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Office of Utilities Regulation

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# Dynamic Environmental Management Limited

**Water and Sewerage Rates**

## Determination Notice

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**OFFICE OF UTILITIES REGULATION**

January 05, 2012

## DOCUMENT TITLE AND APPROVAL PAGE

**DOCUMENT NUMBER: WAS2011003\_DET003**

### **1. DOCUMENT TITLE: Dynamic Environmental Management Ltd (DEML) Review of Rates**

### **2. PURPOSE OF DOCUMENT**

This document contains the main decisions of the Office of Utilities Regulation (OUR) regarding the application by DEML for rate adjustments concerning four housing developments the company provides with water and sewerage services.

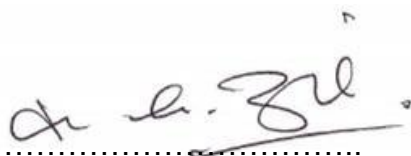
### **3. RECORD OF REVISIONS**

Revision Number	Description	Date

### **APPROVAL**

This document is approved by the Office of Utilities Regulation and the Decisions therein become effective **January 9, 2012**.

**On behalf of the Office:**



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Ahmad Zia Mian  
**Director General**

**January 5, 2012**

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## Chapter 1: Executive Summary

- 1.1 Dynamic Environmental Management Ltd (DEML) submitted a rate application to the Office of Utilities Regulation (OUR) on June 6, 2011 for all four housing developments to which it provides water and sewerage services. Accompanying its application were audited financial statements for the company as well as a business plan outlining the progress of the company over 2006 to 2009, with the major works it is proposing to undertake in the near future.
- 1.2 In its application the company proposed a two part tariff to recover its operating expenses and its capital investment along with a Price Adjustment Mechanism (PAM) and a K- factor. Table 1 outlines the rates proposed.

**Table 1: Summary of Proposed Rates**

	Caribbean Estates	Morris Meadows	Vineyards Estates	Portmore Country Club
<b>Service charge</b>	\$478.62	\$478.62	\$478.62	\$478.62
<b>Volumetric Water Rate</b>	\$110.50	\$110.93	\$118.78	\$110.57
<b>Reconnection Fee</b>	\$3000.00	\$3000.00	\$3000.00	\$3000.00

Sewerage service is proposed to be billed at 100% of water rates.

- 1.3 As part of the rate application review, the OUR's policy is to hold public consultations to obtain the views of interested stakeholders and residents in the various housing developments. Two public hearings were held with the residents of the different housing developments who were given the opportunity to write to the OUR on issues that will affect DEML's tariff process.
- 1.4 The Office in arriving at its decisions has reviewed DEML's proposal, and has also taken into consideration the views expressed by customers at the public hearings.
- 1.5 Several adjustments were made to DEML's proposed capital and operating costs and it was determined that the relevant regulatory capital cost invested by DEML is \$13.20M and the assessed projected operating cost is \$61.79<sup>1</sup>M.

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<sup>1</sup> The figure for operating cost inclusive of depreciation.

- 1.6 It was decided that DEML customer's can benefit from economies of scale by allowing the company a unified rate structure. This is more advantageous as some costs are spread amongst developments.
- 1.7 The Office also determined that the service charge is \$478.62, and the flat volumetric rate to be applied to all housing developments is \$62.47 per 1000 litres. The reconnection fee is calculated at \$2,954.
- 1.8 A monthly PAM will be applied to the rates charged by DEML for all four housing developments.
- 1.9 The K-factor variable proposed by DEML was disallowed.
- 1.10 The OUR has developed quality of service standards to regulate the general service delivered by the company. These standards are categorized as either overall or guaranteed standards. The overall standards are general in nature and the performance of the company against these standards is taken into consideration whenever the rates are reviewed.

On the other hand, the guaranteed standards address specific areas of service delivery in the relationship between the company and its customers. If any of these standards are breached, a compensatory payment of four (4) times the service charge must be automatically credited to the customer's account by DEML within 45 days. Breaches will attract multiple payments up to four (4) periods. For the avoidance of doubt, in instances where DEML did not automatically credit the customer's account within the specified period, this amounts to an additional breach. The customer may appeal to the OUR in instances where the requisite compensation payment is not honoured by the company.

- 1.11 The rates as herein determined by the Office become effective **January 09, 2012** and will remain in effect for a period of twenty four months or such longer period as the Office may determine.

DEML must submit its latest audited financial statements prior to the next review of the rates along with quarterly reports on its operations as specified by the OUR.

## Chapter 2: Introduction

- 2.0 The government's water sector policy recognizes the importance of the involvement of private investors in the sector in helping to achieve the goal of increased access to potable water and ensuring that all major towns are provided with adequate sewerage services.
- 2.1 DEML is a limited liability company incorporated in April 2005. Currently, DEML has received licences from the Minister for the treatment and distribution of domestic water supply as well as to collect and treat sewage in accordance with the National Environment and Planning Agency (NEPA) and World Health Organization (WHO) standards. DEML provides these services to the Vineyards Estate, Caribbean Estates, Portmore Country Club and Morris Meadows housing developments.
- 2.2 DEML provides potable water and sewerage services to 2,180 customers in all four housing developments as listed above. Potable water services are provided to customers via in-house facilities. The sewerage treatment systems consist of lift stations equipped with submersible pumps, standby generators, treatment ponds and discharge points.
- 2.3 DEML is required, under the licence and pursuant to the Office of Utilities Regulation Act, to apply to the OUR for the rates to be charged for providing its services. DEML submitted its application on June 6<sup>th</sup> 2011 requesting an increase in the rates for the four schemes to which it supplies water and sewerage services.

### 2.4 Description of Plants (Water)

The source of water for the Vineyards Estate development is from a well located on the site. It has been suggested that this has been handed over to DEML. In the case of Portmore Country Club the Water Resources Authority has stated that since the well is located in a common area owned by residents of Portmore Country Club Home Owners Association, they would have the right to the water and would be the ones entitled to the licence. However, communication with DEML suggests that the matter is currently being assessed.

As it relates to this issue, the OUR notes that the tariff determination process concerns the extraction and supply of water without prejudice to its source and the rights of owners.

Caribbean Estates and Morris Meadows Housing Developments water sources are from the Cookson Number 4 Well and a well located on the site of Morris

Meadows. DEML purchases water from the National Irrigation Commission and NF Barnes Construction Company Limited, the owners of the wells.

The extracted water is transmitted through 6 inch lines from the wells to the respective sites. Water is then treated via gas chlorination systems and stored in steel bolted water tanks and then distributed to the residents via duplex pump pressure systems maintaining 40-45 psi at source. The distribution trunk lines are SCH 40 PVC with laterals of 1/2 inch.

## **2.5 Description of Plants (Sewerage)**

The Vineyards and Morris Meadows developments have their own wastewater treatment plants, while the Portmore Country Club sewage terminates into the Caribbean Estates Wastewater Treatment Plant. All sewerage treatment plants are located on the respective housing developments except the Caribbean Estates treatment plant which is located in Greater Portmore.

Sewerage is collected from individual houses through a 100mm lateral and connected to a 200mm sewer main along the roads. The sewage flows by gravity through a network of manholes and is discharged through 300mm trunk mains to the various lift stations.

## Chapter 3: DEML's Proposal

DEML outlined that its rate structure approved by the OUR for Vineyards Estate, Caribbean Estates and Portmore Country Club has no recovery factor to offset increases in input costs such as electricity rates and declining foreign exchange rates. Thus, these costs have to be absorbed by the company negatively affecting its bottom line. It also indicated that the rate of the water purchase from NIC from the Cookson No.4 Well was increased by 100% in 2010. The company further indicated that a number of capital intensive works will be carried out to assist with the reduction of NRW that is currently being experienced.

### 3.1 Customer base

DEML provides utility services to 2,180 water and 2131 sewerage customers. The breakout is as follows:

**Table 2: Number of Customers by Categories and Housing Development**

Name of Development	Water Accounts	Sewerage Accounts
<b>Vineyards Estates</b>	426	419
<b>Caribbean Estates</b>	980	980
<b>Portmore Country Club</b>	274	274
<b>Morris Meadows</b>	500	458

### 3.2 Rate Proposal

The company proposed a rate structure consisting of a volumetric water rate, a service charge, a PAM and a K-factor variable. The service charge proposed is \$478.62 and is independent of consumption. DEML stated that it is reflective of the cost incurred to provide meters and prepare and deliver bills.

The company indicated that sewerage charges will be billed at 100% of water charges. Table three outlines the service charge and volumetric rate proposed by DEML.

**Table 3: DEML Rate Proposal**

Rate Proposal	Service Charge	Volumetric rate	
		Water rate/1000litres	Sewerage rate/1000litres
<b>Caribbean Estates</b>	\$478.62	\$110.50	\$110.50
<b>Morris Meadows</b>	\$478.62	\$110.93	\$110.93
<b>Portmore Country Club</b>	\$478.62	\$110.57	\$110.57
<b>Vineyards Estates</b>	\$478.62	\$118.78	\$118.78



3.2.1 On August 12, 2011 the company made another proposal for consideration to be given for the granting of a universal rate for all schemes using the data provided in its application.

### 3.2.2 Price Adjustment Mechanism (PAM)

The PAM is an indexation mechanism that is applied to the base rate and charges for water and sewerage services to preserve the real revenue of a company. The PAM captures the movement of the consumer price index, foreign exchange (J\$/US\$) and kilowatt hour charge (kWh). The company proposed that, similar to the Morris Meadows scheme, a PAM be applied to the rates of all their other schemes in order to preserve the sustainability of the company.

### 3.2.3 K-Factor

DEML proposes that a K-factor be established to fund capital projects which will not increase its revenue base. The company indicated that it intends to spend approximately \$22.39M on capital projects that will not result in any revenue increases.

### 3.2.4 Other proposed rates and charges

A reconnection fee of \$3,000 is proposed by the company.

## 3.3 Operating Expenses

DEML projected that its operating expenses across all the housing developments will be \$72.58M in its first year of operation. Table 4 summarizes the list of operating expenses proposed by DEML for each housing development.

**Table 4: List of Operating Expenses - DEML**

Operating Expenses	Vineyards Estates	Caribbean Estates	Morris Meadows	Portmore Country Club	Total
Admin-Costs	3,755,552.00	7,411,912.00	3,953,322.00	2,726,675.00	17,847,461.00
Sales & marketing cost	359,000.00	312,240.00	362,000.00	86,760.00	1,120,000.00
Prop.& Utility	686,998.00	1,294,084.00	641,719.00	401,698.00	3,024,499.00
Operations Costs	1,946,543.00	4,100,581.00	2,601,455.00	2,089,516.00	10,738,095.00
Banking & Other	522,354.00	1,353,830.00	546,482.00	482,141.00	2,904,807.00
Cost of Sales	7,599,164.00	\$18,772,638	\$7,294,852	\$3,641,037.00	37,307,691
<b>Total</b>	<b>\$14,869,611.00</b>	<b>\$33,245,285.00</b>	<b>\$15,399,830.00</b>	<b>\$9,427,827.00</b>	<b>\$72,583,553.00</b>

### 3.3.1 Administrative Costs

These costs include salaries and statutory payments, management fees, health insurance, uniforms and training. The Vineyards Estates, Caribbean Estates, Morris Meadows and Portmore Country Club will be contributing \$3,755,552, \$7,411,912, \$3,953,322, and \$2,726,675, respectively with the total costs being \$17,847,461.

### **3.3.2 Sales and Marketing Costs**

The total cost for this category which was included in DEML's tariff submission is \$1,120,000. The figure includes costs associated with public relations, advertising, brochures etc. The Vineyards Estates, Caribbean Estates, Morris Meadows and Portmore Country Club contribute \$359,000, \$312,240, \$362,000, and \$86,760 respectively.

### **3.3.3 Property and Utility Costs**

The largest cost items in this category are rent and property costs. DEML stated that costs such as utility expenses, telephone, stationery and supplies and maintenance falls into this cost category. The Vineyards Estates, Caribbean Estates, Morris Meadows and Portmore Country Club contribute \$686,998, \$1,294,084, \$641,719, and \$401,698, respectively to these costs. The total of these costs is \$3,024,499.

### **3.3.4 Operations Costs**

A provision of \$10,738,095 is made for total operations and maintenance costs. This cost covers maintenance and repairs of the water and sewerage facilities, vehicle and travel costs, supplies, as well as conducting regular testing of the water and sewerage quality to ensure that maximum standards are met. The Vineyards Estates, Caribbean Estates, Morris Meadows and Portmore Country Club contribute \$1,946,543, \$4,100,581, \$2,601,455 and \$2,089,516 respectively towards this cost.

### **3.3.5 Banking and Other**

There is a provision of \$2.90M for this cost item. This is attributed to insurance expense, audit and legal fees as well as bank charges. The Vineyards Estates, Caribbean Estates, Morris Meadows and Portmore Country Club contribute \$522,354, \$1,353,830, \$546,482, and \$482,141, respectively to this activity.

### **3.3.6 Cost of Sales**

DEML indicated that this cost category comprises production wages, electricity costs, costs associated with the purchase of water and chlorine costs. The total amount proposed for this cost item as stated in DEML's costing sheet is \$37.31M

## 3.4 Capital Cost

### 3.4.1 Capital Investment

DEML has stated that a number of capital projects are slated to be completed during the tariff review period. These projects include the construction of changing and bathroom facilities at Vineyards Estate, Morris Meadows and Caribbean Estates sewerage ponds as required by the Ministry of Health. The company will also carry out retiling and perimeter fencing at the Caribbean Estates sewerage ponds, relining of the Vineyards Estate sewerage ponds and vehicle procurement. It further stated that standby generators will be procured for the Vineyards Estate well site and the Cookson 4 well site at Bernard Lodge operated by NIC. It says it plans to purchase replacement water meters for all housing developments and that all water meters at the Vineyard Estate Phase 1 will be replaced. Table 5 below gives a detailed list of capital expenditure projects that the company proposes to undertake.

**Table 5: Schedule of Capital works to be undertaken by DEML**

<i>Projects</i>	<b>Vineyards Estates</b>	<b>Caribbean Estates</b>	<b>Morris Meadows</b>	<b>Portmore Country Club</b>	<b>Total</b>
Sewage Pond Re-Tiling		1,572,000	-	428,000	2,000,000
Re-Lining of Sewage Pond	4,760,330		-	-	4,760,330
Installation of changing room	233,968	567,936	233,968	-	1,035,872
Perimeter Fencing	-	1,504,404	-	409,596	1,914,000
Generators	1,741,520	1,491,520	-	-	3,233,040
Changing of the meters	600,000	-	-	-	600,000
Pick-up	285,000	675,000	330,000	210,000	1,500,000
Water Truck	950,000	2,250,000	1,100,000	700,000	5,000,000
Motor Car	190,000	450,000	220,000	140,000	1,000,000
Office Furniture	26,431	62,598	30,604	19,476	139,109
UG Valve Lock - Off	-	940,800	-	-	940,800
Computer	11,400	27,000	13,200	8,400	60,000
Security Camera	39,531	93,627	45,773	29,128	208,059
<b>Total</b>	<b>8,838,180</b>	<b>9,634,885</b>	<b>1,973,545</b>	<b>1,944,600</b>	<b>22,391,210</b>

### 3.4.2 Return on Investment

DEML submitted that the rate of return should be calculated based on the required rate of return which allows the opportunity to earn a return sufficient to provide for the requirements of the consumers and acquire new investments at competitive costs. The company proposed a rate of return of 8% on its total investment for all four schemes.

### **3.5 Public Consultation**

As part of its rate application procedure, the OUR consulted with the public and residents in the affected communities to get comments on the rate submission. The OUR held such hearings on September 4 and Sept 11, 2011. The Office also allowed all customers of DEML to voice their concerns and provide additional information to the OUR by way of written communication on or before September 30, 2011.

## **Chapter 4: Public Consultation for DEML**

As part of the licensing and tariff review process for DEML, the OUR convened public consultations on September 4 and 11, 2011 at the Portmore Missionary Church Hall and FiWi Place in Old Harbour respectively. DEML presented a summary of its tariff application to its customers located in Caribbean Estates, Portmore Country Club (PCC), The Vineyards and Morris Meadows. Several representatives from DEML and the OUR were present to hear the views of the residents. A summary of the concerns communicated are outlined below:

#### **4.1 DEML Operations**

- The residents expressed concern regarding DEML's failure to advice of service disruptions within the areas. It was recommended that a twenty four hour (24hr) notification be given prior to disruption of services.
- There are no contact numbers available to report emergencies.
- The residents expressed concern regarding the expertise and experience of the operators in private water distribution. They are of the view that persons employed in areas such as testing water quality are not properly trained to efficiently execute their duties.
- They expressed concern about DEML's ability to deliver service that is efficient and comparable to other utility providers.
- Residents complained that DEML takes a very long time to repair leaks and that drains are in a deplorable condition. Residents from Vineyard Citizens Association recommended that leaks should be repaired within twenty four hours (24hrs) of notification.

#### **4.2 Security Deposits**

- Residents stated that based on the DEML Determination Notice 2007, 'good paying' customers ought to receive a credit of the total deposit which will be applied to their accounts, once the criteria stipulated in the document have been met. They advised that they have not been informed that refunds have been credited to accounts of these 'good paying' customers. They also expressed concern as to whether DEML will inform those customers who have not met the criteria.

#### **4.3 Metering Facilities**

- Residents of PCC expressed doubt that the meters are accurately calibrated. They queried whether meters installed by DEML are tested by the Bureau of Standards Jamaica (BSJ) prior to installation.

**Response:** DEML advised that the meters are tested and certified by the BSJ prior to installation.

- Residents raised concerns as to what they described as the risky placement of meters which they say increases the likelihood of damage. It was highlighted that meters are usually installed inches away from drive-ways and that complaints regarding this issue have not been addressed by DEML.

#### **4.4 Payment Options**

- Residents expressed concern that it is costly and difficult to travel to a Jamaica National Building Society (JNBS) location to make payments to the Company. They stated that JNBS has recently increased its rates and expressed the view that for years DEML has promised that it will work at increasing the number of payment agencies available to accept DEML payments. They requested that DEML engage the services of payment agencies such as Bill Express and Paymaster and/or the use of online payment services to facilitate ease of payment.

**Response:** DEML assured customers that it is currently engaging in discussions with other payment agencies to broaden the options for payment.

- Residents of Vineyards Estates requested that an office be reinstated within the community. They stated that the Company ought to put in place additional security at the office to prevent recurrence of break-ins.

**Response:** DEML stated that it was unsafe to re-open an office within the community but that it has been in dialogue with external payment agencies which will broaden the bill payment options for its customers.

#### **4.5 Back – up System**

- An enquiry was made as to whether DEML had an emergency system in place in the event of failure or fault on the central system. Customers stated that they have been without water for periods in excess of two days and that water was not trucked during these periods.

**Response:** DEML stated that there has never been an occasion where customers have been without water supply for a period of two days. The

residents were advised by DEML that water will be trucked to residents in the event of operational failure of the system.

#### **4.6 Generator**

- Residents in Caribbean Estates expressed concern that during periods of electricity outages, on many occasions, the generator does not automatically start-up and they have to wait for an extended period before they are able to receive their regular water supply.
- Residents in Vineyards Estate expressed anger that DEML has not provided a generator in their scheme and that when there are electricity outages, they have to do without water for extended periods and that water is not trucked to them on a regular and timely basis. Furthermore, they have expressed concern that since their rates are the highest, the Company should have been able to purchase a generator.

**Response:** The residents were assured by DEML that a generator will be purchased in the near future.

#### **4.7 Water Quality Standards**

- Customers expressed outrage at DEML's request for an increase of over 100% when the water quality standards remain deplorable. They advised the high levels of calcium deposits and the foul odour in the water supply are unacceptable and that DEML has not been addressing these issues.
- Residents of the Caribbean Estates stated that there was an outbreak of gastroenteritis which they claimed resulted from the poor water quality.
- Residents of the Vineyards voiced that DEML ought not to be granted an increase in rates until there is an improvement in the water quality within the area. They stated that the Company ought not to be rewarded for lack of performance and that it is unjust to pay more for water that is of poor quality. Furthermore, they stated that it was very costly to be purchasing bottled water on a regular basis.
- Concern was raised as to whether DEML representatives employed to treat water are properly trained.
- DEML has failed to provide residents with water quality and testing reports.

**Response:** DEML stated that it was aware that there are high levels of calcium deposits in their water supply and that measures are being implemented to reduce those occurrences. DEML stated that customers should have reported their concerns regarding poor water quality when these instances occurred. The representative stated that the customers should not have awaited the consultation to bring these issues to light. It was reiterated that these matters must be reported to the Company for the necessary steps to be taken to address these problems.

#### **4.8 Profit Maximization**

- The residents were concerned that as DEML is a private Company, its interest would be profit maximizing instead of having rates comparable to those of the National Water Commission. They were of the view that NWC has more of a ‘conscience’ in terms of the rates charged.

**Response:** DEML responded by stating that NWC is in a better position to provide water at a lower cost due to economies of scale as well as benefits derived from subsidies.

#### **4.9 Provision for dissolution of arrangement with DEML**

- Enquiry was made as to the existence of a process that would allow the residents to exit the arrangement with DEML in the event that the rates become too costly or the service deteriorates.

**Office Comment:** The Office advised the residents that the license made provision for ‘step –in rights’ that gives the Minister the authority to take over the business in the event that the service provider fails to meet the provisions of the licence.

#### **4.10 Rates**

All residents expressed concern as to the exorbitant increase in rates being requested by DEML.

- The residents of Vineyards Estates expressed outrage that they are paying the highest rates with the least residents and that a request for an increase of over one hundred and thirty one per cent (131%) is unheard of. They stated that all infrastructure including a stand-by generator, the re-lining of the sewage ponds, the construction of proper changing/bathroom facilities is to be fully installed and operational before any increase is granted, since the Company



has been in the community for over five years and there has been no significant change in the infrastructure since that time.

**Response:** The residents were advised by DEML that it is more costly to provide water to that community than the other communities supplied by DEML.

- Residents of Morris Meadows expressed the view that their rates are very high and that it is the only community required to pay Price Adjustment Mechanism (PAM) charges. They stated that it is unjust to be paying for projects being carried out in other communities, whilst no work is being carried out in their community. They are of the view that they should not be paying additional amounts based on the aforesaid. Furthermore, they suggested that meter readers be provided with bicycles to carry out their duties.

**Response:** They were advised by DEML that it has to provide a vehicle for its meter readers and that a bicycle will not suffice.

- Residents of PCC view the proposed rate increase as unrealistic and inequitable. This comes against the background of the PCC having the least need of capital and non-capital expenses and being the most productive; accounting for forty-four percent (44%) of DEML's combined profits for the four communities. Furthermore, they are interested in knowing, since DEML has submitted an application for the four communities it serves, why has the request not been made for a uniform rate?

The residents of PCC have also stated that the initial rate of \$71.10 applied to PCC was the same rate for Caribbean Estates and this captured some elements of capital expenditure including water trucks, generators, water meters and the UG valve. PCC did not require the purchase of any capital items, as in the case of water meters, this was in the original cost of the houses as it was purchased by the developers and given to DEML to install at each premises. It is their view that they have been overcharged since 2009.

### **Price Adjustment Mechanism (PAM)**

- PCC has highlighted a number of concerns regarding the application of PAM charges. It is their view that the tariff review process provides an avenue for applications to be done on a periodic basis which takes into account increases and decreases in consumer prices over any specific period. Therefore they deemed PAM an unnecessary component, as it would duplicate the process.

Additionally, the residents expressed the view that they were unaware of any other material or equipment DEML would need to import on a continuous basis that significantly exposes them to foreign exchange (FX) fluctuations, the exceptions being water meters and generators. On the other hand, they indicated that these two items do not have a short life cycle and would not require frequent replacement.

- PCC has outlined that DEML has indicated that the major increase in expenses occurred in electricity rates as the price for a barrel of oil soared to US\$140 per barrel in 2008 from a relatively moderate US\$65 per barrel in 2006. Though they acknowledge the increase in electricity costs, they argue that DEML does not import nor does it use crude oil, thus using oil prices as a direct reference is flawed.

### **K-Factor & Capital Expenditure**

- PCC residents have outlined that DEML has proposed the inclusion of a K-Factor to facilitate the completion of proposed projects including purchasing water trucks, re-tiling sewage ponds and erecting perimeter fencing, purchasing pick-ups, motor cars, office equipment and security cameras. It is their view that all these items are capital items and not operating expenses and should not be considered in the tariff methodology. Furthermore, they stated that the purchase of a water truck was included in the 2007 Determination, yet this was not purchased. Therefore it would be unjust to include this item in this new application. There is the concern as to what safeguard exists to ensure that claimed capital expenditure will in fact be realized.
- Residents expressed alarm at the high cost for meter replacement which currently stands at \$12,023.78. They deem this exorbitant when compared to the current rate of \$4,173.76 plus \$600 for installation charged by the National Water Commission (NWC).

### **Sewerage/Waste Water Treatment**

- Residents of the Vineyards Estate expressed the need for the waste-water treatment facility to be repaired as a matter of urgency. Furthermore, representatives requested that DEML explain why there are 426 customers while only 419 are billed sewerage charges.
- Residents from PCC requested that a tiered system be implemented for sewerage and not a fixed rate. They stated that it is unjust for them to pay for sewerage rates when they water their plants, or wash their vehicles.

**Response:** The OUR responded by advising the residents that sewerage service is unmetered and that treatment is very costly. It was stated that studies have shown that the cost associated with treating sewage exceeds the cost for treating potable water. As there is currently no accounting separation of these costs, sewerage is billed at 100% of water charges.

#### **Reconnection Fees**

- Residents from all communities supplied by DEML expressed alarm that the company has requested a two hundred per cent (200%) increase in the reconnection fee moving from \$1,000.00 to \$3,000.00. They opposed this increase but requested that the representatives justify its basis.

**Response:** DEML advised that this increase will take into account the labour costs and costs for fittings. Furthermore, the company has to contract vehicles when existing vehicles owned by the company are out of commission/not available. It advised that this rate is comparable to the NWC.

#### **4.11 Exclusivity of the Licence**

- The residents were of the view that DEML should not be given an exclusive licence for the housing scheme; as such an action places them in a monopoly situation with a private owned entity. They believe that the licence granted should make them subject to competition – similar to that of the telecommunications sector - should at a later date another provider wishes to supply the area.

**Office Comment:** The Office informed the residents that it is inefficient for water companies to operate in a similar fashion to that of the telecoms sector. Throughout the world, licence for water tend to be exclusive due to the cost of putting in the infrastructure necessary for the provision of the supply. It should be noted however that the mandate for NWC to provide water services islandwide still exists but that it would have to provide its own infrastructure in order to compete.

### **5.0 Water Licence for Portmore Country Club**

- The residents have outlined that the source of the water distributed to PCC is a well which is owned by the homeowners of PCC, collectively represented by the Portmore Country Club Homeowners Association (PCCHA). Homeowners purchased the unit with the understanding that they were to be the owners of their own water supply system for which they could contract the services of a licensed distributor to operate and manage the plant and distribution infrastructure. This arrangement has, however not been fulfilled by the developers, but the intent is clearly outlined in the By-Laws of the PCCHA and was given to potential purchasers prior to purchase.
- Residents also outlined that the Water Resources Authority (WRA) has not granted DEML the licence to abstract water from the well and that such a licence could not be granted as the well is owned by the homeowners.
- Concern was also raised regarding whether or not DEML would be able to provide sufficient supply in light of the fact that a new development Country Club 2 (CC2) which includes one hundred and eight (108) residential units are being added. This development is adjacent to PCC and is slated to be added to the distribution system shortly. They state that the addition of these units will significantly vary the volume of water projected to be delivered, skewing the per unit rate, based on the method outlined in the DEML application and resulting in higher rates. There is the fear that the existing inadequacies of service will be exacerbated by the addition of the CC2 residences.

## Chapter 5: Office Evaluation of application

### 5.1 Introduction

In making this determination the Office has given due consideration to several issues:

- Efficient cost recovery
- Adequate service delivery
- Sustained financial viability
- A rate structure that is simple but reflects the cost of usage while not unfairly burdening consumers

Consideration is also given to the issues raised at the public hearings as well as those that were submitted from interested stakeholders.

The Rate of Return Methodology was used to assess DEML's rate application. This methodology allows the company to cover its cost of service in the most efficient way possible.

The Methodology is specified as follows:

Revenue Requirement = Cost of Service

$$R = O + D + T + kB$$

Where R = revenue requirement

O = operating expense

D = depreciation allowance

T = taxes

k = a fair rate of return

B = rate base

$$\text{Price/Tariff} = \frac{\text{Revenue Requirement}}{\text{Quantity Demanded}}$$

### 5.2 Operating Costs

The Office is of the opinion that the deemed operating cost should reflect the known and measurable cost of providing acceptable quality of service to existing and potential customers. Therefore, various adjustments were made to the total operating cost proposed by DEML in line with adjustments made to its test year financial statements. The company's test year means the latest twelve months of operation for which there are audited accounts. The results of the test year will be adjusted to reflect changes in operational conditions which are known and measurable with reasonable accuracy at the time of

filing. DEML's test year financials supplied to the OUR cover the financial year 2009.

### **Operating Expenses**

DEML stated that direct operating expenditure is made up of production wages, electricity and chlorine. The company stated that the direct operating expenses increased between 2006 and 2007 by 253.54% and a further 187.89% between 2007 and 2008. The Office is of the opinion that operating cost should reflect the reasonable cost of providing acceptable quality of service to customers. Although operating costs may be deferred and/or accrued the Office is concerned with arriving at the most efficient and effective known and measurable cost. Details of the Office's adjustments to the main cost item proposed by DEML are discussed below.

#### **5.2.1 Administration cost**

DEML proposed total administration costs as being \$17.857M. This cost category consists of salaries for administrative workers, health insurance costs, uniform costs and management fees. The indirect workers consist of three customer service representatives, a customer service and human resources officer, one general manager, a quality control officer, an accountant and an operations officer. It was further communicated that all seven office staff provides services to all four developments.

The Office has taken the proposed indirect salary into consideration and has no objection to this cost category. The costs proposed by DEML for statutory provisions, training and other benefits also remain unchanged.

In earlier tariff submissions DEML proposed that the directors would oversee the operations of the company in its initial stage. They communicated that the directors will not be paid a salary, but will instead be given a management fee. The Office notes that the company is now up and running and its organization chart shows that the company has employed a general manager and other professionals to assist with the running of the company. The \$5.1M proposed for directors' fees is therefore disallowed from this cost category.

When all the above cost changes are taken into consideration it was concluded that total administrative cost faced by DEML is \$12.75M

#### **5.2.2 Cost of Sales**

Cost of sales includes production wages, electricity cost, chlorine costs and the purchasing of water for Morris Meadows and Caribbean Estates. DEML proposed \$37.31M as total cost of sales.

5.2.2.1 Electricity expense is a large contributor to the total operating cost incurred by DEML. In total, electricity utilizes approximately 17.4% of total operating cost. DEML outlined that the electricity cost to supply service to its total customer base is \$13.28M. The Office has decided to use actual JPS bills for the company in serving the existing customer base in determining an average monthly usage for DEML.

The average monthly electricity charge derived for the company is estimated at approximately \$864,864. Thus, the average annual electricity cost determined is \$10.38M.

The OUR encourages DEML to develop and implement an energy management plan over a three year period in order to utilise electricity more efficiently. This is increasingly important since energy cost is a significant driver of water production cost.

5.2.2.2 DEML has included as part of its cost of sales, the cost of purchasing bulk water from the NIC and N.F. Barnes. This water is treated and resold to customers of Caribbean Estates and Morris Meadows. The rate charged by the NIC is 31.50 per cubic meter and the rate charged by N.F. Barnes is \$15.75 per cubic meter. In determining the cost of water purchased, actual invoices were requested from the company and a monthly volume of water purchased from both the NIC and N.F Barnes was calculated. Average volume of water purchased by DEML for Caribbean Estates is 21,893.30 cubic meters per month while 10,021.75 cubic meters a month is estimated to be purchased for Morris Meadows.

The company did not factor in the cost of water loss during repairs to the networks, fire hydrant or other unavoidable losses. The OUR has made a provision of 5% of water purchased and/or produced to account for this. After, incorporating these adjustments, the cost associated with bulk water purchase and water losses was revised to \$10.71M.

5.2.2.3 The OUR has allowed DEML's proposed amount for production wages. With these adjustments, the revised provision for cost of sales is \$33.80M

### **5.2.3 Banking and Other**

DEML stated that banking and other costs are approximately \$3.14M. This cost category consists of bank charges, finance charges, audit and legal fees as well as insurance. However, it was noted that finance charges and bank charges proposed by the company are substantially overstated than that which was incurred by the company over the years and stated in its test year balance

sheet. Therefore, the Office has decided that actual bank and finance charges incurred by the company and increased by the rate of inflation is a justifiable cost to be included in the rate base.

Audit and legal fees and insurance costs listed in this category remain unchanged. After making the above adjustment total banking and other related costs to be included in the rate base is \$1.14M

#### **5.2.4 Operations and Maintenance**

Included in DEML's proposal on this cost category are costs associated with general repair & maintenance, the purchasing of supplies, security cost, quality testing expenses and vehicle and travel cost.

The supplies expense was adjusted downwards to correspond with the supplies expenses stated in the income statement adjusted for inflation.

The Office is of the opinion that in a company that provides water and sewerage services and has infrastructure that is less than 7 years old, repair and maintenance is essential to sustain the useful life of such an infrastructure. Some assets were also transferred by various housing developers to DEML at the initial stage of the company's operations and are not included in the rate base of the company. The Office believes that these assets will have to be replaced or repaired by DEML over the years. Consideration was given to this fact, and a provision was made for this. The retiling and relining of the sewerage ponds at Caribbean Estates and Vineyards Estate as proposed by DEML was allowed as maintenance and repair cost. However, the cost associated with the upgrading of the Vineyards Estate sewerage pond is spread over a two year period since the sewerage system at this development is in need of extensive repair.

The total operations cost approved is \$9.21M.

#### **5.2.5 Property and Utilities**

Included in DEML's provision of \$3.02M for property and utility costs are rental costs, office utilities, stationery and supplies and repair and maintenance. The Office has disallowed the repair and maintenance cost as a general repair and maintenance cost was allowed for in the operations and maintenance cost category. Adjustments were also made to the rent and property cost based on actual invoices received from the company for its 2010 rental and property expenses. As a result of these adjustments, the revised property and utilities expenses is \$2.13M.



### 5.2.6 **Sales and Marketing**

As part of its licence condition, DEML is required to promote the terms and condition of service, including the quality of service standards to its customers. However, given that the various developments are approximately 100% occupied with the exception of Portmore Country Club there is no need for a large sales and marketing promotion campaign. Based on the company's audited financial statements, it spent \$1,485 and \$2,274 on advertising and promotion cost during the year 2008 and 2009 respectively.

However, the Office recognizes the need for an adequate provision for public education. DEML has proposed that this cost is \$1.12M. However, it was decided that an efficient marketing technique is to issue fliers/pamphlets to customers at the various housing developments since the customer base of DEML is not widely dispersed, the company can do this bi-annually. After deriving quotes from various printing companies a cumulative cost of \$231,000 was estimated for this cost category.

### 5.2.7 **OUR Regulatory Fees**

The regulatory fee due to the OUR is dependent on the work programme to be undertaken each year. The Office has instituted a self-imposed cap on the fees due by small water providers in the water sector of 0.3% of gross revenues or no less than \$125,000. The Office will allow fees equivalent to the cap in the approved expenses. This amount is \$1.33M per annum.

5.2.7 With these adjustments the **operating costs to be included in the revenue requirement is \$60.59M<sup>2</sup>**. Table 6 compares the Office's determined operating costs component with DEML's proposal.

Cost	Morris Meadows		Caribbean Estate		Portmore Country Club		Vineyards Estates	
Item	Proposal	Office	Proposal	Office	Proposal	Office	Proposal	Office
Wages and other	3,953,322.00	2,753,322.00	7,411,911.00	5,611,911.00	2,726,675.00	1,826,675.00	3,755,551.00	2,555,551.00
Banking & Other	362,000.00	251,978.00	1,353,829.00	414,218.00	482,141.00	227,365.88	522,354.44	244,270.04
Operations	641,719.00	1,085,493.61	4,100,581.00	3,450,513.89	2,089,516.00	1,120,879.10	1,946,542.00	3,549,136.64
Property & Utility	2,601,455.00	517,346.00	1,294,084.00	762,362.97	401,698.00	381,811.00	686,997.65	468,757.11
Sales & Marketing	546,482.00	19,387.00	312,240.00	19,387.50	86,760.00	19,387.50	359,000.00	38,387.50
Cost of Sales	\$7,294,852.00	6,497,655.21	18,772,638.00	18,839,944.00	3,641,037.00	3,056,301.00	7,599,163.85	7,150,880.20
Total Operation Cost	\$15,399,830.00	11,125,181.82	33,245,283.00	29,098,337.36	9,427,827.00	6,632,419.48	14,869,608.94	14,006,982.49

<sup>2</sup> This cost represents operating cost excluding depreciation

### 5.3 Taxes

The corporate tax rate is 33 1/3%. The Office has however incorporated tax provision in the determination of the pre-tax return on capital so there is no explicit provision for corporate taxation in this determination.

DEML also proposed in September of 2011 property tax that it has incurred, \$1.12M is included in the rate base for property tax.

### 5.4 Asset Base

DEML's fixed assets consist of sewerage and water assets. The total value of assets that DEML proposed as its total investment is \$28.35M. The OUR has reviewed DEML's proposed asset base and the following adjustments were made.

- 5.4.1 The cost associated with the purchasing of water meters included in the proposal was adjusted downwards. Meter costs included in the rate base correspond with invoices received from DEML for meters procured. DEML has supplied the Office with invoices showing that ten water meters were purchased. Therefore, only the cost of ten water meters was included in the rate base. The Office will not approve return on assets not yet acquired unless extreme circumstances so dictate. Capital investments should be financed by equity or loans for which adequate returns will be provided and a recovery by means of depreciation.
- 5.4.2 DEML advised that it intends to purchase and install two generators that will assist with providing backup power to the water system at Caribbean Estates and Vineyard Estates. In the rate reviews done for Caribbean Estates a provision was already made for a generator to be installed. In the case of Vineyards Estates the Office requires DEML to make the necessary investments in the company before assets to be acquired is allowed in its asset base.
- 5.4.3 DEML has proposed that it will seek to acquire a water truck. The Office notes that this cost was already included in past Determination Notices but keep recurring on DEML's list of assets to be acquired. The Office therefore requires that these assets be purchased as soon as possible since their cost was already embodied in the calculation of past rates.
- 5.4.4 The Office is extremely concerned over DEML's history of requesting compensation for assets or infrastructure to be acquired and not delivering such promises in a timely manner. The Office has disallowed the following capital assets from the asset base, until DEML has communicated to us that these assets are both in use and are useful. The Office will not approve return

on assets not yet acquired unless extreme circumstances so dictate. Capital investments should be financed by equity or loans for which adequate returns will be provided and a recovery by means of depreciation. The Office has disallowed the following projected capital intensive projects: Sewerage Pond retiling for Portmore Country Club and Caribbean Estates; the re-lining of sewerage ponds at Vineyards Estate; installation of changing room at Vineyards, Caribbean Estates and Morris Meadows and perimeter fencing for Caribbean Estates and Portmore Country Club. However, the Office believes that since the assets that were transferred by the company are not included in the rate base there should be some allowance made for the replacement of these assets. Therefore, sewerage pond retiling and relining costs are allowed in the general repair and maintenance cost.

After making the necessary adjustments to the assets, an asset base of \$13.20M was used in determining a fair return on DEML's investment.

- 5.4.5 The Office would like to remind DEML that a significant portion of its asset base was transferred to the company by the developers of the various housing developments provided that the contractual obligations were fulfilled. The Office does not include assets that are transferred at no cost in the calculation of the rate base.

## 5.5 Depreciation

Depreciation accounts for the wear and tear of assets used in the provision of service and is recorded as an expense in the profit and loss statement of a company. The Office has included depreciation on the used and useful assets that have been invested by DEML. After revision of the costs of the assets invested and the appropriateness of the rate of depreciation, the Office has determined that the depreciation charge is \$1.20M.

## 5.6 Allowed Rate of Return

The Office is of the opinion that the appropriate rate of return is that which should be sufficient to attract global investors into the water and sewerage business in Jamaica. A proxy is that of a United States investor making a decision on whether to invest in a business in Jamaica.

### 5.6.1 Office determined Cost of Equity

The Capital Asset Pricing Model (CAPM) is used to calculate the Cost of Equity for DEML. The CAPM formula specifies that

$$R_e = R_f + \beta(R_m - R_f) + \varepsilon_i$$

Where:

$R_e$  = Rate of return for shareholders

$R_f$  = Risk free asset return

$\beta$  = Systematic risk of the asset

$R_m$  = Market rate of return

The nominal market yield on 10-year U.S. Treasury securities with constant maturity as at October 2011 is used as a proxy for the risk free rate<sup>3</sup>.

The market risk premium or equity risk premium is the return in excess of the risk free rate that an investor requires for investing in risky assets in this case equities. The premium should be positive reflecting the greater riskiness associated with the investment relative to a risk free security. The premium will also increase as the riskiness of the investment increases. A historical MRP is calculated by using the Geometric Average from 1928 in six different types of markets. Parameters of the MRP are shown in table six below

The country risk premium represents the return investors require for taking on the additional risk associated with a specific country relative to its more stable political and economic counterparts. The country risk premium will be added to the market risk premium to take account of indigenous factors and obtain the overall premium expected for investing in Jamaican equities relative to the risk free security.

We have adopted the Nelson-Siegel model to estimate Jamaica's country risk premium. Specification of the model is as follows:

$$y(t) = \alpha_1 + (\alpha_2 + \alpha_3) \frac{\beta}{t} (1 - e^{-t/\beta}) - \alpha_3 e^{-t/\beta}$$

**The country risk premium for the period January 2007 – October 2011 was 4.72%.**

The beta coefficient measures the systematic risk of investing in a company's equity. The CAPM is built upon the insight that investors will be rewarded for bearing only those risks, called systematic risks that cannot be diversified. Specifically, beta measures the risk that a stock adds to a diversified market portfolio. A stock with more risk than the market will have a beta greater than one and a stock with less risk will have a beta lower than one. The Office is of the opinion that the company is less risky than the market. Appendix one outlines the calculation of the various beta values. When all these factors are inputted in the CAPM model the Office calculated a cost of equity of 11.36%.<sup>4</sup>

## **5.6.2 Office Determined Cost of Debt**

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<sup>3</sup> See table 6 below

<sup>4</sup> See table six below for parameters and the WACC

A Weighted average cost of capital (WACC), which comprises the average cost of debt and equity was calculated and applied to the total asset base. Since adequate information was available on the loan portfolio, and the gearing ratio was comparable to international standards in the water and sewerage sector, the Office has used the actual cost of debt. DEML indicated that its cost of debt ranges from a low of 13% to a high of 16%.

When all the parameters are taken into consideration the Nominal WACC in Jamaican dollars is 11.40%, the nominal after tax WACC is 11.30% and the Nominal Pre-tax WACC is 16.95%

**Table 7: Allowed Rate of Return**

<b>Parameters and WACC for DEML</b>	
	Parameters
<b>Risk Free Rate</b>	2.15%
<b>Gearing</b>	2.40%
<b>Country Risk Premium</b>	4.72%
<b>Cost of Debt</b>	9.06%
<b>Cost of Debt - J\$</b>	13.00%
<b>Market Risk Premium</b>	4.31%
<b>Asset Beta</b>	0.49
<b>Equity Beta</b>	0.59
<b>Tax Rate</b>	33.33%
<b>Expected Inflation – Jamaica</b>	6.00%
<b>Expected Inflation - U.S.</b>	2.30%
<b>Cost of Equity</b>	7.48%
<b>Cost of Equity - J\$</b>	11.36%
<b>Nominal WACC - US\$</b>	7.52%
<b>Nominal After-Tax WACC - US\$</b>	7.44%
<b>Nominal Pre-Tax WACC - US\$</b>	11.16%
<b>Nominal WACC - J\$</b>	<b>11.40%</b>
<b>Nominal After-Tax WACC - J\$</b>	<b>11.30%</b>
<b>Nominal Pre-Tax WACC - J\$</b>	<b>16.95%</b>

## 5.7 Revenue Requirement

Revenue requirement is the amount of funds that a company requires to be financially viable while delivering a reliable quality of service to its customers. The revenue requirement is derived from the summation of the total operating costs (including depreciation & loan interest), taxes and return on investment. **The Office has determined that the revenue requirement is \$65.15M** and is detailed in Table 8 below.

**Table 8: Revenue Requirement Components**

Category	Amount (\$M)
Total operating cost	\$ 60.59
Property Taxes	\$1.12
Pre-tax Return on investment	\$ 2.24
Depreciation	1.20
Total	\$ 65.15

- 5.7.1 The total operating cost is the cost that DEML incurs from operating the regulated entity annually. The components of these costs are discussed above.
- 5.7.2 The return on investment is to compensate DEML for making investments in the water and sewerage sector in Jamaica.
- 5.7.3 Total revenue requirement from water and sewerage rates was derived by subtracting the additional revenue DEML would collect from service charges. Estimated revenue to be collected from service charge is \$12.21M. Thus, **net revenue requirement is \$52.93M**. This amount will be recovered through the volumetric charges.

## CHAPTER 6: Rate Structure

In its application, DEML has proposed a two-tiered rate structure. It has a fixed charge (the service charge) which is to be paid monthly regardless of consumption and a single volumetric rate (that varies with water consumption). The company further proposed that the sewerage rate be billed as 100% of water charges.

### 6.1 Water Rates

The Office has determined that the effective change in rate for DEML for all housing developments served is \$62.47 per 1000 litres. This rate was derived from taking into account all costs that are faced by the company from operating its sewerage and water services. This is then approximated among the total customer base of DEML.

**Table 9: Calculation of Rate**

Details	Annual costs	Monthly cost
Revenue Requirement	\$ 65,144,788.64	
less Revenue from service charge	<u>\$ 12,210,553.44</u>	
Net revenue requirement	\$ 52,934,235.20	\$4,411,186.27
Total no. of lots		2180
Cost per lot (R/\$)		2023.48
Split 50/50 for water & Sewer		1,011.74
Average monthly Usage :	16,196	
Cost per 1000 liters:		\$62.47

This rate becomes effective as at January 9, 2012.

### 6.2 Sewerage Rates

International data shows that sewerage services are more costly to provide. However given the nature of the data collected from water and sewerage companies in Jamaica and the fact that sewerage is not metered, the Office cannot determine independent sewerage rates. Therefore, the Office will continue the practice of allowing DEML to bill for sewerage at 100% of water charges. Since all customers have both services this allocation of total costs is not discriminatory towards consumers of the specific services. A reallocation of more or less to sewerage services would see a corresponding compensating adjustment in the water rates.

### 6.3 Service Charge

DEML proposed a service charge of \$478.62 to cover fixed overheads such as billing and meter reading. The Office is of the view that the service charge should be set at a level that allows for reasonable cost recovery of the fixed overheads, but does not place a high burden on customers that have lower consumption levels. The Office has no objection to the service charge proposed. This rate allows the company to recover a significant part of its overheads while at the same time allows customers to benefit from efficient service delivery. The overheads that are inputted in the calculation of a service charge are those associated with metering, meter reading, billing and customer service costs. The total revenue expected from service charge in the first year of operation is \$12.21M.

### 6.4 Price Adjustment Mechanism

The PAM is an indexation mechanism that is applied to the base rate for water and sewerage services to preserve the real revenue of the company. The PAM captures changes in Foreign exchange, consumer price index and electricity charges. The Office is of the opinion that most input costs associated with providing water and sewerage services are volatile and will not remain fixed over the life of the tariff period. Therefore, compensation should be given to DEML for loss of revenue experienced based on actual unexpected increases in cost.

The formula used to calculate a PAM is specified as

$$\text{PAM} = [w_{fe} \cdot \Delta FE + w_{cpi} \cdot \Delta CPI + w_{ec} \cdot \Delta kwh] \cdot 100$$

Where  $w_{fe}$  is the weight for foreign exchange,  $w_{cpi}$  is the weight for CPI and  $w_{ec}$ , the weight for the average price of electricity per kwh and  $\Delta$  is the percentage change in the respective variables, that is, current value of each variable less the base value.

- 6.4.1 The weights are derived from the proportion of DEML's total operating cost that is affected by the three variables. The Office has calculated the weights as being:

$$\begin{aligned} \text{CPI} &= 0.73 \\ \text{FX} &= 0.07 \\ \text{KWH} &= 0.20 \end{aligned}$$

- 6.4.2 The base values of the PAM indices are shown below

Electricity	34.45/KWH
Exchange Rate	J\$86.49 to US\$1
CPI	All division 176.70



- 6.4.3 The current CPI value should be that published by the Statistical Institute of Jamaica at the end of the preceding month. The foreign exchange rate should be the average monthly rate as reported by the Bank of Jamaica. The average price of electricity is the total electricity bill for the preceding month divided by the total kwh of energy used.
- 6.4.4 The Office has also determined that the PAM should be applied on a monthly basis to all customers' accounts. DEML is required to provide the Office with reports of the calculated PAM rates charged to customers on a quarterly basis.

## **6.5 K-Factor**

DEML has indicated that it intends to spend approximately \$22.39M on capital projects and none of these will result in any revenue increase. It therefore proposed that a K-factor variable be granted to compensate for this for the various housing developments.

The Office advises that a K-factor variable was granted to the NWC in 2008 for specific reasons and were attached to some specific projects. The circumstances of NWC are much different from DEML. For decades NWC was not allowed to have sufficient tariffs to cover operational costs and properly maintain and replace its assets. This resulted in dilapidated plants and inefficient operations.

Essentially, the K-factor was developed to fund capital rehabilitation programmes or capital works that will not yield any significant increase in revenues for the NWC but is required to comply with a specific regulatory direction. The K-factor was also appropriate to fund a capital intensive programme of efficiency improvement inclusive of mains replacement and other NRW activities. This is necessary to reverse the effects of years of under and inadequate funding and set aside specific funding to put NWC on the path of increased efficiency.

By contrast, DEML assets are of recent vintage and rates have been cost based from the outset. If assets have fallen into disrepair in such a short time it would suggest that proper standards of construction and maintenance were not followed.

The list of capital projects proposed by DEML consists of mostly spending on fixed assets. The purchasing of fixed asset is not considered to be a K-factor eligible expense. As it relates to sewerage ponds retiling and re-lining these are expenditures that the company can undertake and capitalise and submit to the Office in the next tariff review process.

The Office has disallowed the inclusion of a K-factor variable in the rates for DEML.

## **6.6 Connection fee**

DEML has not indicated a connection fee to be charged to customers. However Portmore Country Club 2 is not fully occupied and therefore individual premises will have to be connected to the water and sewage networks. A connection fee of \$2000 is approved by the Office and is payable to DEML on the signing of a contract for service.

- 6.6.1 This connection fee will not apply to commercial customers who may be supplied with service by DEML. Commercial customers are required to pay the actual connection charges, which shall include the direct operating cost and the capital costs associated with outlaying the necessary infrastructure.

## **6.7 Reconnection Fee**

DEML proposed a reconnection fee of \$3,000 per customer for reconnection of disconnected service. The Office recognizes that there is a cost involved in reconnecting a service after it has been disconnected. If this service is contracted, the company will have to pay for this service. If the company's personnel are used, then there is the opportunity cost of the labour.

Further information was requested from the company and table 10 below outlines the components of the reconnection fees.

**Table 10: Components of the Reconnection Fee**

Details	Costs
Administrative charges	\$750.00
Labour charges for disconnection/reconnection (2 men for 2 hours)	\$1,240.00
Materials (.25l of pipe, 2 couplers & tangit)	\$164.00
Transportation (2 times)	\$800.00
<b>Total cost</b>	<b>\$2,954.00</b>

The Office is of the view that \$2,954.00 is an appropriate reconnection charge. If the industry is used as a benchmark, this fee is in the range as those charged by some industry players.

## Chapter 7: Regulatory Impact Analysis

### 7.1 Old Rate Structure

Table 11 below outlines the old rate structure for DEML for all four housing developments.

Table 11 Old Rate Structure				
	Vineyards Estate	Caribbean Estates	Portmore Country Club	Morris Meadows
<b>Volumetric Rate water and sewerage</b>	\$51.40 (per 1000 litres)	\$71.10 (per 1000 litres)	\$71.10 (per 1000 litres)	\$83.78 (per 1000 litres)
<b>Service Charge</b>	\$250.00	\$300	\$300	\$300
<b>Connection Fee</b>	\$1,500	\$2,000	\$2,000	\$2,000
<b>Reconnection Fee</b>	\$1,000	\$1,000	\$1,000	\$1,000
<b>Price adjustment Mechanism</b>	NO	NO	NO	YES
<b>Effective date of Rates</b>	1-Aug-06	January 1, 2008	No determination issued	1-Feb-09

### 7.2 New Rate Structure

Table 12 below outlines the new rate structure determined by the Office, which will become effective January 9, 2012.

Table 12: New Rate Structure				
	Vineyards Estate	Caribbean Estates	Portmore Country Club	Morris Meadows
<b>Volumetric Rate Water and Sewage</b>	\$62.47(per 1000 litres)	\$62.47(per 1000 litres)	\$62.47(per 1000 litres)	\$62.47(per 1000 litres)
<b>Service Charge</b>	\$478.62	\$478.62	\$478.62	\$478.62
<b>Connection Fee</b>	\$2,000	\$2,000	\$2,000	\$2,000
<b>Reconnection Fee</b>	\$2,954	\$2,954	\$2,954	\$2,954
<b>Price Adjustment Mechanism</b>	Yes	Yes	Yes	Yes
<b>Effective date of Rates</b>	9-Jan-12	9-Jan-12	9-Jan-12	9-Jan-12

### 7.3 Table 13: Impact of New Rates on Customer's Bills

	Caribbean Estates and Portmore Country Club		
Without sewerage			
	Current bill	New bill	Change
	\$	\$	
16,000 litres			
Service Charge	300	478.62	
Water charge	1137.6	999.52	
PAM	0	102.18	
K-factor		0	
Total bill	1437.6	1580.32	9.93%
	Morris Meadows		
Without sewerage			
	Current bill	New bill	Change
	\$	\$	
16,000 litres			
Service Charge	300	478.62	
Water charge	1340.48	999.52	
PAM	0	102.18	
K-factor		0	
Total bill	1640.48	1580.32	-3.67%
	Vineyards Estate		
Without sewerage			
	Current bill	New bill	Change
	\$	\$	
16,000 litres			
Service Charge	300	478.62	
Water charge	822.4	999.52	
PAM	0	102.18	
K-factor		0	
Total bill	1122.4	1580.32	40.80%

Data collected from DEML suggested that on average a typical residential consumer will use approximately a little over 16,000 litres per month. Therefore 16,000 litres was used as a proxy in calculating the impact that the rate changes will have on customer's bills.

## Chapter 8: Quality of Service Standards

### 8.1 Guaranteed Standards

To ensure that service delivery to the residents does not fall below the minimum level, the following Guaranteed Standards shall come into effect 90 days after the effective date of this Determination:

Code	Guaranteed Standard	Mode of Compensation
<b>GS1 – Connection of New Customers</b>	DEML is required to connect all new customers where water supply is available at the property boundary, within 3 working days after signing the contract for connection.	Automatic
<b>GS2 – Issue of First Bill</b>	DEML must issue (print and mail/deliver) a bill to a customer based on a meter reading within 30 working days after the account is opened.	Claim
<b>GS3(a) – Response to complaints - Acknowledgements</b>	DEML must, within 3 working days, acknowledge written customer complaints.	Claim
<b>GS3(b) – Response to Complaints - Investigations</b>	DEML must, within 15 working days of receipt of complaint, complete investigation and inform the customer of the results.	Claim
<b>GS3(c) – Investigations involving 3<sup>rd</sup> party</b>	DEML must, within 30 working days complete investigation involving 3 <sup>rd</sup> party.	Claim
<b>GS4 (a)– Wrongful Disconnection</b>	DEML shall not disconnect the service of an account which is either not in arrears or is the subject of an investigation internally or by the OUR.	Automatic
<b>GS4 (b) – Reconnection after Wrongful Disconnection</b>	Where DEML has wrongfully disconnected a service account it shall be reconnected within 5 hours	Automatic
<b>GS5 – Repair or Replacement of Faulty Meter</b>	DEML must, within 10 working days after detection, repair or replace any malfunctioning meter.	Automatic
<b>GS6 – Meter Change</b>	DEML must provide customer with details of the date of the change, meter readings for old and newly installed meters on the day and the serial number of the new meter.	Claim
<b>GS7 – Meter Readings</b>	DEML must render a bill based on a meter reading each month.	Automatic
<b>GS8 – Billing Adjustment</b>	Customer must be billed for adjustment within one (1) month of identification of error, or subsequent to replacement of faulty meter.	Claim
<b>GS9 – Reconnection after Payment of Overdue Amount</b>	DEML must, within 24 hours of receipt of all applicable payments (reconnection fee etc.) reconnect customers disconnected for debt.	Automatic
<b>GS10 – Payment of Compensation</b>	DEML must credit customer's account within one (1) billing period after a breach of any of the prescribed Guaranteed Standards. For the avoidance of doubt, if DEML does not compensate the customer within the specified time, this results in another breach.	Claim

- 8.2 A breach of any Guaranteed Standard will result in a compensatory payment to customers. This payment will be equivalent to four (4) times the service charge and should be credited by DEML to the affected account.
- 8.3 DEML must submit bi-annual reports on its performance against the Guaranteed Standards. Such reports must be submitted within 30 business days of the end of each six months period of operation. The Office will conduct an annual review of DEML's performance against these standards and at that time, will determine if any amendments to any of the standards or the mode of compensation is necessary.
- 8.4 In instances where it is apparent that DEML did not automatically credit the customer's account with the compensatory payment, the customer has the right to appeal to the Office for further redress.

### 8.5 Overall Standards

CODE	FOCUS	DESCRIPTION	PERFORMANCE MEASURE
WOS1	Water Quality	Testing samples and for impurities	Water quality must be in compliance with standards specified by MOH
WOS2	Water Pressure	Minimum/maximum water pressure	DEML must maintain a pressure ranging from 20 to 60 psi
WOS3	Reliability of Supply	Notify public of intention to interrupt supply – planned interruptions	Minimum notification time of 12 hours for short interruptions (not more than 4 hours) and 24 hours for longer interruptions (more than 4 hours)  <b>Target 99%</b>
WOS4	Reliability of Supply	Restoration after emergency lock-off	Maximum time to restore supply: 24 hours  <b>Target 95%</b>
WOS5	Sewerage	Correction of sewerage problems	Maximum of 24 hours to correct sewerage problems after being informed  <b>Target 98%</b>
WOS6	Sewerage	Sewerage effluent quality	Ensure that sewerage effluent is within the standards specified by NEPA
WOS7	Leaks	Repair of Leaks	DEML must repair leaks within 24 hours of notification  <b>Target 95%</b>

## **Chapter 9: Summary of Decision**

**In summary, the Office has made the following determinations:**

- 1) The sewerage and water rates are based on a two-tiered rate structure comprising a fixed component, and a flat rate, which is based on consumption.
- 2) The service charge is \$478.62.
- 3) The variable component is a volumetric rate of \$62.47 per 1,000 litres.
- 4) Sewerage rates are 100% of water rates.
- 5) A monthly PAM will be applied to the rates charged by DEML.
- 6) Initial connection fee of \$2,000 becomes payable at the signing of a service contract.
- 7) Reconnection fee is \$2,954.
- 8) Rates are set for a period of 24 months.
- 9) DEML must submit at least 1 year of audited financial statements and production and consumption data prior to the next review of the rates.
- 10) DEML must adhere to Guaranteed Standards as outlined above. Breach of any of these standards will result in a compensatory payment of four (4) times the service charge.

**The rates become effective on January 09, 2012 and will remain effective for 24 months or for such longer period as the Office may determine.**

## Appendix 1

<b>Beta of Small Water Companies</b>						
<b>Companies in Emerging Markets</b>	<b>Debt/Equity</b>	<b>Tax Rate</b>	<b>Monthly Levered Regression Beta</b>	<b>Unlevered Monthly Beta</b>	<b>Re-levered (2.4% Gearing) Monthly Beta</b>	<b>Re-levered (28.5% Gearing) Monthly Beta</b>
Emerging	0.40	0.18	0.61	0.46	0.47	0.61
US	0.78	0.35	0.70	0.47	0.48	0.59
Europe	1.16	0.20	0.62	0.32	0.33	0.42
China	0.21	0.16	0.68	0.58	0.59	0.77
Global	0.59	0.18	0.64	0.43	0.44	0.57
<b>Weighted Average</b>						
<b>Mean</b>			<b>0.65</b>	<b>0.45</b>	<b>0.46</b>	<b>0.59</b>
<b>Minimum</b>			<b>0.61</b>	<b>0.32</b>	<b>0.33</b>	<b>0.42</b>
<b>Maximum</b>			<b>0.70</b>	<b>0.58</b>	<b>0.59</b>	<b>0.77</b>
<b>Standard Deviation</b>			<b>0.04</b>	<b>0.09</b>	<b>0.10</b>	<b>0.13</b>
<b>Count</b>			<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
<b>Upper 95% Confidence Interval</b>			<b>0.68</b>	<b>0.53</b>	<b>0.54</b>	<b>0.70</b>