The Water Authority
of the Cayman Islands

Annual Report
1995

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

THE WATER AUTHORITY
OF THE CAYMAN ISLANDS

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Chairman's Report

The Year 1995

1995 was another very successful year for the Water Authority as the company further strengthened its financial position by reducing operating costs and expanding its revenue base. Government and the Authority are well aware that the costs of basic services such as drinking water and proper sewage disposal must always remain within the budget of all people in this country. Therefore the Authority will strive to remain a lean and competitive organization in order to provide good and affordable service to its customers, and to generate capital for expansion of services. Significant operating expense reductions were achieved in 1995 by refinancing a major portion of the Authority's long term debt. This undertaking included the repayment of a multi-currency loan from the Caribbean Development Bank using funds from a new loan with CIBC Bank and Trust Company. The new loan was negotiated under more favourable terms and provided additional capital for construction of the Lower Valley Reservoir Project. Additional expense reductions were achieved by restructuring the Authority's long term water supply contracts. The forecast is for continued savings over the next six years due to the contract restructuring.

The Authority expanded its projects department in April by adding equipment and manpower to construct extensions to the water supply and sewerage systems. The Authority recognized soon after completion of the Bodden Town Water Supply Project in 1994 that provisions must be made to continue expansion of its service areas in order to keep pace with the rapid growth of the country. In the past, the Authority had contracted out construction work of this nature to specialized companies who imported labour and equipment from overseas. However it was determined that it would be more cost effective and practical to continue pipeline construction using in-house resources. I am pleased to say that several new jobs were created and were filled by Caymanians who have been fully trained to carry out this work. The projects department brought in a respectable amount of revenue from developers who contracted with the Authority to install water mains in new subdivisions.

Also of key importance to the expansion of the projects department was the return in 1995 of two young Caymanians from university in the United States to work with the Authority as Civil Engineers. A third engineering graduate is expected to return to work with the Authority in 1996. Training for each of these young engineers was fully sponsored by Government and the Water Authority. The Authority also sponsored the Deputy Director during her post-graduate work which involved an analysis of the Authority's sewage treatment works in order to identify ways in which to improve the works. As a result of her thesis, the Deputy Director was awarded the degree of Doctor of Philosophy by the University of Surrey. As the Minister responsible for development of this country's work force I am indeed pleased to be a part of an organization like the Water Authority which has anticipated the future needs of this country and has made significant investments of time and money to train Caymanians in engineering.

The Authority's focus on the future included preparation of a comprehensive "Ten Year Development Plan for Water and Sewerage Infrastructure" which addresses the anticipated

water and sanitation needs of Grand Cayman and the Sister Islands. While reviewing this development plan, I found myself reflecting on the Authority's many achievements. It is not hard to imagine how the course of development of these islands would have changed had Government and the Authority not possessed the foresight to take vital steps in providing proper water supply and sewerage infrastructure to the expanding populace of the Cayman Islands. Work continued into 1996 on the Lower Valley Reservoir Project which when completed will ensure sufficient water and distribution pressure is available to all areas of Grand Cayman through the end of this century.

The Authority's financial growth over the past four years has been laudable. In 1995 the Authority collected revenue totaling $8,996,926, an increase of 46% over 1992 figures. In addition, the Authority's net profit has increased from $740,448 in 1992 to $1,556,703 in 1995 which is an increase of 110%. Careful technical and financial planning as well as prudent spending have paid off in a big way. Very few countries in the Caribbean region can boast of a water and sewerage corporation which makes a profit, and fewer yet which have performed as well as the Cayman Islands Water Authority, in service to the people.

As a statutory organization the Water Authority is charged with protection of water resources in the country and exercises regulatory power over a number of independent water producers and operations related to sewage disposal. Several improvements were made in the areas of water resources management in 1995 including closer monitoring of ground water used by expanding agricultural operations in East End, and closer regulation of several independent water producers through issuance of water production and supply concessions by Government. The Authority also worked closely with the Department of Environment to assess the potential threat to ground water from two fuel spills which occurred in the George Town area during 1995. The Authority continues to review all major developments during planning stage and makes recommendations to the Central Planning Authority regarding water supply and sewage treatment.

It is important to recognize that a public utility, and in fact any organization which serves the people, must never become complacent and should endeavor to meet the challenges of the future with planning and preparation. The Cayman Islands continues to experience growth and prosperity and I am very happy to say that the Water Authority continues to meet the challenge of this growth.

Hon. McKeeva Bush MLA JP
Chairman

1. GENERAL INFORMATION

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

Over the past thirteen years the Water Authority has carried out a number of projects to map and monitor the groundwater resources of the country. The Authority has constructed the country's first public sewerage system in the West Bay Beach resort area, and has constructed public water supply systems in both Grand Cayman and Cayman Brac.

The Water Authority is managed by a Board and a Chief Executive Officer (Director). Board members are appointed by the Governor for a period not exceeding two years, while the Director is appointed as a permanent employee. Board meetings are generally held every two months and 9 meetings were held during 1995.

1995 Water Authority Board Members

Chairman:	Hon McKeeva Bush MLA JP
Members:	Permanent Secretary, CD,S,W&YA,&C Mr. Leonard Dilbert/Ms. Lucille Seymour
	Director of DOE, Mr. Wailing Whittaker
	Deputy Financial Secretary, Mr. A. Joel Walton JP
	Mr. Harry Chisholm JP Mr. Richard Flowers Mr. Philip Hydes Mr. Brainard Watler Mr. Otto Watler Mr. Jerry Wood
Secretary:	Acting Director of the Water Authority Mr. Frederick McTaggart

The Authority updated its long term development objectives in 1995 and presented a comprehensive "Ten Year Development Plan for Water and Sewerage Works" to its Board of Directors in November. This new Plan is a logical continuation of the original Authority development plan which was adopted in April 1983. It addresses existing and predicted water and sewage disposal requirements for Grand Cayman and the Sister Islands through the year 2005.

The Authority commenced work on a number of projects during 1995 and purchased new specialized construction equipment in order to keep up with the continued growth in water demand and sewage treatment requirements.

2. FINANCE

General Observations

1995 was the sixth year of statutory independence. The financial statements and explanatory notes are located at the end of this report. The Authority continued to strengthen its financial position in 1995 with a 14% increase in operating revenue during the year. This was accomplished through an increase in the Authority's customer base and a rate increase which was granted by Government in March.

A notable achievement during the year was a 47% increase in the net profit ratio. This increase was mainly due to improvement in the operating surplus (which increased by 16% during the year) and a reduction of foreign exchange losses as a result of refinancing the multi-currency long term loan with the Caribbean Development Bank. The gross profit ratio is consistent with the prior year at 25%.

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Administrative expenses increased by 9% in 1995 compared to a 33% increase in 1994. The 1995 increase was mainly due to the accrual of legal fees due to Government, staff salary increases (and related benefits such as pensions), and staff training.

The Authority boosted its return on capital employed to 5.14% in 1995 compared to 3.64% in 1994. This increase is mainly due to increased operating revenue and increased assets. The liquidity position of the Authority also received a boost in 1995 with a 78% increase in cash and cash equivalents compared to 1994.

Long Term Debt Re-structuring

The Authority re-financed a significant portion of its long term debt in early 1995 through the local branch of CIBC Bank and Trust Company. A portion of this funding was used to repay a old project loan with the Caribbean Development Bank which had cost the Authority a substantial amount in currency exchange losses over the years. The balance of the funds were used to re-finance the previous water supply project loan with CIBC, and to construct the Lower Valley Reservoir and Pumping Station. The new loan was negotiated under more favorable terms and extended the repayment period of a previous project loan with CIBC from seven to ten years.

Reduction of Operational Expenses

The Authority re-structured its long term water supply contracts in order to ensure reliability of supply and reduce operating costs. The water purchase contract with Central DeSal Ltd. was terminated in August on grounds of non-performance, and the agreement with Ocean Conversion (Cayman) Ltd. was amended to provide for increased water production capacity to replace capacity lost from Central DeSal. This action had the net effect of reducing the Authority's average unit water purchase cost from $2.29 to $2.18 per cubic meter. It is expected that this rate will be further reduced in 1996 to $1.80 per cubic meter by purchasing all water from OCL, and will culminate in a savings of approximately $4.5 million in operating expense over the next six years.

Capital Works Financing

The Authority carried out several capital works projects for developers who met the full cost of this work. This accounts for $59,877 in contributed capital for 1995. In addition, the Authority carried out a number of extensions to the public water supply system which were funded by revenue. See the *New Works* section of this report for details.

The Authority contracted with Government to provide engineering services for the design and installation of a new sewage treatment plant for the George Town Hospital in 1994. Final project invoices were sent out in 1995 which accounts for $11,103.09 in revenue from agency work. It is anticipated that the Authority will continue to provide these types of services for Government in the future.

Employee Salary Review

In May the Authority began work on a comprehensive employee salary review using the professional services of KPMG Peat Marwick-Benefits and Compensation Group.

Peat Marwick were asked to prepare a new salary scale for the Authority based on

current market information obtained from public and private sector employers. In addition, they were asked to make recommendations on how the Authority could implement a performance-based reward system for employees. By September KPMG had completed their report and the Authority had begun preparation of a supplemental report which will quantify the KPMG recommendations and examine the effect of implementing their recommendations on a case-by-case basis. It is expected that a proposal will be presented to the Board in early 1996.

General Reserve Plan

A comprehensive general reserve plan was presented to the Board in November. The report projects the Authority's capital expansion for the next ten years and recommends that a reserve contribution schedule is put in place which will allow the Authority to meet the cost of these capital expansion and maintenance projects from revenue which has been placed in reserve. At year's end the report was under review by the Hon. Financial Secretary and it was hoped that the necessary approvals will be obtained in early 1996.

1995 Public Water Supply Rates (CI$/m^3)

	Jan-Feb 1995	Mar-Dec 1995
Groundwater	$2.20	$2.33
Desalinated water GCM		
Residential under 12 m^3/month	$3.78	$4.01
Residential over 12 m^3/month	$4.54	$4.81
Commercial	$4.54	$4.81
Public Authority	$4.10	$4.35
Truck	$3.78	$4.01
Desalinated water CYB		
Piped water (all customer types)	$5.28	$5.60
Truck	$6.60	$7.00

Water and Sewerage Rates

The Cayman Islands Government granted the Authority a 6.0% increase in water and sewerage rates in 1995. This new rate structure became effective on the 1st of March and was applied to rates in both Grand Cayman and Cayman Brac. Connections fees, meter rental fees, and customer deposits remained the same as 1994.

1995 Public Sewerage Rates

Group	SFU's per ft^2	SFU per Unit
Commercial		
Store	0.0275	
Office	0.0375	
Beauty salon, surgery, bar, club, water sports	0.0475	
Food handling, garage, photo lab	0.0575	
Residential and Hotels		
Residential bedroom		6
Residential bathroom		14
Hotel room		18
Rate per SFU	$1.48 per mnth	

3. HUMAN RESOURCES

Staffing

The following movements and changes in personnel occurred during the year:-

- Mrs Gelia L Frederick-van Genderen was confirmed as Deputy Director.
- Mr. Troy Whittaker commenced work as a Civil Engineer after completing a MSc in Environmental Engineering at Stevens Institute of Technology.
- Mr. Antoney Reid joined the Authority as a Resident Engineer upon completion of a BSc in Civil Engineering at Florida Institute of Technology (FIT).
- Ms Gloria Parsons joined the Authority as Financial Controller.
- Mr Tyrone Douglas joined the Authority as Administrative Assistant 2.
- Ms Marcela Martinez-Ebanks joined the Authority as a Temporary Laboratory Technician.
- Mr Cantrell Scott was employed by the Authority as Assistant Operator-Cayman Brac.
- Mr Donald Smith joined the Authority as a Heavy Equipment Operator-Operations.
- Mr Blair Manderson and Mr Cliff Ebanks were employed as Meter Readers with the Authority.
- Mr Gustavo Riapira joined the Authority as a Pipe Layer for the New Works department.

- Mr Orvin Myles and Mr Herbert McField were employed by the Authority as Labourers with the Authority's New Works department.
- Mr Brian Martinez was promoted to Superintendent-Water Supply.
- Mr Jack Hunter was promoted to Superintendent-New Works.
- Mr Walt Watler was transferred from Operations to Operator-Heavy Equipment New Works.
- Mr Cornelio Zelaya joined the Authority as Water Supply Foreman in May and left the Authority to work in the private sector in September.
- Ms Alta Bodden was employed as a temporary Receptionist from March until June.
- The Accountant, Mr Randal Daije, resigned from the Authority to work in the private sector.
- Mr David Powery left the Authority to pursue other interests.
- Mr Blair Manderson left the Authority to pursue other interests.

At the end of the year the total staff complement stood at 48 of which 83% are Caymanian.

Water Authority Staff Complement at 31 December 1995

Acting Director	F W McTaggart BSc
Deputy Director	G L Frederick-van Genderen PhD
Accountant	G Parsons BA CPA
New Works Engineer	T van Zanten MSc Eur Eng MIWEM
Operations Engineer	C McCoy BSc
Water Resources Engineer	H-J van Genderen MSc Eur Eng
Operations Manager	T Hill Master Plumber
Civil Engineer	Troy Whittaker MSc Envr Eng
Resident Engineer	Antoney Reid BSc
Assistant Accountant	J Nicholas
Administrative Assistant 1	A McCoy
Administrative Assistant 2	T Douglas
Cashier	V Powery
Customer Service Supervisor	N Chisholm
Customer Service Assistant	B Webb
Meter Reader	C Morgan
Meter Reader	A Archibold
Meter Reader	C Ebanks
Meter Reader	M Smith
Receptionist	Z Bush
Senior Laboratory Technologist	B MacAree BSc
Laboratory Technician	C Barnes
Laboratory Technician	M Martinez-Ebanks BSc
Senior Draughtswoman	C Seymour AAs
Draughtsman	G Welcome
Water Resource Superintendent	V Rankine
Superintendent-Cayman Brac	B Banks
Asst. Operator-Cayman Brac	C Scott
Exec. Officer-Cayman Brac	K Lazzari
Superintendent-Operations	E Conolly
Superintendent-New Works	J Hunter
Trainee Engineer	B Whittaker AAs

Water Authority Staff Complement at 31 December 1995 (cont.)

Engineering Technician	D Manderson
Superintendent-Water Supply	B Martinez
Reinstatement Foreman	V Whittaker
Sewerage Operator 1	L Tivy
Sewerage Operator 2	S Campbell
Operator-Heavy Equipment	W Watler
Operator-Heavy Equipment	B Watler
Operator-Heavy Equipment	D Smith
Assistant Operator	C Ramoon
Assistant Operator	D Myles
Pipe Layer	G Riapira
Labourer	V Grant
Labourer	J Williams
Labourer	O Myles
Labourer	H McField
Labourer	Ian McLaughlin

Awards

The distinguished Chairman's Awards for 1994 and 1995 were presented at the annual Christmas dinner in December. Mr. Vincent Grant, a labourer with the Authority, was the recipient of the Chairman's Award for 1994. Mr. Grant joined the Authority in 1987 and has worked diligently in this position from that time.

Mr. Thomas Hill receives the 1995 Chairman's Award at the annual Christmas Dinner from the Chairman the Hon. McKeeva Bush JP.

Mr. Thomas Hill, the Authority's Operations Manager, was awarded the 1995 Chairman's Award. Mr. Hill began working with the Authority in 1985 as Senior Superintendent. Mr. Hill's main responsibility is management of the day-to-day activities of the Operations department which is the largest department in the

Authority. Additionally, he assisted in the formation of the Plumber's Examination Board and presently serves as Chairman. Mr. Hill is well respected for his hard work and commitment to the Authority.

Mr. Thomas van Zanten receives a "Ten Year Service Award" at the annual Water Authority Christmas Dinner in recognition of his tenure with the Authority

At the annual Christmas dinner five employees were recognized for ten or more years of service to the Authority. They were: Mr. Thomas Hill, Mr. Thomas van Zanten, Ms. Juliette Nicholas, Ms. Cathy Seymour, and Mr. Clydeton Morgan. The longest serving employee is Mr. Clydeton Morgan who has worked with the Authority since February, 1983.

Ms. Cathy Seymour receives a "Ten Year Service Award" from the PS, Ms. Lucille Seymour at the annual Authority Christmas Dinner in recognition of her tenure.

Training

The Authority appreciates that training of local staff is a significant part of the betterment of its human resources. Participation in local and regional seminars, workshops and conferences is fully supported.

The Authority continued its participation in the Caribbean Basin Water Management Programme (CBWMP), a training programme for water utilities in the Caribbean region. Institutional support for the programme continues to be provided by the Caribbean Environmental Health Institute (CEHI), St. Lucia. However, steps were taken at the Annual Board Meeting in 1995, to incorporate the participating utilities as a "company" with shares. The Authority continues to participate under the previous association. The Authority participated in one of the CBWMP sponsored workshops held in 1995:

- H-J van Genderen attended a workshop on Groundwater Quality Assessment and Protection in Barbados.

This year the Authority sponsored the enrollment of several employees in a variety of courses at the Community College of the Cayman Islands (CCCI):

- V Powery and D Myles commenced the Basic English Skills course. The course lasts 18 weeks and they expect to complete it in early 1996.
- S Campbell enrolled in the Numeracy - City & Guilds (Basic Math Skills) course. This course is also for 18 weeks and will be completed in early 1996.
- B Whittaker registered for the English for Business Communications course. The course lasts 18 weeks and he is expects to complete it in early 1996.
- S Campbell signed-up for the English'O Level course which will run for 1 year.

- D Manderson and A McCoy enrolled for the Book-keeping and Accounts Level 1 course. This course will last for 18 weeks and will be completed by early 1996.
- J Nicholas registered for year 2 of the Accounting Technician (AAT) programme.
- Four of the Authority's staff successfully completed the Beginners' Typewriting course at the CCCI in early 1995.

In addition, the Authority sponsored the enrollment of several employees in a variety of other courses training sessions:

- T van Zanten, H-J van Genderen, C McCoy and T Whittaker participated in a Management Development course offered in collaboration with Caribbean Utilities Company (CUC) and facilitated by Grace Talma and Associates from Trinidad.
- J Nicholas and T Douglas attended a Utility Accounting 1 workshop at CUC which was carried out by Barbados Institute of Management and Productivity (BIMAP).
- V Powery attended a Customer Services - Front Line Staff workshop carried out by the CI Government's Personnel Training Unit (PTU).
- Z Ramos attended a Clerical Officers course facilitated by the PTU.
- C McCoy and N Chisholm attended a 1 day Time Management Skills workshop directed by the PTU.
- A Archibold received 2 weeks training at the Kent Water Meters factory in Puerto Rico to learn how to use a Kent Water Meter Test Bench.
- B Banks was trained for 1 week at the Ocean Conversion Reverse Osmosis (RO) plant in Grand Cayman on how to efficiently run and manage an RO plant. This was in preparation for the Authority's purchase of the Cayman Brac RO plant in early 1996.
- All staff members received training in early 1995 on how the Employee Assistance Programme (EAP) of the Cayman Islands works and how they may benefit from the programme.
- More than 60% of all staff members, including staff in Cayman Brac, completed a Basic First Aid course which was taught by Red Cross Personnel.
- C Reid began his final year at Florida Institute of Technology (FIT) where he is studying for a BSc in Civil Engineering. He is sponsored by the Cayman Islands Government.

4. QUALITY CONTROL AND RESEARCH

Laboratory

In 1995 the laboratory acquired a number of new instruments and meters to replace older failed units and to enhance the analytical abilities of the laboratory.

The major activities of the Laboratory continue to be:

- Quality control of the public water supplies in Grand Cayman and Cayman Brac;
- Monitoring of the Lower Valley and East End groundwater resources;
- Monitoring of the public sewerage system and sewage treatment works in Grand Cayman;
- Providing the public with laboratory services for water analyses;
- Coastal water monitoring in the Hog Sty Bay area;
- Providing water quality monitoring services for other Authority projects or research as required.

Monitoring Programmes

The majority of work carried out by the laboratory consists of comprehensive monitoring programmes on the Authority's water and sewerage operations. These operations accounted for 83% of the samples analysed in 1995. Samples were analysed for various Government departments accounting for 10% of samples analysed. The remaining 7% of samples were private requests. The total number of samples analysed in 1995 were 2305.

Public Water Supply-Grand Cayman

The distribution system continues to be monitored with regular testing of chlorine residuals, total and faecal coliform bacteria, electrical conductivity (EC), total dissolved solids (TDS), pH, and zinc (corrosion inhibitor) at specific sampling points. The TDS and pH of water entering the reservoirs are measured twice daily. Water entering the distribution system is analysed twice daily for TDS, pH and chlorine residuals. Bacteriological analyses are carried out daily during the working week (Mon-Fri).

The free chlorine residual of water entering the public water supply system averaged 0.14 mg/l, while the pH averaged 7.45 units and the TDS averaged 172 mg/l. As zinc orthophosphate is used to inhibit corrosion, the zinc content is measured routinely. The zinc concentration in the distribution system averaged 0.41 mg/l. Daily analyses for both total and faecal coliform bacteria in the distribution system were negative throughout the year.

The laboratory attended to a number of queries from customers. Queries investigated each month on average represented 0.18% of all public water supply 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.

As part of the Authority's water quality control monitoring programme, samples of water from the public water supply system, the feed water from the Authority's water supplier (OCL) were analysed overseas for various parameters such as total petroleum hydrocarbons (TPH) and total organic carbon (TOC). Water entering the distribution line was tested for disinfection by-products such as trihalomethanes (THMs) and total organic halogens (TOHs). None of these compounds were detected in the water.

Public Water Supply-Cayman Brac

The distribution system continued to be monitored with regular testing of chlorine residuals, total and faecal coliform bacteria, TDS, pH, and zinc concentrations at specific sampling points.

The TDS and pH of water entering the reservoir are measured daily. Water entering the distribution system is analysed daily for TDS, pH and chlorine residuals. Bacteriological analyses are carried out weekly. Sample taps within the distribution system are monitored monthly.

In the distribution system, the free chlorine residual of water averaged 0.20 mg/l, pH averaged 7.55 units, TDS averaged 348 mg/l, and zinc averaged 0.48 mg/l.

Ms. Cheryl Barnes, Lab Technician, carries out an analysis in the Red Gate Laboratory of potable water sold by the Authority.

Samples of water from the public water supply system, the feed water from the Authority's water supplier in Cayman Brac were analysed overseas for various parameters. The feed water was analysed for TPH and TOC. Water entering the distribution line was tested for disinfection by-products such as THMs and TOHs.

None of these compounds were detectable in the water.

East End Observation Wells and Wellfield

The Authority monitored 4 observation wells in the East End lens during dry and wet season. Two of the wells are in the brackish water zone. The following table summarizes the 1995 data:

East End Observation Wells Monitoring Results

	Percentage with Total coliform bacteria ≥10 cfu/100ml	Percentage with Faecal coliform bacteria >0 cfu/100ml
Dry Season (May-Jun)	100	100
Wet Season (Nov)	20	0

Samples of raw water entering the East End reservoir were analysed overseas for organochlorine pesticides, PCBs, TOC, nitrate, and fluoride. The results showed no pesticides or PCBs detectable in the water. The product water was analysed for disinfection by-products such as THMs. The disinfection by-products results were slightly elevated above the USEPA/WHO guidelines for potable water. In order to reduce the levels the reservoir was closed and will undergo a thorough servicing and cleaning in January 1996. Further investigations will continue into 1996 with testing of the raw water for bromide compounds and THM formation potential and the product water for THMs. TOC was not detected in the raw water. Nitrate and fluoride levels were within the WHO drinking water guidelines.

Lower Valley Domestic Wells

Selected domestic wells in the Lower Valley area are tested twice yearly for total and faecal coliform bacteria, TDS, EC, and pH. These analyses are carried out during the dry season (31 wells) and the wet season (28 wells). However during the dry season in 1995, several additional parameters including hardness, calcium, magnesium, sulfate, and ammonia were analysed. The 1995 bacteria and salinity data are summarised in the following table:

Lower Valley Domestic Wells Monitoring Results

	Percentage with Total coliform bacteria ≥10 cfu/100ml	Percentage with Faecal coliform bacteria >0 cfu/100ml	Percentage with EC ≥1600µS/cm
Dry Season (May)	35	19	32
Wet Season (Nov)	19	11	68

As the Lower Valley reservoir and wellfield were decommissioned the end of 1994, no samples were analysed overseas.

Ms. Marcella Martinez-Ebanks and Mrs. Brenda MacAree take samples of ground water for testing.

Sewage Treatment Works

Monitoring of the performance of the sewage treatment works continued on a fortnightly basis. Eleven pumping stations continued to be monitored weekly for electrical conductivity (EC). The results were used to assess the soundness of the rehabilitated sewer lines.

The overall unfiltered biochemical oxygen demand (BODuf) removal efficiency of the waste stabilisation ponds further improved in 1995. However the faecal coliform removal efficiency reduced from 3 logs in 1994 to 2 logs in 1995. In view of the high levels of hydrogen sulfide produced in the facultative ponds due to elevated sulfate loading, the levels of salinity experienced, and the hydraulic loading, the waste stabilisation ponds performed as expected.

Operational Performance of the Sewage Treatment Works

Year	Average BOD-5 day mg/l: Raw sewage	Final effluent	%age removal	Average ECµS/cm: Raw sewage
1988	213.0 (g)	13.0 (g)	*94.0*	3787 (g)
1989	174.0 (g)	36.0 (g)	*80.0*	6551 (g)
1990	103.5 (c)	25.4 (g	*75.0*	11955 (c)
1991	76.4 (c)	20.8 (g)	*73.0*	16749 (c)
1992	68.9 (g)	19.6 (g)	*71.5*	21282 (g)
1993	94.2 (g)	22.8 (g)	*75.8*	17462 (g)
1994	117.6 (c)	26.0 (g)	*77.9*	13303 (c)
1995	121.0 (c)	23.4 (g)	*81.0*	12106 (c)

NOTE: BOD = Biochemical Oxygen Demand; EC = electrical conductivity; g = grab sample; c = 24hr composite sample.

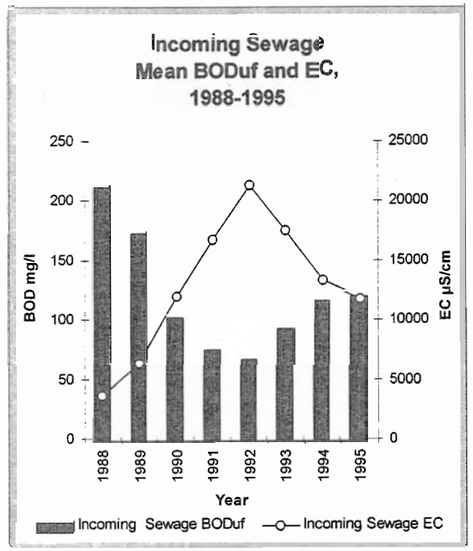
Operational Performance of the Sewage Treatment Works

Year	Average FC cfu/100ml: Raw sewage *(g)*	Final effluent *(g)*	%age reduced
1988	4.39×10^6	1.68×10^3	*99.962*
1989	1.62×10^8	2.87×10^3	*99.998*
1990	3.18×10^8	7.30×10^3	*99.998*
1991	2.77×10^6	1.55×10^4	*99.440*
1992	1.52×10^6	5.84×10^3	*99.616*
1993	3.22×10^6	4.26×10^3	*99.868*
1994	9.29×10^7	2.04×10^4	*99.904*
1995	1.38×10^7	2.53×10^4	*99.817*

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

The following graph compares the EC and the BODuf of the raw sewage since the West Bay Beach Sewerage System was commissioned in 1988. Although the decline in sewage salinity was slight (1000 µS/cm) compared to the previous 2 years, the mean BODuf of the incoming sewage showed an increase. The increase in BODuf may also be attributed to increased connections and consequently incoming additional flow (daily mean flow 3000m^3 in 1995).

The mean sludge depth in facultative pond 1.1 decreased slightly from that of 1994 while facultative pond 1.2 showed a more significant decrease. Carry over to the maturation ponds, in addition to the natural digestion and aging processes that occur in waste stabilisation pond bottom sediments most likely contributed to the average depth variations. In the maturation ponds 2.1 and 2.2 there was a slight increase in the average sludge depth measured in 1995 compared to 1994.



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

Sludge depth is monitored annually as part of the operational performance evaluation of the sewage treatment works.

Hog Sty Bay Monitoring Programme

In February 1991 the Hog Sty Bay monitoring programme commenced as a

part of a joint study between the Water Authority and the Protection and Conservation Unit (PCU) of the Department of Environment. Although the results have not identified any significant pollution, the programme will continue in order to identify and observe trends.

The location of the 17 sample points, sampling methods and frequency were the same as those outlined in the Water Authority's Annual Report 1992. All samples were analysed for faecal coliform and enterococci bacteria in addition to physico-chemical parameters.

Since 1993, the average faecal coliform bacteria densities have continued to decrease. The highest average for faecal coliform was 1.0 cfu/100ml at sample point 7 (bottom). The highest individual faecal coliform result obtained in 1995 was 11 cfu/100ml at sample point 7 (bottom). The overall average enterococci bacteria densities also decreased in 1995. The highest average for enterococci was 1.0 cfu/100ml at sample point 3 (subsurface sample). The highest individual enterococci result was 7 cfu/100ml at sample point 7 (bottom sample).

In 1995, the DoE commenced monitoring of nutrients at the same sample points. Samples are analysed for nitrate (NO_3 as N) and reactive phosphate (PO_4 as P). The 1995 mean nitrate and phosphate concentrations reported for all samples were 0.42 µg/l and 0.14 µg/l, respectively. Based on the limited information and data available these concentration are less than literature-derived tolerance levels for a tropical coral reef.

The physico-chemical parameters are as expected for tropical marine coastal waters. Both bacteriological parameters, faecal coliforms and enterococci, are within the United States Environmental Protection Agency and the European Union standards for bathing water.

Hog Sty Bay Monitoring Results

Year	Average Faecal coliform bacteria (cfu/100ml)	Average Enterococci bacteria (cfu/100ml)
1991	1.9	3.2
1992	9.8	2.4
1993	19.2	1.4
1994	0.6	0.5
1995	0.4	0.3

Research

G Frederick-van Genderen successfully completed a collaborative PhD with the University of Surrey, UK on 15 November 1995. During the *viva voce,* Mrs van Genderen was examined by world renowned waste stabilisation pond expert, Professor D Mara from University of Leeds, UK and Dr. M Pardon, PAHO Environmental Health Advisor. Both examiners gave excellent comments regarding her research and the presentation of the thesis. No corrections were required.

The title of the thesis is "The performance of full-scale waste stabilisation ponds treating saline wastewater with particular reference to bacteriophage as a hydraulic tracer". Several major points in the thesis are listed below:

- *The Water Authority's sewage treatment system is dominated by an unbalanced sulphur cycle resulting in high levels of hydrogen sulphide (H_2S) being produced largely from seawater derived sulphate.*
- *The diversity of phytoplankton and zooplankton normally associated with aerobic maturation ponds is greatly reduced by H_2S generated in the facultative ponds. This aggravated the hydraulic overload and resulted in poor performance with respect to faecal indicator bacteria removal in the maturation ponds.*

- *In vitro experiments with Serratia marcescens bacteriophage in raw sewage and effluents from facultative and maturation ponds indicated that survival of the bacteriophage was such that it was feasible to use as a tracer. Subsequently one facultative pond was dosed, in vivo, with the phage and sampled intensively. The results were used to determine the dispersion characteristics of flow within the pond. The results from the ponds' outlets were used to calculate mean retention time.*
- *Short-circuiting was shown experimentally and a numerical model (developed at University of Surrey) using physical pond and climatic data was applied. The retention time resulting from the application of this model and that shown from the tracer study were more closely correlated with each other than either of them were with the design retention time. The factors of wind and wind speed were identified as having a potentially major, negative influence on the hydraulic regime of the ponds when the wind varied from east to north.*
- *The design performance was compared in terms of pathogen removals and biochemical oxygen reduction with data obtained from the routine monitoring programme and specialized intensive studies. There was good agreement between the level of short-circuiting defined experimentally and the actual removal of faecal indicators in the facultative ponds.*

Conferences

Staff of the Water Authority attended the following conferences:

- T Hill and N Chisholm attended the Fourth Annual Conference and Exposition of the Caribbean Water and Wastewater Association (CWWA) held in Castries, St Lucia, 3-7 October 1995.
- The Third International Association on Water Quality (IAWQ) Specialist Conference and Workshop on Waste Stabilisation Ponds - Technology and Applications was held in Brazil, 27-31 March 1995. A paper titled "An evaluation of Retention Times and Short-circuiting in Waste Stabilisation Ponds Using Serratia marcescens Bacteriophage as a Tracer" was presented by G Frederick-van Genderen.
- T van Zanten attended the Water Environment Federation Tec'95 68th Annual Conference and Exposition held in Miami, Florida, 21-25 October.

Papers

- Ng, K.-C.S., and Jones, B. Hydrogeochemistry of Grand Cayman, British West Indies: implications for carbonate diagenetic studies. Published in Journal of Hydrology Vol.164 pp.193-216 (1995).
- Frederick, G.L. and Lloyd, B.J. Evaluation of *Serratia marcescens* bacteriophage as a tracer and a model for virus removal in waste stabilisation ponds. Published in Water Science and Technology Vol.31, No.12, pp.291-302. (1995).
- Fares, Y.R. and Lloyd, B.J. Wind effects on residence time in waste stabilisation lagoons. Proceedings of the 26th Congress of International Association for Hydraulic Research (IAHR), London, UK, Sept 1995.
- Ellis, K.V. and Rodriguez, P.C. Developments to the first-order, complete-mix design approach for stabilisation ponds. Water Research Vol.29 No.5, pp1343-1351.

Reports

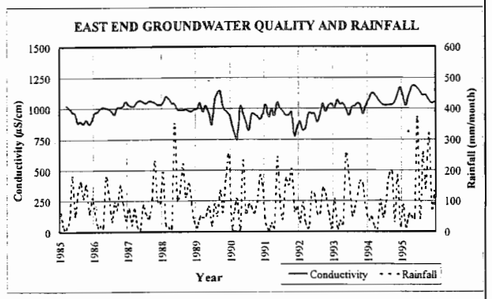
- Ten Year Development Plan for Water Supply and Sewerage Infrastructure.
- Construction of Feedwater and Brine Disposal wells at the Lower Valley Facility.
- Contamination of Groundwater at the Jackson Point Terminal: Investigation of Potential Environmental Risks.
- Rehabilitation and Recommendations on Sewage Treatment Works Rehabilitation (Inlet Works, Interpond Structures, Manholes and Valve Chambers).
- Feasibility Report on the Acquisition and Operation of a Reverse Osmosis Plant for Cayman Brac Water Supply by the Water Authority-Cayman.

5. WATER RESOURCES

Groundwater Monitoring

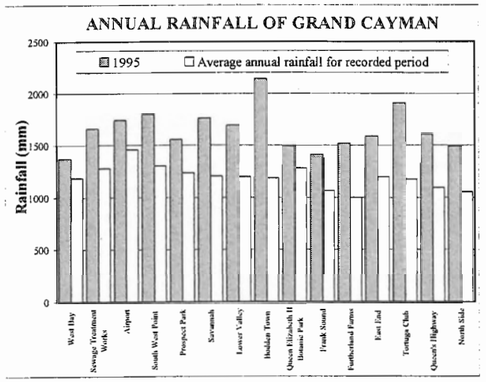
The hydrogeological monitoring programme of the Lower Valley and East End fresh water lenses continued throughout 1995. The Authority operates a comprehensive monitoring network which

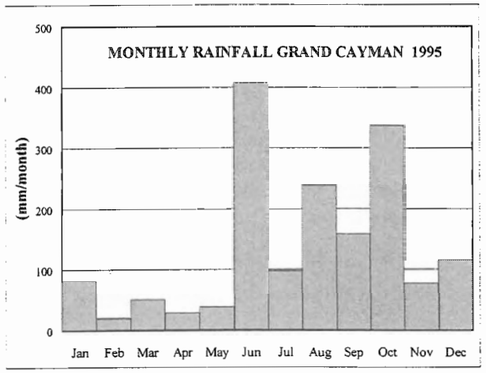
consists of observation wells, piezometers, water level recorders and an island-wide network of rain gauges. The salinity and the volume of water pumped from the Authority's production wells in the East End wellfield is monitored at regular intervals.



Groundwater pumped from irrigation wells by four commercial farms located over the East End lens is closely monitored. Abstraction volumes are checked on a monthly basis using meters which were installed by the Authority. The salinity of the ground water from the wells is also measured.

The salinity of groundwater pumped from the Authority's wellfield in East End decreased slightly towards the end of the year. This may be attributed to the high rainfall during the second half of 1995. Groundwater quality generally correlates with rainfall; as the amount of rain is the principle factor determining recharge of the lenses. Years with significantly higher rainfall than average lead to a noticeably lower salinity of the groundwater, whereas lower rainfall leads to a higher salinity. This effect also takes place during the wet season; the heavy rains of the wet season cause a decrease in the salinity of the water from the wellfield.





Rainfall Distribution

Data for rainfall are collected from an island-wide network of primary rain gauges; a number of dedicated volunteers keep daily records for the Authority. Data collected by the Mosquito Research and Control Unit, the Civil Aviation Authority and the Queen Elizabeth II Botanic Park are included in the graphs showing the rainfall. 1995 was a very wet year, mainly due to a very active hurricane season. The island wide average of the 15 stations was 1650 mm (65 inches) compared to 1021 mm (40 inches) in 1994. The island wide average for the 15 stations for the period that data are available is 1197 mm (47 inches). Recording periods vary per station from 1956 to 1995. 1995 showed a relatively even distribution of rainfall throughout Grand Cayman.

Water Resource Licencing

The Water Authority continued to monitor works that impact groundwater resources. The following number of licences and permits were issued in 1995 in compliance with the Authority's statutory obligations:

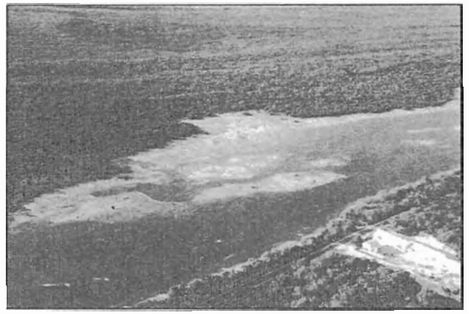
- *Discharge Permits* 385
- *Abstraction Licence* 7
- *Quarry Permit* 4
- *Canal Work Permit* 1
- *Well Driller Licences* 5
- *Cesspool Emptier Licences* 6

The Planning Department collects the revenue for discharge permits when the application for Plumbing Approval is made. The Water Authority issues the permits; and is reimbursed by the Planning Department.

Booby Pond Study

The ownership of the Booby Pond in Little Cayman was transferred from the Crown to the National Trust in 1995. The objective of the Trust is to gain more insight in the biological, ecological and hydrogeological cycles of this pond. This information will be used to establish a sensible approach to future conservation and preservation of the reserve.

The Authority in collaboration with the Trust embarked on the hydrogeological study of Booby Pond in 1995. Water levels in the pond are low during the dry season, and a typical offensive odour is produced by the pond leading to complaints from nearby residents. This odour is not observed during the wet season when water levels are higher. It is expected that the hydrogeological investigation will give a better understanding of the mechanisms determining the water levels of the pond. It is expected that this study will take a minimum period of one year to ensure that all the different seasons are included.



Aerial view of Booby Bay Pond in Little Cayman. The Authority is working with the National Trust to study the hydrogeological forces which control the pond.

In October three water level recorders were installed to monitor the water levels of the pond, the sea, and the groundwater respectively. Basic meteorological data and information to characterize the condition of the pond are collected daily on site. Water samples are collected monthly from the pond, groundwater, and the sea for analysis by the Authority's laboratory. This study is facilitated by the assistance of the owner of the Southern Cross Club, who volunteered to take care of the water level recorders, monthly collection of water samples, and daily data collection on site.

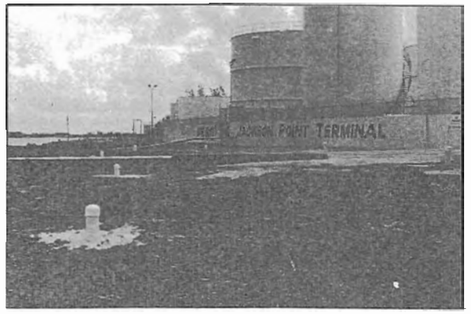
Groundwater Contamination at Jackson Point Terminal

On July 18th personnel at Esso Standard Oil SA Ltd. Jackson Point Terminal discovered that approximately 42 m^3 (11,000 US gallons) of unleaded gasoline had leaked from one of their storage tanks. Esso took immediate action to prevent any further leakage of the fuel and the authorities were notified.

The Water Authority, in close collaboration with the Protection and Conservation Unit of the Department of the Environment, investigated the potential environmental risks of this accident. As the fuel storage facility is located near to the Walkers Road fresh water lens, a caution was issued through the media to the residents of South Sound not to use groundwater for potable purposes until it was established that no pollution of domestic wells had taken place. The subsequent investigation included a household survey of approximately 50 properties in close proximity to the tank to determine the use of groundwater, a hydrogeological survey to establish the direction of the groundwater flow, and comprehensive analysis of water from three domestic wells close to the tank and two monitoring wells within the compound. General water quality parameters of these samples were analyzed by the Authority's laboratory and analysis for the presence of volatile and semi-volatile petroleum products were carried out by Orlando Laboratories, Inc. of Florida. In addition, 5 marine samples were analyzed by the same laboratory for mono-aromatic constituents. Samples from three wells of concerned residents were also analyzed by the Authority's Laboratory.

The results of the household investigation indicated that 79% of those sampled use groundwater and that 13% of the respondents use groundwater for potable purposes, inclusive of drinking. The hydrogeological survey concluded that the main direction of groundwater flow is towards the sea. The results of the samples analyzed overseas showed no detectable levels of hydrocarbons. The conclusion of the investigation was that it was highly unlikely that domestic wells in close proximity to the terminal could be contaminated by fuel originating from the tank. The groundwater contamination was limited within a close radius of the tank and monitoring of the plume indicated migration towards the sea. The public was notified that domestic wells were not contaminated. Esso and the authorities maintained a close working relation throughout the investigation.

Esso retained the services of Geochemical Consultants, Inc. of Florida to conduct their own investigation and to select and implement a remediation method for the site. The consultants characterized and delineated the fuel plume. Vapour extraction, a technique that enhances volatilization of the pollutants from the subsurface and the groundwater was selected as the most suitable method to remove the contaminants. Remediation efforts commenced on the 30th of August.



Jackson Point, Grand Cayman where Esso spilled approximately 12,000 gallons of gasoline in July. The Authority and DOE worked closely to monitor the spill and clean-up efforts by Esso. Monitoring wells can be seen along the ironshore.

Development Plan Review

The Proposal for Amendments and Additions to the Development Plan was publicized by the end of 1994 and the public was given the opportunity to make

sections relating to fresh groundwater resources, the Authority took the opportunity to make some comments. These were not outright objections, however it was pointed out that re-zoning of certain areas located over the Lower Valley and East End lenses may result in future over-abstraction and depletion of fresh groundwater resources. In the event such a re-zoning takes place the Authority may have to consider further measures to restrict the use of fresh groundwater.

Cayman Water Company Operational Performance (US gallons)

	1995	1994	% change
Water Produced	333,747,900	299,306,600	11.5%
Water purchased from Water Authority and Hyatt	1,370,688	13,675,824	-90.0%
Total Water Sold	311,933,732	280,183,423	11.3%
Seven Mile Beach Service Area sales	206,887,092	186,144,382	11.1%
West Bay Service Area sales	55,638,640	41,890,550	32.8%
Water Authority sales	0	2,887,191	
Truckers sales	1,949,100	2,225,700	-12.4%
Safe Haven sales (non potable)	47,458,900	47,035,600	0.9%
Unaccounted for water	6.92%	10.48%	-34.0%
Average fuel adjustment factor ($/1000 US Galls)	$0.72	$0.75	-4.5%
Total Royalty payment	$317,736.30	$282,214.43	12.6%

Cayman Water Company

Cayman Water Company's water sales increased by 11.3% compared to 1994. The new facility in West Bay comprising a 1 million US gallon glass fused steel storage reservoir, 250,000 US gallon per day capacity reverse osmosis plant, and state of the art pumping station became operational in June. This facility is designed to accommodate future expansion and possible relocation of their Governor's Harbour facility to the site.

Little Cayman Beach Resort

The Licence for the Little Cayman Beach Resort for a concession under the Water Production (Supply) Law 1979 to distribute potable water through a pipeline in Little Cayman was issued in December. It is expected that installation of the 1.2 km distribution main will be completed early 1996.

6. WATER SUPPLY OPERATIONS

East End Wellfield

The East End wellfield completed its tenth year of production (1986-1995). The sales of East End groundwater were 5.8% higher than in 1994. This slight increase is probably caused by the closure of the Lower Valley wellfield in December 1994. The loss from the pipeline was 0.95% and loss from the reservoir was 9.02% resulting in a total loss of 9.89% in 1995. The total quantity of water produced since commencement of the wellfield in March 1985 was 243,000 m^3 (64,200,000 US gallons).

East End Wellfield Performance Data

Year	Hours Run	Average Pumping Rate (m^3/hr)	Quantity Produced (m^3)	Loss (%)	Power Consump. (kWhr/m^3)	Quantity Sold (m^3)
1987	2,712	14.0	37,973	1.37	0.47	29,263
1988	3,134	14.0	43,879	1.36	0.45	33,815
1989	3,440	16.5	56,928	1.05	0.40	57,973
1990	1,310	14.8	19,408	1.00	0.43	19,704
1991	1,816	15.1	27,438	4.55	0.45	26,323
1992	1,182	13.2	15,546	13.90	0.44	11,653
1993	540	16.5	8,916	14.33	0.43	6,489
1994	623	16.0	9,945	9.38	0.43	9,013
1995	672	16.4	11,048	9.89	0.45	9,538

Water from the public tap at the reservoir is available free of charge; 418 m^3 (110,000 US gallons) was used in 1995. The reservoir was closed in December to accommodate a thorough cleaning and repair.

Public Water Supply - Grand Cayman

Total water sales for 1995 increased by 10% from 1994 figures to 1.239 million m^3. New customers connections increased by 9.0% from 4,658 in December, 1994 to 5,080 in December, 1995. Average daily water sales for the year was 3,395 m^3,

water sales for the year was 3,395 m^3, which is approximately 65% of water production capacity.

At year's end, contracts were in place for the erection of a storage reservoir and construction of a new pumping station at Lower Valley. Both will be on line by April 1996 and will greatly enhance the Authority's storage and pumping capacity. This will also improve the pressure/flow characteristics to customers at the extremities of the distribution system and facilitate continued expansion of the system. (see section entitled *New Works - Lower Valley Site*)

1995 Operations Summary for Public Water Supply in Grand Cayman

Total Water Produced	1,293,055	m^3
Total Water Sold	1,239,285	m^3
Pipeline Sales	1,198,346	m^3
Trucked Sales	40,939	m^3
Other Sales	0	m^3
Unaccounted for Water	4.16	%
Number of Pipeline Customers	5,075	ea.
Average Daily Water Sales	3,395	m^3
Water Sales as % of Total Production Capacity	65	%
Water Purchased from CWC	0	m^3
Water Sold to CWC	3,038	m^3
Electricity consumed	296,580	kWhr
Pump Station Efficiency	0.219	$kWhr/m^3$

Number of Water Customers by Type Grand Cayman

Month	Single Resident	Multi-Resident	Comm.	Public Authority	Truck	Total
Dec-94	3955	61	558	84	7	4665
Jan-95	3989	61	571	86	6	4713
Feb-95	4019	62	568	87	6	4742
Mar-95	4049	60	570	88	6	4773
Apr-95	4085	63	570	88	6	4812
May-95	4111	61	570	61	6	4809
Jun-95	4158	61	574	82	5	4880
Jul-95	4183	63	573	81	5	4905
Aug-95	4201	64	578	81	5	4929
Sep-95	4225	64	580	80	5	4954
Oct-95	4250	64	578	80	5	4977
Nov-95	4276	64	590	80	5	5015
Dec-95	4327	64	602	82	5	5080

In an effort to cope with continued increases in work load and to improve the efficiency of the Operations department, it was decided to separate the Department into two specialized areas: Water Operations and Sewerage Operations. This was accomplished in August and has improved department efficiency and lines of communication.

Average Monthly Water Consumption by Customer Type (m^3/month) Public Water Supply Grand Cayman

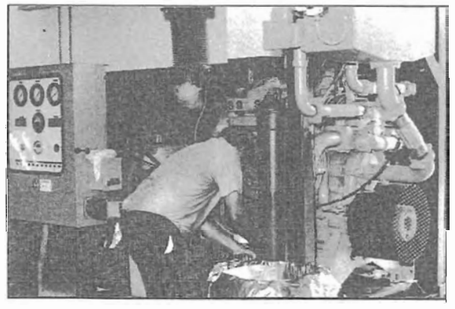
Month	Single Resident	Multi-Resident	Commerc.	Public Auth.	Truck
Dec-94	12.7	124.8	34.5	94.5	1237.8
Jan-95	15.7	202.1	48.6	102.4	665.7
Feb-95	14.7	122.5	38.6	114.3	767.7
Mar-95	16.1	152.2	46.5	119.1	922.3
Apr-95	15.2	124.7	41.4	99.7	1031.9
May-95	18.5	176.2	47.7	109.5	1552.5
Jun-95	13.5	118.0	38.8	94.2	223.7
Jul-95	13.1	123.2	34.8	86.9	329.0
Aug-95	14.1	113.4	38.2	69.9	249.9
Sep-95	13.8	125.9	38.8	75.6	326.3
Oct-95	13.0	124.6	38.0	79.1	128.2
Nov-95	13.7	132.4	42.7	96.1	465.2
Dec-95	11.5	103.1	32.7	50.8	540.7

Ocean Conversion (Cayman) Ltd. (OCL) completed the upgrade of their reverse osmosis plant at Red Gate Road in February with the commissioning of two diesel driven pump sets. The Minister of Community Development, Sports, Youth Affairs, and Culture officially opened the new facility at a ceremony held on the 27th of February. The commissioning of the new facility brought the installed capacity of the plant to 4,000 m^3 per day and marked the completion of plant modifications required under the revised licence which was issued by Government to Ocean Conversion in April 1994. OCL continued to operate a first class water production plant and supplied 81% of the water purchased by the Authority in 1995.

Central DeSal Ltd. (CDS), who supplied water to the Authority from early 1988, continued to struggle with their modified Ahlstrom/IDE water distillation unit. CDS supplied only 19% of the Authority's water purchases in 1995 and only 57% of the minimum quantity stipulated in their Licence. After careful consideration by the Water Authority and Government it was

decided to terminate CDS's water production and supply licence in August. Although the Authority recognized CDS's pioneering contribution to public water supply in the Cayman Islands, it was necessary to secure a more reliable source of water.

Prior to termination of the licence, Government allowed CDS the opportunity to offer a plan to remediate the problems with their plant. At the same time the Authority investigated alternative sources of water should the CDS proposal prove unsatisfactory. It was agreed in September that the Authority would accept an alternative proposal from OCL to upgrade their plant at Red Gate Road to a production capacity of 5,000 m^3 per day. By year's end the modification work was well underway and it was expected that the plant would be at the new capacity by the end of February 1996. It was agreed that the Authority would continue to take water from CDS on an "as need" basis through the end of the year while upgrade work was being carried out on the OCL plant to replace the CDS water production capacity.



Mr Parsons of Ocean Conversion services one of the new Caterpillar diesel engines which drive the expanded water production plant.

In addition to the immediate upgrade of the OCL plant it was recognized that the Authority would require additional water production capacity by January 1997. Work commented in October on contract documents for a new reverse osmosis plant which would be located at the new Lower Valley reservoir site. It was anticipated that the project would go out to tender in early 1996 with a tentative completion date of January 1997. Pre-qualification invitations were sent out in December to approximately 40 international companies with experience in reverse osmosis technology.

Water Authority operations staff complete a water service connection in Red Bay.

The Authority's 250 mm main pipeline in the Red Bay area continued to experience significant problems, with an average of one pipe break per month. Plans are in place to replace a 1.5 mile section of pipe in 1996 when the new Lower Valley Pumping Facility is operational. Average water loss dropped slightly for the year to about 4.16%. A high of 24% monthly water loss was recorded and a low of -3% in January.

Water Truckers

The Authority currently sells potable water to three water trucking companies from the Red Gate Road Facility. These companies primarily deliver water to customers who are not yet connected to the piped distribution system. Overall trucked water

quantities from Red Gate Facility increased by 7% to 40,939 m^3 (10.8 million US Gallons) total for the year.

Trucked Water Sales in Grand Cayman (shown in US Gallons)

	1995	1994	1993	1992
Cayman Water Co.	1,949,100	2,225,700	2,657,100	5,820,020
Water Authority LVWF	0	2,403,163	4,566,672	11,879,727
Water Authority EEWF	2,520,000	2,247,021	1,713,096	3,078,723
Water Authority Desal	10,816,084	10,111,462	13,828,175	18,248,822
Walkers Road (non-potable) estimate	102,000	102,000	102,000	102,000
TOTALS:	15,387,184	17,089,346	22,867,043	39,129,292

Trucking companies are as follows:

- *C.L. Flowers and Sons (2 accounts)*
- *Mr. Wilford Ryan*
- *Mr. Brasley McLean*

Public Water Supply - Cayman Brac

The public water supply system in Cayman Brac experienced a 26% growth in sales for the year. At year's end there were 62 customers being served by the pipe distribution system. No water losses were reported for 1995, which is reasonable considering the small size of the distribution system.

Operations Summary for Public Water Supply in Cayman Brac

	1995	1994	1993	1992
Total Water Produced (m^3)	37,752	31,893	24,069	22,642
Total Water Sold (m^3)	48,033	38,313	24,247	22,781
Pipeline Sales (m^3)	40,001	31,859	19,605	20,249
Trucked Sales (m^3)	8,032	6,454	4,642	2,532
Other Sales (m^3)	0	0	0	0
Unaccounted for Water (%)	-1.20%	-1.16%	-1.01%	-1.66%
Number of Pipeline Customers (ea)	62	56	51	49
Average Daily Water Sales (m^3)	131.60	104.97	66.43	62.41
Water Sales as % of Total Capacity	58%	46%	29%	27%

The Authority now employs 3 persons on Cayman Brac; an Assistant Operator was hired in July in order to cope with the increasing demand for trucked water and to operate the facility when the Superintendent is on leave.

Average Monthly Water Consumption by Customer Type (m^3/month) Public Water Supply Cayman Brac

Month	Single Resident	Commercial	Public Authority	Trucker
Dec-94	11.1	112.4	10.6	7.9
Jan-95	13.8	133.1	23.7	10.0
Feb-95	11.4	104.8	29.0	11.5
Mar-95	12.6	118.7	25.6	11.9
Apr-95	14.4	142.9	40.1	10.7
May-95	13.0	117.1	58.7	11.5
Jun-95	10.4	88.3	51.5	11.0
Jul-95	11.9	124.7	23.5	8.4
Aug-95	11.2	167.8	20.2	10.5
Sep-95	11.0	132.0	19.5	9.1
Oct-95	11.6	89.8	18.3	7.5
Nov-95	11.5	118.9	14.7	9.7
Dec-95	10.6	102.2	13.6	9.3

The reverse osmosis plant (which is owned and operated by Ocean Conversion (Cayman) Ltd.) experienced some operational problems during the year, but continued to meet the terms of their contract. In December the Authority exercised its option under the Licence with OCL to purchase and operate the plant at the end of the current contract period. It was agreed in the purchase contract that the plant would be rebuilt from the ground up in order to make it acceptable to the Authority. In addition a second pass system is to be installed which will improve the quality of water produced by the plant, and a new energy recovery system will reduce the electricity consumption of the plant.

7. SEWERAGE OPERATIONS

West Bay Beach Sewerage

The West Bay Beach sewerage system continued to require close attention in order to keep it functioning at peak efficiency. Madsen-Barr Corporation of the US completed repairs on approximately 455 meters of 100 mm and 150 mm diameter sewer laterals during the first three months of 1995. These clay laterals were identified as being in need of repair by the CCTV survey which was completed

by the Water Authority's Operation Department in 1994, and were repaired using the proprietary U-Liner method. These repairs helped reduce the average conductivity of sewage flowing into the Treatment Works by 17%. Total sewage flow was also reduced by approximately 6%. One section of pipe which was lined in 1993 experienced some problems with the U-Liner and the section was re-routed at no cost to the Authority.

Operations Summary for Public Sewerage in Grand Cayman

	1995	1994	1993
Volumes			
Total Sewage Treated (m^3)	1,011,727	1,074,304	1,175,772
Average Daily Flow (m^3)	2,772	2,943	3,221
Average Daily Septage (m^3)	24	13	18
Electricity Usage			
Pump Station Electricity (kWhr)	205,423	174,010	208,417
Pump Station Efficiency (kWhr/m^3)	0.20	0.16	0.18
Treatment Works Electricity (kWhr)	146,720	125,400	137,200
Treatment Works Effic. (kWhr/m^3)	0.15	0.12	0.12
Aspirator Electricity (kWhr)	not used	not used	71,100
Aspirator Efficiency (kWhr/m^3)	not used	not used	0.06
Total Electricity (kWhr/m^3)	0.35	0.28	0.36
Charges			
Total No of Connections (ea)	265	260	243
Total Sewerage Fee Charged (CI$)	$1,806,73 1	$1,686,07 9	$1,661,64 3
Avg Monthly Fee per Customer (CI$)	$568	$540	$569
Total No of Septage Customers (ea)	5	4	6
Total Septage Fee (CI$)	$36,963	$19,494	$25,200
Avg Monthly Cost per Customer (CI$)	$616	$406	$350

Based on a detailed investigation in 1993 of all manholes in the West Bay Beach public sewerage system, it was determined that at least thirty-eight manholes required rehabilitation work to repair badly corroded concrete. Because of the excellent performance of manholes repaired in 1990-91 using the Permaform®-method, no alternate repair methods were considered for this work. In early January 1995 the tender documents for the manhole rehabilitation work were sent to several licensed installers of the proprietary repair method that had expressed interest in the project.

Following intensive post-tender opening negotiations with the lowest bidder, Performance Pipelining Inc. from Ottawa, Illinois, an compromise was reached on the proposed repair method and price. The final contract price was significantly less than the original tender amount, due in part to the Authority altering the specification for the work, and by allowing work to commence in January 1996, which is generally a slower period for the contractor because of the weather in the mid-western United States. It is anticipated that this work will be completed in late March 1996.

Customer connections on the public sewerage system increased by 2% during the year to a total of 265. Revenue generated from sewerage system increased by 7.0%.

Sewage Treatment Works

A complete survey of the West Bay Beach Sewage Treatment Works was completed in 1995. Some renovation and improvements were recommended which will reduce the operating costs of the facility. It is planned to complete the majority of this work in-house during 1996. The annual survey of sludge quantities in the stabilization ponds indicated minimal changes in quantities of accumulated sludge from the previous year.

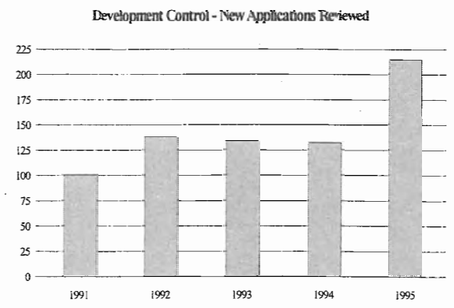
8. NEW WORKS

George Town Sewerage

Proper sewage treatment and disposal remains a serious concern of the Water Authority.

Due to various other commitments no further work was carried out on the pre-feasibility study for a sewerage system for North and Central George Town. However it is anticipated that this study will be continued in mid-1996, and a preliminary report will be presented to Government in late 1996.

The Water Authority continued to review the waste water treatment and disposal systems for all new developments at the planning stage, with the exception of single houses and duplexes which are reviewed by the Building Control Unit. 215 new developments were reviewed in 1995, which is an increase of more than 60% compared to the previous three years.



New Works Crew

In September 1994 a report was submitted to the Board, and subsequently approved, recommending that a trencher is purchased by the Water Authority to be able to carry out pipeline extensions using in-house resources. This course of action was necessary as the civil engineering contractor Petroservicios Ltda. had completed their work in May 1994 and the demand for expansions of the piped water supply continued. The report concluded that using in-house resources to carry out pipeline extensions to the water distribution system would be more economical than having this work carried out by a contractor, and would also allow more flexibility in the order in which these extensions are made, resulting in a better service to the customers. Furthermore it was anticipated that sufficient work is generated annually to justify the employment of a full-time pipelaying crew and the purchase of a trencher and associated equipment.

The Vermeer T755 trencher was delivered to Grand Cayman in late April 1995, and the New Works crew commenced work in mid-May 1995.

In 1995 the New Works crew (in some instances assisted by Operations) installed more than 4,000 metres of pipework. The following areas were provided with piped water during the year;

- *Bonnieview Estates (Phase I), Prospect*
- *Admiral's Landing (Phase II), Prospect*
- *Tommy Jackson sub-division (Phase II), Savannah*
- *Red Bay Estates*
- *Logwood sub-division, George Town*
- *Lynnhurst Avenue, George Town*
- *Casuarina Estates, George Town*
- *Eden Rock Apartments, George Town*
- *various small side roads in George Town*

The New Works pipe line construction crew gets ready to start another day of work on a water main extension at the end of Hirst Road in Newlands

In addition, the large trencher was used to assist the Public Works Department (excavate for fiber-optic cable at L.A. building) and the Department of Agriculture (excavate trenches for irrigation pipes at the Agricultural Grounds).

In the first half year of operation the New Works crew did not achieve the anticipated rate of progress, mainly due to inexperience of the crew and the relatively large number of small developments included in the work load. Nevertheless the pipeline extensions carried out by the New Works crew in 1995 were still more economical than if they had been carried out by an outside contractor (based on extrapolated figures from the Bodden Town Project).

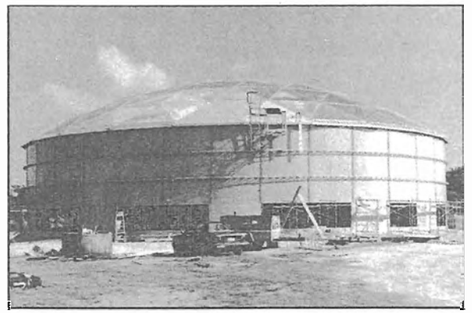
It is anticipated that in 1996 the New Works crew will be used on larger projects, particularly the Breakers extension. The crew has now gained experience and it is anticipated they will be more productive, and thus more competitive, in 1996.

George Town Hospital Project

In early 1994 it was determined that the existing waste water treatment plant at the George Town hospital needed to be replaced. Upon request by the Ministry of Health, Drug Abuse Prevention and Rehabilitation, and the Public Works Department, the Water Authority provided the engineering services for this project.

The Water Authority's engineering services comprised the design, the preparation of the tender documents, the review of the returned tenders, and the supervision of the construction of the 20,000 US gallon per day waste water treatment plant, and the installation of the 4" diameter force main.

In late December 1994 the tender documents for the above mentioned Contract were sent to the pre-qualified local contractors. On March 3, 1995 the Central Tenders Committee (CTC) awarded this contract to the lowest bidder, Arch & Godfrey (Cayman) Ltd., who satisfactorily completed the works in late August 1995.



1,000,000 US Gallon bolted steel tank nears completion at Lower Valley site.

Lower Valley Site

A detailed hydraulic analysis of the public water supply system in Grand Cayman was carried out in early 1994 and the results were summarized in a report ("Further Development of Piped Water Supply"), which was presented to and accepted by the Board in September 1994. This report recommended the construction of an additional reservoir and pumping station in the eastern part of the distribution system (with a preference for the existing Lower Valley site) before April 1996 in order to ensure sufficient pressure and quantities throughout the present water distribution system, at all times of the day, through the year 2005. In addition, the facility was designed to accommodate future extensions of the distribution system

through the districts of North Side and East End.

The detailed design of the Lower Valley pumping facility was completed in August 1995, and includes provisions for an additional water production facility (with an initial production capacity of 1,500 m^3 per day) to be on line in early 1997.

The tender documents for the supply and erection of the 1,000,000 US gallons capacity storage tank at the Lower Valley site were sent out in April 1995. The contract was subsequently awarded in July 1995 to the lowest bidder, Florida Aquastore from the U.S.A. Construction of the concrete base started in late October 1995. Due to some logistical problems experienced by the contractor, the completion of the storage tank is not anticipated until late March 1996.

The tender documents for the construction of the pump house at the Lower Valley site were sent out in early September 1995. This contract was awarded in early November 1995 to the lowest bidder Arch & Godfrey (Cayman) Ltd. Construction had not started by the end of the year. However it is anticipated that the building will be completed by mid-April 1996.

9. WATER AND SEWERAGE OPERATORS

Well drillers

Five well drillers were re-licenced by the Authority in 1995. They were Watler and Hislop Plumbing Services Ltd. (2 licences), Industrial Services and Equipment Ltd. (2 licences), and Webb and Wright Well Drilling Co. (1 licence).

Septage Truckers

Six septage truckers were licenced in 1995. They were Industrial Services and Equipment Ltd., Jim Piercy, Harris Wright, Orville Webb, Waste Management Services and the Department of the Environment.

Plumbers Licencing

The Plumber's Examination Board met on five occasions in 1995 to review applications. Theoretical examinations were held on four occasions during the year to assess applicant's abilities. The following licences were approved by the Board in 1995;

	1995 Licences	Total No. to 31.12.95
Apprentice	9	70
Journeyman	11	105
Master	2	31

Members of the Plumber's Examination Board are;

Chairman:	Mr. Thomas Hill Operations Manager, Water Authority
Members:	Mr. Deepatilaka Gunawardena Deputy Director of DOE
	Mr. Delano Hislop, Master Plumber
	Mr. Arthur Arch Plumbing Inspector, BCU
Secretary:	Mrs. Annette McCoy Administrative Assistant, Water Authority

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

THE WATER AUTHORITY
OF THE CAYMAN ISLANDS

FINANCIAL STATEMENTS
1995

Index

CAYMAN ISLANDS

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

In accordance with the provisions of Section 8(7) of the Water Authority Law, 1982 and Section 44(1) of the Public Finance and Audit Law, 1985, I have audited the financial statements of the Water Authority of the Cayman Islands for the year ended 31 December 1995 as set out on pages 29 to 37. These financial statements are the responsibility of the Water Authority's management. My responsibility is to express an opinion on these financial statements based on my audit.

My examination was made in accordance with generally accepted auditing standards which require that I plan and perform the 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 1995, and of the results of its operations and its cash flows for the year then ended, in accordance with International Accounting Standards and the Water Authority Law, 1982, as amended.

N K Esdaile
Auditor General

8 July 1996

Water Authority of the Cayman Islands
Balance Sheet
As At 31st December 1995
(Stated in Cayman Islands Dollars)

	Notes	1995	1994
CURRENT ASSETS			
Cash On Hand		1,500	1,450
Cash At Bank		245,400	374,796
Cash On Fixed Deposit		1,661,124	693,211
Total Cash & Cash Equivalents		**1,908,024**	**1,069,457**
Accounts Receivable	3	864,846	881,293
Inventory	4	164,793	11,065
Prepaid Expenses		17,781	15,255
Interest Receivable		7,507	-
Total Current Assets		**2,962,951**	**1,977,070**
CURRENT LIABILITIES			
Bank Overdraft	5	24,269	372,051
Accounts Payable		241,884	196,433
Contract Retention Payable		-	64,063
Interest Payable	6	70,721	395,558
Customer Deposits		422,773	363,220
Customer Deposit on Construction Contract		12,000	-
Customer Project Loans	8	75,550	82,691
Current Maturities On Long Term Liabilities	9	2,478,538	1,829,403
Total Current Liabilities		**3,325,735**	**3,303,419**
NET CURRENT LIABILITIES		**(362,784)**	**(1,326,349)**
FIXED ASSETS			
Land-Leasehold		118,250	-
Land-Freehold		565,264	565,264
Water Supply System		16,172,606	16,442,511
Sewerage System		9,523,553	9,769,676
Other Assets		651,770	376,535
Construction in Progress		309,907	21,196
Total Fixed Assets	7	**27,341,350**	**27,175,182**
TOTAL ASSETS LESS NET CURRENT LIABILITIES		**26,978,566**	**25,848,833**
LONG TERM LIABILITIES	9	**(21,987,161)**	**(22,474,008)**
NET ASSETS		**$ 4,991,405**	**$ 3,374,825**
EQUITY REPRESENTED BY:			
Contributed Capital	10	660,122	600,245
Retained Earnings		4,331,283	2,774,580
Total Equity		**$ 4,991,405**	**$ 3,374,825**

On behalf of the Board: 15th June 1996

Hon. W. McKeeva Bush, MLA, JP
Chairman

Frederick W. McTaggart
Director

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

Water Authority of the Cayman Islands
Statement of Income and Expenses
For the Year Ended 31st December, 1995
(Stated in Cayman Islands Dollars)

	Notes	1995	1994
INCOME			
Gross operating revenue	11	8,558,304	7,467,689
Less: Operating expenses		6,400,925	5,597,356
Gross operating surplus for year		**2,157,379**	**1,870,333**
Sundry income	12	438,622	361,276
Operating surplus for year		**2,596,001**	**2,231,609**
OTHER EXPENSES			
Administrative		947,683	868,113
Foreign exchange losses		91,615	303,773
		1,039,298	**1,171,886**
Net surplus for year		**1,556,703**	**1,059,723**
Retained Earnings at Beginning of Year			
Balance as previously stated		2,774,580	2,626,662
Less: Prior year adjustment		-	(661,805)
Restated balance		**2,774,580**	**1,964,857**
Retained Earnings before Contribution to Government		**4,331,283**	**3,024,580**
Contribution to Government		**-**	**(250,000)**
Retained Earnings at End of Year		**$ 4,331,283**	**$ 2,774,580**

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

Water Authority of the Cayman Islands
Statement of Expenses
For the Year Ended 31st December, 1995
(Stated in Cayman Islands Dollars)

	Notes	1995	1994
OPERATING EXPENSES			
Salaries		846,462	769,566
Wages		106,802	93,316
Water Purchase		2,824,520	2,707,638
Repairs and Maintenance		216,975	74,385
Supplies		76,919	72,789
Electricity		126,034	111,247
Depreciation Expense		727,055	685,375
Lease Expense		-	6,250
Loan Interest		1,442,656	1,067,747
Lease Finance Charges		7,732	-
Miscellaneous		25,770	9,043
Total Operating Expenses		**6,400,925**	**5,597,356**
ADMINISTRATIVE EXPENSES			
Salaries		386,413	311,242
Staff Training and Benefits		136,462	186,382
Office and Lab Supplies		39,779	34,469
Licenses and Dues		12,850	9,219
Telephone and Utilities		25,933	18,381
Office Rental		27,912	27,912
Insurance		84,467	90,606
Legal Fees		82,140	16,201 *
Interest on Customer Deposits		-	21,155
Repairs and Maintenance		7,580	2,223
Bad Debt Expenses		49,096	44,953
Depreciation Expense		44,972	37,033
Miscellaneous		50,079	68,337 *
Total Administrative Expenses		**947,683**	**868,113**
TOTAL ADMINISTRATIVE AND OPERATING EXPENSES		**$ 7,348,608**	**$ 6,465,469**

* Restated to conform with current year presentation.
The accompanying notes form an integral part of the financial statements.

Water Authority of the Cayman Islands
Statement of Cash Flows
For the Year Ended 31st December 1995
(Stated in Cayman Islands Dollars)

	1995	1994
CASH FLOWS FROM OPERATING ACTIVITIES		
Net Surplus for year	1,556,703	1,059,723
Adjustments to reconcile net surplus to net cash provided by operating activities.		
Depreciation	772,027	722,408
Foreign Exchange Losses	-	303,773
	2,328,730	2,085,904
Net Change in Non-Cash Working Capital		
Accounts Receivable	16,447	(180,640)
Inventory	(153,728)	(11,065)
Prepaid Expenses	(2,526)	5,356
Interest Receivable	(7,507)	
Accounts Payable	45,451	38,313
Contract Retention Payable	(64,063)	(124,759)
Interest Payable	(324,837)	56,918
Customer Deposits	59,553	(44,542)
Customer Deposits on Construction Contract	12,000	-
Customer Project Loans	(7,141)	82,691
Net Cash Provided By Operating Activities	1,902,379	1,908,176
CASH FLOWS FROM INVESTING ACTIVITIES		
Cost of Fixed Assets Purchased	(485,989)	(409,505)
Construction in Progress	(355,649)	(618,155)
Contributed Capital	59,877	1,305
Net Cash Used by Investing Activities	(781,761)	(1,026,355)
CASH FLOWS FROM FINANCING ACTIVITIES		
Repayment of Long Term Debt	(6,213,436)	(1,588,138)
Proceeds of Long Term Debt	6,279,167	480,666
Overdraft Facilities	(347,782)	372,051
Contribution to Government	-	(250,000)
Net Cash Used By Financing Activities	(282,051)	(985,421)
Net (Decrease)/Increase In Cash & Cash Equivalents During the Year	838,567	(103,600)
Cash & Cash Equivalents at the Beginning of the Year	1,069,457	1,173,057
Cash & Cash Equivalents at End of Year	**$ 1,908,024**	**$ 1,069,457**

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

Water Authority of the Cayman Islands
Notes to the Financial Statements
For the Year Ended 31st December 1995
(Stated in Cayman Islands Dollars)

1. Background Information

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.

2. Significant Accounting Policies

The significant accounting policies adopted by the Water Authority in these financial statements are as follows:

(a) Basis of accounting

The financial statements of the Water Authority are prepared under the historical cost convention and are in accordance with International Accounting Standards.

(b) Depreciation

Fixed assets, with the exception of freehold land, are depreciated on a straight line basis to write off the cost of each asset over its useful life as follows:

Water and Sewerage Systems	15 - 50 Years
Machinery and Equipment	10 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.

(d) Allowance for bad debts

The allowance for bad debts is established through a provision for bad debts charged to expenses. Accounts receivable are written off against the allowance when management believes that the account is un-collectible. The allowance is an amount that management believes will be adequate to cover any bad debts, based on an evaluation of collectibility and prior bad debts expense.

(e) Inventory

Inventory is accounted for on the first-in, first-out basis, and is stated at the lower of cost and net realizable value. In prior years, supply materials was included within Construction in Progress. This change in accounting policy has been applied prospectively; the prior year figures have not been restated as the amounts involved are not material.

(f) Cash & cash equivalents

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

3. Accounts Receivable

	1995	1994
Accounts Receivable	946,343	927,358
Provision for Bad Debts	(81,497)	(46,065)
	$864,846	$881,293

4. Inventories

	1995	1994
Water Supply Materials	160,913	-
Office Supplies	3,880	11,065
	$164,793	$11,065

5. Bank Overdraft

The Cayman Islands Government provides a guarantee for an overdraft facility at one of the Authority's local bankers. At the year end an amount of $6,526 was secured by such a guarantee.

6. Interest Payable

	1995	1994
Long Term Liabilities	-	311,538
Customer Deposits	70,721	84,020
	$70,721	$395,558

The Water Authority Regulations, 1988 specifies 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.

7. Fixed Assets

Cost	Leasehold Land	Freehold Land	Water Supply	Sewerage	Other Assets	Construction In Progress	Total
At 31 December 1994	-	565,264	17,957,352	11,169,122	789,304	21,196	30,502,238
Additions	118,250	-	28,621	3,213	432,462	367,239	949,785
Transfers	-	-	78,528	-		(78,528)	-
At 31 December 1995	118,250	565,264	18,064,501	11,172,335	1,221,766	309,907	31,452,023
Accumulated Depreciation							
At 31 December 1994	-	-	1,514,841	1,399,446	412,769	-	3,327,056
Charge for Year	-	-	377,054	249,336	145,637	-	772,027
Capitalized during construction	-	-	-	-	11,590	-	11,590
At 31 December 1995	-	-	1,891,895	1,648,782	569,996	-	4,110,673
Net Book Value							
At 31 December 1995	$ 118,250	$ 565,264	$ 16,172,606	$ 9,523,553	$ 651,770	$ 309,907	$ 27,341,350
At 31 December 1994	$ -	$ 565,264	$ 16,442,511	$ 9,769,676	$ 376,535	$ 21,196	$ 27,175,182

The water supply system and sewerage system includes the cost of electrical and mechanical equipment, and machinery.

Other assets includes the costs of tools and equipment, office furniture and equipment, and vehicles.

7. Fixed Assets (cont.)

Construction-in-Progress represents project expenses incurred in connection with the construction of a desalinated water reservoir and a pumping station at Lower Valley.

In 1996 the Finance Lease Agreement under which Leasehold Land was acquired has been terminated by paying off the remaining lease commitment, which amounted to $170,585. This land will be shown as Freehold Land in the 1996 financial statements (see Note 16).

8. Customer Project Loans

Customer project loans represent balances outstanding at the year-end 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. In previous years these amounts were included within customer deposit balances.

9. Long Term Liabilities

Loans		1995	1994
a) CIBC Bank and Trust Co. Cayman Ltd.			
Water Supply and Sewerage		16,832,024	11,291,349
b) Caribbean Development Bank			
Sewerage		-	5,050,873
Water Supply		1,775,632	1,930,208
c) Cayman Islands Government			
Grand Cayman		4,629,455	4,822,349
Cayman Brac		982,800	1,053,000
Medical Expenses		91,632	91,632
d) Capital Contribution Loan		57,600	64,000
e) Obligations under Finance Lease			
Lower Valley Land Lease			
Future Lease Obligations	176,467		-
Less: Deferred Lease Finance Charges	(79,911)	96,556	-
Total long term liabilites		24,465,699	24,303,411
Less current maturities		(2,478,538)	(1,829,403)
		$ 21,987,161	**$ 22,474,008**

a) 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 a interest rate of 1% over London Interbank Offered Rate (LIBOR) and is repayable, on a monthly basis, over a ten year period commencing on the 1st of March 1995. An amount of $91,615 was incurred as a realised foreign exchange loss on final settlement of the Caribbean Development Bank loan. 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.

9. Long Term Liabilities (cont.)

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

The CDB loans are in the name of the Cayman Islands Government and are on-lent to the Water Authority. The Water Authority is responsible for all interest and principal repayments on these loans.

c) The Cayman Islands Government loan for Grand Cayman is interest free and is being repaid in quarterly installments of CI$48,223 each, over a period of twenty five years commencing the 1st of April 1995. The Cayman Islands Government loan for Cayman Brac attracts interest at a fixed rate of 8% per annum. This loan is to being repaid in quarterly installments of $17,550, over a period of 15 years commencing the 1st of April 1995.

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 installments of CI$2,500 each. No repayments were made in 1995.

d) 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 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 installments of $6,400 each. This loan is interest free and the first installment was made on the 1st of June 1995.

10. Contributed Capital

	1995	1994
Balance at beginning of year	600,245	598,940
Add: Received during year	59,877	95,573
	660,122	694,513
Less: Amount not recovered	-	(30,268)
Transfer to Capital Contribution loan (Note 9)	-	(64,000)
	$660,122	$600,245

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

11. Gross Operating Revenue

Gross operating revenue comprises the amount of water sales, sewerage fees, septage disposal fees, connections/disconnection charges, and meter rental charges billed to customers during the year.

12. Sundry Income

Sundry income consists of royalties from water production and supply concessionaires, profit on agency work, interest, statutory licence fees, and miscellaneous income.

13. Other Operating Expenses

During the year, the Cayman Islands Government provided at no charge to the Water Authority a limited amount of personnel services. In addition, the Water Authority provided at no charge to the Cayman Islands Government the availability and use of water for fire fighting, disposal of septage collected by the Department of the Environment, free sewerage service to a number of indigent persons in the

13. Other Operating Expenses (cont.)

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.

14. Pension

In August 1993, the Governor approved the inclusion of the Water Authority's staff as being in employment under the term "Public Service" for the provision of The Pension Law. At that time all employees who had been "seconded" from the Public Service Commission resigned and were employed directly by the Water Authority. The pension contributions for those employees and subsequent eligible Caymanian employees hired by the Water Authority were paid directly to the Cayman Islands Government, who will in turn, bear all and any future pension liability due to these staff members.

15. Commitments

Commitments at December 31,1995 are as follows:

I Authorised and Contracted	Cost Incurred to 31/12/95	Estimated Cost to Completion	Total Cost
a) West Bay Beach Sewerage manhole rehabilitation with Performance Pipelining, Inc.	Nil	192,562	192,562
b) Purchase of water production plant in Cayman Brac with Ocean Conversion (Cayman) Ltd.	Nil	180,000	180,000
c) Supply and erection of bolted steel tank for Lower Valley Project.	187,972	88,220	276,192
d) Construction of pumping station for Lower Valley Project.	Nil	237,529	237,529
	$187,972	**$698,311**	**$886,283**

II Authorised but not Contracted	Cost Incurred to 31/12/95	Estimated Cost to Completion	Total Cost
a) Employee break room at Red Gate Road compound.	Nil	70,000	70,000
b) Extension of water supply system through Breakers.	Nil	387,000	387,000
	Nil	**$457,000**	**$457,000**

16. Leases

A plot of land was leased in Lower Valley by the Cayman Islands Government up to the 28th of February 1995 on which had been situated a groundwater reservoir and treatment works owned and operated by the Water Authority. The groundwater facility was closed permanently on the 31st of December 1994 and the site was designated for expansion of the public water supply system. The lease was terminated in August 1995 and replaced by a 14 year lease-purchase agreement between the Water Authority and the owner of the land. In early 1996 the total lease commitment was paid in full to the vendor and the Authority has taken title of the 2.75 acre land parcel (see Note 7 and 9).

The Water Authority leases office space from the Cayman Islands Government for its administrative office at a cost of $2,326 per month on a month to month basis.