

Portfolio of Communications and Works.

THE WATER AUTHORITY.

1983 ANNUAL REPORT.

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January 1984.

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1. GENERAL

The Water Authority Law was Gazetted in March following which the Water Authority was formed and in May a Management Board was appointed under the Chairmanship of the Honourable Member for Communications & Works.

During 1983 five full and one extra-ordinary Authority meetings were held.

The Water and Sewerage Project office became the Department of The Water Authority and the Project Coordinator was appointed Director and secretary to the Authority.

Much of the Authority's first part year was devoted to planning and establishing administrative and operational procedures to accommodate the requirements of the Authority. In addition to planning, the Authority also carried out its operational functions.

2. ADMINISTRATION

2.1 Staffing.

The staff complement is as follows:-

Director	-	MB
Senior Project Engineer	-	M17-11
Senior Clerical Officer	-	M50-36
Laboratory Technician	-	M42-31
Draftsman	-	M50-36
Graduate Research Assistant		
Hydrogeologist	-	M50-36

1 Plumber	skilled group	D2
1 Labourer	unskilled group	C2

Two United Nations Associate Experts

1 Water Supply Engineer	-	No cost
1 Sewerage Engineer		

During the year the post of draftsman has been filled three times. The present encumberment shows considerable promise and it is hoped he will persevere through a training programme.

One of the United Nations Associate Experts left at the end of his two year contract and the United Nations are actively seeking a replacement.

The administrative and secretarial duties of the clerical officer are now greater than can be expected to be performed by one person. The type of administrative duties have also changed to such an extent that an executive officer would be more appropriate. In 1984, the Authority will make representations to increase its staff complement by one executive officer. It is also proposed in 1984 to increase the direct labour unit, by one operator and one supervisor.

2.2 Accommodation.

The Authority continued to lease its office accommodation. At present every effort is made to utilize all available space, but it is apparent that more space is required and the advent of further functions will make more space essential.

To alleviate some problems, a large store and a separate workshop were constructed on the reservoir site at Lower Valley.

2.3 Development Control and Licencing.

Arrangements have been made with the Planning Department and the Chief Environmental Health Officer to begin inspecting in early 1984, plumbing plans and plumbing work. The system is to be introduced gradually, the first step being to educate designers to prepare the necessary plans to include the details which the Authority requires. Full scale plumbing inspection will commence when the regulations have been accepted and the Authority has power to charge for this service. All the necessary administrative arrangements have been made to accommodate this procedure.

Plumbers licencing was the subject of a small sub-committee comprising the major plumbers on the island. It reported to the Authority that such a system was very necessary and would receive support from the major elements involved in the profession.

Commercial groundwater abstraction licencing commenced with the registering of all existing groundwater rights. Licencing cannot take place until the regulations are approved.

Administrative procedures were established to accommodate all the licencing required to be carried out by the Authority.

2.4 Legislation.

The Law was Gazetted in May.

Regulations were drafted and presented to Council, but have not yet been promulgated.

The draft submitted to Council was withdrawn late in the year in order to benefit from the United Nations legislation expert advice.

The UN expert visited in December and redrafted the regulations. It is expected that the new draft will be submitted in 1984.

Some major functions of the Authority cannot take place until the regulations are promulgated.

2.5 Finance.

Expenditure:

1983 Recurrent Allocation	-	226,073.00
1983 Recurrent Expenditure	-	187,275.77
1983 Capital Allocation	-	136,000.00
+ CIDA grant of		<u>8,320.00</u>
TOTAL =		144,320.00
1983 Capital Expenditure	-	144,138.81

See breakdown sheet for further details.

Revenue:

1983 revenue was minimal as water sales were only for a period of one month and for that time the major truckers were not using the facility.

Total revenue - CI\$4,175.05

See breakdown for further details.

Water Sales:

At year end all seven trucking companies had registered to use the Lower Valley facility.

Each company is required to pay CI\$25.00 per month to hire the meter and \$5.50 for each 1000 gallons used.

A simple economic analysis shows the following:-

The total cost of the scheme was CI\$156,000.

15% being electrical and mechanical

85% being civil works

Expecting to amortize capital over 10 years and 30 years for electrical and mechanical and civil works respectively at 10% interest, then monies required annually to service, the amortization are:-

Electrical and Mechanical	-	3,710.76
Civil Works	-	13,963.92

In addition annual:-

Operational Costs	-	20,000.00
Admin. Costs	-	15,000.00
Total annual cost	-	52,670.00

To meet this expenditure approximately - 9,600,000 gallons of water would require to be sold, approximately one quarter of the designed capacity.

This example is a simplification as the operational costs will be directly proportional to the water consumed, however the \$20,000 is used as an average figure.

3. WATER SUPPLY DEVELOPMENT

Construction on the Lower Valley wellfield and reservoir commenced in April and was completed in October. The works were commissioned in November. Water sales began during the latter part of November. The scheme provides 100,000 gallons per day of treated potable water with a storage capacity of 200,000 gallons. 32 pumping stations and wells were constructed. Half horsepower domestic constant duty pumps were used and flow restricted to 2 gallons/minute. All wells were metered as were the two main pipelines entering the reservoir, provision is made for water aeration and chlorination before storage. Seven metered standpipes were provided for the truckers, each trucker having an individual meter. The system being completely automatic requiring no supervision.

Final designs were completed for the East End well field and district distribution construction being phased for 1984.

Final designs for a distribution to Bodden Town and area supplied from the Lower Valley lens were completed, construction being phased for 1984.

A small wellfield and supply development for Watlers Road George Town was designed. The supply being of non-potable quality but treated to render it free of harmful bacteria. The project was commissioned by the Portfolio of Health Education and Social Services as part of their housing and sanitation improvement programme.

4. SEWERAGE DEVELOPMENT

Government accepted that the sewage treatment and disposal problems along the West Bay Road should be resolved. Provisional approval was granted for a scheme to sewer the main resort area of West Bay Beach and a treatment works to service this area and the second phase of the sewerage, George Town.

Problems with approval of a site for the sewage treatment works caused delay with final designs. Towards the end of the year there was provisional agreement to the purchase of land adjacent to the garbage dump, for these works.

It is anticipated that final designs, and project preparation will take place in 1984. It is hoped that funding will be arranged with the Caribbean Development Bank and construction commence towards the end of 1984.

A small sewerage system for Watlers Road was preliminarily designed. This project being commissioned by the Portfolio of Health Education and Social Services, as part of their housing and sanitation improvement programme. Considering the imminent implementation of the West Bay Road Sewerage it is recommended that the sewerage of Watlers Road be delayed and incorporated in the main works.

5. GROUNDWATER

In cooperation with the public Health Department a major investigation was carried out to determine the quality of groundwater being used for domestic purposes in the George Town area. A confidential report was published and submitted to Council. The Authority used its own laboratory facilities for chemical analysis and the Public Health laboratory analysed for bacteria contamination.

A similar exercise was carried out for the whole of Cayman Brac, by two technicians based there for a two week period. Again a confidential report was published and submitted to Council. It is intended to continue both these monitoring programmes on a bi-annual basis.

An investigation into the affects of artificial waterways on the stability of freshwater lenses was initiated. Two independent preliminary studies were carried out, both showed that under certain circumstances considerably problems could arise. It is proposed that a further, more detailed investigation be carried out in 1984, utilizing the services of one of the consultants and the Graduate Research Assistant hydrogeologist. It is intended that this investigation be conclusive and provide Government with the necessary information to make a policy decision.

Routine monitoring of all freshwater resources continued throughout the year concentrating on the Lower Valley lens. Several new rainfall monitoring stations were installed bringing the total number of stations to ten. All hydrological data is collected on a monthly basis and analysed.

The hydrogeologist designed a more intensive monitoring programme for the Lower Valley lens which will be initiated early in 1984.

All domestic wells in the Lower Valley area were monitored to obtain a baseline prior to the commissioning of the Lower Valley wellfield.

6. LABORATORY

The laboratory was upgraded throughout the year and a full time laboratory assistant was employed.

The laboratory is now capable of testing for most important chemical pollutants, total and fecal coliform bacteria. Importantly the facility now exists to cross-check the accuracy of measurement techniques.

Throughout the latter part of the year 333 total analysis were performed, mainly for Government purposes.

The public was encouraged to utilize the laboratory facility. This is seen as a method of obtaining revenue in addition to educating the public of the necessity for wholesome water supplies and satisfactory disposal of sewage.

The laboratory also rendered technical assistance to private and Government development.

A regular monitoring system for the water supplied at Lower Valley has been established. Total analysis is performed bi-weekly.

A comprehensive survey to determine the likely salinity of effluent derived from the West Bay Beach properties was completed. The results showed that such an effluent was acceptable for irrigation purposes. There being a probable market for such a product at the Golf Course now under construction.

A coastal water quality monitoring programme was initiated. The purpose being to obtain a baseline of chemical and bacterial pollution. The programme will continue on a six monthly basis. To date no significant pollution has been evidenced, although there have been indications of fecal coliform bacteria along parts of the West Bay Beach and Hog Sty Bay.

B. UNITED NATIONS

The United Nations assistance continued through the year. The Authority being assisted by their Smaller Islands Water Resources and Management Project, 1983 being the last year of this project being funded from the Country's I.P.F. A tripartite review was held in April where provisional agreement was reached to continue the project on a cost sharing basis.

The Authority was visited twice by the United Nations' project manager Dr. Peter Hadwen and once by the desk officer in Jamaica Mrs. Annette Ebanks and the senior advisor from New York Mr. Uri Golani. Various equipment was purchased, mainly laboratory equipment, bringing the total United Nations contribution to this section to US\$18,665. Arrangements were also made to purchase a second Apple Computer, to be used for the financial and administrative section and also a percussion drilling rig for which there is a great need, especially when the water resources study in Cayman Brac commences.

The United Nations arranged and funded the services of Mr. Boris Bermes, who was one of the consultants who carried out the canalization study, and Mr. Stefano Burchi, who redrafted the regulations.

The United Nations also provided at no cost the full time services of two Associate Experts, Mr. Leonardus de Waal and Mr. Jarmo Hukka, both engineers. Mr. Hukka left in December at the end of his contract. The United Nations will be providing a replacement.

An Associate Expert hydrochemist was provided on a short term consultancy to assist our local laboratory technician to establish laboratory procedures. Since that time our technician has produced a comprehensive water laboratory manual that is likely to be used throughout the Caribbean.

The Authority was visited by Dr. Washington PAHO Jamaica, who appraised the total operation of the Authority and submitted a report.

The Honourable Financial Secretary and the Director were invited to a conference arranged jointly by PAHO and CDB held in Jamaica to discuss funding problems and project preparation. Both attended.

A Caribbean Development Bank project identification team visited to discuss, funding and project preparation.

SUB-HEAD	AMOUNT VOTED	EXPENDITURE	BALANCE
1 Personal Emoluments (C&W)	\$ 80,648	\$ 73,925.77	\$ 6,722.23
Wages (C&W)	15,000	11,249.34	3,750.66
2 Travelling & Subsistence (Travel on Duty)	\$ 3,000	\$ 2,175.45	\$ 824.55
3 Supplies & Materials (Water Treatment Chemicals)	11,625*	5,703.61	5,921.39
3 " " " (Office Supplies)	3,500	3,497.88	2.12
3 " " " (Fuel)	5,000	2,441.50	2,558.50
3 " " " (Construction Materials)	15,000	14,953.48	46.52
4 Rental of Property (Feb. 1983 - Jan. 1984)	14,400	14,400.00	-
6 Public Utilities	16,650**	7,158.57	9,491.43
7 Other Operating & Mtce. Services (Scientific Services)	1,750**	1,272.51	477.49
7 " " " (Equipment Maintenance)	6,500**	2,419.99	4,080.01
7 " " " (Freight)	2,500	2,476.94	23.06
7 " " " (Drilling Investigations etc.)	30,000*	10,580.63	19,419.37
8 Grants & Contributions or Subscriptions (Training of Personnel)	2,500**	158.25	2,341.75
12 Interdepartmental Purchases & Services (Vehicle Hireage)	30,000	19,889.85	10,110.15
14 Equipment	15,000	14,972.00	28.00
40/41 Fresh Water Lenses (LVWFD) (136,000 + 8,320 Can. Aid)	144,320	144,138.81	181.19

* Three quarters released

* Two quarters released

REVENUE

	<u>AMOUNT COLLECTED</u>	<u>AMOUNT NOT COLLECTED</u>	<u>TOTAL AMOUNT DUE</u>
Water Testing & Technical Services	244.00	292.00	536.00
Lower Valley Wellfield Dev. Pamphlet (Advertisements)	950.00	-	950.00
Sale of Water	1,873.79	815.26	2,689.05
	<u>\$ 3,067.79</u>	<u>\$ 1,107.26</u>	<u>\$ 4,175.05</u>