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Office of Utilities Regulation

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# **Dynamic Environmental Management Limited**

Review of Water and Sewerage Rates

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## **Determination Notice**

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**OFFICE OF UTILITIES REGULATION**

July 31, 2006

**DOCUMENT TITLE AND APPROVAL PAGE**

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**DOCUMENT TITLE:** Dynamic Environmental Management Limited – Review of water and sewerage rates

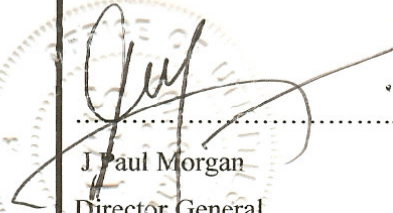
**1. PURPOSE OF DOCUMENT**

This decision notice sets out the Office's Determination with respect to the submission from Dynamic Environmental Management Ltd. to set prices for the provision of water and sewerage services to the Vineyards Estate, Busy Park, St. Catherine

**APPROVAL**

This document is approved by the Office of Utilities Regulation and the decisions become effective on August 1, 2006.

On behalf of the Office:



J Paul Morgan  
Director General

Date 1 August 2006.

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## Executive Summary

DEML was granted water and sewerage services provider licences by the Minister of Water and Housing on 2<sup>nd</sup> of November 2005. The company is licensed to provide service in the Vineyards Estate, Bushy Park, St. Catherine.

The sewage treatment plant consists of four ponds: anaerobic, facultative, maturation ponds and constructed wetlands and can treat 9,825.6m<sup>3</sup>. DEML leased a well site from the Commissioner of Lands for 6 years and is licensed by the Water Resources Authority (WRA) to extract 860m<sup>3</sup> of water per day from this source.

DEML applied to the Office for approval of rates to be charged to its customers on 23<sup>rd</sup> November 2005. This also included a request for an interim rate to be introduced, pending completion of the full rate review. On 9<sup>th</sup> June 2006, DEML filed a revision to its original submission. Table 3 outlines the final rate proposals.

The Office decided to undertake a comprehensive rate review instead of approving an interim rate, since assessing the interim rate proposal would require the same level of effort as a full scale rate review<sup>1</sup>. Following consultations with the citizens of the community, the Office has determined that the rates shall be as are summarized in Table 1, below.

The Office will review the consumption profile of the service area, at the end of the first twelve months of operation with the view to amending the rates to reflect an increasing block structure if this is appropriate or deemed necessary to send conservation signals. In recognition that there are no historical data, the Office will also take the opportunity to revisit the assumptions made in the tariff determination and assess the company's operations for efficiency, service levels and delivery as well as customer satisfaction.

The Office has also approved a connection fee of \$1,500 to connect each lot to the company's water system. In those instances where the developer has connected the sewerage no connection fee for sewerage is chargeable.

In the event of disconnection of service for non-payment, the cost to reconnect the service is \$1,000.

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<sup>1</sup> This is so because Office would conduct a public hearing on the application as well as select an appropriate benchmark against which the interim rates would be compared  
Dynamic Environment Limited – Review of Water and Sewerage Rates  
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Office of Utilities Regulation

**Table 1: Office determined rates for water and sewage**

<b>Category</b>	<b>Water rates</b>	<b>Sewerage rates</b>
Volumetric rate	\$51.40 (per 1,000 litres)	\$51.40 (per 1,000 litres) of water consumed
<b>Service charge</b>	<b>\$250</b>	-
<b>Connection fee</b>	<b>\$1,500</b>	
<b>Reconnection fee</b>	<b>\$1,000</b>	

The licences include quality of service standards for the provision for both water and sewerage services. The sewerage services licence contains overall standards while the water supply licence has specific overall and guaranteed standards. Breach of any guaranteed standard will result in DEML being obliged to make a compensatory payment equivalent to the service charge (or multiples thereof) to affected customers. The mechanism for making compensatory payments will be implemented within three months of the effective date of this Decision. Customers will be consulted as to the methodology to be employed – automatic payments by the eservice provider or after specific claims by the affected customer.

The company’s performance in relation to the overall standards will be taken into consideration at the time of rate reviews.

## **Introduction**

As a result of an agreement between Dynamic Environment Management Limited (DEML) and New Era Homes 2000, DEML assumed responsibility for the continued operation and maintenance of water and sewerage systems in Vineyards Estate, Bushy Park, St. Catherine. The relationships between all parties are relevant to the calculation of the rates to be charged. The original premise was for the scheme to be handed over to the National Water Commission at no cost; however the developers exercised the option of handing over the scheme to DEML. A substantial portion of the assets was therefore paid for by the homeowners in the purchase price of the houses. DEML has invested in additional assets in order to provide proper and effective utility services.

DEML applied to the Office for the grant of water and sewerage service provider licences on the 29<sup>th</sup> April 2005. Notices of both applications were published in the print media. Can-Cara Environment Limited filed an objection to the granting of the sewerage service provider licence. The Office received no objections with regards to the water service provider application so it processed the application and submitted its recommendation to the Minister on October 27<sup>th</sup> 2005. The water service provider licence was issued November 2<sup>nd</sup> 2005. The licence is for a period of 20 years and includes provision for renewal.

The Office convened a public hearing on 30<sup>th</sup> September 2005 to hear matters raised on the objection to the sewerage service provider licence and subsequently issued a decision on the hearing on 26<sup>th</sup> October 2005<sup>2</sup>. While the Office rejected the objection it recognized that the considerations for the licensing of providers of sewerage services had peculiar environmental requirements so it used the opportunity to outline the approach it will take in dealing with applications and the licensing process for sewerage service providers in the future.

Subsequent to the hearing, the Office submitted its licence recommendation to the Minister of Water and Housing and sewerage services provider licence was issued by the Minister on 2<sup>nd</sup> November 2005.

The service area as designated in the *DEML Water Supply Licence, 2005* and *DEML Sewerage Services Licence, 2005* is Vineyards Estate, Bushy Park, St. Catherine. DEML states that its water will be sourced from a well site, leased for a period of 6 years, from the Commissioner of Lands. It is licensed by the WRA to extract and use a maximum of 860m<sup>3</sup> of water per day.

The sewerage treatment system consists of 4 ponds: an anaerobic pond, facultative pond, maturation pond and constructed wetlands. The system will also be equipped with a lift station, submersible pumps and a standby generator. The plant has a total retention capacity of 9,825.6m<sup>3</sup> and DEML expects to treat 3.58 million litres per year.

The basic conditions of the licences are the same for both water and sewerage and include provisions for auditing the business and the submission of periodic reports to the Office. With regard to standards, the sewerage service quality of service standards are general in nature and address overall service delivery whilst several guaranteed standards are outlined in the water service provider licence. These guaranteed standards attract a penalty by way of a compensatory payment to be made by the service provider in the event that a standard is breached.

The licence also requires DEML to file a proposal to the Office as to the rates it intends to charge for the provision of water and sewerage services. The Office received this filing on 23<sup>rd</sup> November 2005. The consultation process was prolonged due to initial objections from the citizens to DEML as their provider of water and sewerage services.

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<sup>2 2</sup> See Office Decision Arising from Hearing into Dynamics Environment Licence Application: A Determination, October 2005, Document No: WAT2005/01. Available at [www.our.org.jm](http://www.our.org.jm).

# DEML's Proposal

## Customer base

DEML projects that at the beginning of 2006, it will have 260 customers which will gradually increase to 392 at the end of the year. In the 2<sup>nd</sup> year of operation (2007) the company expects to get an additional 15 customers. No further increase in the customer base is projected for the next 10 years. The customer base used in these years, that is, 3<sup>rd</sup> year onwards, is 407<sup>3</sup>.

**Table 2: Projected Customer Base**

Year	Additional Customers	Total customers
Beginning of year 1 - 260	132	392
Year 2	15	407
Year 3 onwards	-	407

## Rates

The initial rate application consisted of two proposals. The first proposal provided for a service charge of \$233.19/customer account and a volumetric water rate of \$68.43/1,000 litres. Sewerage rate is to be calculated at 100% of water volumetric charges. In its calculation of the volumetric rate, DEML assumes that each household has, on average, 4 persons and will consume 26,767 litres of water per month. The second proposal was for an interim rate of a flat fee of \$2,000 per month per customer for water and sewerage until the Office handed down a determination, if such a decision could not be made by 1<sup>st</sup> February 2006.

DEML subsequently reviewed the rates in its first proposal and submitted revised rates on 9<sup>th</sup> June 2006. An initial connection fee for water of \$1,500 was proposed as well as a reconnection fee of \$1,000.

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<sup>3</sup> DEML states that there are 427 lots in the service area, but has assumed that 5% of lots will not be connected or provided with service.

**Table 3: DEML's Proposed Rates**

<b>Consumption bands</b>	<b>Final proposal (June 2006)</b>
Flat rate regime Per 1,000 litres	\$57.84
Variable rate regime	0-10,000: \$47.95/1,000 litres 11,000-25,000: \$64.49/1,000 litres 26,000 -30,000: \$69.80/1,000 litres
Service charge	\$263.26
Connection fee	\$1,500
Reconnection fee	\$1,000

The company expects that it will take, on average, three months to collect all outstanding amounts. It projects a collection rate of 73% of accounts billed in the month of billing, 20% in the following month, and the remaining 7% over the next two months. As such, at the end of each year, DEML estimates that its receivables will be 3.45% of billed revenues.

DEML's financial model indicates that the company plans to request a tariff review in the 4<sup>th</sup> year of operation, and every 2 years after that. However, in its revenue projections, the rates are linked to a monthly price adjustment mechanism (PAM) of 0.5%, which is included in the calculation of revenues.

### **Expenses**

Prior to the acquisition of water and sewerage systems by DEML, the housing developer provided, at no cost, water and sewerage services to residents in Vineyards Estates. This arrangement continued after DEML acquired the infrastructure, but because the Office had not yet approved the rates, the company was unable to bill customers for this service, even though the company was incurring operating costs. DEML estimates this cost at \$6.185M for the year 2005.

DEML projects that it will incur \$15.342M in expenses for 2006 for both its sewerage and water operations. (See table 4)



**Table 4: Projected Expenditure**

	2005 (JA\$)	2006 (JA\$)
<b>Expenses:</b>		
Direct Cost of Sales	2,031,367	3,845,482
Sales And Marketing	220,000	440,000
Property & Utilities	247,000	442,000
Operations	451,900	1,211,000
Banking & Other	285,312	400,000
Other Wages & Benefits	-	3,855,000
Repayment of Operating Loan		
Interest Term Loan	-	-
Depreciation	1,022,067	1,533,100
<b>Total Expenses</b>	<b>6,185,145</b>	<b>15,341,992</b>

### 1. Cost of Sales

Direct cost of sales comprises of production wages, purchase of chlorine and utility services. In 2005, DEML incurred cost of sales of \$2.031M.

In 2006, the amount is projected to increase significantly (\$3.845M) as the company expects to have a full complement of staff, resulting in an increased wage bill.

### 2. Sales and Marketing

Prior to the granting of a licence to DEML, customers were receiving water and sewerage services free of charge. DEML thinks it will require an extensive marketing campaign to inform the communities of the intended changes in the provision of the services, and more importantly that each household will be billed monthly for these services. As such, the company considers sales and marketing to be a critical element of its business operations. It states that it incurred \$220,000 prior to 2006 in this regard and expects the amount to increase to \$440,000 for the 2006 period. After which, the cost item will increase by 6% annually.

### 3. Wages

DEML has projected direct and indirect wages. In the 2005 wage related expense totaled \$2.377M<sup>4</sup> but is projected to increase to \$5.109M<sup>5</sup> in 2006. DEML states that its business will be divided into commercial, human resource management and operations departments and will employ 14 persons. In the initial stages of the operation, the shareholders of the company will operate as executive directors and will be paid 10% of revenues as salaries. In the long run, however, it is expected that a full time manager will be employed.

<sup>4</sup> Of this amount, direct wages of \$450,000 is included in cost of sales.

<sup>5</sup> Included in this amount is direct wages of \$1.254M. This has been accounted for in cost of sales.

#### 4. Operations

Amongst the cost items included in this category are licences, permits and leases. In 2005 the amount allocated to this category was \$451,900 but provision increased to \$1.211M in 2006. A provision of \$250,000 for regulatory fees is included in this amount.

#### 5. Banking and Other Charges

This line item includes provision for insurance, accounting and legal fees as well as banking charges. Insurance and professional fees constitute most of the \$400,000 in 2006.

#### 6. Capital Funding

DEML has stated that assets consisting of water and sewerage facilities and valued at \$49.636M were transferred to them by New Era Homes (the housing developer). It expects to obtain both short and long term loans from financial institutions to help finance the operating and maintenance cost and working capital. Operating loan of \$2.265M was obtained in 2005, with a further \$1.35M in 2006 from the shareholders of the company. This is an interest free loan and the company is expected to repay it within the first two (2) years of operation. In addition to the operating loan, a term loan amount of \$8M will also be obtained in 2006, which is to be repaid over a 5 year period at an interest rate of 18%. No further loans are expected to be obtained in subsequent years.

#### **Asset Base**

The total value of the assets acquired for both water and sewerage is \$49.636M consisting of sewerage construction cost of \$25.87M and construction cost for water systems of \$13.792M plus capitalized professional fees and administrative costs of \$6.474M. DEML has stated that it will make further capital investment of \$12.9M to improve the efficiency of the business. The overall cost of the assets is \$62.536M. Table 5 shows the details of these costs.

**Table 5: DEML Schedule of Assets for Water and Sewerage**

<b>Asset Type</b>	<b>Value (\$)</b>	<b>Total (\$)</b>
Land (water and sewerage)		3,500,000
Generator (installed)	1,300,000	
Lift pumps (installed)	2,900,000	
Sewer lines	6,670,000	
Pond Construction	15,000,000	
<b>Total - Sewage</b>		<b>25,870,000</b>
Deep Well Pump/Pressure Pumps and Controls	8,192,000	
Storage Tank	4,000,000	
Water lines	1,600,000	
<b>Total - Water</b>		<b>13,792,000</b>
<b>Sub-total (water and sewerage)</b>		<b>43,162,000</b>
Professional Fees (10% of subtotal)		4,316,200
Administrative costs (5% of subtotal)		2,158,100
<b>Total value of assets acquired</b>		<b>49,636,300</b>
<b>Total value of DEML investment<sup>6</sup></b>		<b>12,900,000</b>
<b>Total value of asset base</b>		<b>62,536,300</b>

**Depreciation**

Most of sewerage and water assets have 20 year useful lives. DEML makes a provision of \$1.533M<sup>7</sup> for annual depreciation. There was no amortization of the capitalized professional fees and administrative costs.

**Return on Investment**

DEML has used 5% return on \$12.9M investment to get a yearly return on investment of \$645,000.

<sup>6</sup> DEML stated that it will make this investment but amount was not included in the asset base.

<sup>7</sup> DEML did not include the depreciation associated with assets in which it had made investments in the calculation of the total depreciation charge.

## Public Consultation

In keeping with its statutory duty to provide opportunities for all who are likely to be affected by its decisions to be heard, the Office organized a public consultation with the residents of the Vineyards, St. Catherine. In fact, two were held - the first on April 9<sup>th</sup> 2006 was aborted after the residents alleged that they did not know that DEML had applied for and had been granted a license to be their service provider.

After several reported private meetings between Vineyards Estate Citizens Association and DEML, the second public consultation was held on 18<sup>th</sup> June 2006. The concerns raised were as follows:

### 1. *Connection fees*

Residents stated that in DEML application a connection fee of \$1,500 was being proposed for water and a similar amount for sewerage. They contended that their properties were already connected to the sewage system; as such it would be unfair to charge for connection that already existed.

Response: DEML responded that there would be no connection fee for sewerage or water for those residents in Phase One given that these properties were already connected and is presently receiving supplies from NWC.

Phase Two residents will only pay connection fee of \$1,500 for water. No connection fee for sewerage will be levied.

### 2. *Exclusivity/Uncertainty*

Phase one residents enquired about the status of their accounts, given that they are being provided with water from NWC but will be provided with sewerage from DEML.

Response: The Company responded that it is presently in negotiations with NWC with regards to the transfer of accounts that are presently being served with water, but in the event that these negotiations fail, it will offer incentives to these residents to switch to DEML.

Office comment: It must be recognized that DEML has to be paid for the water supplied – the NWC has no locus standi in that area and is in fact reselling the product and services provided by DEML and has not yet obtained any authority or rights to do so.

### 3. *Reliability of Service*

Residents enquired about the reliability of the service that they will be provided with. They stated that presently, although they are not paying for water service, they experience frequent water lock-offs.

Response: DEML stated that a standby generator would be installed at the well site so that water would be available in the event of a power outage.

#### 4. *Meters*

(a) Questions were raised about the time frame within which customer meters would be installed. Some of the residents stated that New Era Homes had promised that they would not pay for the cost of the meters.

Response: DEML stated that it was unable to give a definite time frame as the rates are yet to be approved by the Office.

Office comment: The company could proceed to install meters even in the absence of approved water and sewage tariffs.

With regards to the cost of the meters, DEML undertook to meet with New Era Homes to ensure that the promise that residents would not be asked to pay for the meters could be fulfilled.

(b) The residents enquired about whether there will be a cost to replace faulty meters and how long it will take to do such replacement. Some of the residents felt that the proposed twenty (20) working days for the replacement/repair of a faulty meter was too long. Ten working days was proposed.

Response: DEML stated that there would be no charge for the replacement of faulty meters.

Office comment: To be equitable, future rates will have to provide for the cost of replacement meters.

#### 5. *General*

A number of questions were raised and comments made which reflected concerns about the levels of service to be delivered and the rights of customers.

Office comment: The service provider will be required to produce and make available to each customer on demand its “Standard Terms and Conditions of Contract”. The service provider will also have to develop its Codes of Practice relating to customer service – making complaints, contacting the company, disconnection policy, payment of bills, etc.

## **Office's Evaluation of Application**

Although DEML requested an interim rate with its initial filing, the Office decided that the approval of an interim rate would require benchmarking the company against similar companies. This would take essentially the same time as a comprehensive rate review. Furthermore, an interim rate would not give the company an incentive to provide the requisite information in a reasonable time to allow for a comprehensive rate review. As such the Office decided to undertake a comprehensive rate review.

The Office is mindful of the imperative to set rates that are reasonable but which will be sufficient to provide investors with the opportunity to make a reasonable return on their investment. At the same time, the Office is of the view that rates should send signals that will encourage conservation. Because there is no consumption data on the service area, it has not been possible to develop a set of rates that accurately reflect the consumption patterns. In this regard, the Office had to make specific assumptions with regards to the total consumption and therefore concluded that it would be more appropriate to set a flat rate for water and sewage charge for the initial year. At the end of the first year, it will review the consumption profile, and revise the rates to adequately reflect the consumption pattern of the community. The company is required to keep detailed information on the water production and consumption.

There will not be a price adjustment mechanism (PAM) in the first year.

In determining the rates to be charged, the Office has used 2006 as the test year to determine the revenue requirement and calculated the rates such that they will be sufficient to satisfy the revenue requirements.

### **Rate base**

The rate base, as defined in the licence, is the net investment in the company. DEML states that its total capital base is \$63.636M. The Office has however adjusted this figure to \$63.599M after analysis of the detailed submission by DEML. Assets amounting to \$49.636M were transferred from New Era Homes Ltd to DEML at a minimal cost. The Office has assumed that the true costs of the transferred assets were included in the price of the houses and as such it will treat these assets as 'customer owned assets' in the regulatory accounts. Consequently, these assets will not attract a rate of return and the depreciation charge will be offset by an equivalent amortization of the customers' interest in the assets. The remaining amount of \$13.963M represents investment financed by the company. Table 6 lists the asset description that comprises the total investment by DEML.

**Table 6: DEML's Investment**

Type of Asset	Value (\$)	Value (\$)
Road repairs	6,137,922	
Database Management Software and Equipment	1,425,000	
Motor Vehicles	2,250,000	
Water Meters	2,340,000	
Generator	1,500,000	
Container office (site)	310,000	
<b>Total value of DEML investment</b>		<b>13,962,922</b>
Total value of assets transferred		49,636,300
<b>Total value of asset base</b>		<b>63,599,222</b>

The repairs on roads is to be carried out as a condition for the transfer of assets and can be considered as the price paid for the assets and as such will be treated as part of the equity in the business.

### **Operating Costs**

New Era Homes owned and operated the water and sewage systems prior to DEML. During this time, households in the service area, Vineyards Estate, received water and sewerage services at no charge. This arrangement continued after the transfer of the assets to DEML, as the company was without a licence and approved rates and therefore could not charge for the service.

Since the transferal in 2005, DEML has incurred operating costs such as utility expenses and maintenance costs to keep the water and sewerage systems operational. The company has stated that the total costs incurred for 2005 is \$6.185M and projects total operating cost at \$15.342M in 2006. The Office will use 2006 as the test year, as such has not included \$6.185M in the determination of the operating costs.

The Office has made several adjustments to DEML's projections upon examination of the various cost components that make up total expenses.

- **Cost of Sales**

DEML has made a provision of \$68,250 for prepaid inventory (related to meters) in the projection for cost of sales (\$3.845M). Expenses related to meters ought properly to be capitalized; as such the Office has excluded the amount of \$68,250 from cost of sales and included it in the capital provision for meters. In the calculation of its proposed rates, DEML annualized the cost of sales for one month to arrive at the yearly figure of \$3.845M<sup>8</sup>. The Office is of the view that a longer period of data must be analyzed to project the future movement in costs; as such the Office has used half yearly data from

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<sup>8</sup> This approach is inconsistent with that used in the remaining model; in fact, the amount included for cost of sales in the income statement is \$4.515M.

2005 to project the cost of sales in 2006. The amount for cost of sales used by the Office in the derivation of total operating costs is \$4.363M

- **Salaries and related costs**

DEML makes provision for direct (included in cost of sales) and indirect wage related costs of \$5.109M<sup>9</sup>. Of this amount, \$1.2M provision for management fees is made and statutory deduction of 6% of expected salaries is included. The Office has adjusted this percentage to 11.5% to include all mandatory statutory deductions (NIS, NHT, Education Tax and HEART). The Office has also reviewed the organizational chart of the company and is of the opinion that the staff complement is sufficient to deliver and maintain adequate service delivery. The Office has therefore adjusted the proposed amount upwards to \$5.218M.

- **Sales and Marketing**

Given the problems surrounding the transfer of assets and the lingering discomfort by the Vineyards community with DEML as the service provider, the Office is of the view that adequate marketing and the implementation of various public relations programme will be critical to the success of the business. In the financial model submitted by DEML an amount of \$220,000 was spent on marketing in 2005, this amount is projected to increase to \$440,000 in 2006. The Office has therefore allowed the estimated \$400,000 as part of the total operating costs.

- **Depreciation**

In DEML's sewerage licence, a depreciation schedule was included outlining the depreciation rates to be applied to each category of assets. Although, a depreciation schedule was not included in the water provider licence, similar depreciation rates would apply to similar types of plant.

DEML has provided for a depreciation charge of \$1.533M<sup>10</sup> for 2006. This level of depreciation was based on the assets transferred and not on assets acquired as a result of capital injection by DEML. The company has stated that it will make an investment of \$12.9M in assets. This was adjusted to \$13.963M based on the list of assets submitted by DEML and shown in Table 5. Of this amount of assets \$7.825M will attract depreciation charges for regulatory purposes. The depreciation associated with this set of assets is \$1.245M.

An amount of \$6.138M is associated with road repairs. This is not considered to be a 'used or useful' asset in the provision of services as it is related to general road repairs in the community and not directly associated with regulatory assets and therefore will not attract depreciation charge for the purpose of setting rates.

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<sup>9</sup> The amount for direct wages is \$1.254M and is already included in the cost of sales.

<sup>10</sup> This depreciation charge does not include provision for capital injections of \$7.825M by DEML.



Since DEML did not invest the total value of capital base, the Office will not include the recovery depreciation charges on the assets of \$49.636M through the rates. It should be noted, however that a provision for operation and maintenance (O&M) on all assets of \$494,000 is included in cost of sales. DEML may in future years make investments in the rehabilitation of the plant and these expenditures will be capitalized and added to the rate base.

• **Interest Cost**

DEML has included a 5% return on investment in the calculation of its proposed rates. The company has also included interest associated with its term loan in determining the total operating costs. The interest on term loan included in the total cost is \$675,000.

The Office has used the weighted average cost of capital to determine the reasonable return on investment and therefore the revenue requirement. As such it has excluded interest expenses from operating costs to avoid double counting.

With the above adjustments, **the Office projects that the total operating cost in 2006 is \$12.235M.** Table 7 summarizes the components of total operating expenses.

**Table 7: Office determined operating expenses**

	<b>DEML proposed</b>	<b>Office determined</b>
<b>Expenses:</b>		
Direct Cost of Sales	3,845,482	4,363,856
Sales And Marketing	440,000	400,000
Property & Utilities	442,000	422,000
Operations	1,211,000	1,211,000
Banking & Other	400,000	400,000
Other Wages & Benefits	3,855,000	3,947,100
Interest Operating Loan	3,615,410	-
Interest Term Loan	-	-
Depreciation	1,533,100	1,244,750
<b>Total Expenses</b>	<b>15,341,992</b>	<b>12,235,015</b>

**Return on Investment**

The rates that are set by the Office should be such that it gives the company an opportunity to make a reasonable return on its investment. This return is calculated as cost of capital times the rate base. As stated earlier, DEML would not get a return on investment on the assets that it has acquired (\$49.636M) by way of a ‘grant’. DEML has, however, invested capital of \$13.963M and as such should realize a return on this investment. The Office is of the view that DEML faces similar risk as other small water

and sewerage service providers operating in Jamaica. In a recent determination, the Office determined that the real post tax cost of equity for small water and sewerage provider is 14.6%<sup>11</sup>. DEML has stated that the loan interest is 18%, which results in a post tax weighted average cost of capital of 13.2% on the assumption of a debt/equity ratio of 55:45. When this is applied to the rate base of \$13.963M, **the pre-tax return on capital or the amount of revenues necessary to provide the required return is \$2.752M.**

## **Taxes**

The corporate tax rate is 33 1/3%. The Office has incorporated the provision for taxes in the determination of return on capital so there is no further provision for taxation.

## **Revenue Requirement**

The revenue requirement is the sum of total operating costs (including depreciation), taxes and return on investment. The Office has determined that the revenue requirement is \$15.077. (See table 8).

**Table 8: Revenue Requirement**

<b>Category</b>	<b>Amount (\$M)</b>
Total operating cost	12.325
Taxes	-
Pre tax Return on investment	2.752
<b>Total</b>	<b>15.077</b>

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<sup>11</sup> See Can-Cara Development Limited Review of Sewerage Rates – Determination Notice, December 31, 2005, Document No: WAT 2005/02.

## Determination

### Connection fee

DEML has proposed an initial connection fee of \$1,500 per customer to access the water service. This cost comprises the labour, material and overheads required to install individual meters as the developer has already provided the piped connection. The Office is of the view that \$1,500 is reasonable.

### *Determination 1*

*The water connection fee of \$1,500 is approved.*

*Where the developer has, in fact, made the sewerage connection - no connection fee for sewerage is chargeable.*

### Reconnection fee

DEML has proposed a reconnection fee of \$1,000. The Office has no objection to the proposed amount as it falls within the range across the various utility sectors.

### *Determination 2*

*The reconnection fee of \$1000, in the event of disconnection for non-payment, is approved*

### Service charge

Although DEML submitted two rate proposals, it expressed a preference for an increasing block rate – (See Table 3) in addition to a service charge of \$263.26 (per customer account). It is standard practice in the water and sewerage sector to have a two part billing system, consisting of a fixed and a variable charge. The fixed charge is usually set such that the company can recover its fixed overheads<sup>12</sup> while the variable charge is designed to cover those costs that vary with the volume of production. Due to the low customer base and high fixed cost, the service charge, would be very high if all fixed costs were to be recovered by the service charge. As such the Office has adopted the approach of only partially recovering the fixed costs through the service charge and setting the volumetric rates such that it covers the shortfall in the revenue requirement. Given this approach, the Office **has determined the service charge of \$250**. With this service charge, the Office projects revenues of \$978,000<sup>13</sup>.

### *Determination 3*

*The base service charge is to be set at \$250.*

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<sup>12</sup> Costs such as metering, billing and depreciation are usually fixed.

<sup>13</sup> This projection uses a customer base of 427. Although the company has used a customer base of 407 in its projection of revenues, it has used 427 in the calculation of the volumetric rates.

### Water and Sewerage rate

With a revenue requirement of \$15.077M, the shortfall, after subtracting revenues from the service charge (\$978,000) is \$14.099M. Revenues from volumetric rates must cover this shortfall.

The Office considers it important to have a billing system that is simple and easy to understand by customers. As such it has no objection to the principle of establishing a single volumetric rate for all consumption. It also recognizes, however, that there may be some merit in having an increasing block structure to encourage conservation. Given the lack of consumption data for the service area, it is difficult to develop a set of rates that will accurately reflect the consumption pattern. The Office sought to find a reasonable proxy to project overall consumption.

Consumption data of NWC's customers for the total island as well as that for St Catherine only, was analyzed. Arising out of this analysis, the projected consumption was considerably less than the 26,767 litres used by DEML. Although the analysis of the data revealed that majority of the consumption is concentrated within the first 6,000 gallons, the Office has been unable to project, with a sufficient degree of certainty, the percentage of accounts within the Vineyards Estate area that will fall within each consumption band. This is based on the assessment that the community is not representative of the average income of or consumption levels in the parish or island.

The Office has therefore decided to use DEML's estimated consumption of 220 litres per individual per day to determine the volumetric rate. With this consumption, and assuming that there are, on average, 4 persons in each of the 427 households, total projected yearly consumption is 137.15ML. Until costs have been properly allocated between the two services, it is assumed that there is a 50:50 split of the total cost between water and sewerage services. The Office has further allocated the sewerage costs on the basis of the amount of water consumed; as such the total volume that is used to derive the volumetric rate is 274.3ML. The net revenue requirement of \$14.099M is divided by 274.3ML to get a volumetric rate of \$51.40/1,000 litres.

At the end of the first 12 months of operation, DEML is required to submit one year of consumption and production so that rates that more adequately reflect the consumption profile of the service area can be determined.

*An important requirement of the company's accounting will be the accounting separation of the water supply and sewerage services businesses.*

To test the long term viability, the Office did a 10-year projection of business operations. The cash flow<sup>14</sup> projections were done over the 10-year period, discounting to present value using the company's WACC of 13.2% and then compared it to the initial cash

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<sup>14</sup> Cash flow excludes depreciation and all loan related expenses.  
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outlay of the company<sup>15</sup>. With this forecast, a NPV of \$35.2M is generated. Given this significantly positive value, the Office is satisfied that the company is viable in the long term and also that customers will have access to reliable and continuous service over time.

#### ***Determination 4***

***The volumetric rate for water and sewerage services is \$51.40 per 1,000 litres.***

***The service charge and volumetric rate is set for a period of 15 months.***

## **Performance Benchmarks**

DEML's licences contain several reporting requirements and quality of service standards which forms a part of its licence conditions. These are reproduced below and shall be amongst the criteria used to assess the company's annual performance.

### **A. Reporting Requirements**

DEML shall submit yearly operating and audited financial information on its operation within three (3) months of the end of each financial year. DEML shall submit audited financial information to the Office prior to the review of the sewerage and water charges.

### **B. Quality of Service Standards**

While DEML's sewerage service provider licence only contains overall standards, the water licence contains both overall and guaranteed standards. Overall standards are general in nature and address overall delivery of service. Guaranteed standards address specific areas of service, and DEML shall be obliged to make compensatory payments equivalent to the service charge if any of these standards are breached. **The regime for compensatory payment will be introduced three months after the effective date of this Determination after consultation with stakeholders on the preferred mechanism for initiating the compensatory payments.**

The standards prescribed in each of the licences are as follows:

#### *Overall Standards - Sewerage*

##### **Environmental standards:**

- DEML shall conform to all and any standards that may be established from time to time by National Environment Protection Agency (NEPA).
- At least 90% of reported blocked main should be cleared within 4 hours of report being received
- The plant should be maintained to minimize odor complaints. There shall be no more than 5 complaints per 100 customers regarding odor in any month

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<sup>15</sup> The general rule of thumb is that accept project if NPV is greater than zero and IRR is greater than WACC.

### *Billing*

Customers should be provided with appropriate bills detailing the basis for all charges on a monthly basis

### Overall Standards- Water

The required notification time should be given for at least 90% of planned interruptions  
At least 90% of emergency lock-offs should be restored within the required time.

### *Billing*

DEML shall provide bills to its customers on a monthly basis (based on meter reading) detailing the volume of water consumed for the period and all other relevant charges and specifying the conditions for disconnection for non-payment.

### Guaranteed Standard - Water

1. DEML shall give 24 hours notice to customers for any scheduled interruptions of supply for the purpose of maintenance or otherwise
2. DEML shall, in the event of unscheduled interruptions or emergencies restore water supply within 24 hours

Should the company fail, at any time, to meet these standards, it shall make a compensatory payment to the affected customers for each breach in an amount equal to the service charge that is payable by the customer. Customer payments are to be effected by means of a credit to the customer's bills.

Pursuant to its statutory powers the Office also introduces the following overall standard

- 90% of all households must have functioning meters at all times and the following guaranteed standard
- No account shall receive more than one consecutive estimated bill (conditions of force majeure which will be agreed by the Office are excepted)
- Payment of compensatory payment due to breach of guaranteed standards within 30 days after confirmation of the breach

Additionally, DEML should use all reasonable endeavours to achieve the following service standards:-

- Processing of billing and non-billing complaints within 30 days
- Repairing faulty meters within 40 days of being informed after verification that meter is faulty
- Reconnection after payment of overdue amounts within 24 hours

**These standards are summarized at Tables 9A, 9B and 10.**

Notwithstanding the above service standards, the Office reserves the right, in accordance with its statutory powers, to introduce any standard it considers necessary to improve delivery of service or change the compensatory payment from time to time.

The definition of “*Force Majeure*” as it relates to the Guaranteed and Overall Standards is to be agreed between the Office and DEML within one month of the date of this Determination.

### **Codes of Practice**

The following Codes are to be developed by the company:

- (a) Within three months of the date of this Determination – “Standard Terms and Conditions of Contract” are to be submitted to the Office for review and approval.
- (b) During the first year after the date of this Determination – a series of Customer Service information bulletins advising customers of the company’s procedures for making complaints, bill payment, disconnection policy, contact offices and telephone numbers, etc. This will be regarded as a work in progress during the 12 month period as the Office will expect DEML to eventually produce a Code of Practice for Customer Service.

## Service Standards

**Table 9A - Summary of Standards and Performance Criteria - Water**

<b>Standard/ Performance Criteria</b>	<b>Licence Requirement</b>	<b>Office Requirement this Tariff</b>	<b>Comments</b>
<b>General -</b>			
Environmental	Conform to NRCA	Conform to NRCA	
Water Quality	I Jam Standards	I Jam standards	Compliance at all times with MOH
Water pressure	20 – 60 psi	20 – 60 psi	Obligation to ensure adequacy of supply at all times
Billing	Monthly bills based on meter readings	Monthly bills based on meter readings	
<b>Quality of Service – Overall</b>			
Notification of all planned outages to be given	90% within required time	90% within 24 hours	
Time for restoration of supply after emergency lock offs	90% within required time	90% within 24 hours	
<b>Quality of service - Guaranteed</b>			
Notice of scheduled outages	24 hours	24 hours	
Restoration time after unscheduled or emergency interruptions of service	24 hours	24 hours	
<b>Quality of service -Other</b>			
Monthly meter readings	Best endeavours	90% of all meters	
Processing of Billing and non billing complaints	Best endeavours	Resolve within 30 days	
Repairing faulty meters	Best endeavours	90% repaired or replaced within 40 days of report	
Reconnection after payment of overdue amounts	Best endeavours	24 hours	
Payment of compensatory payments	Best endeavours	Within 30 days of confirmation of breach	



**Table 9B - Summary of Additional (New) Standards and Performance Criteria - Water**

<b>Standard/ Performance Criteria</b>	<b>Licence requirement</b>	<b>Office Requirement this Tariff</b>	<b>Comments</b>
<b>Quality of Service – Overall</b>			
Percentage of accounts with functioning meters at all times	-	90%	
Disconnection for non payment of debt	-	95% of all disconnections must be legitimate	
<b>Quality of service - Guaranteed</b>			
Number of consecutive estimated bills	-	1	Will not attract compensatory payment

**Table 10 - Summary of Standards and Performance Criteria - Sewerage**

<b>Standard/ Performance Criteria</b>	<b>Licence requirement</b>	<b>Office Requirement this Tariff</b>	<b>Comments</b>
<b>Environmental</b>	Compliance with NEPA/NRCA	Compliance with NEPA/NRCA	
<b>Billing</b>	Provide appropriate bills	As per water service	
<b>Quality of Service – Overall</b>			
Clearing reported blocked mains	90% within 4 hours of report-	90% within 4 hours of report-	
Odor	Maximum 5 complaints/100 customers/month	Maximum 5 complaints/100 customers/month	To minimize complaints about odor.

## Summary of Decision

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

- 1) The sewage and water rates is based on a two-tiered rate structure comprising of a fixed component, known as the service charge (applicable to water only) and a flat rate, which is based on consumption.
- 2) The service charge is \$250.
- 3) The variable component is a volumetric rate of \$51.40 per 1,000 litres.
- 4) Sewage rates are 100% of water rates.
- 5) Initial connection fee for water only is \$1,500.
- 6) Reconnection fee is \$1,000.
- 7) Rates are set for a period of 15 months.
- 8) At the end of the first year, the Office will review after the submission of consumption and production data by DEML. Accordingly the subsequent rate review must be based on 12 months of full operating data.
- 9) DEML must adhere to overall and guaranteed standards as outlined in its licences or as modified by this Determination.
- 10) Within three months of the date of this Determination, DEML shall prepare “Standard Terms and Conditions of Contract” which is to be submitted to the Office for review and approval.
- 11) During the first year after the date of this Determination, DEML is to develop a series of Customer Service information bulletins advising customers of the company’s procedures for making complaints, bill payment, disconnection policy, contact offices and telephone numbers, etc

**The rates become effective on the 1<sup>st</sup> August, 2006 and will remain effective for 15 months.**