

THE WATER AUTHORITY OF THE CAYMAN ISLANDS

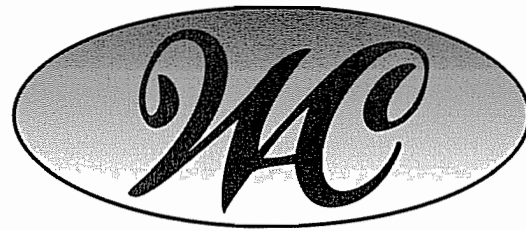


ANNUAL REPORT 2001

Opening Ceremony 10th Annual Caribbean Water & Wastewater
Conference & Exhibition,
Marriot Resort, Cayman Islands

**THE WATER AUTHORITY
OF THE CAYMAN ISLANDS**

**ANNUAL REPORT
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The Water Authority of the Cayman Islands

Mission Statement

"To ensure that the entire population of the Cayman Islands have access to pure, wholesome and affordable supply of potable water; and to provide advice to Government on all matters related to water supply in these islands, including regulation of other entities who are licensed by Government to provide public water supplies.

To protect and develop groundwater resources for the benefit of present and future populations of these islands.

To provide for the collection, treatment and disposal of sewage within these islands in a manner that is safe, efficient and affordable.

To operate in such a manner as to be financially self-sufficient, while contributing to the economy of these islands and achieving a reasonable and acceptable return on capital investments."

The Ministry of Community Services, Women's Affairs, Youth and Sports

THE WATER AUTHORITY OF THE CAYMAN ISLANDS

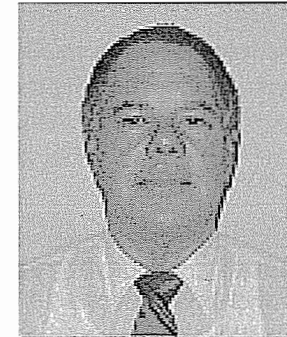
ANNUAL REPORT 2001

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Chairman's Report

The Year 2001



This year, I am pleased to report, was another successful year for the Authority even though it was the first time since the water distribution system was constructed, that annual growth in demand did not perform as forecasted.

The annual water sales increased by 5% from 2000 compared to 13% average annual increase for the period 1997-2001. This less than double digit growth in water sales for the Authority may be attributed to two main factors, one being the slowdown of the local economy and secondly, the slowing economy combined with the after effects of the terrorist attacks in the United States of America on 11 September, 2001. Nevertheless, operating revenue and net profits were 6% and 21%, respectively, above the 2000 audited financial statements. From the 2001 report it is evident that the Water Authority successfully met the challenge to provide the vital water and wastewater infrastructure necessary to support the growth and development of these islands.

The Authority will continue its plan to extend the water distribution system throughout the remaining eastern districts in Grand Cayman, as there is a demand for the service from residential customers as well from large developments in the area. Progress on the East End Pipeline Extension project remained steady with water mains being installed up to the Skipwith Link to the intersection with John McLean Drive and in the entire John McLean Drive in the district of East End. As the local economy recovers and as growth continues, the Authority will continue to keep pace by making the required investment in capital projects to meet the needs of the country.

The need for further water production capacity is being addressed with the award of the contract for a new reverse osmosis plant at the Red Gate site to Ocean Conversion Cayman Ltd after a competitive tendering process. This additional 3,000 m³/day production capacity plant will ensure the Authority is able to meet the demand for water as it expands eastwards and the anticipated recovery of the economy occurs.

The Authority received authorisation from the Executive Council that allowed the extension of the public water supply into older subdivisions with a policy amendment put in place in 2001. All new subdivisions are required to put in water supply water infrastructure. The amendment allows for work in the existing areas provided the net profit from the extension was expected to provide at least a 15% return on investment after 2 years.

This year, the Authority completed the master plan for the parcel of land adjacent to the Red Gate site and obtained planning permission. The master plan includes building a new post-treatment facility (chlorination building) in a more suitable and accessible location on the property, access roads, new abstraction and disposal wells as well as the much needed extension to the current Administration Building.

As part of the Authority's project to expand the water production capacity of the RO plant in Cayman Brac, two abstraction wells and one brine disposal wells were constructed and the construction of a steel storage shed/workshop behind the existing office building was completed. The new abstraction wells were put in use with the current plant and because of the improved design and construction, the water production capacity of the old plant has increased by about 15% while maintaining excellent water quality.

With regards to wastewater infrastructure, the tender documents for the Grand Cayman Wastewater Treatment Works were sent out to five contractors in 2001. The mandatory pre-bid conference was held on 11-12 September 2001. After some delay due to the difficulty contractors experienced in obtaining the required 5% tender bond and proof of 100% performance bond from a local institution following the events of 11 September 2001, the two responsive bids were opened by the Central Tenders Committee (CTC) in

December. The bid prices were significantly above the Authority's budget of US\$12.8 million by 35-48%. With the approval of the Central Tenders Committee, the Authority entered into direct negotiations with the lowest bidder, Wharton-Smith Inc/Hadsphaltic International. It is expected that pending resolution of these issues and an acceptable reduction in the contractor's bid, that work will commence on the project by mid-2002. With the anticipated completion in 2004 of the Grand Cayman Wastewater Treatment Works, the Authority will be well situated to meet the island's needs for proper wastewater treatment over the next 15-20 years.

In 2001, Cayman Water Company decided to cease their responsibility for their sewerage system in the Governor's Harbour area. Without accepting any liability for the sewerage system, the Authority then agreed to take over billing customers for the service at the same rate (75% of sewerage fixture units) used for customers on the Governor's Sound section. Cayman Water Company upgraded the pumping station and paid for the inspection and cleaning of the Governor's Harbour sewage collection system.

The Authority considers investment in the training and development of personnel to be very important as our employees are our most important resource. Employees are encouraged to take advantage of training and learning opportunities offered through various local and overseas institutions and organisations.

In October, the Authority was honoured to host the 10th Caribbean Water and Wastewater Association Conference and Exhibition. It was a successful conference with the Authority's own staff presenting three very well-received papers with topics on hydrogeology, laboratory accreditation and human resources development.

The Authority's support of various sports and activities related to young people as well as other charitable organisations within the local community continued through the year. Additionally, our employees are encouraged to give back to the community by contributing and dedicating time to assisting those less fortunate through Water Authority supported activities and projects such as Paint Your Heart Out Cayman and Project Angel Tree.

The Authority continued to carry out its statutory functions with regard to protection of groundwater resources through monitoring of quarry operations, groundwater abstraction, groundwater pollution incidents, development control and effluent disposal.

The tragic event of the terrorist attack against the United States of America on 11 September 2001 touched each of us and we extend our sincere condolences to the many around the world that were directly impacted.

The Board and I look forward to the continued success of the Water Authority in the future, and are sincerely grateful for the time and effort put in by each and every person whose contributions have made the Authority a model organisation in the corporate community of the Cayman Islands.

Mr Brainard Watler
Chairman

1. GENERAL INFORMATION

The Water Authority of the Cayman Islands is a statutory body, incorporated through the Water Authority Law, 1982 (Law 18 of 1982). The primary mission of the Water Authority is to provide public water and wastewater infrastructure for the Cayman Islands, and to protect and manage the water resources of the country.

Over the past eighteen years, the Water Authority has carried out a number of projects to map and monitor the groundwater resources of the country. In addition, the Authority constructed the country's first public sewerage system in the West Bay Beach resort area, and constructed public water supply systems on both Grand Cayman and Cayman Brac. Expansion of these systems is on-going.

The Water Authority is managed by a Chief Executive Officer (or Director) on permanent employment terms, and a Board of Directors, which is appointed every two years by the Governor of the Cayman Islands. After the 2000 national elections a new Board was appointed in January 2001 and the Authority was delegated to another ministry; Ministry of Community Development, Youth, Sports and Women Affairs. In 2001, the Ministry was renamed to Community Services, Women's Affairs, Youth and Sports.

The Board met regularly with ten meetings being held in 2001.

2001 Water Authority Board Members

Chairman: Mr Brainard Watler

Members: Permanent Secretary, CS, WA, Y & S
Mr Carson Ebanks, JP
Senior Assistant Secretary, CS, WA, Y & S
Ms Dorine Whittaker
Deputy Financial Secretary
Mr A Joel Walton, JP
Mr Rolston Anglin, MLA West Bay
Mr Harry Chisholm JP
Mr Joey Ebanks
Mr Richard Flowers
Mr Otto Watler
Mr Jerry Wood

Secretary: Director of the Water Authority
Dr Gelia Frederick-van Genderen

2. FINANCE

General Observations

The Water Authority maintained a positive financial position in 2001. Operating revenue increased by 5% and overall revenue increased by 6% from 2000. The largest part of the increase was due in part to higher water and sewerage revenue. Sundry income increased by 29% from 2000 due in part to the CWWA Conference Revenue. Operating expenses decreased by 1% from 2000. Administrative expenses increased by 13% from 2000. The largest part of the increase was due in part to the CWWA Conference expenses. The Authority's operating profit increased by 17% from 2000 and the net profit increased by 21% from 2000 (which reflects the increase in Operating Revenue and decrease in Operating Expense as explained above).

Loans

On 26 October 2001 the Authority signed a contract with OCL for a new Reverse Osmosis Plant at the Red Gate Water Works with a production capacity of 3,000 cubic meters per day. The cost of the new plant to the Authority will be CI\$2,612,006 which is vendor financed, interest free. Additionally, the Authority will pay monthly operating and base quantity fees. The construction of the plant is expected to be completed by the end of 2002. Under the terms of the agreement, the Authority will make monthly payments of US\$21,750 and CI\$12,917 for a duration of seven years from the commissioning date.

The Cayman Islands Government loaned the Authority \$4,822,349 for the development of the facilities in Grand Cayman. The loan is interest free and is being repaid in quarterly instalments of CI\$48,223 over a period of twenty-five years which commenced 01 April 1995. This loan was increased in February 1997 by CI\$450,000 in exchange for a 1.3-acre parcel of land at Red Gate that was sold to the Authority by the CI Government for the purpose of constructing an Administration Building. The increased portion of the loan was formalised on 27 December 2001. It is interest free and is being repaid over a period of 21 years in annual instalments of \$18,000.

Government Contribution

The Water Authority and the Cayman Islands Government agreed that the Authority would pay a dividend \$150,000.

Water and Sewerage Rates

The rates for water supply and sewerage service remained unchanged from March 1995. Additional sewerage rate categories were added to the Water Authority Regulations in 1998 in order to accommodate the possible integration of the Walkers Road Government Schools, Community College of the Cayman Islands and Truman Bodden Sports Complex into the public sewerage system.

2001 Public Water Supply Rates	
Group	\$ per cubic metre
Groundwater	\$2.33
Desalinated water Grand Cayman	
Residential under 12 m ³ /month	\$4.01
Residential over 12 m ³ /month	\$4.81
Commercial	\$4.81
Public Authority	\$4.35
Truck	\$4.01
Desalinated water Cayman Brac	
Piped water (all customer types)	\$5.60
Truck	\$7.00

2001 Public Sewerage Rates		
Group	SFU's per ft ²	SFU per Unit
Store	0.0275	
Office	0.0375	
Beauty salon, surgery, bar, club, water sports	0.0475	
Food handling, garage, photo lab	0.0575	
Schools, colleges and technical training facilities	0.0375	
Public swimming pools, public sports stadia and public parks:		
Toilet, plus		20
Urinal, plus		50
Wash basin		20
Residential and Hotels		
Residential bedroom		6
Residential bathroom		14
Hotel room		18

3. HUMAN RESOURCES

The Authority's staff complement at the end of the year was as follows:

Water Authority Staff Complement 2001	
Director	G L Frederick-van Genderen PhD
Deputy Director	G Glidden BA CPA
Financial Controller (Designate)	S Glidden BA
New Works Engineer	T van Zanten MSc Eur Ing MCIWEM
Water Resources Engineer	H-J van Genderen MSc Eur Ing
Information Systems Manager	J Bodden BA
Operations Manager-WS	T Hill Master Plumber
Operations Manager-WW	J Gadsby
Operations Manager-Cayman Brac	B Banks
Customer Service Manager	M Ebanks MBA
Accountant	R Scott
Accounts Receivable Officer	L Morejon
Administrative Assistant	E Phelps
Administrative Assistant-HR	J Dixon
Assistant Operator -WS	J Cruz
Assistant Operator-Collection System	K Connor
Assistant Operator-Collection System	J Groves
Assistant Operator-Collection System	D Myles
Assistant Operator-Collection System	E Hydes
Assistant Operator-CYB	C Scott
Assistant Operator-WS	V Grant
Assistant Operator-WS	R Grant
Assistant Operator-WS	D Smith
Assistant Operator-WW	C Ebanks
Assistant Utility Services Supervisor	G Hydes
Assistant Vehicle Maintenance Officer	R McField
Cashier	B Ebanks
Cashier	H Ebanks
Connections Foreman- WS	T Bodden
Connections Foreman-WS	H Myles
Customer Service Representative	S Bodden
Customer Service Representative	D Ebanks
Debt Collection Officer	S Ebanks
Design Engineer	C Garbutt BSc, Eng, MJIE
Design Engineer	M Tedd BSc, CEng, MICE
Development Control Technologist	C Crabb BSc
Draughtsman	G Lewis
Engineering Technician-Water Resources	V Rankine
Executive Officer-Cayman Brac	K Pietras
Foreman-NW	L Ramirez
Laboratory Assistant	T Ebanks
Laboratory Manager	B MacAree MSc MCIWEM
Laboratory Technician	N Powery
Laboratory Technologist	M Martinez-Ebanks BSc
Laboratory Technologist	W Warren BSc
Labourer-CYB	D Martin
Labourer-WS	J Llewellyn
Labourer-WS	J Parchman
Library/Records Administrator	B Speirs
Messenger	J Wood

Water Authority Staff Complement 2001 (cont'd.)

Meter Reader	M Conolly
Meter Reader	C Richards
Meter Reader	M Bodden
Meter Reader	H Ebanks
Office Assistant	T McField
Operator- Collection System	S Campbell
Operator- Collection System	A Bennett
Operator-Cayman Brac	C Scott
Operator-Collection System	G Manning
Operator-Heavy Equipment New Works	W Watler
Operator-Heavy Equipment Operations	B Watler
Operator-Heavy Equipment Operations	M Powery
Operator-Heavy Equipment Operations	L Rodriguez
Personnel Administrator	S Carter
Pipe Layer-NW	K Johnson
Pipe Layer-WS	E Forero
Procurement Officer	D Manderson
Quality Assurance Inspector	G McLean
Receptionist	L Stephenson
Reinstatement Foreman-WS	V Whittaker
Senior Accountant	T Hew
Senior Accountant (Trainee)	D Ebanks
Senior Laboratory Technologist	M Martinez-Ebanks BSc
Senior Meter Reader	C Morgan
Senior Operator-Collection System	L Tivy
Senior Pipe Layer-NW	G Riapira
Skilled Labourer-NW	G Kelly
Skilled Labourer-NW	J Moore
Sr Customer Service Representative	Z Bush-Ramos
Stores Clerk	G Smith
Superintendent- Construction	L Washburn
Superintendent-New Works	J Hunter
Trainee Draughtsman	J Tivy
Trainee Draughtsman	A Echenique
Treatment & Distribution Operator-WS	G Bush
Treatment & Distribution Operator-WS	A Scott
Utility Billing Officer	V Fallas
Utility Services Supervisor	A Archibold
Vehicle Maintenance Officer	B Ingram
Water Resources Technologist	R Marsden Chem Tech Diploma

During the year, the following employees were promoted:

- T McField was promoted to Office Assistant.
- C Morgan was promoted to Senior Meter Reader.
- L Rodriguez was promoted to Heavy Equipment Operator-WS.
- M Martinez-Ebanks was promoted to Senior Laboratory Technologist.
- G Bush was promoted to Treatment and Distribution Operator-WS.

At the end of the year the total staff complement stood at 89 of which 66% are Caymanian. Twenty-six (26) percent of the non-Caymanian staff are married to Caymanians or have Caymanian family connections.

Awards

In 2001, the Authority recognised employees in the following categories: the prestigious Chairman's Award, the "Employee-of-the-Quarter" and the ten-year service award.

Chairman's Award

The distinguished Chairman's Award for 2001 was awarded to Mr Larry Washburn for his outstanding service and dedication to duty.

Ten and Fifteen Years of Service Award

At the annual Staff Meeting and the annual Christmas dinner, several employees were recognised for their ten or more years of continuous service to the Authority. These were:

15 Years of Service

No 15 year awards were presented this year.

10 Years of Service

Mr Don Myles, Mrs Brenda MacAree, Mr Anthony Archibold, and Mr Walt Watler.

Employee-of-the-Quarter Awards

January-March

The first quarter award was given to Mrs Vielka Fallas in recognition of her hard work and dedication to the monthly utility billing and her continuous commitment to the Authority.

April-June

The second quarter award was presented to Mrs Trecia Hew for her hard work and dedication in managing the Financial Department during the period 02 April 2001 - 04 May 2001.

July-September

The third quarter award was presented to Mr Loy Tivy for his hard work, dedication, and exemplary performance in the role as Acting Superintendent-Collection System.

October-December

The fourth quarter awards were presented to Mr Carlos Scott for his hard work and dedication in assisting with the installation of wells for the West End Water Works Reverse Osmosis Plant in Cayman Brac.

Training

Training is important to ensure employees are able to meet the ever increasing and changing demands of technology. The Water Authority continues to invest significant capital in providing training and development opportunities of employees at local and overseas academic institutions, regional organisations, and at international conferences and workshops.

The Authority continued its participation in the Caribbean Basin Water Management Programme (CBWMP), a training programme for water utilities in the Caribbean region.

The following training events occurred in 2001:

Community College of the Cayman Islands

- One employee enrolled in Introduction to Computers.
- Seven employees enrolled in Introduction to Excel 2000.
- Four employees enrolled in Intermediate Excel 2000.
- One employee enrolled in Advanced Excel 2000.
- Two employees enrolled in Introduction to Word 2000.
- Three employees enrolled in Introduction to Access 2000.
- One employee enrolled in Intermediate Access 2000.
- Two employees enrolled in Basic English.
- One employee enrolled in English as a Second Language.

Training activities through CBWMP:

K Connor completed an operator certification

Miscellaneous Short-term Training

- Several employees enrolled in courses at the International College of the Cayman Islands including classes in Microsoft Access 2000 and Introduction to Computers.
- One employee participated in an online course on the American Water Works Association's website entitled, "Electrical Safety (Construction)".
- Four members of staff participated in courses offered by the MicroCAD Institute, an American-based organisation that provides local training on CAD and GIS programmes.
- Two senior managers received training on the use of Great Plains Dynamics and Diamond Software, the accounting and utility billing system used by the Authority.
- Several members of the Human Resources Department were trained in the use of the Human Resources Module of Dynamics.

Workshops and Conferences Overseas

- S Ebanks attended a workshop entitled, "How to Legally Collect Accounts Payable" in Tampa, FL.

Professional Qualifications and Degree Programmes

- S Carter completed a course through the Personnel Training Unit and Portsmouth University (UK) and received a Certificate in Personnel Practice from the Chartered Institute of Personnel Development in the UK.
- S Glidden received sponsorship to prepare and sit for the Certified Public Account qualification.
- T Hew continued a BA degree in Accounting at the International College of the Cayman Islands.
- B Whittaker continued a 4-year BSc in Civil Engineering at Florida Institute of Technology (FIT), Melbourne, FL.
- B MacAree completed a self-funded MSc Degree programme with University of Bath, UK.

The Authority continues to assist school groups and other organisations with educational tours of the laboratory and operation facilities.

4. QUALITY CONTROL AND RESEARCH

Laboratory

The laboratory carries out the chemical and biological analyses for the Authority's operations, monitoring programmes and private requests. The major monitoring programmes of the laboratory are:

- Quality control of the piped public water supplies (Grand Cayman and Cayman Brac), and East

End reservoir and wellfield;

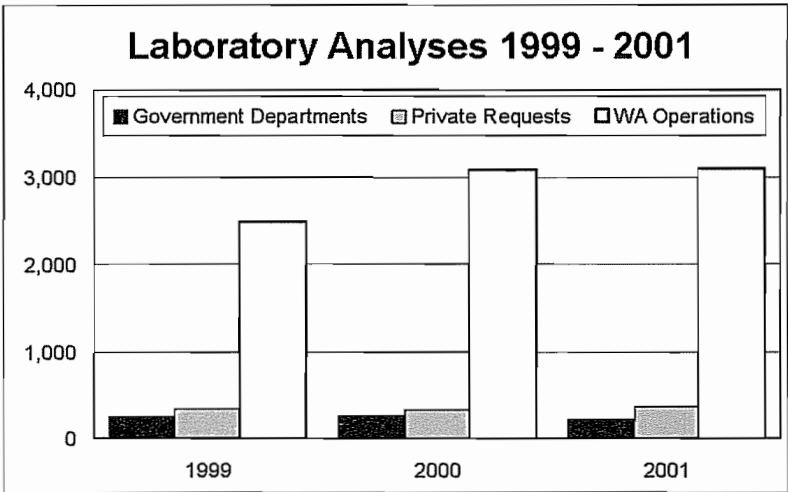
- Monitoring of Lower Valley and East End groundwater resources;
- Research and monitoring of the West Bay Beach sewerage system and sewage treatment works;
- Coastal water monitoring in the Hog Sty Bay area;
- Providing water quality monitoring services for other Authority projects or research as required;
- Providing the public with laboratory services for water analyses;
- Compliance monitoring of private wastewater treatment works.

The laboratory continued to make strides towards A2LA accreditation this year. In March 2001, a pre-audit of the laboratory was carried out by Dr Jennifer Clancy of Clancy Environmental Consultants, Vermont USA. The aim of the audit was to determine the strengths and weaknesses of the laboratory in terms of meeting its accreditation goals. The findings of the audit were published in a report by Dr Clancy dated 16 March 2001 and concluded that apart from some minor changes to laboratory quality assurance procedures and related documentation, the laboratory was ready to make its application for accreditation.

The laboratory continued to participate in the Aquacheck (WRc, UK) Proficiency Testing Programme this year for microbiological and chemical analysis. In 2001 the laboratory received 18 proficiency samples: 10 for microbiological analysis and 8 for chemical analysis.

Monitoring Programmes

The majority of the laboratory's activities relate to comprehensive monitoring programmes of the Authority's operations. The total number of samples analysed in 2001 was 3,677, this did not change significantly from 2000. The number of private request samples increased by 10% compared to 2000.



The Lower Valley Hach online monitoring system for chlorine residuals, pH and electrical conductivity (EC), installed in late 2000, operated well this year despite minor maintenance issue and operational problems with the SCADA system.

Public Piped Water Supply-Grand Cayman

Monitoring of the distribution system continued with regular testing of chlorine residuals, total and faecal coliform bacteria, heterotrophic plate count bacteria (HPC), EC, total dissolved solids (TDS), pH, zinc and orthophosphate at specific sampling points.

Water produced by OCL, at the Red Gate and the Lower Valley Water Works, is tested twice daily for TDS and pH levels prior to storage in the Authority's reservoirs. Water entering the distribution system is analysed twice daily for TDS, pH and chlorine residuals. Zinc and orthophosphate analyses are carried out weekly. Bacteriological analyses are carried out each working day. Monitoring of sampling taps is carried out in accordance with a set schedule.

Quality of Water entering Distribution System from Red Gate Water Works	
Parameters	Mean
Free Chlorine (mg/l)	0.39
pH (units)	7.46
EC (µS/cm)	343
TDS (mg/l)	165
Zinc (mg/l)	0.57
Orthophosphate (mg/l)	1.48
Heterotrophic Bacteria (estimated cfu/ml)	0
All faecal coliform results were negative.	

Quality of Water entering Distribution System from Lower Valley Water Works	
Parameters	Mean
Free Chlorine (mg/l)	0.49
pH (units)	7.55
EC (µS/cm)	370
TDS (mg/l)	177
Zinc (mg/l)	0.61
Orthophosphate (mg/l)	1.71
Heterotrophic Bacteria (estimated cfu/ml)	0
All faecal coliform results were negative.	

The metal boron in the product water originating both from the Red Gate Water Works and the Lower Valley Water Works exceeded the provisional World Health Organization (WHO) Drinking Water Guideline Values of 0.5 mg/l. Boron water quality standards in various jurisdictions differ significantly; the United States Safe Drinking Water Act has no boron standard, the federal guideline in Canada is 5 mg/l and the European Drinking Water Directive is 1.0 mg/l. The level of boron in the Authority's supplies meets the European directive.

The laboratory collected 75 samples in relation to queries from customers. Written reports were provided to customers, and where necessary, they were advised on the action to take regarding problems encountered on their side of the meter box.

Public Piped Water Supply-Cayman Brac

The TDS and pH of water entering the reservoir from the reverse osmosis plant are tested on a daily basis. Water entering the distribution system is analysed daily for TDS, pH and chlorine residuals. Bacteriological and zinc analysis are carried out weekly. Three sample taps within the distribution system are monitored monthly.

Quality of Water entering Distribution System from West End Water Works	
Parameters	Mean
Free Chlorine (mg/l)	0.39
pH (units)	7.46
TDS (mg/l)	165
Zinc (mg/l)	0.57
Orthophosphate (mg/l)	1.48
Heterotrophic Bacteria (estimated cfu/ml)	0
All faecal coliform results were negative.	

East End Wellfield and Reservoir

The East End wellfield and reservoir completed its sixteenth year of service to the public. Treated fresh groundwater is sold to truckers and made available to the public through a standpipe at the reservoir site. Product water from the reservoir is monitored daily for chlorine residuals, pH, Electrical Conductivity and Total Dissolved Solids.

Quality of Product Water from East End Reservoir	
Parameters	Mean
Free Chlorine (mg/l)	0.33
pH (units)	7.87
EC (µS/cm)	884
TDS (mg/l)	611
All faecal coliform results were negative.	

Testing of the feedwater of the East End reservoir indicated no presence of micropollutants or pesticides. However the level of total trihalomethanes in the product water exceeded the WHO Drinking Water Guideline Values. Trihalomethanes are disinfection by-products as a result of treating water with chlorine to remove harmful bacteria. As product water from the East End reservoir is used to supplement drinking water in cisterns, rather than as a single source of drinking water, the daily intake of trihalomethanes originating from East End product water is lower than the daily intake in the approach used by the WHO. Consequently the risk of lifetime exposure also will be lower. The Authority will seek ways to address this situation.

Lower Valley Domestic Wells

Selected domestic wells in the Lower Valley area are tested for total and faecal coliform bacteria, TDS, EC, nitrates and pH. Analyses were carried out this year during the wet season (25 wells).

Lower Valley Domestic Well Monitoring Results		
	Total coliform > 0 cfu/100ml (%)	Faecal coliform > 0 cfu/100ml (%)
Wet Season	38	25

Wastewater Treatment Works

The performance of the waste stabilisation ponds was monitored every two months. Twelve pumping stations continued to be monitored weekly for EC that is used as an indicator of groundwater intrusion into the sewerage system.

The overall unfiltered biochemical oxygen demand (BODuf) removal efficiency of the waste stabilisation ponds increased compared to 2000 and faecal coliform removal efficiency remained at just over 2 logs.

Operational Performance of the Sewage Treatment Works				
Average BOD-5 day (mg/l)				
Year	Raw sewage	Final effluent	%age removal	Average Daily Flow (m ³ /day)
1988	213.0 (g)	13.0 (g)	94.0	728.3
1989	174.0 (g)	36.0 (g)	80.0	1611.2
1990	103.5 (c)	25.4 (g)	75.0	2898.2
1991	76.4 (c)	20.8 (g)	73.0	4116.9
1992	68.9 (g)	19.6 (g)	71.5	4843.9
1993	94.2 (g)	22.8 (g)	75.8	2954.6
1994	117.6 (c)	26.0 (g)	77.9	2979.9
1995	121.0 (c)	23.4 (g)	81.0	2936.1
1996	142.4 (c)	31.5 (g)	77.9	3232.1
1997	161.8 (c)	34.6 (g)	78.6	3231.0*
1998	158.0 (c)	26.7 (g)	83.0	4094.0*
1999	105.7 (c)	23.9 (g)	77.4	5472.0
2000	110.7 (c)	36.0 (g)	67.5	4623.0
2001	176.3 (c)	33.2 (g)	81.2	5251.0

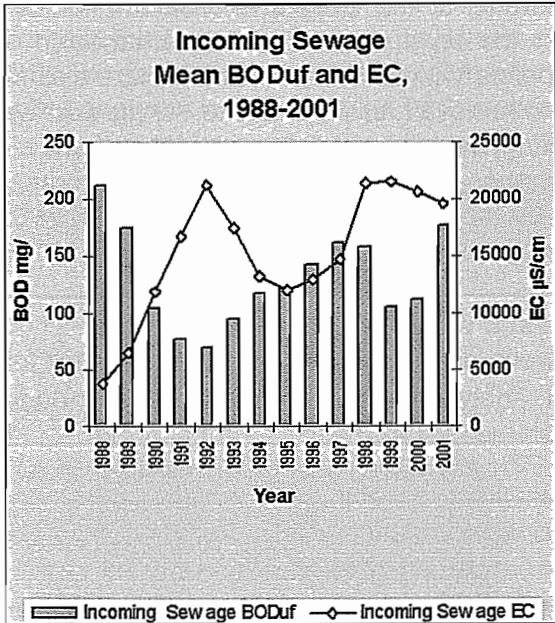
NOTE: BOD = Biochemical Oxygen Demand; EC = electrical conductivity; g = grab sample; c = 24hr composite sample. Average flows are corrected for flow meter errors, *corrected figures from 1998 Annual Report.

Operational Performance of the Sewage Treatment Works			
Average FC (cfu/100ml)			
Year	Raw sewage (g)	Final effluent (g)	%age reduced
1988	4.39 x 10 ⁶	1.68 x 10 ³	99.962
1989	1.62 x 10 ⁸	2.87 x 10 ³	99.998
1990	3.18 x 10 ⁸	7.30 x 10 ³	99.998
1991	2.77 x 10 ⁶	1.55 x 10 ⁴	99.440
1992	1.52 x 10 ⁸	5.84 x 10 ³	99.616
1993	3.22 x 10 ⁶	4.26 x 10 ³	99.868
1994	9.29 x 10 ⁷	2.04 x 10 ⁴	99.904
1995	1.38 x 10 ⁷	2.53 x 10 ⁴	99.817
1996	6.89 x 10 ⁸	2.75 x 10 ⁴	99.601
1997	4.36 x 10 ⁸	2.13 x 10 ⁴	99.512
1998	3.46 x 10 ⁸	1.53 x 10 ⁴	99.558
1999	4.91 x 10 ⁶	1.28 x 10 ⁴	99.740
2000	7.21 x 10 ⁸	4.36 x 10 ⁴	99.396
2001	3.96 x 10 ⁸	2.52 x 10 ⁴	99.363

NOTE: FC=Faecal coliform bacteria; cfu = colony forming units; g = grab sample; c = 24hr composite sample.

The salinity of the sewage remains significantly higher than the mean levels in 1997. It is estimated that more than 1/3 of the flow collected and pumped is due to saline groundwater infiltration. The Authority completed a diagnostic review of the collection system in 2001.

The following graph compares the EC and unfiltered BOD since the commissioning of the West Bay Beach Sewerage System in 1988. The average salinity of the incoming sewage was slightly lower compared to 2001.



Sludge depth is measured annually as part of the operational performance monitoring of the sewage treatment works. The mean sludge depth in the facultative ponds increased by 11% in facultative pond 1.1 and by 14% in facultative pond 1.2. Maturation pond 2.1 showed a significant increase of 21% from that measured in 2000. However, the increases were minimal in maturation pond 2.2 with 1% over last year's levels.

Average Sludge Depth in Waste Stabilisation Ponds				
Year	Pond 1.1 (metres)	Pond 1.2 (metres)	Pond 2.1 (metres)	Pond 2.2 (metres)
1990	0.145	0.164	0.054	0.041
1991	0.346	0.294	0.215	0.241
1992	0.385	0.362	0.177	0.217
1993	0.345	0.371	0.303	0.298
1994	0.343	0.345	0.123	0.126
1995	0.318	0.243	0.144	0.140
1996	0.388	0.341	0.162	0.133
1997	0.405	0.365	0.140	0.122
1998	0.605	0.594	0.169	0.179
1999	0.693	0.695	0.196	0.216
2000	0.663	0.725	0.209	0.229
2001	0.734	0.830	0.253	0.231

With the various operational problems relating to salinity and hydraulic loading, the waste stabilisation ponds performed as expected.

George Town Harbour Water Quality Monitoring Programme

The George Town Harbour Water Quality monitoring programme commenced in 1991 as a joint study between the Water Authority and the Department of the Environment. The results to date have not identified any significant pollution, however the programme will continue in order to identify and observe trends.

The programme includes 18 sampling points. All samples were analysed for faecal coliform and enterococci bacteria in addition to various physico-chemical parameters. The highest average faecal coliform result was 29.5 cfu/100ml at sample point 8. The highest individual faecal coliform result

obtained in 2001 was 162 cfu/100ml at sample point 8.

The overall average enterococci bacteria densities in 2001 have increased slightly since 2000. The highest average for enterococci was 3.2 cfu/100ml at sample point 1-additional with the same sample point having the highest individual enterococci result of 23 cfu/100ml.

Performance of Water Supply Concessions		
	Production (US gallon)	Royalty (\$)
Little Cayman Beach Resort	3,230,772	5,654
Morritt's Tortuga Club	18,643,200	17,712
Royal Reef Resort	6,755,330	6,561
On the Bay Development	497,240	1,492

The physico-chemical parameters of the 18 main sample points are as expected for tropical marine coastal water. Salinity results for sample point 1-additional are generally lower than that of the other 18 samples. This sample is collected at a fissure in the Ironshore of the coast and appears to be influenced by the outflow of brackish groundwater containing hydrogen sulphide. The observance of white particles in the fissure outflow was confirmed by laboratory analysis (Clancy Environmental Laboratory, USA) to be the sulphur oxidizing bacterium Beggiatoa. The bacterium is found widely in nature primarily in habitats rich in hydrogen sulphide.

Mean faecal coliform and enterococci results for all 18 sampling points are well within the EU and EPA guidelines values for recreational water.

Conferences, Papers and Reports

Hosting of the 10th Annual Caribbean Water and Wastewater Association Conference

The Tenth Annual Caribbean Water and Wastewater Conference & Exhibition was held from 2-5 October 2001 in Grand Cayman, Cayman Islands. The Water Authority was honoured to host the Conference & Exhibition as 10 years ago the Authority was host to the 1991 Caribbean Water Engineer's Conference & Exhibition. The 2001 Conference & Exhibition was attended by 250 delegates from the Caribbean, North America, Canada, Europe, Israel, and Latin American and featured 31 Exhibitors. Thirty-seven papers were presented under the theme "Innovative Technologies in the Water and Waste Industries for the 21st Century".

Keynote addresses at the Opening Ceremony were made by the Honourable Edna Moyle, Minister of Community Development, Women Affairs, Youth & Sports and the Honourable Kurt Tibbetts, Minister for Planning, Communication & Works & Leader of Government Business. Conference participants received greetings from Dr Gelia Frederick-van Genderen, Director, Water Authority-Cayman & Conference Chairperson, Mr Errol Grimes, CWWA President, and Mr Daniel Cummings, Past President CWWA. The Exhibition of overseas and local suppliers of products relevant to the water and wastewater sector was officially opened by His Excellency the Governor Mr Peter Smith, CBE.

Technical Session themes included: Membrane Filter Technology for Water and Wastewater, Innovative and/or Cost-effective Water and Waste Treatment Processes, Operational and Maintenance Solutions, Recycle, Reuse, and Recovery Technology, Desalination Processes, Quality Control Management and Standardization, Automated Treatment Process Control, Asset Management Using Information Systems (SCADA, GIS, AMR), Environmental Challenges for Water and Waste Treatment, Developments in Utility Customer Relationships. The format of the conference consisted

of the presentation of scientific and technical papers and discussion forums on current issues facing the sector. Conference proceedings were made available on CD and are available for purchase from the CWWA Secretariat.

Among the week's highlighted activities was the "Open Day" where members of the public and students from local schools visited the Exhibition. For the students it was a very educational field trip as they heard explanations of the processes of desalination and sewage recycling for irrigation. The Awards Ceremony & Banquet culminated the week's events. The Water Authority-Cayman was honoured as Mr Brainard Watler, Chairman; Water Authority Board of Directors was the 2001 recipient of the CWWA's Gold Award that recognizes persons for "distinguished service to the water sector in the Caribbean". Mr Watler has played a major role in the development of water and wastewater infrastructure for the Cayman Islands and has served on the Board of Directors. He was appointed the Authority's Chairman in January 2001.

Conference participants went on Facility Tours to the Lower Valley Water Works and the Wastewater Treatment Works. Those wishing to experience some of Cayman's land and water attractions enjoyed an Island tour or had a lifetime experience as they swam with the rays at Stingray City.

The Conference Planning Committee of the 10th Annual CWWA Conference & Exhibition received many positive reports from participants who enjoyed their conference experience and their visit to Grand Cayman.

Papers

Jones, B, van Genderen, H J & van Zanten, T C (2001). *Wellfield design for a reverse osmosis plant located over a fresh water lens in Lower Valley, Grand Cayman, Cayman Islands*. Tenth Caribbean Water and Wastewater Association Conference. Cayman Islands, 1-5 October 2001.

MacAree, B (2001). *The Road to Laboratory Accreditation using ISO/IEC 17025 – A Cayman Islands Case Study*. Tenth Caribbean Water and Wastewater Association Conference. Cayman Islands, 1-5 October 2001.

Glidden, G (2001). *Human Resources and Development as a Value-Added Strategic Business Partner*. Tenth Caribbean Water and Wastewater Association Conference. Cayman Islands, 1-5 October 2001.

MacAree, B (2001). *Hazardous Waste Disposal Practices and their Effect on Ground Water Quality – A Grand Cayman Case Study*. MSc Thesis, University of Bath, UK.

Reports

- Investigation of Groundwater Quality at the Grand Cayman Wastewater Treatment Plant 1999-2001.

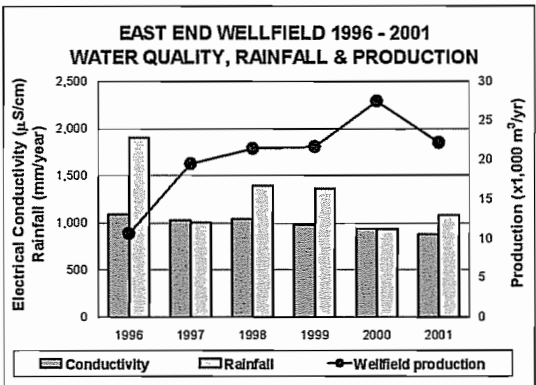
5. WATER RESOURCES

Groundwater Monitoring

The Authority continued its groundwater monitoring programmes in 2001 with data collection from observation wells, piezometers, water level loggers and raingauges. Some of the older mechanical

monitoring equipment was replaced with dataloggers, which provide high quality data at low cost. As the electronic data logging raingauge, which was installed at the Wastewater Treatment Works in 2000, had proven its reliability, 3 additional datalogging raingauges were installed in Grand Cayman. A total of 8 monitoring and observation wells were rehabilitated in Lower Valley in 2001.

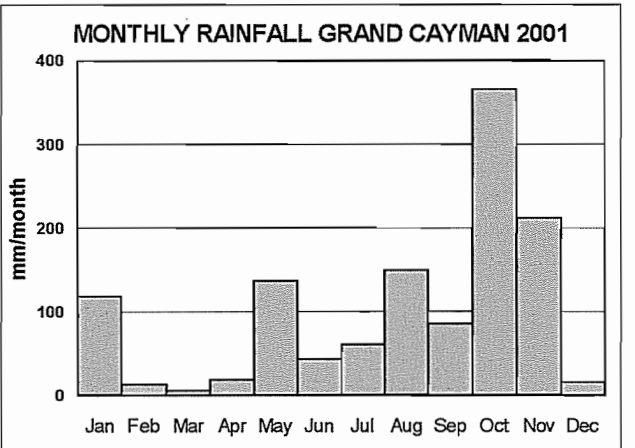
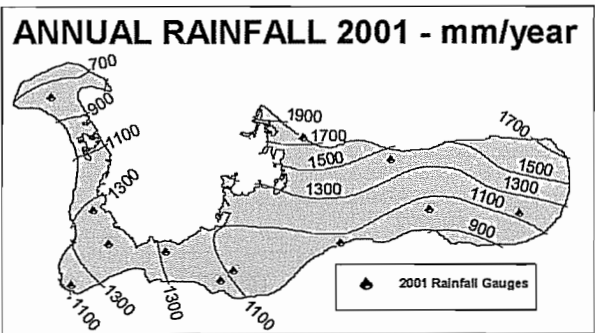
The water quality of the groundwater pumped from the production wells of the East End wellfield showed no significant changes in Electrical Conductivity (EC) compared to previous years of operation. The average EC of the product water from the reservoir was 884 $\mu\text{S}/\text{cm}$, and minimum and maximum values were 813 $\mu\text{S}/\text{cm}$ and 926 $\mu\text{S}/\text{cm}$ respectively.



Rainfall

In Grand Cayman rainfall records are obtained from a network of rain gauges maintained by volunteers. These data are supplemented by the Authority's manual and datalogging raingauges and data provided by the Meteorological Service, the Queen Elizabeth II Botanic Park and the Mosquito Research and Control Unit.

Average rainfall in Grand Cayman for all the stations of which data are collected was 1,224 mm (48") in 2001, compared to 992 mm (39") in 2000 and 1,701 mm (67") in 1999. As usual the wet period coincided with the period of hurricane activity in October and November 2001.



Groundwater Use – East End lens

The Authority monitors the commercial abstraction of groundwater from the East End lens; Furtherland Farm uses the majority of fresh groundwater with 557 m^3/day , whereas the abstraction by Captain Charles Kirkconnell Farm and Franklin Smith Farm is limited to 41 m^3/day and 31 m^3/day respectively. The Water Authority abstracted 61 m^3/day from the East End wellfield. The total commercial abstraction in 2001 averaged 690 m^3/day .

In March 2001 the Water Authority awarded the contract for the construction of the storage building and associated work to Cayman Repairs Construction. This contract was satisfactorily completed by early June 2001.

Average Usage per Consumer Group-CYB (m ³ /Connection)				
Month	Single Resident	Commercial	Public Authority	Trucked
Dec-00	11.0	93.8	9.8	114.6
Jan-01	13.5	100.7	10.2	124.5
Feb-01	14.6	104.7	11.9	131.2
Mar-01	15.6	108.6	13.6	137.8
Apr-01	18.5	117.5	13.7	149.6
May-01	16.2	111.3	10.2	137.7
Jun-01	15.3	122.9	12.8	151.0
Jul-01	14.2	129.4	10.1	153.6
Aug-01	14.1	123.8	12.6	150.6
Sep-01	12.8	112.4	11.3	136.5
Oct-01	12.3	95.7	12.6	120.5
Nov-01	12.4	68.2	10.3	90.9
Dec-01	13.7	74.8	9.5	98.0
Averages	14.2	97.3	10.6	122.1

Public Water Supply-Grand Cayman (GCM)

In 2001 the increase in demand for piped water supply was down from previous years, about 3% over the volume of water sold in 2000. This is the first year since the water distribution project was commissioned that there is less than double-digit growth in water demand. This may be attributed to two main factors, one being the slowdown of the local economy and secondly, the slowing economy combined with the after effects of the terrorist attacks in the United States of America on 11 September, 2001.

With the tragic international events of 2001 globally, concerns have been raised because of real and perceived terrorist activities and threats. As the Authority's operations are part of the vital infrastructure of the Cayman Islands, the Authority revised and improved its security procedures and will be taking further actions in 2002 to reduce identified vulnerable areas.

Although the growth rate declined, pipeline connections increased to 8,866 by the end of December 2001, representing an increase of just over 6%.

The average daily water sales were 6,174m³ per day representing 86% of the contracted capacity. In 2001 the Authority awarded Ocean Conversion a contract to construct a new 3,000m³ per day Reverse Osmosis plant at the Red Gate Water Works site.

Public Water Supply-GCM Summary of Operations				
	2001	2000	1999	Unit
Total Desalinated Water Purchased	2,543,429	2,443,745	2,095,880	m ³
Total Desalinated Water Sold	2,253,657	2,193,074	1,919,096	m ³
Pipeline Sales	2,192,348	2,131,226	1,896,876	m ³
Trucked Sales	60,829	53,192	22,068	m ³
Unaccounted for Water	11.4	10.0	8.3	%
# of Pipeline Connections	8,866	8,335	7,630	No.
Average Daily Water Sales	6,174	5,992	5,258	m ³
Daily Sales as % of Contracted Capacity	86	83	73	%
Water purchased from CWC	21,329	2,362	0	m ³
Water Sold to CWC	-6	8,297	143	m ³
Pump Stations Electricity Consumed	670,900	556,120	472,980	kWh
Pump Station Efficiency	0.277	0.240	0.231	kWh/ m ³

The distribution system experienced an increase in unaccounted for water, a 1.4% increase above the previous year. The losses are attributed to the age of consumer meters, un-metered fire hydrants, ruptured water mains, periodic flushing of water services and mains. Nevertheless, unaccounted for water bears further investigation and subsequent action to further improve the overall efficiency of the Authority's operations. To identify leaks in the system, in 2002 the Authority will contract a leak detection consultant.

The Authority continued its planned replacement/upgrading of various sections of the 250/200mm water main in George Town area, including Smith Road between Hospital Road and Pines Way, Thomas Russell Way between Shedden Road and the Department of Education building, and Crewe Road between Legacy Drive and Melody Lane. This replacement/upgrade programme will continue in 2002.

Public Water Supply-GCM Connections per Customer Type					
Month	Single Resident	Multi- Residential	Commer.	Public Auth	Total
Dec-00	7,318	60	842	115	8,335
Jan-01	7,441	61	844	117	8,463
Feb-01	7,419	61	885	117	8,482
Mar-01	7,516	60	917	118	8,611
Apr-01	7,626	59	899	120	8,704
May-01	7,633	59	915	118	8,725
Jun-01	7,699	60	927	121	8,805
Jul-01	7,764	60	938	123	8,885
Aug-01	7,795	60	919	122	8,896
Sep-01	7,913	60	937	122	9,032
Oct-01	7,992	58	954	123	9,127
Nov-01	7,932	62	964	126	9,084
Dec-01	7,755	59	930	122	8,866

Public Water Supply-GCM Average Usage per Consumer Group (m ³ /Connection)				
Month	Single Resident	Multi- Residential	Commer	Public Auth
Dec-00	11.1	85.0	35.4	67.6
Jan-01	19.0	208.3	57.7	108.4
Feb-01	15.5	125.1	44.7	91.5
Mar-01	17.6	139.2	50.4	89.1
Apr-01	17.6	134.5	48.1	86.5
May-01	16.4	132.0	46.1	85.5
Jun-01	13.7	113.9	40.9	94.5
Jul-01	17.6	129.3	42.0	115.8
Aug-01	16.9	128.6	45.3	101.8
Sep-01	14.9	106.8	39.0	81.6
Oct-01	15.4	112.8	40.3	96.0
Nov-01	14.9	120.1	41.0	69.0
Dec-01	10.9	86.0	29.5	57.9
Averages	15.9	128.1	43.8	89.8

Public Water Supply-GCM Water Sales by Consumer Group (m ³)			
	2001	2000	1999
Single Residential	1,484,620	1,414,123	1,247,855
Multi-Residential	92,653	91,008	97,494
Commercial & Industrial	484,515	478,912	426,425
Truckers	60,829	53,192	22,068
Public Authorities	130,560	147,183	125,103
CWC	-6	8,297	143

From the tables above, water sales to the Authority's single residential customers increased by 5% while the number of customers in this category increased by 6% from the previous year. Water sales to multi-residential customers increased by 2%, while the number of customers in this category decreased by about 2%. Water sales to the Authority's commercial and industrial customers increased showed an increase of 10% over 2000 sales to commercial customers and sales to Public Authority customers increased by 7%. The volume of water sold to truckers showed an increase of 14% in 2001.

7. WASTEWATER OPERATIONS

Public Sewerage-GCM

The number of customers connected to the public sewer system at the end of 2001 decreased to 255 from 261 at the end of 2000, a decrease of 2%. Revenue generated from sewage increased by 8% over that of 2000. Revenue from five septage truckers providing service on Grand Cayman was slightly lower than in 2000, by less than 1%.

Due to major repaving of the West Bay Road by the Public Works Department, the Authority was required to raise the level of 45 existing manhole covers to the new pavement level.

A Closed Circuit TV (CCTV) survey of sewer lines on the West Bay Beach Sewerage System was completed in 2001 and leaking areas were identified, however none of the U-lined sections installed in 1994 have failed. The main sewers along the West Bay Beach Road were reported to be in very good condition with only one section requiring repair. Failures were identified in approximately 2,400 ft. of the 6-inch clay sewer lines and 3,000 ft. of 8-inch clay sewer lines in the collection system. The Authority plans to address the rehabilitation of the sewer system in 2002.

Public Sewerage System-GCM Summary of Operations				
	2001	2000	1999	Unit
Total Sewage Treated	1,916,615	1,692,018	1,997,280	m ³
Average Daily Flow	5,251	4,623	5,472	m ³
Average Daily Septage	38	38	37	m ³
Pump Station Elec.	377,504	361,827	347,748	kWh
Pump Station Effic.	0.20	0.21	0.17	kWh/m ³
Treatment Works Elec.	235,280	225,800	210,968	kWh
Treatment Works Effic.	0.12	0.13	0.11	kWh/m ³
Total Electricity Effic.*	0.32	0.35	0.28	kWh/m ³
Total # of Connections	255	261	268	
Total Sewerage Fees	\$2.50	\$2.32	\$2.15	Mil C/\$
# of Septage Customers	5	6	6	
Total Septage Fees	\$52,019	\$52,712	\$59,005	

NB: *mechanical aerators turned off July 1999.

Wastewater Treatment Works

From the operational data, the average daily flow to the treatment works in 2001 increased by approximately 14%. The annual survey of sludge depth (reported in Section 4 of this report) in the ponds indicated increases in sludge accumulation compared to increases over the last few years in the facultative ponds and maturation pond 2.1. The treatment efficiency of the ponds is decreasing due to the decrease in pond volume available for treatment of the wastewater.

8. NEW WORKS

New Works Crew

In 2001, the New Works crew installed just over 6,000 metres of pipework relating to the following projects:

- Nearly half of the work involved the continuation of the extension of the piped water distribution into the district of East End: A 300mm diameter pipeline in Sea View Road, from intersection with Skipwith Link to intersection with John McLean Drive; the entire John McLean Drive (pipe diameter varying between 150mm and 300mm); and a 100mm diameter pipeline in part of Oracle Drive.
- A 300mm diameter water main was installed in the Harquail By-Pass, to allow connection of the Authority's distribution system to that of Cayman Water Company. This work was nearly completed by year's end.
- 300mm and 200mm diameter pipelines were installed in the (future) Bodden Town Relief Road and the adjacent Lookout Road.
- The 100mm diameter pipeline in Bobby Thompson Way, between Smith Road and the future Crewe Road By-pass intersection, was upgraded to 300mm nominal diameter to improve the distribution towards the east.
- A 100mm diameter pipeline was installed in Fairbanks Road and Outpost Road (George Town).

In its seventh year of operation, the New Works crew continued to perform very well. A detailed cost analysis indicates that the pipeline extensions carried out by the New Works crew in 2001 were significantly more economical than if they had been carried out by an outside contractor (An overall cost savings of approximately 23% compared to the average overall cost, corrected for inflation, on the Bodden Town Project).

The work carried out in private roads and new subdivisions was extremely low, and as a result less than 0.75% of all costs incurred in 2001 by the New Works Crew (labour, plant and materials) were reimbursed by contributions from the various developers/clients.

George Town Site (Red Gate Site)

In February 2001 the adjacent landowners were notified of the Authority's application for Planning Approval for the Red Gate Site Master Plan. This site, adjacent to the existing facility, will ultimately accommodate (i) the Operations-Water, Engineering and Water Resources departments (in an extension to the existing office building), (ii) additional water production facilities, (iii) additional water storage tanks, and (iv) a new post-treatment building. Planning approval was granted on 21 March 2001.

In early 2001 the areas reserved for the proposed R.O. plant, post-treatment building and access roads were cleared from vegetation. In July 2001 an 8-feet high security fence was erected around the site.

In March 2001, tender documents for the contract to build and operate a reverse osmosis plant with a water production capacity of 3,000m³ (800,000 US gallons per day) were sent to four pre-qualified contractors. Only three tenders were returned, of which Ocean Conversion (Cayman) Ltd.'s tender was the most competitive. This contract was subsequently awarded to them in June 2001. Due to various reasons by the end of the year the actual contract documents were not yet signed. It is anticipated that the contract will be signed in January 2002 with completion of the new water production plant by October 2002.

Tender documents for the contract to construct a post-treatment building and associated works were sent to nine interested building contractors in late August 2001. In November 2001 this contract was awarded to the lowest tenderer, Island Builders Co. Ltd., who commenced the work in December 2001. It is anticipated that the building will be completed by April 2002.

Cayman Brac Water Supply

In January 2001 the materials for the steel framed storage building arrived on Cayman Brac.

In March 2001 the Water Authority awarded the contract for the construction of the storage building and associated work to Cayman Repairs Construction. This contract was satisfactorily completed by early June 2001.

Due to various other commitments, the work necessary to increase the Cayman Brac R.O. plant production capacity from 230 m³/day to 540 m³/day was postponed. The design of the control system for the modified plant was continued, and was nearly completed by the end of the year. In anticipation of the upgraded R.O. plant, two abstraction wells and one brine disposal well were constructed in October/November 2001. In addition, the site drainage was improved by the construction of a road drainage well.

GPS/GIS System

During 2001 the Water Authority continued to collect data on the existing water distribution and wastewater collection systems using its GPS equipment, and transfer it onto digitized maps. Once all data is collected and all records have been transferred in a digitized form, pipelines, valves, meter boxes etc. can be retrieved with a high level of accuracy in the field using handheld units.

In the future this data can be combined with other information available within the Water Authority (e.g., customer information, operational data) in a GIS (Graphical Information System) database, allowing a graphical representation of many types of information.

Grand Cayman Wastewater Treatment Works Project (referred to in Financial Statements as "sewerage treatment works")

In early 2001 two contracts were awarded to specialized local contractors, one to construct four disposal wells on the site, and another to excavate a 20 feet deep, 5 feet wide dewatering canal near the southwest boundary of the existing Sewage Treatment Works site.

In early December 2000 the Water Authority invited the submission of pre-qualification information from interested and experienced civil engineering contractors for the construction of the 2.5 mgd Grand Cayman Wastewater Treatment Works.

By mid-2001 the Water Authority engineers, assisted by their consultants (Globaltech, Inc. from Boca Raton, FL and Polytron, Inc. from Atlanta, GA), completed the construction drawings and tender documents.

In August 2001 the tender documents for this contract were sent to five pre-qualified contractors. A mandatory pre-tender conference was organized in mid-September 2001 to thoroughly familiarize the contractors with the local conditions and make them aware of the regulations and laws with which they will be required to comply.

On Friday 7 December 2001 the Central Tenders Committee opened the two returned tenders. The tender returned by Hadsphaltic International Ltd./Wharton-Smith Inc. was found to be the most competitive, although it exceeded the Engineer's estimate for this contract.

It is anticipated that the contract will be awarded to the lowest tenderer in early 2002 with actual construction commencing soon thereafter, with completion by early-2004.

9. WATER AND SEWERAGE STATUTORY LICENCING

Water Resource Licencing

In 2001 the Authority issued the following licences and permits:

- Groundwater Abstraction Licence 2
- Discharge Permit 3
- Quarry Permit 5
- Canal Work Permit 2
- Well Drillers Licence 5
- Cesspool Emptier's Licence 6

Plumbers Licencing

The Plumber's Examination Board met on three occasions in 2001 to review applications. Theoretical examinations were held on three occasions during the year to assess applicant's ability.

The following licences were approved:

Category	2001	Total at 31-Dec-01
Apprentice	9	181
Journeyman	6	139
Master	5	46

Members of the Plumbers Examination Board at the end of the year:

- Chairman: Mr Thomas Hill
Operations Manager WAC
- Members: Mr Arthur Arch
Plumbing Inspector, BCU
Mr Delano Hislop
Master Plumber
Mr Victor Yates
Master Plumber, Plumbing Contractor
- Secretary: Mrs Leatha Morejon
Accounts Receivable Officer, WAC

10. INFORMATION SYSTEMS

The Water Authority made a decision in 2001 to adopt a staggered replacement programme that would require computers to be replaced every five years. Twenty percent of computers were replaced in 2001, with many of them being reshuffled and redeployed according to needs.

The Information Systems Department set up a temporary website to facilitate the Authority's hosting of the Caribbean Water and Waste Water Association's 10th Annual Conference in October 2001.

The Information Systems Department has established a protocol for senior management to have access to their work PCs and the network from home. This facility provided managers more flexibility with their work hours were necessary.

**THE WATER AUTHORITY
OF THE CAYMAN ISLANDS**

**FINANCIAL STATEMENTS
2001**

**THE WATER AUTHORITY
OF THE CAYMAN ISLANDS**

**FINANCIAL STATEMENTS
2001**

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Water Authority of the Cayman Islands

CERTIFICATE OF THE AUDITOR GENERAL

***To the Members of the Water Authority of the Cayman Islands
And the Financial Secretary of the Cayman Islands***

I have audited the financial statements of the Water Authority of the Cayman Islands for the year ended 31 December 2001 as set out on pages 3 to 19 in accordance with the provisions of Section 17(1) of the Water Authority Law (1996 Revision), and Section 45(1) of the Public Finance and Audit Law (1997 Revision).

Respective Responsibilities of Management and the Auditor General

These financial statements are the responsibility of the Authority's management. My responsibility is to express an opinion on the financial statements based on my audit.

Basis of Opinion

My examination was made in accordance with International Standards on Auditing which require that I plan and perform my audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that my audit provides a reasonable basis for my opinion.

Opinion

In my opinion, these financial statements present fairly, in all material respects, the financial position of the Water Authority of the Cayman Islands as at 31 December 2001, and the results of its operations and its cash flows for the year then ended in accordance with International Accounting Standards.

N K Esdaile
Auditor General

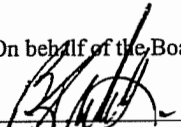
31 July 2002

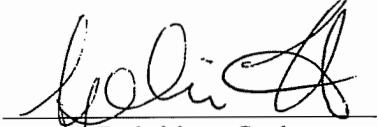
**Water Authority of the Cayman Islands
Balance Sheet**

As At 31st December 2001
(Stated in Cayman Islands Dollars)

	Notes	2001	2000
CURRENT ASSETS			
Cash On Hand		1,650	1,650
Cash At Bank		905,011	747,856
Total Cash & Cash Equivalents		906,661	749,506
Accounts Receivable	3	1,606,286	1,669,567
Inventory	4	425,037	422,786
Prepaid Expenses		41,337	34,096
Total Current Assets		2,979,321	2,875,955
CURRENT LIABILITIES			
Bank Overdraft	5	-	244,542
Accounts Payable		716,610	707,573
Loans Payable		229,845	-
Contract Retention Payable		-	2,859
Interest Payable	6	33,063	32,912
Customer Deposits		713,981	695,724
Customer Deposit On Construction Contract		23,327	25,909
Customer Project Loans	8	37,436	38,266
Current Maturities On Long Term Liabilities	9	3,766,648	3,268,324
Total Current Liabilities		5,520,910	5,016,109
NET CURRENT LIABILITIES		(2,541,589)	(2,140,154)
FIXED ASSETS			
Land-Freehold		3,139,599	3,139,599
Buildings		1,918,111	1,959,013
Water Supply System		20,834,801	20,688,650
Sewerage System		7,848,250	8,317,363
Other Assets		1,274,607	1,404,997
Construction In Progress		1,272,667	648,926
Total Fixed Assets	7	36,288,035	36,158,548
TOTAL NET ASSETS		33,746,446	34,018,394
LONG TERM LIABILITIES	9	(13,015,447)	(16,825,066)
NET ASSETS		\$ 20,730,999	\$ 17,193,328
EQUITY REPRESENTED BY:			
Contributed Capital	10	1,085,223	1,085,223
Retained Earnings		19,645,776	16,108,105
Total Equity		\$ 20,730,999	\$ 17,193,328

On behalf of the Board on the 29th of August 2002:


Mr. Brinard Watler
Chairman


Dr. Gelia Frederick van Genderen
Director

The accompanying notes form an integral part of these financial statements.

**Water Authority of the Cayman Islands
Statement of Net Surplus and Retained Earnings**

For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

	2001	2000
INCOME		
Gross Operating Revenue	14,901,645	14,174,837
Less: Operating Expenses	(9,363,896)	(9,395,856)
Gross Operating Surplus for Year	5,537,749	4,778,981
Sundry Income	861,974	665,762
Operating Surplus for Year	6,399,723	5,444,743
OTHER EXPENSES		
Administrative Expenses	(2,712,052)	(2,399,253)
Net Surplus for Year	3,687,671	3,045,490
Retained Earnings at the Beginning of the Year	16,108,105	13,212,615
Retained Earnings Before Contribution to Government	19,795,776	16,258,105
Contribution to Government	(150,000)	(150,000)
Retained Earnings at End of Year	\$ 19,645,776	\$ 16,108,105

The accompanying notes form an integral part of these financial statements.

Water Authority of the Cayman Islands
Statement of Income
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

	<u>2001</u>	<u>2000</u>
OPERATING REVENUE		
Water Sales	11,997,246	11,454,670
Sewerage Fees	2,501,985	2,317,604
Septage Disposal	52,019	52,712
Agency Work	26,451	18,014
Connection and Miscellaneous Fees	323,944	331,837
Total Operating Revenue	<u>14,901,645</u>	<u>14,174,837</u>
SUNDRY INCOME		
Royalties	608,633	560,763
Statutory Licencing Fees	56,676	23,636
Interest Earned	25,979	33,860
Other	170,686	47,503
Total Sundry Income	<u>861,974</u>	<u>665,762</u>
TOTAL REVENUE	<u>\$ 15,763,619</u>	<u>\$ 14,840,599</u>

The accompanying notes form an integral part of these financial statements.

Water Authority of the Cayman Islands
Statement of Expenses
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

	<u>Notes</u>	<u>2001</u>	<u>2000</u>
OPERATING EXPENSES			
Land Lease Expense	13	13,363	11,307
Water Purchase		4,183,431	4,090,951
Loan Interest		824,677	1,100,895
Salaries		1,144,037	1,255,803
Depreciation Expense	7	1,355,996	1,337,504
Wages		908,301	755,356
Repairs and Maintenance		379,873	326,087
Electricity		299,440	266,695
Supplies		213,380	186,393
Miscellaneous		41,398	62,358
Obsolete Inventory Expense		-	2,507
Total Operating Expenses		<u>9,363,896</u>	<u>9,395,856</u>
ADMINISTRATIVE EXPENSES			
Salaries		922,635	925,531
Staff Training and Benefits		682,419	656,525
Depreciation Expense	7	144,858	144,658
Insurance		119,290	109,583
Office and Lab Supplies		96,148	77,516
Telephone and Utilities		154,625	142,093
Miscellaneous		217,125	103,764
Licenses and Dues		75,292	56,785
Legal Fees		16,449	12,292
Bad Debt Expense		159,374	27,386
Repairs and Maintenance		29,038	26,361
Loan Interest		77,399	99,055
Audit Fees		13,800	12,000
Office Rental		3,600	5,704
Total Administrative Expenses		<u>2,712,052</u>	<u>2,399,253</u>
TOTAL OPERATING AND ADMINISTRATIVE EXPENSES		<u>\$ 12,075,948</u>	<u>\$ 11,795,109</u>

The accompanying notes form an integral part of these financial statements.

Water Authority of the Cayman Islands
Statement of Cash Flows
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

	Notes	2001	2000
CASH FLOWS FROM OPERATING ACTIVITIES			
Net Surplus for Year		3,687,671	2,897,027
Adjustments to Reconcile Net Surplus to Net Cash Provided by Operating Activities:			
Extraordinary Item Not Involving the Movement of Cash	15	-	148,463
Depreciation		1,500,854	1,482,162
Gain on Sale of Fixed Assets		(5,726)	(366)
Interest Earned		(25,979)	(33,860)
Interest Expense		902,076	1,199,950
		<u>6,058,896</u>	<u>5,693,376</u>
Net Change In Working Capital			
Interest Paid		(901,925)	(1,199,950)
Accounts Receivable		63,281	(362,401)
Inventory		(2,251)	107,689
Prepaid Expenses		(7,241)	24,960
Accounts Payable		9,037	(299,718)
Contract Retention Payable		(2,859)	(97,254)
Customer Deposits		18,257	(25,453)
Customer Deposits on Construction Contract		(2,582)	-
Customer Project Loans		(830)	(28,600)
Net Cash Provided by Operating Activities		<u>5,231,783</u>	<u>3,812,649</u>
CASH FLOWS FROM INVESTING ACTIVITIES			
Interest Received		25,979	33,860
Cost of Fixed Assets Purchased		(1,006,600)	(1,282,001)
Proceeds From Sale of Fixed Assets		5,726	3,360
Construction In Progress		(623,741)	(81,447)
Contributed Capital		-	6,602
Net Cash Used by Investing Activities		<u>(1,598,636)</u>	<u>(1,319,626)</u>
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds of Long Term Debt		-	1,001,480
Repayment of Long Term Debt		(3,311,295)	(3,058,070)
Loans Payable		229,845	-
Overdraft Facilities		(244,542)	12,353
Contribution to Government		(150,000)	(150,000)
Net Cash Used by Financing Activities		<u>(3,475,992)</u>	<u>(2,194,237)</u>
Net Increase In Cash & Cash Equivalents During the Year		157,155	298,786
Cash & Cash Equivalents at the Beginning of the Year		749,506	450,720
Cash & Cash Equivalents at End of Year		<u>\$ 906,661</u>	<u>\$ 749,506</u>

The accompanying notes form an integral part of these financial statements.

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

1. Establishment and Principal Activity

The Water Authority of the Cayman Islands ("the Water Authority") is a statutory body established on 1st January 1990 under the Water Authority Law (Law 18 of 1982), as amended.

The Water Authority is principally engaged in the management of water supply and sanitation affairs of the Cayman Islands including the provision of public water supplies, sewerage systems and the management, development and protection of water resources.

As at 31 December 2001, the Water Authority had 91 employees (2000: 84 employees). The Water Authority is located at 13 G Red Gate Road, P.O. Box 1104 George Town, Grand Cayman, Cayman Islands.

2. Significant Accounting Policies

These financial statements have been prepared in accordance with International Accounting Standards (IAS) issued by the International Accounting Standards Committee (IASC), and interpretations issued by the Standing Interpretations Committee of the IASC. The significant accounting policies adopted by the Water Authority in these financial statements are as follows:

(a) Basis of preparation

The financial statements of the Water Authority are presented in Cayman Island dollars and are prepared on the accrual basis under the historical cost convention.

(b) Fixed Assets

- (i) Property plant and equipment are stated at acquisition cost less accumulated depreciation. Construction work in progress is stated at cost, which includes all expenditures related directly to specific projects and an allocation of fixed and variable overheads incurred in the contract activities.
- (ii) Depreciation is charged to the income statement on a straight-line basis over the estimated useful lives of items of property, plant and equipment, and other assets that are accounted for separately.

Freehold Land is not depreciated. The estimated useful lives of the other fixed assets are as follows:

Buildings	50 Years
Water and Sewerage Systems	15 - 50 Years
Other Assets	5 - 10 Years

(c) Foreign currency translation

Assets and liabilities denominated in currencies other than Cayman Islands Dollars are translated at exchange rates in effect at the balance sheet date. Revenue and expense transactions denominated in currencies other than Cayman Islands Dollars are translated at exchange rates ruling at the date of those transactions. Gains and losses arising on exchange are included in the Statement of Income and Expenses.

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

2. Significant Accounting Policies (continued)

(d) Allowance for bad debts

Management of the Authority establishes an allowance for bad debts when it believes that accounts receivable balances are uncollectible. The allowance is expensed and an equal amount is set-up as a provision for bad debts, which is netted off against gross accounts receivable balances.

Management determines the extent of the allowance based on its knowledge of individual debtors' past performance.

(e) Inventory and Allowance for Obsolete Inventory

Inventory, which consist of consumable spares is accounted for on the first-in, first-out basis, and is stated at the lower of cost and net realizable value.

Management of the Authority establishes an allowance for obsolescence of inventory items when it determines that those items are no longer usable in the Authority's operations. The allowance is expensed and an equal amount is set-up as a provision for obsolete inventory, which is netted-off against gross inventory balances. The allowance is equal to the book value of inventory that management considers no longer usable.

(f) Interest Expense

All interest and other costs incurred in connection with borrowings are expensed as incurred as part of Loan Interest. The interest expense of loan payments is recognised in the income statement using the effective interest rate method.

(g) Cash & cash equivalents

For the purpose of the Statement of Cash Flows, cash and cash equivalents are considered as cash held on demand and fixed deposits with an original maturity of three months or less.

(h) Revenue recognition

The Authority bills its customers monthly for water consumed, sewerage and other services. Revenue derived from such sources is taken to income on a bill rendered basis. As in previous years no account has been taken of unread water consumption, sewerage and other services at the end of the financial year.

(i) Employees benefits

(i) The Authority has an actuarial valuation conducted every three years, and any gains or losses arising are adjusted against the Retained Earnings.

(ii) Members enrolled in the Public Service Pensions Plan prior to 01 January 2000 are governed by Section 28 to 45 (Defined Benefits) of the Public Service Pensions Law, 1999. Those members enrolled in the Plan after 01 January 2000 are governed by Section 46 to 66 (Defined Contributions) of the Public Service Pensions Law, 1999. Employees who are not qualified to join the Public Service Pensions Fund are enrolled in an approved local pension plan.

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

2. Significant Accounting Policies (continued)

(j) Financial Instruments

(i) Classification

A financial asset is classified as any asset that is cash, a contractual right to receive cash or another financial asset, exchange financial instruments under conditions that are potentially favourable or an equity instrument of another enterprise. Financial assets comprise of cash and cash equivalents and accounts receivables.

A financial liability is any liability that is a contractual obligation to deliver cash or another financial instrument or to exchange financial instruments with another enterprise under conditions that are potentially unfavourable. Financial liabilities comprise long and short term debt.

(ii) Recognition

The Authority recognises financial assets and financial liabilities on the date it becomes party to the contractual provisions of the instrument. From this date, any gains and losses arising from changes in fair value of the assets or liabilities are recognised in the statements of income.

(iii) Derecognition

A financial asset is derecognised when the Water Authority realised the rights to the benefits specified in the contract or loses control over any right that comprise that asset. A financial liability is derecognised when it is extinguished, that is when the obligation is discharged, cancelled, or expires.

(iv) Measurement

Financial instruments are measured initially at cost which is the fair value of the consideration given or received. Subsequent to initial recognition all financial assets are measured at their estimated fair market value.

Financial liabilities are subsequently measured at amortised cost, being the amount at which the liability was initially recognised less any principal repayments plus any amortisation (accrued interest) of the difference between that initial amount and the maturity amount.

3. Accounts Receivable

	<u>2001</u>	<u>2000</u>
Trade Receivable	1,813,085	1,718,779
Non Trade Receivables	106,929	181,504
Provision for Bad Debts	(313,728)	(230,716)
	<u>\$1,606,286</u>	<u>\$1,669,567</u>

4. Inventories

	<u>2001</u>	<u>2000</u>
Water Supply and Sewerage Materials	436,170	419,822
Office Supplies	6,467	20,564
Provision for Obsolete Inventory	(17,600)	(17,600)
	<u>\$425,037</u>	<u>\$422,786</u>

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

5. Bank Overdraft

The Cayman Islands Government provides a guarantee for an overdraft facility at one of the Authority's local bankers in the amount of US\$500,000 (also see Note 9(a)).

6. Interest Payable

	<u>2001</u>	<u>2000</u>
On Customer Deposits	32,912	32,912
Loan Interest Payable	151	0
Total	<u>33,063</u>	<u>32,912</u>

Section 9 of the Water Authority Regulations, 1988 specified that interest be calculated on customers' deposits at the rate of 5% per annum from the date of payment of the deposits, and the interest earned shall be added to the customers' deposits. This section of the Regulations was revoked on the 8th of February 1994. Interest payable on customer deposits has been calculated only on deposits which were taken before the 8th of February 1994 and which the Authority held on the date of these financial statements. Interest has been accrued up until the date on which the Regulation was revoked.

7. Fixed Assets

Cost	Freehold Land	Buildings	Water Supply	Sewerage	Other Assets	Construction In Progress	Total
At 31 December 2000	3,139,599	2,045,153	25,193,910	11,410,765	2,878,885	648,926	45,317,238
Additions	-	-	18,289	-	212,044	1,432,786	1,663,119
Disposals	-	-	-	-	(99,216)	-	(99,216)
Transfers between fixed assets	-	-	808,031	1,014	-	(809,045)	-
At 31 December 2001	<u>3,139,599</u>	<u>2,045,153</u>	<u>26,020,230</u>	<u>11,411,779</u>	<u>2,991,713</u>	<u>1,272,667</u>	<u>46,881,141</u>
Accumulated Depreciation							
At 31 December 2000	-	86,140	4,505,260	3,093,402	1,473,888	-	9,158,690
Charge for Year	-	40,902	680,169	470,127	309,657	-	1,500,855
Disposals	-	-	-	-	(99,216)	-	(99,216)
Capitalized during construction	-	-	-	-	32,777	-	32,777
At 31 December 2001	<u>-</u>	<u>127,042</u>	<u>5,185,429</u>	<u>3,563,529</u>	<u>1,717,106</u>	<u>-</u>	<u>10,593,106</u>
Net Book Value							
At 31 December 2000	<u>\$ 3,139,599</u>	<u>\$ 1,959,013</u>	<u>\$ 20,688,650</u>	<u>\$ 8,317,363</u>	<u>\$ 1,404,997</u>	<u>\$ 648,926</u>	<u>\$ 36,158,548</u>
At 31 December 2001	<u>\$ 3,139,599</u>	<u>\$ 1,918,111</u>	<u>\$ 20,834,801</u>	<u>\$ 7,848,250</u>	<u>\$ 1,274,607</u>	<u>\$ 1,272,667</u>	<u>\$ 36,288,035</u>

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

7. Fixed Assets (continued)**a) Sewerage Treatment Works Upgrade**

In August 1998 the Authority invited bids for the provision of general, mechanical and electrical engineering services in connection with a planned upgrade to the West Bay Beach Sewerage Treatment Works. The consultant engineers originally estimated the cost of the upgrade at CI\$ 10.6 million, however after reviewing tenders submitted, the estimate was increased to CI \$ 14.3 million. The Authority is currently negotiating with CIBC for additional financing. A part of the existing works would be decommissioned in 2003. Government gave approval for the Authority to enter into a US\$12.8 million loan agreement with CIBC in September 2000 to finance the project. The loan agreement was signed with CIBC in December 2000, however prior to getting the loan, the Authority had financed the cost of the wastewater treatment works project (\$496,036) from revenue. See Note 9(a) for the terms of the loan.

b) Accelerated Depreciation

In 2000 there was an assessment of the extent of accelerated depreciation required in future years, to write-down part of the existing sewerage system by the prospective 2003 decommissioning date. The total amount of accelerated depreciation over the three and half years will be \$844,709. The accelerated depreciation recognised in 2001 was \$241,345 (2000: \$241,345) and the amounts to be recognised for 2002 and 2003 are \$241,345 and \$120,673 respectively.

The water supply system and sewerage system includes the cost of mechanical and electrical equipment, and machinery. Other assets include the costs of tools and equipment, office furniture and equipment, and vehicles.

c) Construction in Progress

Construction-in-Progress principally relates to expenses incurred in connection with the following:

1. Upgrade of the water supply system on the Harquail Bypass and Bodden Town Relief Road in progress at December 2001.	229,910
2. Engineering services, subsoil investigations and site preparation for subsoil investigations relating to the 2.5 MGD upgrade of the West Bay Beach Sewerage Treatment Works. See also Note 13.	898,436
3. Site investigation for possible Eastern Site.	5,023
4. Upgrade of the Red Gate Site	58,514
5. Cayman Brac Plant Upgrade	80,784
	<u>\$1,272,667</u>

8. Customer Project Loans

Customer project loans represent balances outstanding at the year-end of \$37,436 (2000: \$38,266) in respect of funds collected from private individuals to carry out capital works in the South Sound area of George Town in 1989. These funds are interest free and are repayable by way of a 10% rebate on the individual's annual water consumption charges.

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

9. Long Term Liabilities

Long Term Liabilities	2001	2000
a) CIBC Bank and Trust Co. Cayman Ltd.		
(i) Water Supply and Sewerage	7,783,423	9,971,178
(ii) Administration Building Loan	1,262,392	1,323,732
(iii) Waste Water Treatment Works Loan	500,000	500,000
b) Caribbean Development Bank		
Water Supply	846,391	1,001,329
c) Cayman Islands Government		
(i) Grand Cayman	3,922,091	4,114,985
(ii) Cayman Brac	561,600	631,800
(iii) Medical Expenses	91,632	91,632
d) Public Service Pensions Fund		
Past Service Pension Liability	148,463	148,463
e) Capital Contribution Loan	19,200	25,600
f) Ocean Conversion (Cayman) Ltd.	1,401,336	1,733,712
g) Property Loan	245,567	550,959
Total Long Term Liabilities	16,782,095	20,093,390
Less Current Maturities	(3,766,648)	(3,268,324)
	<u>\$ 13,015,447</u>	<u>\$ 16,825,066</u>

- a) (i) The CIBC Bank and Trust Co. Cayman Ltd. (CIBC) loan represents a financing package of US\$22,350,000, which includes a US\$500,000 overdraft facility. The total package refinanced previous Barclays Bank and Caribbean Development Bank loans, and provided funding for the Bodden Town Water Supply project and Lower Valley Reservoir and Pumping Station project. The loan is provided at an interest rate of 1% over London Interbank Offered Rate (LIBOR) and is repayable, on a monthly basis, over a ten-year period, which commenced on the 1st of March 1995. Monthly payments are due as follows:

1995-November 1997	US\$200,000
November 1997-2004	US\$275,000

The CIBC loan is held in the name of the Water Authority and is secured by a guarantee by the Cayman Islands Government.

- (ii) On 17th August 1998 CIBC approved a credit facility of CI\$1,600,000 for the new Water Authority Administration Building on 13G Red Gate Road. The loan is provided at an interest rate of 1% over London Interbank Offered Rate (LIBOR) repayable on a monthly basis of CI\$14,000 over a fifteen-year period that commenced on 14th October 1999. CIBC presently holds a Registered First Charge over the property.

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

9. Long Term Liabilities (continued)

- (iii) In September 2000, Government gave approval for the Authority to enter into the US\$12.8 million loan agreement with CIBC Bank and Trust Company (Cayman) Ltd. for the financing of the Grand Cayman Wastewater Treatment Works Project. The loan agreement was approved by CIBC under the terms and conditions of the facility letter dated 15th September 1999 and was signed on 29th December 2000. The loan is provided at an interest rate of 1% over London Interbank Offered Rate (LIBOR) and has a Capital Repayment Holiday Period (CRHP) that represents the period beginning on the date of the drawdown of the first advance and expiring on either the date of completion of construction of the Grand Cayman Wastewater Treatment Works or the date 24 months after the date of the drawdown of the first advance whichever is earlier. The loan is repayable on the first business day of the month following the date of expiry of the CRHP and on each business day immediately succeeding 47 months at an aggregate monthly amount of US\$110,000 including principal and interest, thereafter, on the first business day of each of the immediately succeeding 48 months, an aggregate of US\$250,000 per month including principal and interest.

- b) The Caribbean Development Bank (CDB) water supply loan is to be repaid over 15 years at variable interest rates of 6 to 7%. Repayment commenced on the water supply loan in quarterly instalments in March 1992. The principal repayments currently being made on this loan are approximately US\$46,250 each quarter, plus interest.

The CDB loan is in the name of the Cayman Islands Government and is on lent to the Water Authority. The Water Authority is responsible for all interest and principal repayments on this loan.

- c) (i) The Cayman Islands Government loaned the Authority \$4,822,349 for the development of the facilities in Grand Cayman. The loan is interest free and is being repaid in quarterly instalments of CI\$48,223 over a period of twenty-five years which commenced on the 1st of April 1995. This loan was increased in February 1997 by CI\$450,000 in exchange for a 1.3-acre parcel of land at Red Gate that was sold to the Authority by the CI Government for the purpose of constructing an Administration Building. The increased portion of the loan was formalised on December 27th 2001. It is interest free and is being repaid over a period of 21 years in annual instalments of \$18,000.

(ii) The Cayman Islands Government loaned the Authority \$1,053,000 for the development of the facilities in Cayman Brac. The loan attracts interest at a fixed rate of 8% per annum and is repayable in quarterly instalments of CI\$17,550, over a period of 15 years which commenced on the 1st of April 1995.

(iii) The loan payable to the Cayman Islands Government for medical expenses is in respect of injuries incurred by a cyclist in 1991 for which the Water Authority has assumed liability. The loan is interest free and repayable in monthly instalments of CI\$2,500 each. No repayments were made from 1995 through 2001.

- d) Refer to Note 12 for explanation of the Public Service Pensions Fund Past Service Pension Liability.
- e) The capital contribution loan represents the cost of certain capital work carried out in 1991 and funded by a customer to facilitate the Water Authority to construct a pipeline through a third party's property to provide the water connection to the customer concerned. The cost of this work was \$64,000. In 1995 management agreed to repay the loan in ten (10) annual instalments of \$6,400 each. This loan is interest free and the first instalment was made on the 1st of June 1995.

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

9. Long Term Liabilities (continued)

- f) The Water Authority contracted with Ocean Conversion (Cayman) Ltd. ("OCL") on the 17th of June 1997 to provide and operate a reverse osmosis seawater desalination plant at Lower Valley, Grand Cayman under a lease purchase and operating agreement. There was no movement in cash in respect of this transaction and consequently the Statement of Cash Flows does not reflect the increase in Plant and Loans, which arise therefrom. The plant was completed in March 1998 and is financed at a fixed interest rate of 5% per annum. Under the terms of the agreement, the Authority commenced payments to OCL in April 1998, making monthly payments of US\$17,325 and CI\$6,998 for a duration of seven years.

In 1999 the Lower Valley Reverse Osmosis Plant was expanded to a production capacity of 3,000 cubic meters per day under contract with OCL. The cost of the expansion to the Water Authority was CI\$973,833, plus additional monthly operating fees. The expansion of the plant was completed in March 1999 and is financed at a fixed interest rate of 5% per annum. Under the terms of the agreement, the Authority commenced payments to OCL in March 1999, making monthly payments of US\$33,028 and CI\$7,676 for a duration of seven years.

On 26th October 2001 the Authority signed a contract with OCL to expand the Red Gate Reverse Osmosis Plant to a production capacity of 3,000 cubic meters per day. The cost of the expansion to the Authority will be CI\$2,612,006, plus additional monthly operating fees. The expansion of the plant is estimated to be completed by the end of 2002 and is financed interest free. Under the terms of the agreement, the Authority will make monthly payments of US\$21,750 and CI\$12,917 for a duration of seven years.

- g) In October 1999 the Authority purchased 7.5 acres of land adjacent to the Red Gate Road Water Works for future expansion of the public water supply system in Grand Cayman at a cost of CI\$1,750,000. CI\$850,000 was paid by cash and a vendor financing arrangement was made for the remaining CI\$900,000 repayable in monthly instalments of CI\$28,203 over a period of three years which commenced on the 1st of October 1999, at a fixed annual interest rate of 8%.

10. Contributed Capital

	<u>2001</u>	<u>2000</u>
Balance at Beginning of year	1,085,223	1,078,621
Add: Received During Year	0	6,602
Balance at End of Year	<u>\$1,085,223</u>	<u>\$1,085,223</u>

Contributed capital represents funds received from private individuals to fund capital work that was completed by the Water Authority. The relevant costs have been capitalised as water and sewerage works (see Note 7).

11. Related Party Transactions

The Cayman Islands Government appoints the Chairman and Members to the Water Authority Board of Directors. The following transactions occurred during the year between the Water Authority and Cayman Islands Government.

1. The Authority made loan repayments to Government during the year of \$417,260.
2. The Authority recognized contributions payable to Government relating to 2001 in the amount of \$150,000 (2000: \$150,000).

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 2001
(Stated in Cayman Islands Dollars)

11. Related Party Transactions (continued)

During the year, the Water Authority provided at no charge to the Cayman Islands Government the availability and use of water for fire fighting, free sewerage service to a number of indigent persons in the Watler's Road area, supervision of water resources, administration of Plumbers Examination Board, consultative services for development control, and water at a reduced Public Authority rate. The Authority also engages the services of other government departments of the Cayman Islands Government. Such services are provided at current prevailing market prices on an arm's length basis.

As detailed in Note 12 the Authority and its eligible employees paid contributions to the Public Service Pensions Fund during the year.

12. Pensions*a) Public Service Pensions Plan*

The Pension contributions for eligible Caymanian employees of the Water Authority are paid directly to the Public Service Pensions Fund (the "Fund"). The Fund is administered by the Public Service Pensions Board (the 'Pensions Board'). The Fund has both an underlying defined benefit and defined contribution element. Prior to 14 April 1999 the scheme underlying the Fund is a defined benefit scheme. With effect from 14 April 1999 the Fund had both a defined benefits and a defined contribution element. Participants joining the Fund after 14 April 1999 have their benefits defined by a defined contribution scheme. Participation in this scheme was subsequently extended to 31 December 1999 by virtue of The Public Service Pensions (Amendment and Validation) Law, 2000, which was passed by the Legislative Assembly on the 13th April 2000.

In 1999, an actuarial assessment, using the projected unit credit method of measuring costs and obligations, determined that the Authority's had an un-funded past service liability for pensions as at 1 January 1997 of \$677,000. Notwithstanding that some of these benefits have accrued whilst some of the Authority's present employees were employed by the Cayman Islands Government, the Authority has decided to recognise the entire amount of the un-funded past service liability in its financial statements. The Authority has started funding the past service liability by paying monthly contributions at the rate of 5% of eligible employees' monthly salaries to the Fund; a rate that was pronounced by the Pensions Board.

A subsequent actuarial valuation as at 1 January 1999, completed in September 2000, re-assessed the un-funded past service liability to be \$179,118 (also see note 15). It further assessed the normal annual contribution to be 12.26% of pensionable emoluments, plus a further 1.57% of pensionable emoluments in order to amortize the past service liability over 20 years. This assessment was used in the 1999 Financial Statements, which were completed in March 2001. On 4 July 2001, the Authority received a letter from the Pensions Board stating that the re-assessment in September was incorrect. The correct un-funded past service liability amount is \$266,370 (also see note 15).

It further assessed the normal annual contribution to be 13.00% of pensionable emoluments, plus a further 2.34% of pensionable emoluments in order to amortize the past service liability over 20 years. In 1999 and 2000 the Authority made no adjustment for the rate changes and continued making contributions to the fund at 6% employer, 6% employee and 5% for past service liability contribution. This effectively resulted in advance payments towards the past service liability of approximately \$39,145 in the past two years.

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12. Pensions (continued)

The Authority and its eligible employees also make contributions in respect of current pensions benefits, at rates prescribed by the Pensions Board. During the current year the Authority and its eligible employees contributed 6.26% and 6% respectively of employees' monthly salary. Another actuarial assessment is scheduled for 2002.

- (i) A reconciliation of assets and liabilities recognised in the balance sheet:
Present value of the defined benefit obligations that are partly funded - \$1,193,000
The fair value of the plan assets at the 1 January 1999 - \$861,882
(ii) The amount included in the fair value of the plan assets: Nil
(iii) The reconciliation showing movement of past service liability during the period:

As per 1999 Financial Statements	58,937
Plus: Reconciliation of 1998 PSL Contribution	61,211
Plus: Understatement of PSL advised in error by PSPB	87,252
Less: PSL contribution paid in the fiscal year 2000	(58,937)
Balance at 31 December 2001	<u>\$148,463</u>

- (iv) The total expenses recognised in the income statement:
Current service cost in the fiscal year 2001 \$164,845
PSL had no cost in the fiscal year 2001 0
(v) Return on plan assets: Not known
(vi) Principal actuarial assumptions:
Discount Rate – 8%
Expected rate of return on plan assets – 8%
Excepted rate of salary and pension increase – 3% and 2% respectively
Retirement age – 55 years

b) Other Pension Plan

In accordance with the National Pensions Law of June 1998, employees who are not qualified to join the Public Service Pensions Fund are enrolled in an approved local pension plan (British Caymanian Pension). During 2001 the Authority and its employees paid 5% and 5% respectively of salary contributions.

The total amount recognised as a pension expense during 2001 was \$164,845 (2000: \$174,478).

13. Leases

The Authority leases a parcel of land in Cayman Brac under an operating lease. Lease payments are currently \$1,027 per month and are subject to a review in January 2004 to reflect open market rental values. The lease was signed in January 2000 and runs for a period of thirty years.

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14. Commitments

Commitments at December 31, 2001 are as follows:

<u>Authorised and Contracted</u>	<u>Cost Incurred as of 31/12/01</u>	<u>Estimated Cost to Completion</u>	<u>Total Cost</u>
Engineering and Consultancy Fees:			
Island Builders Co. Ltd.	0	87,999	87,999
Globaltech Inc.	142,086	0	142,086
Polytron Inc.	89,514	0	89,514
	<u>\$231,600</u>	<u>\$87,999</u>	<u>\$319,599</u>

In August 2001, pre-qualified local building contractors were invited to bid on the Tender Documents of the Post Treatment Facility for the "Construction of a 900 square foot single story building, including the electrical and plumbing installations, a concrete wash-down area, settlement chamber and effluent disposal well." This contract was awarded in late November 2001 to Island Builders Co. Ltd.

15. Extraordinary Item

In June 1997 an actuarial assessment of the Authority's unfunded past service liability for pensions was completed. The liability was assessed at \$677,000 as of 1st January 1997. The matter was not accounted for in the Authority's 1997 financial statements because, in 1997, the Pensions Law did not contain any provisions relating to unfunded past service liability for pensions.

On 8th December 1998 the Pensions (Contribution Rate) Regulations, 1998 was passed. Those Regulations allowed the Authority to recognise the unfunded past service liability within its financial statements. The Authority reduced its Retained Earnings as of 1st January 1997 by \$677,000 and accordingly, the 1997 financial statements were restated. This liability was also accounted for in the Authority's 1998 financial statements.

The 1st January 1997 actuarial assessment of the Authority also determined the required contribution rates to adequately fund pension benefits accruing to its employees. The assessment identified that if the past service liability of \$677,000 was not immediately paid, total contributions (employees' and employer's contributions) would have to be at 22% of employees' emoluments to adequately fund pension benefits. The Authority and its employees pay contributions at the rate specified by the Pensions Board: 6% each for employee and employer plus, an additional 5% in respect of the un-funded past service liability, a total contribution rate of 17%.

In September 2000, the Pensions Board reassessed the unfunded past service liability as at 1st January 1999 and stated that the Authority's unfunded past service liability now was reduced to \$179,118. Therefore, the Authority increased its Retained Earnings by \$497,882 as of 1st January 1999 to recognize this change in accounting estimate.

On 4th July 2001, the Pensions Board informed the Authority that the above reassessment was incorrect. In February 2001, the Authority had expressed concerns regarding the accuracy of the assessment on the Past Service Liability (PSL) as of 1 January 1999 and received a memorandum from Pensions Board clarifying our concerns. The Authority utilized that assessment to increase the Retained Earnings in the 1999 Financial Statements, which were finalized in March 2001. Based on the corrected reassessment, given to the Authority in July 2001, the Authority decreased the Retained Earnings by \$148,463 as of 1st January 2000 to recognize this change in accounting estimate (also see note 12).

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16. Financial Instruments

Credit risk. Credit risk is the risk that one party to a transaction will fail to discharge an obligation and cause the other party to incur a financial loss. Concentrations of credit risk relate to groups of customers or counterparties that have similar economic or industry characteristics that cause their ability to meet contractual obligations to be similarly affected by changes in economic or other conditions

Financial assets that potentially subject the Authority to credit risk consist principally of, trade receivables, and other receivables. Credit risk with respect to these receivables is limited because the Authority has a policy in place that is monitored by management on a consistent basis to ensure the timely collection of receivables. Accordingly, the Authority has no significant concentrations of credit risk.

Interest rate price risk. The Authority's has loans with Government and a counterpart with fixed interest rates ranging from 5% to 8%. Details of rates and maturities are presented in note 9.

Interest rate cash flow risk. The Authority also has loans with a local financial institution with a floating interest rate that coincide with the market rate.

Fair values. The carrying amount of cash deposits, accounts receivable, other receivables and accounts payables approximate their fair value due to their short-term maturities. Fair values are made at specific points in time, based on market conditions and information about the financial instrument. These estimates are subjective in nature and involve uncertainties and matters of significant judgement and therefore cannot be determined with precision. Changes in assumptions, economic conditions and other factors could cause significant changes in fair value estimates.