

Office of Utilities Regulation

KEMTEK DEVELOPMENT AND CONSTRUCTION LIMITED INTERIM WATER RATES

Determination Notice



OFFICE OF UTILITIES REGULATION

2020 January 06

DOCUMENT TITLE AND APPROVAL PAGE

1. DOCUMENT NUMBER: 2019/WAS/008/DET.004

2. DOCUMENT TITLE: KEMTEK DEVELOPMENT AND CONSTRUCTION LIMITED INTERIM WATER RATES

3. PURPOSE OF DOCUMENT

This document outlines the Office's decisions on Kemtek Development and Construction Limited's application for approval of interim rates to be charged to customers consequent on the granting of a licence by the Minister on 2019 September 18.

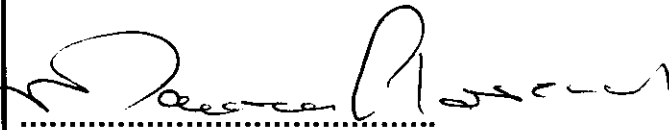
4. ANTECEDENT PUBLICATIONS

Publication Number	Publication Title	Publication Date

5. Approval

This document is approved by the Office of Utilities Regulation and the decisions therein become effective on 2020 January 06

On behalf of the Office:



.....
Deputy Director General
Maurice Charvis

2020 January 06

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1. Executive Summary

- 1.1. Kemtek Development and Construction Limited (KDCL) is a privately owned company with registered office at Shop 6E Pompano Commercial Complex, Tower Isle in the parish of St. Mary. On 2019 September 18, KDCL was granted a water supply and distribution licence by the Minister of Economic Growth and Job Creation. The company is licenced to supply and distribute water to a service area encompassing the Stonebrook Manor Development in Florence Hall, Trelawny.
- 1.2. In its application for a water supply and distribution licence in 2018, the company had included a proposal for rates to be charged. After issue of its licence, the Office of Utilities Regulation gave the company an opportunity to submit a formal tariff application. In 2019 October, KDCL submitted its Tariff Application to the OUR, which application modified the rates originally proposed with its licence application. The rates requested by the company were:

Service Charge	Nil
0 to 28,500 litres	\$144.86[/thousand litres/month]
Over 28,500 litres	\$202.80[/thousand litres/month]

- 1.3. In its Tariff Application KDCL also requested a flat rate of \$4,300/month based on an average monthly consumption of 6,000 gallons per month, to be charged to customers whose premises had not yet been outfitted with water meters.
- 1.4. In assessing the reasonableness of KDCL's Application, the OUR took into account the limited costs data available from the company given that it had recently commenced operation. In the absence of costs data, the OUR considered it prudent to use benchmarking, supported by its 'No Objection Policy', as the rate-setting procedure for the establishing interim rates for the company, rather than applying the rate-making procedures outlined in its Licence. The 'No Objection Policy' is based on a principle that if the rates proposed by a private water or the sewerage services provider are below those being charged by the National Water Commission (NWC) for comparable services, the Office would not object to the implementation of the proposed rates.
- 1.5. As shown in Table 1.1 below, KDCL's rates were first converted from litres to gallons, given that the other benchmarked utilities rates are presented in \$/gallon.
- 1.6. The benchmark analysis conducted involving a comparison of KDCL's proposed rates against those now being charged by the National Water Commission (NWC), the dominant provider of water supply and distribution services, and two other comparable independent water providers, Dynamic Environmental Management Limited (DEML) and CanCara Development Limited (CDL).
- 1.7. In arriving at a determination for the interim tariff, the OUR after conducting the benchmark analysis, applied the 'No-objection Policy'.

**Table 1.1 – Bill Impact Based on KDCL Proposed Rates
Typical Bill (at 6,000 gallons/27,277 litres)**

KDCL Proposed Rates			
Description	Rate (\$/'000"Litre)	Bill Charge (J\$)	Litres
0 to 20,000 litres	144.86	2,897.20	20,000.00
Over 20,000 litres	202.80	1,475.68	7,276.54
		4,372.88	27,276.54
Consumption 27,277 litres/6,000 gallons equivalent			
Description	Equivalent Rate (\$/'000"Gallon)	Bill Charge (J\$)	Gallons
0 to 4,399 gallons	658.55	2,897.20	4,399.38
Over 4,399 gallons	921.95	1,475.68	1,600.62
		4,372.88	6,000.00
1 Gal. - 4.54609 Litres			

- 1.8. The benchmark analysis revealed that, based on KDCL’s proposed rates, the typical customer served by: (i) the NWC would pay 28% higher, (ii) DEML would pay 12% lower and (iii) CDL would pay 3% lower; than the typical KDCL customer (see Table 1.2 below). This indicates that the rates proposed by KDCL would result in a lower tariff than the rates currently charged by the NWC, and are competitive with those charged by other private water providers.

Table 1.2 – Benchmark Analysis: Typical Bill (at 6,000 gallons)

Volumetric Service Blocks (’000 Gallon)	KDCL Rate (\$/'000'Gallon)	NWC Rate (\$/'000'Gallon)	DEML Rate (\$/'000'Gallon)	CDL Rate (\$/'000'Gallon)
0 - 3 [0-4.4 KDCL]	658.55	471.49	513.30	421.29
>3 - 6 [Over 4.4 KDCL]	921.95	831.21	513.30	742.88
>6 - 9	921.95	897.49	513.30	802.11
>9 - 12	921.95	1,145.53	513.30	1,023.87
>12 - 20	921.95	1,426.67	513.30	1,274.91
> 20	921.95	1,836.41	513.30	1,641.14
Volumetric Charge [Consumption @ 6,000 gallons]	4,372.88	3,908.10	3,079.79	3,492.49
Service (Fixed) Charge	-	1,700.00	641.82	739.28
Total Charge(J\$/month)	4,372.88	5,608.10	3,721.61	4,231.77
Variance Relative to KDCL	-	28%	-15%	-3%

1.9. In light of the above analyses, and given KDCL’s proposed rates result in a lower tariff than that currently charged by the NWC, the OUR has no objection to KDCL charging the proposed rates stated below.

Service Charge	Nil
0 to 28,500 litres	\$144.86/thousand litres/month
Over 28,500 litres	\$202.80/thousand litres/month
Flat Rate	\$4,300/month (Unmetered Premises)

1.10. The rates shall remain in effect for a period of, at least, eighteen (18) months from the effective date of this decision.

1.11. During the intervening period, KDCL shall prepare and submit an application for a comprehensive review of rates based on its actual cost for providing the service. The application shall include the most recent set of audited financial accounts available at the time of the application. KDCL shall prepare and submit its application within fifteen months (15) months from the effective date of this Determination Notice. In the interim KDCL shall meet at a minimum the guaranteed service standards as set out in the Licence. The compensation mechanism for a breach of a Guaranteed Standard will be established at the next review of rates.

2. Definitions, Acronyms and Abbreviations

COD	-	Commercial Operations Date
CDL	-	Can-Cara Development Limited
DEML	-	Dynamic Environmental Management Limited
Gal	-	Gallons
Government	-	Government of Jamaica
GS	-	Guaranteed Standards - Quality of Service
IG	-	Imperial Gallon
Licence	-	Kemtek Development and Construction Limited Water Supply and Distribution Licence, 2019
Licensed Business	-	The supply and distribution of water by the Licensee pursuant to the Licence
Licensee/ KDCL	-	Kemtek Development and Construction Limited.
Minister	-	Minister of Government with portfolio responsibility for water
MTAOP	-	“Meter Testing Administrative and Operational Protocol for the Electricity and Water Sectors in Jamaica, 2017” Document No. 2016/GEN/004/RUL.001
NWC	-	National Water Commission
O&M	-	operations and maintenance
OUR Act	-	The Office of Utilities Regulation Act
OUR/Office	-	Office of Utilities Regulation
ppm	-	parts per million
WRA	-	Water Resources Authority

3. Introduction

- 3.1. Kemtek Development and Construction Limited (KDCL) is a privately owned company with its registered office situated at Shop 6E Pompano Commercial Complex, Tower Isle, St. Mary. The company was granted a licence cited as the “**Kemtek Development and Construction Limited Water Supply and Distribution Licence, 2019**” on 2019 September 18 (“Licence”) to supply and distribute water to a service area located at the Stonebrook Manor Development in Florence Hall, Trelawny.
- 3.2. The Stonebrook Manor Development is bounded on the north by a reserved road, to the west by a main road from Falmouth to Daniel Town, to the south by an old parochial road and to the east by New Falmouth Resorts Limited.
- 3.3. KDCL holds a Water Abstraction Licence dated 2018 January 18 from the Water Resources Authority (WRA), which allows it to abstract no more than 927 cubic metres of water per day from the Florence Hall #1 Well located at Florence Hall, Trelawny. The Water Abstraction Licence is valid for a period of five (5) years.
- 3.4. In its licence application in 2018, KDCL advised that its construction development consist of eight (8) Phases. It indicated that it would have commenced handing over units for Phase I in 2018 August and for Phase II in 2018 December. At that time, the company was expected to complete the transfer of the remaining phases over three (3) years.
- 3.5. As at 2019 November, KDCL reported that it had successfully transferred approximately ninety percent (90%) of the units in Phases I and II, and are on track to commence the construction of Phase III in 2020 January.
- 3.6. This Determination Notice outlines KDCL’s Tariff Application and sets out the Office of Utilities Regulation’s (OUR’s) analyses and determinations thereon.

4. Legal Framework

4.1. The OUR is a multi-sector utility regulator established pursuant to the Office of Utilities Regulation Act (“OUR Act”), with regulatory oversight of the provision of prescribed utility services in Jamaica. The supply and distribution of water are included among the prescribed utility services defined in section 2 and the First Schedule of the OUR Act.

4.2. The OUR is empowered under section 4(4) of the OUR Act to determine the rates charged for the provision of a prescribed utility service. This section reads:

“ (4) The Office shall have power to determine, in accordance with the provisions of this Act, the rates or fares which may be charged in respect of the provisions of a prescribed utility service. ”

4.3. On 2019 September 18, pursuant to the OUR Act, the Minister with portfolio responsibility for the water and sewerage sectors granted the Licence to KDCL. The provisions of the Licence reinforce the OUR’s statutory powers to regulate KDCL’s Licensed Business as defined under the Licence.

4.4. In respect of price controls, Clauses 13.1 & 13.2 of the Licence provide that:

“13.1 The Licensee is subject to the conditions and procedures set out in Schedule 3.

13.2 The rates to be charged by the Licensee in respect of the Prescribed Utility Service in relation to the Licensed Business shall be as determined by the Office from time to time.”

4.5. The Licence stipulates that the rates and charges as determined by the OUR should provide a reasonable opportunity for the Licensee to make a reasonable return on capital employed after taking into account all reasonable costs incurred in the provision of services. Extracts from Schedule 3 of the Licence, provide as follows:

“The rates for the supply of services by the Licensed Business shall be set such that the rates provide a reasonable opportunity for the Licensee to make a reasonable return on capital employed after taking into account all reasonable costs incurred in the provision of the services.

Revenue Requirement = operating costs + depreciation + taxes + return on investment, with each component defined as follows:

“Operating costs”: All prudently incurred costs, which are not directly associated with investment in capital plant...

“Return on Investment”: ... The return on investment shall be calculated by multiplying the allowed rate-of-return by the Licensee’s total investment

base (“Rate Base”) for the test year. The allowed rate of return is the Licensee’s Weighted Average Cost of Capital (WACC). The WACC (“K %”) will balance the interests of both consumers and investors and be commensurate with returns in other enterprises having corresponding risks which will assure confidence in the financial integrity of the enterprise so as to maintain its credit and to attract capital...”

4.6. With regard to the application for an initial tariff, Schedule 3 of the Licence provides that:

“On the granting of this Licence, the Licensee shall submit a proposal for the initial tariffs to be charged in respect of services and the Rate Review Process as set out herein shall be applicable.”

4.7. Further, the Licensee is permitted to apply to the OUR for a tariff review as needed, but no more frequently than once in every two (2) years. Schedule 3 of the Licence provides that:

“At such intervals as the Licensee may determine but no more often than once in every two (2) years, the Licensee may submit an application for a tariff review. The Application must be supported with data and information as the Office will determine.”

4.8. Notwithstanding the provisions of Schedule 3 of the Licence, the Office currently applies a policy of “non-objection” to rate applications from small water and sewerage service providers, such as KDCL. The policy allows for the automatic approval of the proposed rates, if such rates do not exceed those rates of the National Water Commission (NWC) for comparable services. However, in instances where the proposed rates are higher than those of the NWC, the small provider is required to provide the necessary cost data and audited financial statements in support of its application to facilitate a more detailed rate review.

4.9. This automatic non-objection tariff setting methodology (the “No-Objection Policy”) is being reviewed by the OUR. As part of the review, the OUR will engage stakeholders in a consultation process on the issue.

4.10. The Licence expressly states in Schedule 2 that the Licensee shall observe prescribed service standards, and it also authorizes the OUR to introduce new or vary existing guaranteed standards that will encourage and facilitate minimum standards of customer service.

5. Summary of the Tariff Proposal

5.1. KDCL has requested a two-tiered tariff structure for metered customers. The rates proposed are as follows:

Service Charge	Nil
0 to 28,500 litres	\$144.86[/thousand litres/month]
Over 28,500 litres	\$202.80[/thousand litres/month]

5.2. The company indicated that it is in the process of procuring electronic meters (Hydrus 2.0) and currently has a confirmed order for 100 units. However, the immediate need is for 350 meters. In light of this, it has sought approval to charge a flat fee for premises that will be temporarily unmetered. The proposal is for a monthly fee to be calculated for a household of four (4) persons consuming 50 gal/day/person (6,000 gals/which would equate to \$4,372.88 for a month). Accordingly, KDCL proposed a flat rate of \$4,300/month per household for unmetered customers.

5.3. The company requested that the interim residential rate generate adequate revenues to cover costs items as follows:

- Capital Costs:
 - *Storage Tanks*
 - *Water Treatment System*
 - *Well/Booster Pumps*
 - *Supply Piping*
- Operating Costs
 - *Pumping Utility Costs (Electricity)*
 - *Administrative Cost*
 - *Water Treatment Cost/Sampling*
 - *Technical Support*

5.4. Assuming that it has approximately 900 customers (households) consuming 250 gallons of water, KDCL projected that its water demand would be 292,500 gallons/day after making allowance for losses. Table 5.1 below shows KDCL's calculation of its estimated daily water demand.

Table 5.1 KDCL Projected Water Demand¹

Water Demand (Gallons)	
Recommended Demand (per NWC)	50 Gal/day/person
Number of persons per household	5 persons/household
Assume 5 persons/household	250 Gal/household/day
	950 Litres/household/day
	28,500 Litres/household/month
Number of homes in development	900 homes
Daily demand for development	225,000 Gallons/day
Assume leakage rate of 30%, thus demand factor:-	1.3 Demand Factor
Water Demand for development	292,500 Gallons/day

¹ Based on KDCL's analysis the projected demand by its customers is 225,000 gallons per day, but its projected production is 292,500 per day since it anticipates water losses to be 30% of its daily demand.

6. Evaluation of the Application

- 6.1. Schedule 3 of KDCL's Licences stipulates that a 'Cost-plus' approach is applicable in the determination of the company's rates. However, given that the company has recently started operating, this information would not be available.
- 6.2. It is therefore within this context that the OUR considered it prudent to use benchmarking as the appropriate approach for this rate review. From a regulatory perspective, benchmarking is an acceptable procedure where there are information gaps that prevent rational decision making.
- 6.3. The benchmark analysis conducted involved a comparison of KDCL's proposed rates against those now being charged by the NWC, the dominant provider for water supply and distribution services, and two other independent providers, Dynamic Environmental Management Limited (DEML) and CanCara Development Limited (CDL).
- 6.4. KDCL's rates were first converted from litres to gallons, given that the other benchmarked utilities' rates are presented in \$/gallon. The bill impact and the result of the benchmark analysis is shown below in Table 6.1 and Table 6.2, respectively.

Table 6.1 – KDCL Bill Impact: Typical Bill (at 6,000 gallons/27,277 litres)

KDCL Proposed Rates			
Description	Rate (\$/"000"Litre)	Bill Charge (J\$)	Litres
0 to 20,000 litres	144.86	2,897.20	20,000.00
Over 20,000 litres	202.80	1,475.68	7,276.54
		4,372.88	27,276.54
Consumption 27,277 litres/6,000 gallons equivalent			
Description	Equivalent Rate (\$/"000"Gallon)	Bill Charge (J\$)	Gallons
0 to 4,399 gallons	658.55	2,897.20	4,399.38
Over 4,399 gallons	921.95	1,475.68	1,600.62
		4,372.88	6,000.00
1 Gal. - 4.54609 Litres			

Table 6.2 – Benchmark Analysis: Typical Bill (at 6,000 gallons)

Volumetric Service Blocks	KDCL	NWC	DEML	CDL
(‘000 Gallon)	Rate	Rate	Rate	Rate
	(\$/000’Gallon)	(\$/000’Gallon)	(\$/000’Gallon)	(\$/000’Gallon)
0 - 3 [0-4.4 KDCL]	658.55	471.49	513.30	421.29
>3 - 6 [Over 4.4 KDCL]	921.95	831.21	513.30	742.88
>6 - 9	921.95	897.49	513.30	802.11
>9 - 12	921.95	1,145.53	513.30	1,023.87
>12 - 20	921.95	1,426.67	513.30	1,274.91
> 20	921.95	1,836.41	513.30	1,641.14
Volumetric Charge				
[Consumption @ 6,000 gallons]	4,372.88	3,908.10	3,079.79	3,492.49
Service (Fixed) Charge	-	1,700.00	641.82	739.28
Total Charge(JS/month)	4,372.88	5,608.10	3,721.61	4,231.77
Variance Relative to KDCL	-	28%	-15%	-3%

6.5. Over the years, the OUR has applied what is referred to as the ‘No-Objection’ Principle to the private water/sewerage sector where there is an information gap. In essence, this principle states that if the service provider’s proposed rates are below those being charged by the NWC for comparable services, the Office should give its approval to the proposed rates on a “no objection” basis.

6.6. In assessing the reasonableness of KDCL’s Application, the OUR took into account the rate-making principles outlined in the Licence, the No- Objection Policy, and the limited availability of costs data on the company’s operations. In the absence of costs data, the OUR considered it prudent to use benchmarking coupled with the No-Objection Policy as the applicable approach for this rate review.

6.7. The benchmark analysis reveals that the typical customer served by: (i) the NWC would pay 28% higher, (ii) DEML would pay 15% lower; and (iii) CDL would pay 3% lower than the typical KDCL customer (see Table 6.2 above). This indicates that the rates proposed by KDCL results in a lower tariff than the rates currently charged by the NWC, and are competitive with those currently charged by other small private water providers.

6.8. Based on the OUR’s benchmarking analysis, and given that KDCL’s proposed rates result in a lower tariff than that currently on offer by the NWC, the OUR has no objection to KDCL applying the interim tariffs as proposed.

6.9. The interim rate determined by the Office is to remain in effect for a period of, at least eighteen (18) months from the effective date of the Determination Notice. This period should allow

KDCL sufficient time to initiate its commercial operations and prepare audited accounts on its utility business.

- 6.10. KDCL shall submit a tariff application within fifteen (15) months of the effective date of this Determination Notice. The tariff application should include, among other things, the monthly customer and consumption data for the period, audited financials that present a true and fair view of the financial position of the company for the year prior to the application, with all relevant notes to financial statements and a capital investment plan indicating any upgrade or expansion required to the water supply and distribution system.

Determination 1

- a) The Office has “**no objection**” to KDCL charging the interim tariffs as proposed. The approved interim rates for KDCL are as follows:

Service Charge	Nil
0 to 20,000 litres	\$144.86/thousand litres/month
Over 20,000 litres	\$202.80/thousand litres/month

Flat Rate \$4,300/month (Unmetered Premises)

- b) The above rates and charges shall remain in effect for at least eighteen (18) months from the effective date of this Determination Notice. During this period KDCL is to initiate commercial operations and prepare audited accounts on the Licensed Business in order to facilitate the submission of a full tariff application.

7. Quality of Service Standards

7.1 In light of the fact that KDCL's water supply and distribution business is still at a relatively early stage of development, the OUR takes the view that the imposition of compensatory payments for breaches in quality of service standards would be premature.

7.2 Against this background, the Office has determined that during this 'interim' tariff period KDCL shall meet the Service Standards as set out in Schedule 2 of the Licence. However, the compensation mechanism for a breach of a Guaranteed Standard will be established at the next review of rates. Notwithstanding, should KDCL fail to submit a Tariff Application within fifteen (15) months of the effective date of this Determination Notice, the Office reserves the right to impose compensatory payments on the company for breaches in quality of service standards. The service standards to be observed by KDCL are shown in Table 7.1 below.

Table 7.1 Guaranteed Standards – Quality of Service (GS)

Code	Guaranteed Standard
GS1 – Connection of New Customers	KDCL is required to connect all new customers complete with working meters, where water supply is available at the property boundary, within three (3) working days after signing the contract for connection.
GS2 – Issue of First Bill	KDCL must issue (print and mail/deliver) a bill to a customer based on a meter reading within thirty (30) working days after the account is established.
GS3(a) – Response to complaints -Acknowledgements	KDCL must, within three (3) working days acknowledge written customer complaints.
GS3(b) – Response to Complaints - Investigations	KDCL must, within fifteen (15) working days of receipt of complaint, complete investigations and inform the customer of the results.
GS3(c) – Investigations involving 3rd party	KDCL must, within thirty (30) working days complete investigations involving 3rd party.
GS4(a) – Wrongful Disconnection	KDCL shall not disconnect the service of an account which is either not in arrears nor is the subject of an investigation internally, or by the OUR.
GS4 (b) – Reconnection after wrongful Disconnection	KDCL must, within twelve (12) hours, reconnect any supply that the company wrongfully disconnected and a written apology extended.
GS5 – Repair or Replacement of Faulty Meter	KDCL must, within ten (10) working days of identifying, or being notified of a defect, repair or replace any malfunctioning meter.
GS6 – Meter Reading	KDCL must render a bill based on a meter reading each month.

Code	Guaranteed Standard
GS7 – Reconnection after Payment of Overdue Amount	KDCL must, within twenty-four (24) hours of receipt of all applicable payments (reconnection fee, etc.) reconnect customers disconnected for non-payment of outstanding bills.

Determination 2

- a) KDCL shall be required to meet the Service Standards as set out in Schedule 2 of the Licence except for GS8 – Payment of Compensation. The compensation mechanism for a breach of a Guaranteed Standard will be established at the next review of rates.
- b) In the event that KDCL fails to submit a Tariff Application within the next fifteen (15) months of the effective date of this Determination Notice, the Office reserves the right to impose compensatory payments on the company for breaches in quality of service standards.

8. Technical Review of Water Supply System

Overview of KDCL's Water Supply System

8.1 The orientation of KDCL's water supply system depicts a typical design configuration for water supply infrastructure used by small water service providers. The system includes critical components, such as raw water abstraction facilities, water treatment, pumping and storage facilities, distribution network, instrumentation & controls, and metering devices. These facilities are described below.

Water Abstraction and Production

8.2 Based on the system's design/operational characteristics, the potable water that is supplied to the development is sourced from a deep-water well (91.5 m) located in the adjacent Stonebrook Vista Development at Florence Hall, with a maximum abstraction rate of 927 m³/day (as per Water Resources Authority (WRA) licence). During system operation, raw water from the well is abstracted using a submersible well pump, driven by a 20HP, 230V, 3-phase motor. After extraction, the raw water is treated, and then channeled to the storage facilities.

8.3 To enhance system reliability, KDCL indicated that a second raw water well will be developed in the Stonebrook Manor Development, with an estimated capacity of 250 m³/day. According to the company, this well will serve as a back up to the main well in Stonebrook Vista, in the event it becomes unavailable for an extended period due to, among other things, scheduled maintenance and forced outage of critical equipment or contamination of the raw water.

Water Demand Projection

8.4 According to KDCL, the projected total daily water production was estimated based on forecasted aggregate daily demand. This was derived based on the assumptions and calculation shown below:

- Daily Consumption : 50 Gal/day/person
 - No. of persons/household : Four (4)
 - Total number of units : 895
 - Total daily demand : [Daily cons X No. of persons/household X Total units]
- = 179,000 Gal/day (678 m³/day)**

8.5 This demand projection relative to the system's design capacity indicates that the company should be able to adequately supply potable water to all housing units (895) in the Stonebrook Manor Development, with sufficient margin, on a sustained basis.

Water Treatment

8.6 The water treatment process at the facility is described as follows:

- The abstracted raw water from the well water is pumped into three (3) Macrolite sand filters for the removal of all particulate material greater than 5 microns from the water. The filters are installed in parallel to facilitate operational flexibility and reliability.
- After filtration, the water is directed to a chlorination system for further treatment. During this process, chlorine gas is injected into the water to achieve a residual chlorine value of 2 parts per million (ppm), in order to meet the standards for potable water, prior to storage and distribution.

8.7 Verification of water quality is done by testing of water samples collected at designated sampling points within the system.

Water Storage and Distribution

8.8 Based on the water network layout, treated water is pumped to a “resident” storage tank (capacity of 163,000 gallons) located at Stonebrook Vista water production facility. Using pressure pumps, the water stored in this tank is pumped to two (2) main storage tanks (100,000 Gal and 750,000 Gal) located at a high elevation in the Stonebrook Manor Development. The stored potable water is then gravity-fed into a distribution pipeline network, which supplies the entire service area. The water flow and pressure in the network are regulated by specialized instrumentation and communication/control devices.

Electric Power Supply

8.9 The main electrical power supply for the water supply system is provided by Jamaica Public Service Company Limited’s (JPS) electricity grid, by means of a 230V, three-(3) phase connection. This power supply orientation is compatible with the power requirements of major electrical equipment/machines in the system (well pumps, drive motors and other pump/motor assemblies), and necessitates proper electrical operation of these equipment.

8.10 For back-up power, KDCL indicated that arrangements have been made for the installation of a standby generator with adequate capacity to power the system’s facilities before the end of 2019. The availability of equivalent back-up/standby power supply for the system, effectively would reduce exposure of the system’s critical electrical equipment to the loss of the main power supply, thus reducing potential adverse impacts on water service continuity and reliability. While this proposed back-up power arrangement is noted, for regulatory monitoring purposes, KDCL is required to provide an update on the implementation status of this facility at the next Rate Review.

Completion of Construction and Commissioning

8.11 The OUR's technical review found that components integral to the system's operation at the assumed total demand, is still under construction. It is expected that full commissioning of the facilities will occur by 2021. In light of this implementation schedule, and in keeping with the regulatory monitoring framework, KDCL shall submit the following reports to the OUR:

- Update on the status of the system implementation within three (3) months after the effective date of this Determination Notice.
- Quarterly Progress Report on the system implementation activities up to the time of testing & final testing and commissioning; and
- Detailed Commissioning Report of the system facilities after completion of all commissioning activities.

Management and Operation Structure

8.12 KDCL presented an interim organizational structure for temporary management and operation of the water supply system, which it indicated will be replaced by a permanent structure after full completion of system construction and commissioning prior to commercial operations.

Interim Structure

8.13 According to KDCL, this arrangement involves temporary operation and maintenance (O&M) of the system by a management consultant, engineering consultant and a water quality control consultant, and is projected to be in effect up to commercial operations date (COD).

Long-term Management Structure

8.14 Under the proposed permanent management structure, KDCL indicated that the emphasis would be on a water management company that would provide the requisite technical and administrative resources for the long-term operation and maintenance of the system. Based on the OUR's review, the proposed arrangement appears to be reasonable and generally representative of management/operation approaches utilized for O&M of small water supply systems.

Performance Requirements

8.15 In compliance with Schedule 2 of the Licence, KDCL is required to submit to the Office on an annual basis, the following information and reports:

- a) Volume of water produced;
- b) Volume of water sold;
- c) Assessment of unaccounted-for-water (UFW);
- d) Consumption per customer category;
- e) Details of any unserved demand;
- f) Water quality reports;

- g) Schedules of maintenance programme;
- h) Reliability of supply report for relevant detailing:
 - Number of planned interruptions;
 - Percentage of planned interruptions where the required 24-hour period of Notice is not adhered to;
 - Number of unplanned interruptions; and
 - Percentage of unplanned interruptions not restored in the required 24-hour period.

8.16 Based on the nature of the operations, this information is crucial for regulatory assessment and monitoring of the overall system performance, as well as the level of service delivered to customers.

Regulatory Review and Monitoring Framework

8.17 The regulatory requirements for ongoing assessment/monitoring of KDCL's quality of service performance and utility operations are delineated in the sections below.

Technical Reports

8.18 To supplement the stipulated reporting requirements and enhance the monitoring of KDCL's utility operations, as well as the key performance indicators (KPIs), the company shall submit to the OUR, the following technical reports:

- Quarterly "Technical Reports" covering the parameters/indicators set out under Schedule 2 of the Licence, prior to the submission of the full annual reports; and
- Any other technical data/reports related to the system that the Office might consider necessary, from time to time.

Technical Service Standards

8.19 Based on the system's design, configuration and technical/operating specifications, it is expected that service delivery will meet or exceed the stipulated standards and conditions, and this should be manifested in the service quality experienced by individual customers. Although the prescribed service standards have defined thresholds, KDCL, as the service provider, is required to ensure that they are appropriately quantified, documented and communicated to the customers. Notably, it is important to recognize that without appropriate levels of service, the planning and operation of the system may not achieve the defined objectives.

8.20 The water service standards to be observed by KDCL mainly entails the following components.

Availability and Reliability of Supply

8.21 This component relates to the availability and continuity of water services to all customers connected to the water supply system, and it is considered a key factor for assessment of overall system reliability and service delivery performance. It involves frequency, duration, and

severity of water supply interruptions (planned and unplanned), as well as daily water demand/capacity dynamics, and other conditions.

8.22 Although KDCL has a relatively small customer base, the network is designed to provide all housing units/customers in the service area (both existing and future customers), with full access to potable water services at acceptable levels of reliability.

8.23 Given the existing technical/operating characteristics of the system and the proposed arrangements for the management and operation of the facility, it is expected to operate within the minimum functional specifications to deliver safe, efficient, adequate and reliable water service to the customers over the term of the Licence. Notwithstanding, to ensure that this expectation is realised, it is necessary for KDCL to develop a Framework/Action Plan, encompassing among other things, requirements pertaining to system planning, operations, maintenance of facilities, and assessment of risks to the system. This Framework/Action Plan shall be submitted to the OUR within three (3) months of the effective date of this Determination Notice.

Water Quality

8.24 This aspect covers conditions such as microbiological parameters, turbidity, colour, PH, etc., which should be addressed in the water treatment process, in accordance with the Licence, relevant health & safety standards/regulations, prudent utility practice, and international best practices. It is important to note that contamination of drinking water constitutes a major burden on human health; therefore, interventions to improve its quality can provide significant benefits to society. Given this imperative, KDCL shall supply potable water at acceptable quality, consistent with the minimum water quality standards prescribed under Schedule 2 of the Licence, for long-term consumption. Although these are minimum requirements, KDCL should endeavour to maintain PW quality at the highest possible level.

8.25 With respect to the reporting of water quality, to supplement the annual water quality reports, KDCL shall submit quarterly water quality reports to the OUR for ongoing monitoring of the relevant parameters. The company shall also ensure that the water quality test results and other relevant water quality information are accessible to customers, on an ongoing basis.

Water Pressure

8.26 In accordance with the requirements of the Licence, KDCL shall ensure that the pressure of the water supplied to customers is maintained in the range of 20 - 60 PSI. Based on observation, the “monitoring & control unit” for the system appears to be equipped with the necessary components to measure, record and monitor this parameter. On that basis, KDCL shall report all measurements of water pressure in the network, in the quarterly Technical Reports to be submitted to the OUR.

Planned and Unplanned Interruptions

8.27 As set out under Schedule 2 of the Licence, KDCL shall keep records of all planned and unplanned water service interruptions detailing: dates times, affected area, number of affected customers and notices provided to them. This information is necessary to facilitate system reliability and operational assessments. The service standard also requires KDCL to:

- Provide notification time for at least ninety percent (90%) of planned interruptions.
- Restore at least ninety percent (90%) of unplanned interruptions of water supply within the period communicated to customers.

8.28 This service quality information should be included in the quarterly Technical Reports to be submitted to the OUR.

Revenue Metering

8.29 KDCL should ensure that all revenue-type water meters to be installed in the service area are in conformance with the requirements of the Licence and the “Meter Testing Administrative and Operational Protocol for the Electricity and Water Sectors in Jamaica, 2017” (MTAOP). With respect to the acquisition of water meters to be installed for metering water quantities supplied to customers, KDCL shall provide a report/update to the OUR on the proposed metering arrangements, including meter procurement schedule, quantities, and other relevant information necessary for compliance with MTAOP requirements. This update shall be submitted within one (1) month after the effective date of this Determination Notice.

System Operation

8.30 The characterization of a water utility as a small water service provider, as in the case of KDCL, should provide ample signals to the company to employ prudent strategies to ensure the optimization of system operations at all times. This approach should effectively minimize total operating costs, while realizing improvements in operational efficiency and performance. In that context, KDCL’s proposed arrangement for the long-term management and operation of the water supply system appears to be representative and reasonable. Notwithstanding, to limit or eliminate the potential for system degradation over time, KDCL is required to develop appropriate policies and procedures for the prudent operation of the system, including critical equipment and facilities. These procedures shall be included in the requested Framework/Action Plan.

Maintenance

8.31 As set out under section 8 of the Licence, KDCL shall maintain and keep in good repair all equipment used in carrying out the “Licensed Business”, to enable it to meet its Licence obligations. Prudent industry practice also supports the development and adherence to

maintenance polices/procedures that will assure efficient, reliable and cost-effective water infrastructure operations.

8.32 Taking into account these conditions, KDCL shall develop appropriate policies/procedures to guide the maintenance of the facility, which shall be included in the requested Framework/Action Plan. The company shall also develop an overall Maintenance Plan for the water supply infrastructure, for three (3) years in advance. The plan shall take into account OEM's recommendations for plant maintenance and statutory maintenance requirements where applicable, and shall be reviewed annually and updated as necessary. The company shall submit the Maintenance Plan to the OUR, three (3) months after the effective date of this Determination Notice. Thereafter, the updated plan shall be submitted to the OUR in January of each year, for the remaining period of the Licence.

Risk Management

8.33 The OUR's technical review found that KDCL has contemplated strategies to respond to system contingencies and exceptional circumstances, including the following conditions:

- Chlorination plant failure;
- Forced outage of storage facilities due to major leaks or contamination;
- Major power supply failure;
- Major forced outage of submersible well pump and/or drive motor; and
- Raw water well contamination.

8.34 It appears that some mitigation measures have already been incorporated in the system's design, while some aspects have been planned and expected to be fully implemented with the complete build out of the network. Notwithstanding, given the potential consequences of risk conditions on the operation of the system, KDCL shall develop a strategy/model to assess and mitigate potential risks to the system, on an ongoing basis. This requirement shall be addressed in the requested Framework/Action Plan.

Summary of Regulatory Requirements

8.35 The regulatory requirements to be addressed by KDCL are summarized in Table 8.1 below.

Table 8.1: Regulatory Requirements to be addressed by KDCL

Regulatory Requirements to be addressed by KDCL		
Index	Aspect	Items to be submitted to the OUR
1	Power Supply	<ul style="list-style-type: none"> Update on the implementation status of the back-up power facility, to be included in the requested “status update”.
2	Construction & Commissioning	<ul style="list-style-type: none"> Update on the status of the system implementation within three (3) months of this Determination Notice. Quarterly Progress Reports on the system implementation activities up to the point of completion of construction of all system facilities and testing & commissioning; and Detailed Commissioning Report of the system facilities after completion of all commissioning activities. An Independent Engineer should prepare this report.
3	Technical Reports	<ul style="list-style-type: none"> Quarterly “Technical Reports” covering the parameters/requirements set out under Schedule 2 of the Licence, prior to the submission of the full Annual Reports; and Any other technical data/reports related to the system that the Office might consider necessary, from time to time.
4	Availability and Reliability of Supply	<ul style="list-style-type: none"> A Framework/Action Plan, encompassing among other things, requirements pertaining to the planning, operations and maintenance of the facility shall be submitted to the OUR, three (3) months after the effective date of this Determination Notice.
5	Water Quality	<ul style="list-style-type: none"> Quarterly and annual water quality reports
6	Water Pressure	<ul style="list-style-type: none"> Reporting of water pressure measurements in the Quarterly Technical Reports
7	Planned and Unplanned Interruptions	<ul style="list-style-type: none"> Service quality performance information, which shall be included in the Quarterly Technical Reports.
8	Revenue Metering	<ul style="list-style-type: none"> Report/Update on the proposed metering arrangements, including meter procurement schedule, quantities, and other relevant information necessary for compliance with MTAOP requirements. This report/update shall be submitted within one (1) month after the effective date of this Determination Notice.
9	System Operation	<ul style="list-style-type: none"> Operating policies and procedures for the prudent operation of the system, including critical equipment and facilities, which shall be included in the requested Framework/Action Plan

Regulatory Requirements to be addressed by KDCL		
Index	Aspect	Items to be submitted to the OUR
10	Maintenance	<ul style="list-style-type: none"> • Policies and procedures to guide the maintenance of the facility, which shall be included in the requested Framework/Action Plan. • An overall Maintenance Plan for the water supply infrastructure, for three (3) years in advance. The plan shall take into account the original equipment manufacturers' (OEM) recommendations for maintenance of plant/equipment and incorporate statutory maintenance requirements where applicable, and shall be reviewed annually and updated as necessary. The company shall submit the plan to the OUR, three (3) months after the effective date of this Determination Notice. • Thereafter, the updated Maintenance Plan shall be submitted to the OUR in January of each year, for the remaining period of the Licence.
11	Risk Management	<ul style="list-style-type: none"> • Strategy/model to assess and mitigate potential risks to the system, which shall be addressed in the requested Framework/Action Plan.