fines & Surcharges	-	7	-
Economic Service Charges (ESC)	-	267	150
Stamp Duty	7	7	15
Vehicle Service – Rathmalana	133	318	200
Hiring Charges	45	29	-
Training Centre Expenditure (A'pura)	126	271	600
Dayata Kirula Expenses	<u>223</u>	<u>418</u>	<u>500</u>
<b>Total</b>	<b><u>1,447</u></b>	<b><u>3,105</u></b>	<b><u>2,780</u></b>

**NOTES TO THE FINANCIAL STATEMENTS CONTD.**

<b>NOTE NO: 4.1 ADMINISTRATIVE COSTS</b>	<b>Actual</b>	<b>Actual</b>	<b>Actual</b>
	<b>2013</b>	<b>2012</b>	<b>2013</b>

**NOTE NO: 4.5 TREASURY GRANTS –CAPITAL (Research studies )****HYDROGEOLOGICAL COASTAL STUDY IN COLOMBO TO**

<b>NEGOMBO</b>	<b>Rs'000</b>	<b>Rs'000</b>	<b>Rs'000</b>
Salaries & Wages	119	329	
Overtime & Holiday Pay	201	450	
Traveling	270	702	
Stationery & Office Requisites	19	7	
Fuel & Lubrications	711	1,552	

Printing & Publications	29	-	
Ground Water Other	24	24	
Drilling Work Consumable	103	4,064	
Maint. Of Motor Vehicles	95	174	
Maint. Of Machinery		132	
Maint. Of Lab. Equipments	187	1,491	
Maint. Of Buildings	2	2	
Postage & Telecommunication	19	16	
Sundry Expenditure	2	6	
Rent. Rates & Taxes	144	130	
Office Equipment Maint. & Repairs	<u>-</u>	<u>28</u>	
<b>Sub Total</b>	<b><u>1,925</u></b>	<b><u>9,107</u></b>	<b><u>9,000</u></b>

**STUDY IN WATER QUALITY CHANGES IN AQUIFER SYSTEM-**

**A'PURA**

Overtime & Holiday Pay	361	384	
Traveling	271	246	
Fuel & Lubrications	1,086	1,167	
Maint. Of Lab. Equipments	94	964	
Maint. Of Motor Vehicles	347	247	
Drilling Work Consumables	1,100	2,831	
Ground Water Other	1	2	
Rent. Rates & Taxes	-	21	
Maint. Of Machinery	1	86	
Office Equipment Maint. & Repairs	45	78	
Entertainment	104	55	
Training Centre Expenditure (A'pura)	241	229	
Electricity	1	-	
Scholarships & Seminars	<u>42</u>	<u>-</u>	
<b>Sub Total</b>	<b><u>3,694</u></b>	<b><u>6,310</u></b>	<b><u>8,000</u></b>
<b>ATLAS COLLECTION MAPS</b>			

Overtime & Holiday Pay	-	11	
Traveling	-	22	
Stationery & Office Requisites	-	2	
Fuel & Lubrications	-	96	
Sundry Expenditure	<u>-</u>	<u>1</u>	
<b>Sub Total</b>	<u><u>-</u></u>	<u><u>132</u></u>	<u><u>-</u></u>

**ISOTOPE STUDIES INPUT LAMAQUIFERS**

Overtime & Holiday Pay	-	7	
Traveling	-	23	
Maint. Of Lab. Equipments	<u>-</u>	<u>162</u>	
<b>Sub Total</b>	<u><u>-</u></u>	<u><u>192</u></u>	<u><u>-</u></u>

**NOTES TO THE FINANCIAL STATEMENTS CONTD.**

	Actual	Actual	Actual
	2013	2012	2013
<b>NOTE NO: 4.5 TREASURY GRANTS –CAPITAL (Research studies )</b>	<b>Rs'000</b>	<b>Rs'000</b>	<b>Rs'000</b>

**HYDROGEOLOGICAL STUDY IN LIMESTONES AQUIFERS IN**

**MANNAR DISTRICT**

Salaries & Wages	-	10
Overtime & Holiday Pay	132	225
Traveling	187	271
Stationery & Office Requisites	-	1
Fuel & Lubrications	372	317
Drilling Work Consumable	96	2,225
Ground Water Other	18	2
Uniforms	-	2
Rent. Rates & Taxes	30	30
Maint. Of Lab. Equipments	-	250
Maint. Of Motor Vehicles	180	31
Maint. Of Machinery	-	26

Entertainment	-	21	
Sundry Expenditure	1	-	
Office Equipment Maint. & Repairs	20	-	
Publicity	<u>15</u>	<u>-</u>	
<b>Sub Total</b>	<b><u>1,051</u></b>	<b><u>3,411</u></b>	<b><u>9,000</u></b>

**JAFFNA GROUND WATER MONTORING**

Overtime & Holiday Pay	173	9	
Traveling	192	45	
Stationery & Office Requisites	8	8	
Fuel & Lubrications	588	165	
Drilling Work Consumable	26	123	
Ground Water Other	10	2	
Rent. Rates & Taxes	137	47	
Salaries & Wages	63	4	
Maint. Of Motor Vehicles	226	43	
Maint. Of Machinery	1	164	
Office Equipment Maint. & Repairs	-	27	
Maint. Of Buildings	1	21	
Entertainment	-	5	
Maint. Of Lab. Equipments	27	24	
Postage & Telecommunication	2	-	
Electricity	9	-	
Sundry Expenditure	<u>4</u>	<u>-</u>	
<b>Sub Total</b>	<b><u>1,467</u></b>	<b><u>687</u></b>	<b><u>8,000</u></b>

NOTES TO THE FINANCIAL STATEMENTS CONTD.

	Actual 2013	Actual 2012	Actual 2013
	Rs'000	Rs'000	Rs'000
<b>NOTE NO: 4.5 TREASURY GRANTS –CAPITAL (Research studies )</b>			
<b>HYDROGEOLOGICAL STUDY IN VAVUNIA &amp; KILINCHCHI</b>			
Drilling Work Consumable	39	1,312	
Overtime & Holiday Pay	110	-	
Traveling	102	-	
Fuel & Lubrications	<u>338</u>	<u>-</u>	
	<b><u>589</u></b>	<b><u>1,312</u></b>	<b><u>9,000</u></b>
<b>STAFF TRAINING</b>			
Workshop & Seminars	<u>-</u>	<u>174</u>	
<b>Sub Total</b>	<b><u>-</u></b>	<b><u>174</u></b>	
Rehabilitation & Improvement	<u>950</u>	<u>1,082</u>	<u>1,000</u>
<b>THE STUDY ON THE DIRECT &amp; INDIRECT IMPACTS OF CLIMATE CHANGES</b>			
Overtime & Holiday Pay	36	-	
Traveling	51	-	
Fuel & Lubrications	116	-	
<b>Sub Total</b>	<b><u>203</u></b>	<b><u>-</u></b>	<b><u>2,000</u></b>
<b>GRAND TOTAL</b>	<b><u>9,879</u></b>	<b><u>22,407</u></b>	<b><u>46,000</u></b>

**NOTE NO: 5****CASH & CASH EQUIVALENTS**

(1) Bank of Ceylon York Street Branch (0002026295)	46	10
(2) Bank of Ceylon Torrington Branch (0002322267)	1,860	1,218
(3) Bank of Ceylon Torrington Branch (0002322268)	3	19
(4) Bank of Ceylon Torrington Branch (0005342839)	542	52
(5) National Savings Bank – Bammbalapitiya (100230211818)	3,235	11,626
(6) National Savings Bank – Borella (1-0061-03-31236)	11	11
(7) National Savings Bank – Borella (1-0061-03-31287)	<u>2</u>	<u>1</u>
<b>TOTAL</b>	<b><u>5,699</u></b>	<b><u>12,937</u></b>

**NOTES TO THE FINANCIAL STATEMENTS CONTD.**

	Actual	Actual
<b>NOTE NO: 6</b>	<b>2013</b>	<b>2012</b>
	Rs'000	Rs'000
<b>TRADE &amp; OTHER RECEIVABLES</b>		
<b>STAFF</b>		
(1) Book Advance	2	-
(2) Distress Loan	12,291	11,040
(3) Festival Advance	227	228
(4) Traveling Advance	5	214
(5) Cycle Loan	34	5
(6) Staff Debtors	182	112
(7) Special Advance	-	61
(8) Treasury Grant Receivable	-	4,934
(9) Salary Advance	50	-
(10) Petty Cash	<u>10</u>	<u>-</u>
<b>Sub Total</b>	<b><u>12,801</u></b>	<b><u>16,594</u></b>
<b>OTHERS</b>		
(11) Trade	5,933	3,970
(12) Deposits	56	60
(13) Advances to suppliers	64	87
(14) Retention Money	444	444
(15) With Holding Tax Receivable	1,462	1,462
(16) Bank Guarantee	257	396
(17) Other Debtors	-	2
(18) Fuel Deposits	<u>-</u>	<u>212</u>
<b>Sub Total</b>	<b><u>8,216</u></b>	<b><u>6,633</u></b>
<b>TOTAL RECEIVABLES</b>	<b><u>21,017</u></b>	<b><u>23,227</u></b>

(19) Less : V.A.T. Payable		<u>(696)</u>	<u>(486)</u>
	<b>TOTAL</b>	<b><u>20,321</u></b>	<b><u>22,741</u></b>
<b>NOTE NO: 7</b>			
<b>INVENTORIES</b>			
<b>MATERIALS &amp; SPARES</b>			
Vehicle Spares		1,134	985
Fuel & Lubricants		411	2,728
Fuel & Lubricants – CN –PROJECT		-	-
Stores Materials		14,509	12,354
Stores materials – CN-PROJECT		-	504
Building Maintenance		127	143
Stationery		329	208
Machinery Spares (with 2 KR Spares)		64,272	50,015
Laboratory Maintenance		1,980	634
Stores Materials – MANNAR PROJECT		-	1,193
Stores Materials - JAFFNA PROJECT		<u>-</u>	<u>110</u>
	<b>TOTAL</b>	<b><u>82,762</u></b>	<b><u>68,874</u></b>
<b>NOTE NO: 7</b>			
<b>PRE-PAYMENTS</b>			
Cash In Transits		8	-
Newspapers & Periodicals		14	26
Maintenance of Office Equipment		21	8
Urban Council – puttalam – Rate & Taxes		-	200
Maintenance of Motor Vehicle		128	54
Postage & Telecommunication		<u>3</u>	<u>3</u>
	<b>TOTAL</b>	<b><u>174</u></b>	<b><u>291</u></b>

**NOTES TO THE FINANCIAL STATEMENTS CONTD.**

**PROPERTY, PLANT & EQUIPMENT**

NOTE NO: 09

Cost / Valuation	Balance as at	Additions	Disposal	Balance as at
	01.01.2013	for the year	Adjustments	31.12.2013
	<u>Rs'000</u>	<u>Rs'000</u>	<u>Rs'000</u>	<u>Rs'000</u>
Land	884	-	-	884
Leased Property	1,218	-	(1,218)	-
Motor Vehicles	91,712	-	(15,309)	76,403
Machinery, Tools & Equipments	232,518	29	-	232,547
Laboratory Equipments	74,593	488	-	75,081
Furniture fittings & office Equipments	14,418	663	-	15,081
Computers & Accessories	8,866	875	-	9,741
Scientific Equipments	31,057	450	-	31,507
Geological Maps	2,186	-	-	2,186
Building Improvements	2,166	-	(1,464)	702
Machinery & Vehicles Improvements	8,584	-	(4,652)	3,932
Improvement of Computers	<u>5,585</u>	<u>-</u>	<u>(2,817)</u>	<u>2,768</u>
<b>TOTAL</b>	<b><u>473,787</u></b>	<b><u>2,505</u></b>	<b><u>(25,460)</u></b>	<b><u>450,832</u></b>

**Depreciation**

	Balance as at	Charges	Disposal /	Balance as at
	for the year	Adjustments	31.12.2013	01.01.2013
	<u>Rs'000</u>	<u>Rs'000</u>	<u>Rs'000</u>	<u>Rs'000</u>
Motor Vehicles	76,569	3,529	(9,800)	
Machinery, Tools & Equipments	226,768	250	-	70,298
Laboratory Equipments	27,289	10,653	-	227,018
Furniture fittings & Office Equipments	8,514	785	-	37,942
Computers & Accessories	5,419	992	-	9,299

Scientific Equipment	8,313	5,687	-	6,411
Geological Maps	<u>375</u>	<u>437</u>	<u>-</u>	<u>812</u>
<b>TOTAL</b>	<b><u>353,247</u></b>	<b><u>22,333</u></b>	<b><u>(9,800)</u></b>	<b><u>365,780</u></b>
NET BOOK VALUE	<b><u>120,540</u></b>		<b><u>85,052</u></b>	

**Total Depreciation is made as follows**

From Accumulated Depreciation	<b>22,333</b>
From Improvements (1,464+4,652+2,817)	<b><u>8,933</u></b>
	<b><u>31,266</u></b>

**NOTES TO THE PROPERTY PLANT & EQUIPMENT**

**NOTE NO: 09**

- 01.** Land of Korakahawewa Training Center (Hec. 2.166) has leased agreement on paying with annual rental basis
  
- 02.** Details of the Land & Building which are utilizing of the Board without having legal ownership as at 31.12.2013 are as follows.

<b>LAND</b>	<b>BUILDINGS (Appox)</b>
Head Office	8477 Sq.ft
Work Shop at Rathmalana	32960 Sq.ft
Circuit Bungalow at Hambanthota	3038 Sq.ft
Regional Office at Hambanthota	1474 Sq.ft
Work site at Vauniya	1082 Sq.ft

- 03.** Nos of Motor vehicles (Double Cabs) granted from General Treasury in year 2012 have not been valued. (Vehicle Nos. PE-0623, PD-5851, PD-5856)
  
- 04.** 14 Nos of Motor Vehicles have not been accounted due to unavailability of legal ownership (Please see page No. 27 for Schedule of Motor Vehicles)

**NOTES TO THE FINANCIAL STATEMENTS CONTD.**

	Actual	Actual
	2013	2012
	Rs'000	Rs'000
<b>NOTE NO: 10</b>		
<b>TRADE CREDITORS</b>		
<b>NAME</b>		
01. Sri Lanka Customs	619	619
02. Provincial Sec. Nuwaragampalatha	422	-
03. B. Munasinghe	42	-
04. Central Industries PLC	2,074	-
05. Others	<u>-</u>	<u>5,426</u>
<b>TOTAL</b>	<b><u>3,157</u></b>	<b><u>6,045</u></b>

**NOTE NO: 11**

**OTHER PROVISIONS & PAYABLES**

(1) Staff		
1:1 Staff Creditors	29	26
1:2 Unclaimed Wages	9	9
1:3 DSWRPP Project	-	430
<b><i>SUB TOTAL(1:1 – 1:3)</i></b>	<b>38</b>	<b>465</b>
(2) Provision for Audit Fees	534	384
(3) Retention Payable	-	51
(4) E.P.F. 10%	(21)	(13)
(5) Accrued Expenses	7,296	5,136
(6) Bid Bond & Refundable Deposits	514	-
<b><i>SUB TOTAL(2 – 6)</i></b>	<b>8,323</b>	<b>5,558</b>
(7) Less: V.A.T Cash	(215)	(29)
(8) Less: V.A.T Receivable	<u>(222)</u>	<u>-</u>
	<b><u>7,924</u></b>	<b><u>5,994</u></b>

**NOTE NO: 12**

**DEFERRED INCOME**

Service Advance (Pl.se Page No 25 & 26 for details)	<b><u>16,766</u></b>	<b><u>21,137</u></b>
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**NOTE NO: 13**

**RETIREMENT BENEFIT OBLIGATION**

The Amounts recognized in the Statement of Financial Position are as follows

At Beginning of the year	67,419	62,968
Charge / Credit for the year	10,655	8,053
Contribution Paid	<u>(6,933)</u>	<u>(3,602)</u>
At end of the year	<b><u>71,141</u></b>	<b><u>67,419</u></b>

**NOTE NO: 14**

<b>SECURITY DEPOSITS</b>		<b>Deposit</b>		
		<b>Rs</b>		
(1)	Mr. W.P.S. Gunethilake - Cashier	<b>3,500</b>	11	10
(2)	Mr. K.A. Wimal - Store Keeper	<b>500</b>	2	2
(3)	Mr. N. Wicramasinghe - Canteen	<b><u>5,000</u></b>	<u>5</u>	<u>5</u>
	<b>TOTAL</b>	<b><u>9,000</u></b>	<b><u>18</u></b>	<b><u>17</u></b>

**NOTE NO: 15**

Please see Page No 03 for statement of changes in Net assets / Equity

SCHEDULE OF ACCURED EXPENSES AS AT 31.12.2013

	<b>Actual</b>	<b>Actual</b>
	<b>2013</b>	<b>2012</b>
	<b>Rs'000</b>	<b>Rs'000</b>
<b>ACCRUED EXPENSES</b>		
Salaries & Wages	619	422
Traveling & Subsistence	335	764
Overtime / Holiday Pay	397	741
Telephone	90	166
Fuel	428	837
Maint. Motor Vehicle	131	10
Maint.of Machinery	107	159
Stationery	38	1
Maint. Of Office Equipments	9	-
Consultancy changes	9	5
Electricity	170	186
Rent	1	9

Korakahawewa Centre	-	1
Hiring charges	0	2
Drilling Works Consumables	1,532	9
Ground Water other Expenses	2	3
Water Bills	8	9
Entertainment	2	1
News Papers	5	2
E.P.F. 10%	485	435
E.P.F. 12%	582	522
E.T.F 3%	146	130
Sundry Expenses	5	1
Medical	10	40
Stamp Duty	17	12
Maintenance of Buildings	2	1
VAT Cash	215	8
VAT Cash	558	532
Office Equipments	1,135	-
Lab Maintenance	30	-
Labour Charges	-	15
Welfare Expenditure	4	4
Director fees	8	12
Legal charges	187	58
Medical Test charges	3	-
Payee Tax	-	3
Hiring Charges	12	16
Vacation Leave Enhancement	14	12
Uniform	-	8
<b>TOTAL</b>	<b><u>7,296</u></b>	<b><u>5,136</u></b>

SCHEDULE OF OTHER DEBTORS & ADVANCES AS AT 31.12.2013

		<b>Actual 2013</b>
		Rs
<b>STAFF DEBTORS</b>		
01.	S.W. Senerath (Sri Lanka Army)	<u>182,121</u>
	<b>TOTAL</b>	<b><u>182,121</u></b>
<b>OTHER DEPOSITS</b>		
	<b>Telephone</b>	
01.	Dept. of Telecommunication	25,000
02.	M.T.N. Network – Dialog GSM	5,500
	<b>Other</b>	
01.	Ceylon Oxygen	6,000
02.	Library Deposit – NIBM	500
03.	Colombo Gas & Water Co.Ltd	1,500
04.	Colombo Gas & Water Co.Ltd	1,500
05.	Colombo Gas & Water Co.Ltd	1,500
06.	Colombo Gas & Water Co.Ltd	1,500
07.	Ceylon Oxygen	7,000
08.	Shell Gas Ltd	5,900
09.	Colombo C.M.C.	<u>500</u>
	<b>TOTAL</b>	<b><u>56,400</u></b>
<b>ADVANCE TO SUPPLIERS OUTSTANDING SUPPLIER</b>		
01.	Pasidu Advertistment Company	40,000
02.	General Sales Company (Pvt) Ltd	<u>23,520</u>
	<b>TOTAL</b>	<b><u>63,520.</u></b>
<b>RETENTION RECEIVABLE</b>		
	<b>CLIENT</b>	<b>JOB CODE</b>
01.	National Water Supply & Drainage Board	AGMO/NWS&DB/RWS/NEP/2012 – 2
		403,166
02.	National Water Supply & Drainage Board	AGMO/NWS&DB/RWS/NEP/2012 – 2
		<u>40,827</u>
	<b>TOTAL</b>	<b><u>443,993</u></b>
<b>BANK GUARANTEE</b>		
	<b>CLIENT</b>	<b>JOB CODE</b>
01.	National Water Supply & Drainage Board	AGMO/TWG/2013
		223,650

02. SRI Lanka Red Cross Society

SLRCS/PRO/2013-018

33,638

**TOTAL**

**257,288**

**STAFF CREDITORS**

01. P.M.Premalal

10,404

02. A.H.T.W.K. Ariyawickrama

5

03. W.A.N.Premakeerthi

1,428

04. H.K.Nandasena

4,200

05. S.M.Nimal Bandara

3,300

06. A.A.J.Amarasinghe

2,700

07. M.D.S.Wimalasiri

2,538

08. W.K.S.Perera

993

09. K.G.U.Rathnasiri

2,713

10. K.N.Kumara

1,488

**TOTAL**

**29,766**



**1.3 Auditor's Responsibility**

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards consistent with International Standards of Supreme Audit Institutions (ISSAI 1000- 1810 ).

**1.4 Basis for Disclaimer Opinion**

As a result of the matters described in paragraph 2.2 of this report I am unable to determine whether any adjustments might have been found necessary in respect of recorded or unrecorded items, and the elements making up the statement of financial position, statement of financial performance, statement of changes in equity and cash flow statement.

**2. Financial Statements**

**2.1 Disclaimer of Opinion**

Because of the significance of the matters described in paragraph 2.2 of this report, I have not been able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion. Accordingly, I do not express an opinion on these financial statements.

**2.2 Comments on Financial Statements**

**2.2.1 Accounting Policies**

Although administration expenditure such as salary, overtime, travelling and fuel etc. were absorbed to the research studies, the accounting policy (basis) in respect of absorption had not been disclosed in the financial statements. Therefore, the classification of expenditure could not be satisfactorily examined or accepted in audit.

**2.2.2 Accounting Deficiencies**

The following observations are made.

- (a) The goods valued at Rs.4,933,604 had been purchased on a credit basis during the previous year without the provision and it had been settled by utilizing the Treasury grant (capital) received for the year under review. Therefore, the research expenditure and the Treasury grant (capital) had been understated by similar amount.





- (b) The Board had obtained advances totalling Rs.7,605,128 from 55 institutions and 10 individuals to carry out various works during the period from 2010 to 2012. However, the Board had not taken any action to settle these advances up to 31 December 2013.
- (c) The withholding tax amounting to Rs.1,462,000 had been shown as receivables under the current assets in the financial statements since 2010. However, the recoverability of this amount was in doubt.

#### **2.2.5 Lack of Evidence for Audit**

- (a) The confirmations relating to the balances of trade receivables and creditors amounting to Rs.5,933,085 and Rs.15,705,724 respectively had not been made available for audit. Therefore, the reliability and accuracy of those balances could not be ascertained in audit.
- (b) Even though the Board had earned an income of Rs.74,443,000 during the year under review on Hydrogeological Survey, Construction of Tube Wells, Hand Pump Installation, Pumping Tests, Cleaning the Tube Wells and Water Sample Analysis, the detailed estimates for each and every activities had not been furnished for audit. Further, the actual cost incurred for each activity had not been recorded for enable to compare the actual costs with the actual incomes.
- (c) The Ministry of Irrigation and Water Resources Management had reimbursed a sum of Rs.12,341,651 to the Board during the year under review for the construction of tube wells, hydrogeological studies and various type of research conducted in island wide on behalf of the Ministry. However, the Board had failed to submit the relevant payment vouchers and bills related to the expenditure incurred for the above activities. Therefore, it could not be ascertained in audit whether the entire amount received from the Ministry had been utilized for the intendant purposes.
- (d) An amount of Rs.545,000 obtained from the Ministry of Irrigation and Water Resources Management had been spent during the year under review to carry out the research activities on water quality at Rathupaswala. Nevertheless, the Board had failed to furnish the paid vouchers and other related documents thereon for audit.



### 2.3 Non-compliance with Laws, Rules and Regulations etc.

The following non-compliances were observed in audit.

<b>Reference to Laws, Rules and Regulations</b>	<b>Non-compliance</b>
<p>(a) <b>Water Resources Board Act, No.29 of 1964 and amended Act, No.42 of 1999</b></p> <p>Section 14(1) and 14(2)</p>	<p>The Advisory Committee to the Board had not met during the year under review though the Committee should advise the Board on any or all of the matters set out in Section 12 of the Act.</p>
<p>(b) <b>Financial Regulations of Democratic Socialist Republic of Sri Lanka</b></p> <p>Financial Regulation 262 (2)</p>	<p>Some of the paid vouchers and their supporting documents had not been stamped with the "PAID" stamp. Hence, the possibility of presenting the same documents for payment a second time could not be ruled out in audit.</p>
<p>(c) <b>Treasury Circulars</b></p> <p>(i) Circular No. 842 dated 19 December 1978</p> <p>(ii) Section 9.7 of the Public Enterprises Circular No. PED / 12 of 02 June 2003</p>	<p>A register of fixed assets had not been maintained by the Board in terms of provisions in the Circular.</p> <p>A special allowance of Rs.1,775,000 had been paid to some selected officers of the Board from January to December 2013 without being obtained the required approval from the Secretary to the Treasury.</p>



**3. Financial Review**

**3.1 Financial Results**

According to the financial statements presented, the working of the Board for the year ended 31 December 2013 had resulted in a deficit of Rs.49,579,000 as against the corresponding deficit of Rs.43,812,000 for the preceding year, thus indicating a further deterioration of Rs.5,767,000 in the financial results for the year under review. The main reason attributed for this deterioration was increase of expenditure by Rs.8,465,000 as compared with the increase of income by Rs.4,906,000.

**4. Operating Review**

**4.1 Performance**

According to the annual estimates, progress reports and other information furnished by the Board, the physical performance of the construction works and research studies carried out by the Board during the year under review is given below.

Item/Activity	Estimated units	Completed units	Variation
Hydrogeological Survey	100	193	93
Tube Well Construction	100	84	16
Hand Pump Installation	50	31	19
Pumping Test	40	43	3
Tube Well Cleaning	30	13	17
Water Sample Analysis	500	1259	759
<b>Consolidated Fund Projects</b>			
<b>* Water Quality Changes in Aquifer System and Identification of Zones With Hazardous Minerals Containing in Water in Anuradhapura District.</b>			
Water Sample Analysis	650	219	431
Geophysical Survey	60	12	48
Test Bore Hole Drilling	50	10	40
Pumping Test and Leveling	10	02	08
<b>* Hydrogeological Study on the Coastal Sandy Aquifer Extending from Colombo to Negombo</b>			
Geophysical Investigation	50	16	34
Construction of Bore Holes	50	10	40
Pump Test	20	02	18
Leveling	100	-	100
Water Sample Analysis	200	171	29
Establishing Well Monitoring	-	194	194
<b>* Development of Ground Water Monitoring Network in Jaffna Peninsula.</b>			
Hydrogeological Survey	100	03	97
Construction of Test Bore Holes	100	03	97



Water Sample Analysis	100	127	27
Pump Test and Leveling	50	07	43
Ground Water Monitoring	100	127	27
<b>* Hydrogeological Study in Limestones Aquifers in Mannar District.</b>			
Geophysical Investigation	50	15	35
Construction of Test Bore Holes	50	05	45
Pump Test	10	-	10
Leveling	50	13	37
Water Sample Analysis	50	248	198
<b>* Hydrogeological Coastal Study in Vavuniya and Kilinochchi.</b>			
Geophysical Survey	50	18	32
Construction of Test Bore Holes	50	06	44
Water Sample Analysis	50	10	40
<b>* The Study on the Direct and Indirect Impacts of the Climate Changes on the Coastal Aquifer System of Sri Lanka</b>			
Construction Shallow Piezometers	30	-	30
Water Sample Analysis	50	-	50

The following observations are made in this Connection.

- (a) Even though the Board had planned to carry out 100 leveling, 10 pump testing, construction of 30 shallow piezometers and 50 water sample analysis, none of those had been carried out during the year under review.
- (b) The Board had established 194 well monitoring network under the Hydrogeological Study on the Coastal Sandy Aquifer Extending from Colombo to Negombo, Project during the year under review. However, this activity had not been included in the annual estimate.
- (c) Actual expenditure on laboratory and other consumable, workshop and seminar had exceeded by 739 per cent and 5168 per cent respectively as compared with the budgetary provisions.

#### 4.2 Weaknesses in the Implementation of Research Studies

The Board had implemented 06 research studies in order to examine the quality of water and its impact to the general public and out of total provision of Rs. 45,000,000 allocated for the year 2013 for this purpose, a sum of Rs. 9,879,000 had spent during the year under review to carry out these research studies. Details are shown below.

Name of the Research Study	Estimated Cost	Date of Commencement	Due date of Completion	Estimated Expenditure for the year	Actual Expenditure during the year	Cumulative Expenditure as at 31 Dec. 2013
	Rs.			Rs.	Rs.	Rs.
(i) Water Quality Changes in Aquifer System and Identification of Zones with Hazardous Minerals containing water which Leads to Cause Health Problems to People in Anuradhapura District.	23,632,000	June 2010	31.12.2011	9,550,000	3,694,000	11,153,990
(ii) Hydrogeological Study on the Coastal Sandy Aquifer Extending from Colombo to Negambo.	127,000,000	July 2010	31.12.2012	14,450,000	1,925,000	18,398,539
(iii) Ground Water Assessment and Development of Ground Water Monitoring Network for Jaffna Peninsula.	28,500,000	January 2012	31.12.2014	2,000,000	1,467,000	2,154,000
(iv) Hydrogeological Study in the Limestone Aquifers in Mannar District.	28,800,000	January 2012	31.12.2013	6,575,000	1,051,000	4,462,000
(v) Hydrogeological Study in Vavuniya and Kilinochchi District.	77,950,000	January 2013	31.12.2015	69,700,000	589,000	589,000
(vi) The Study on the Possible Direct and Indirect Impacts of Climate Change on Coastal Aquifer System of Sri Lanka.	16,000,000	January 2013	31.12.2015	12,000,000	203,000	203,000



The following deficiencies were observed in this connection

(a) **Common Lapses Observed in the Implementation of Research Studies**

- (i) Although a full time research officer should be appointed to monitor the research studies for its successful completion, a full time research officer had not been attached to any research studies implemented during the year under review by the Board. Instead of that the General Manager of the Board had nominated as research officer for all studies. Therefore, these studies could not be completed within the scheduled time.
- (ii) It was observed that the research studies had not supervised by a competent and experienced research officer.
- (iii) List of names of the officers those who were attached to the research studies and allocated man days for each study had not been included in the research proposals.
- (iv) The accumulative expenditure and physical progress of the study had not been given when extended the period of execution.
- (v) Detail expenditure of each item had not been included in the research proposal

(b) **Water Quality Changes in Aquifer System and Identification of Zones with Hazardous Minerals Containing Water which Leads to Cause Health Problems to People in Anuradhapura District**

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- (i) Although this research study should have been completed at the end of November 2011 or within 18 months from the date of commencement, it had not been completed even up to end of the year 2013
- (ii) Acceptable reasons had not been given for this unusual delay.
- (iii) The following 03 new activities which were not included in the first research proposal had been included in 2012, due to weakness in the planning of the research studies



Name of Activity		Number of Units
Conducting Hydrogeological Investigations	-	100
Constructing of Test Boreholes	-	50
Conducting Pumping Tests	-	50

- (iv) Cost of Rs.19,800,000 had been estimated for collection and analysis of 300 water samples in first research proposal. However, at the extension of the research in 2012 that amount had been reduced up to Rs.1,000,000 and in 2013 only a sum of Rs.500,000 had been estimated for collection and analysis of 500 water samples indicating weakness of the estimation.
- (v) Sufficient provision had not been obtained from the Treasury for 2010, 2011 and 2013 and a proper estimate or work plan for the provision of Rs.15,000,000 allocated by the Treasury for the year 2012 had not been included in the research proposal.
- (vi) Tabling the results of this research study in Parliament is very important to propose solutions for life threatening Chronic Kidney Disease which has been reported from the North Central Province. However, inability to complete the research study as scheduled caused great loss to public and total expenditure of Rs.11,153,990 incurred on this research study since 2011 had become fruitless.

(c) **Hydrogeological Study on the Coastal Sandy Aquifer Extending from Colombo to Negombo**

- (i) Although the research study should be completed within two and half years from the date of commencement or at the end of the December 2012, it had not been completed even up to end of the 2013.
- (ii) Sufficient provision had not been obtained from the Treasury in 2010, 2011 and 2013 and a proper estimate or work plan for the provision Rs.30 million allocated by the Treasury for the year 2012 had not been included in the research proposal.



- (iii) Total expenditure of the research by 31 December 2013 was Rs.18,398,539. That was 14 percent from estimated total expenditure. Therefore, it is observed in audit that targets of the research were unrealistic.
- (iv) Out of 6 specific objectives of the research, the Quantification of recharge to the aquifer and to set limits of extraction from sand aquifer within the study area had been omitted in 2014, due to legal issue.

**(d) Ground Water Assessment and Development of Ground Water Monitoring Network for Jaffna Peninsula**

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- (i) Capital expenditure of the Board such as construction of buildings and procurement of office furniture amounting to Rs.17 million had been included to the expenditure of this research study.
- (ii) Although estimated expenditure in 2012 was Rs.12.5 million, the Treasury had approved only 10 million. In the year 2013 Treasury approved provision was Rs.8 million whilst estimated expenditure was Rs.2 million, thus indicating the weaknesses in the financial management of the study.
- (iii) Although the total estimated expenditure for the year 2012 and 2013 was Rs.28,500,000, the actual expenditure was Rs.2,154,000. Therefore, financial progress of the study was only 14 per cent. As such the target of the research was unrealistic even in 2014.

**(e) Hydrogeological Study in the Limestone Aquifer in Mannar District**

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- (i) The study had not been completed as scheduled by the end of the year 2013, due to weaknesses of the planning.
- (ii) Financial performance in 2012 and 2013 was at a unsatisfactory level of 15 per cent and 16 per cent respectively.



- (iii) Total expenditure of Rs.4,462,000 incurred on this study had become a fruitless because the research study had not been completed as scheduled.
- (iv) It was observed in audit that the financial management of the study had been unsatisfied due to considerable variances were observed between estimated expenditure and provision approved by the Treasury for the years 2012 and 2013. There had been an under provision of Rs.7,225,000 in 2012 and over provision of Rs. 2,425,000 in 2013.

**(f) Hydrogeological Study in Vauniya and Kilinochchi District**

- (i) The financial progress was unsatisfactory due to actual expenditure was 0.8 per cent as compared with estimated expenditure.
- (ii) Although the estimated expenditure of the study was Rs.69,700,000 for the year under review, the Treasury approved provision was only Rs.9,000,000.
- (iii) Capital expenditure such as purchase of vehicle, drilling machines, air compressors, field equipment, furniture and construction of buildings amounting to Rs.50 million had been included as expenditure of the study.

**(g) The Study on the Possible Direct and Indirect Impacts of Climate Change on Coastal Aquifer System of Sri Lanka**

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- (i) Financial performance of the study was unsatisfactory because only 2 per cent out of estimated expenditure had been incurred.
- (ii) Although the estimated expenditure of the study for the year under review was Rs.12,000,000, the Treasury had approved only Rs.2,000,000.



#### 4.2 Management Inefficiencies

The following observations are made.

- (a) Even though a provision of Rs.46,000,000 had been made for the Board under the Head 152 - Ministry of Irrigation and Water Resources Management for capital expenditure, only a sum of Rs.15,054,810 had been utilized during the year under review. The Board had failed to utilize a sum of Rs.30,945,190 or 67 per cent of the total provision.
- (b) Prompt action had not been taken in respect of non-moving stocks valued at Rs.5,378,596 and obsolete stocks valued at Rs.3,804,738 remained in the store.

#### (c) Achievement of Objectives

The Board had not taken necessary action to achieve the following objectives as laid down in Section 12 of the Water Resources Board (Amendment) Act No. 42 of 1999.

- (i) The control regulation and development (including the conservation and utilization) of the water resources of the country.
- (ii) The prevention of the pollution of rivers, streams and other water resources.
- (iii) The formulation of national policies relating to the control and use of the water resources of the country with the following objectives.
  - ❖ The multi-purpose development and use of water resources.
  - ❖ The short term and long term provision of water resources for domestic supplies and industrial supplies.
  - ❖ The control of salinity
- (iv) The preparation of comprehensive and integrated plans for the conservation, utilization, control and development of the ground water resources of the country.



- (v) Co-ordination of the activities of the Government Departments, Local Authorities and Public Corporations in regard to surveys of basic data and other investigations, relating to hydrogeology.
- (vi) Analysis of reports based on investigations, statistical surveys, plans and proposals relating to the ground water resources of the country made by Government Departments, Local Authorities and Public Corporations.
- (vii) Co-ordination of projects undertaken by Government Departments, Local Authorities and Public Corporations, relating to the conservation, utilization and development of the subterranean water resources of the country, and the assessment of the possibilities, benefits and economic feasibility of such projects.

#### 4.3 **Build up a Fund for Retirement Benefits**

Even though a provision of Rs.71,141,000 had been made in the financial statements of the Board as at 31 December 2013 for the payment of gratuity, only a sum of Rs.3,235,000 had been invested to meet the future obligations.

### 5. **Accountability and Good Governance**

#### 5.1 **Internal Audit**

Although ten internal audit reports were issued by the Internal Audit Division during the year under review, action had not been taken by the Board to rectify the issues pointed out by those audit reports.

#### 5.2 **Budgetary Control**

Significant variances were observed between the budgeted and actual income and expenditure, thus indicating that the budget had not been made use of as an effective instrument of management control.



6. **Systems and Controls**

Deficiencies in systems and controls observed during the course of audit were brought to the notice of the Chairman from time to time and special attention is needed in respect of the following areas of control.

- (a) Accounting
- (b) Control Over Fixed Assets
- (c) Budgetary Control
- (d) Receivables and Payables
- (e) Research Studies

W.P.C. Wickramaratne  
Acting Auditor General

IA/32/2014

2014.11.27

Auditor General,  
Auditor General's Department  
No. 306/72,  
Polduwa Road,  
Battaramulla

**Report on the Auditor General on the Financial Statements of the Water Resources Board for the year ended 31 December 2013 in terms of Section 14 (2) (c) of the Finance Act, No.38 of 1971**

This refers to your report No. LP/G/WRB/1/14/33 dated 05<sup>th</sup> November 2014 on the above subject.

My observations are given below.

**2.2 Comments on Financial Statements**

**2.2.2. ACCOUNTING DEFICIENCIES**

- (a) Purchases relating to Research Studies in year 2012 were accounted in accrual basis and settled from Treasury Grants released in year 2013.
  
- (b) Conducting of Awareness Programmes on Water Quality conditions in North-Central Province and providing clay pots and water filters to public were done as a part of research studies. Therefore, said amount were accounted under the expenditure of research studies.
  
- (c) Since the expenditure Rs.2,022,079.00 mentioned here such as maintenance of vehicles, purchasing of Office and Laboratory furniture, miscellaneous consumable articles, training programmes, purchasing of water filters to distribute among public in poor water quality areas, stationary, electricity, telephone and motor vehicle insurance using for research project activities, overtime and travelling are directly related to conducting of research studies in Anuradhapura district. Therefore, it is classified and accounted under research studies expenses.

### **2.2.3 Un reconciled Accounts**

An amount of Rs. 4,933,604 /= was paid for the Purchases of year 2012 relating to research studies and an amount of Rs.242,206/= was use to purchase of Assets. Therefore the difference was not shown in the statement of Financial Performance due to record the accrual basis.

### **2.2.4 Accounts Receivables & Payables**

- (a) The Board decided to write off the outstanding amount of Rs. 557,249/= out of Rs.689,155/= in year 2014.'
- (b) The amount of Rs.Mn 16.7 was shown as advances received as at 31.12.2013 relating to 65 nos. from Institutions and Individuals. An amount of Rs.Mn 3.6 of 21 nos. of Institutions / Individuals out of such amount has been cleared in year 2014.
- (c) The Board has taken a decision to write off the withholding tax dues from the books in year 2014 considering the irrecoverable situation.

### **2.2.5 Lack of Evidence for Audit**

- (a) Confirmation letters on Debtors and Creditors balance were sent to relenent Institutions and Individuals.
- (b) The estimates of groundwater investigations, pumping tests, tube well constructions, water sample analysis etc. will be prepared minimizing the differences comparing to actual cost with actual income.
- (c) Vouchers were not separately maintained by the Board as the whole work was undertaken from Ministry and invoiced accordingly.
- (d) The amount of Rs. 545,000/= was invoiced without reimburse the actual cost basis. The report of the research has sent to the Govt. Audit on the letter dated 19.11.2014

### **2.3. Non Compliance of Laws, Rules & Regulations**

#### **REFERENCE**

- |     |  |   |   |
|-----|--|---|---|
| (a) | Section 14 (1) and 14(2) of WRB Act.   | - | Although the comprising of advisory Committee to the Board, it had not been met during the year under review.                                       |
| (b) | FR.262(2)  | - | Rectify this manner in future.  |
| (c) | (I) P E Circular No. 842 dated 19 December 1978                                  | - | The register of Fixed Assets are being computerising and it will complete early.  |
|     | (II) Section 9.7 of the Public Enterprises Circular No. PED / 12 of 02 June 2003 | - | The special allowance was paid under the Board approval and approval of the Secretary to the Ministry of Irrigation and Water Resources Management. |

### **4. Operating review**

#### **4.1 Performance**

- (a) Carring out leveling, pumping tests, construction of peizometers and water sample analysis were not able to complete as scheduled due to the lack of equipment and machinery. However, those works will be carried out with available resources as much as possible.

- (b) The well Monitoring Network is a selected set of existing tube wells, dug wells and other water sources of study area that is using for long term monitoring of groundwater levels fluctuation and changes of water quality. This Monitoring Network Generally select considering the available information in WRB groundwater database. Therefore , it.is not necessary to spend separate cost in this regard and not estimated.
- (c) Since the additional funds were received in mid of the year from Dam Safety and Warer Resources Planning Project (DSWRPP) to develop Laboratory and it's consumables, conduct workshops, seminars and training programmes on groundwater development, the actual expenditure has been exceeded with respect to budgetary provisions as estimated at the beginning of the year.

#### **4.2 Weakness in the Implementation of Reseach Studies**

##### **(a) Common Lapses Observed in the Implementation of Reseach Studies**

- (I) Although the General Manager is responsible for overall research studies, Senior Officers (Hydrogeologists) were appointed as Project officers for each Research Study
- (II) Senior Hydrogeologists of Water Resources Board are well qualified and experienced officers who are having sound knowledge on the field of Hydrogeology and groundwater development. Therefore, they were appointed to conduct these research studies. Senoir Officers supervise the activies performed by them.
- (III) Since these officers are engaged with other official duties of the Board, it is not possible to allocate separate man days to them for research studies.
- (IV) Instructions has been given to include Physical and Financial Progress of previous year when submit new proposals to extending.
- (V) It is instructed to include details of each expenditure item to research proposals as much as possible

##### **(b) Identification of zones with Hazardous Mineral containing water which leads to cause Health problems to people in Anuradhapura District**

- (i),(ii) While conducting of this study, it is understood that data on seasonal fluctuation on water quality is very important and required to achive project objectives. Since these data are not avaliabe up to 2010,

arrangements were made to collect seasonal data covering wet and dry periods up to 2014. Therefore, the study has been extended for fulfilling all data requirement on groundwater quality distribution within the district.

The water quality zonation maps showing hazardous area will be prepared and publish at the end of the study.

- (iii) Since the unavailability of Test bore holes at the beginning of the study, arrangements were made to conduct additional groundwater investigations, construction of test bore holes, conducting of pumping tests. Accordingly, original proposal was amended by including those activities and continued the project up to 2014.
  - (iv) Due to the non-availability of hydro-chemical data for the study at 2010, full chemical analysis (including all chemical parameters) of 300 water samples were included to first study proposal. Based on the results of above analysis, analytical chemical parameters of each water sample were reduced for 2012 and 2013. Accordingly, estimates for chemical analysis also reduced.
  - (v) Considering the available provisions allocated by the Treasury, original work plan amended and continued the study for further years from 2012 to 2014.
  - (vi) A detailed report including results of the study, all findings and recommendations will be submitted at the end of the study in 2014
- (C) **Hydrogeological study on the Coastal Sandy Aquifer extending from Colombo to Negombo**
- (i) The main objective of this study is to identify, develop, manage, allocate and conserve the shallow sandy aquifer extending to Colombo to Negombo.  
  
As the initial activity of the study, data collection were commenced in 2011. When gathering the available data, it was understood that time series (temporal) groundwater data such as seasonal water level fluctuation and water quality changes were not available for the study. Since those data are very essential to achieve the project objective, it is decided to collect time series data at least for three consecutive years from 2012 to 2014. Accordingly, study was further extended.
  - (ii), (iii) Considering the responsibilities given to WRB under section 12 of the WRB(amendment) Act No. 42 of 1999, those research studies have been formulated as a national requirement in order to sustainable development of the groundwater resources of the country.

However, conducting of regional level groundwater research projects is a new subject to the board, said weaknesses have been occurred. Instructions were given to relevant officials to avoid such weaknesses in future studies as much as possible.

- (iv) The said project objective was omitted until setting of legal provisions on groundwater control regulations.

**(d) Groundwater Assessment and Development of Groundwater Monitoring Network for Jaffna Peninsula**

- (i) Since infrastructure facilities of WRB in Jaffna and North part of the Country had been abandoned in last 30 years, expenditure on establishment of Project office, Laboratory facilities and purchasing new scientific equipment were included to the research project.
- (ii) Since conducting of research studies on macro level is a new subject to WRB, the initial project proposals were subjected to further extensions and revising of estimates. However, action will be taken to avoid such weaknesses in future works.
- (iii) Though the financial progress of the project reduced 14% of the initial estimate affords will be made to achieve the physical target of the project by establishing groundwater monitoring network in Jaffna.

**(e) Hydrogeological Study in the Limestone Aquifer in the Mannar District**

- (i),(ii) This study has been formulated to understand sub surface conditions of existing limestone aquifers in Mannar district. Methodology of such kind of study is firstly analysing of initial stage study results and based on these results determine further research activities that required to data gaps filling such as construction of exploratory bore holes, test pumping, hydro-chemical analysis etc. Accordingly, the study has been extended to several stages up to 2014.

Funds for this study had been not received systematically. Therefore, difficulties were occurred to conduct project works such as construction of test bore holes etc.

- (iii) The groundwater data collected to this study are very useful to planning future groundwater development projects.

- (iv) The research project activities had been planned and scheduled according to the available funds approved and provided by the Treasury.

**(f) Hydrogeological Study in Vavunia and Kilinochchi Districts**

- (i) Funds for the study was received in mid of year 2013. Heavy rain also occurred in latter part of the year. Therefore, study work had been delayed and not completed as scheduled.
- (ii) The estimated cost for purchasing drilling machinery and equipment (Rs. 50.0 Million) was not approved by the Treasury. Therefore , instructed to conduct the study with available funds.
- (iii) Said capital expenditure (Rs.50.0 Million) was not approved by the Treasury.

**(g) The Study on the Possible Direct and Indirect Impact of Climate change on Coastal Aquifer Systems of Sri Lanka**

- (i) Although the study works were commenced in mid of the year 2013, difficulties were occurred with planning in covering all around The coastal areas. Therefore , it had been decided to conduct project activities by several stages in next three years period.
- (ii) The study will be continued using only approved treasury provisions

**4.2 Management Efficiencies**

- (b) Action is being taken to dispose the Non-moving & Obsolete stocks.

**(c) Achievements of Objectives**

In addition to the present activities conducting by Water Resources Board , under the responsibility of Section 12 of WRB (Amendment ) Act. No 42 of 1999, further action will be taken to fulfil the matters mentioned as (c). (i) to (c).(vii)

### **4.3. Build up a Fund for Employees gratuity**

Separate fund for Employees gratuity is already established.

## **5. Accountability and Good Governance**

### **5.1. Internal Audit**

### **5.2. Budgetary Control**

Action will be taken to minimise the estimated income and actual expenditure by preparation of estimates as much as closer to the actual costs.

## **6. Systems and Control**

Action will be taken to improve on following areas of control.

- (a) Accounts
- (b) Financial & Physical performance
- (c) Budget
- (d) Debtors & creditors
- (e) Provision of the Water Resources Board Act
- (f) Research study

**Bandula Munasinghe**  
**Chairman**  
**Water Resources Board**

## **Intermediate Actions taken to enhance the performance of the Water Resources Board**

At present the Water Resources Board is engaged in studies connected with the water resources of Sri Lanka. For the year 2013, eight (08) study projects were implemented and those activities are expected to be carried out according to the action plan. Therefore, in order to improve the efficiency of the studies of the Board the following steps are due to be taken:

01. Recruit the necessary technical personnel (Mainly, Geo-hydrologist, chemists and technical officers)
02. Giving the necessary Management training and the technical knowledge to the staff.
03. Developing the transport facilities for field duties.
04. To get drilling machines and other spare parts to construct testing tube wells and repairing of the spare parts.
05. Buying of Geo-physical equipment and equipment necessary to test the quality of water and through them enhancing the amount of Geological survey and analysis of water that can be carried out by the Board.
06. Examining the progress of all the units of the Board weekly.
07. To make use software to make the management of the fixed assets and administration more efficient and to continue with it further.
08. To do a feed- backs on all activities of the board.