

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Application for increase
in wastewater rates in Monroe
County by K W Resort Utilities Corp.

Docket No. 150071-SU

REBUTTAL TESTIMONY

OF

EDWARD R. CASTLE

on behalf of

K W Resort Utilities Corp.

1 **Q. Please state your name, profession and address.**

2 A. My name is Edward R. Castle. I am Vice President of Weiler Engineering Corporation, and
3 Director of its wastewater division. My business address is 6805 Overseas Highway,
4 Marathon, Florida 33050.

5 **Q. Have you presented direct testimony in this case?**

6 A. Yes I have.

7 **Q. Are you sponsoring any exhibits?**

8 A. Yes, I am sponsoring the following exhibits: Exhibits ERC-5 and ERC-6, estimates for
9 completion.

10 **Q. Were these Exhibits prepared by you and your staff?**

11 A. Yes they were, using information provided by KWRU staff or consultants.

12 **Q. What is the purpose of your rebuttal testimony?**

13 A. The purpose of my rebuttal testimony is to respond to Office of Public Counsel witness
14 Andrew T. Woodcock determination of the Used & Useful percentage for the Wastewater
15 Treatment Plant because there is no consideration that the plant has been designed to meet
16 environmental compliance. I am also providing testimony regarding Office of Public
17 Counsel's proposed methodology to determine expenses by annualizing January through
18 February 2016 which would create a deficiency in the amount of expenses because these are
19 KWRU's four driest months and would have the least amount of expenses and using a per
20 gallon treated expense calculation, both of which will greatly underestimate costs of
21 operating AWT before and after the new plant is on-line. Additionally, I am providing
22 testimony as to the permit modifications relationship to the existing plants and wells. Finally,
23 I am providing testimony as to engineering supervision costs associated with the wastewater
24 treatment plant project that are not included in the \$4.3 million Wharton Smith associated
25 with the new wastewater treatment plant.

26 **Q. Why do you disagree with these conclusions?**

1 A. In reaching their conclusions they relied on the basic formula set out in Rule 25-30.431
2 F.A.C. but failed to look beyond the formula to consider the several factors set out in
3 Sections 367.081(2)(a)2 and (3) F.S. and Rule 25-30.432 F.A.C. When these factors are
4 considered, regardless of the mathematical results, the WWTP should be considered 100%
5 Used & Useful. As provided in Florida Statute §367.081(2)(a)2c., “the commission shall
6 approve rates for service which allow a utility to recover from customers the full amount
7 of environmental compliance costs.” A plant with a .849 MGD capacity is necessary in
8 order to ensure KWRU has the capacity to treat future flows for the 10-year period
9 prescribed by FDEP rule required for environmental compliance. Otherwise, reasonable
10 assurance is not provided and KWRU would not be issued a permit to expand by FDEP.
11 Because providing capacity for the anticipated flows over a 10-year period is required by
12 FDEP to provide reasonable assurance that the discharge from the plant will not harm the
13 environment, the necessity to design and build is an environmental control and it is clear
14 to me that the DEP rule is controlling.

15 In fact, Rule 24-30.432, F.A.C., expressly provides that the enumerated factors are only
16 some of the factors that the PSC will consider in determining the used and useful amount,
17 and is not by any means an exhaustive list. Fla. Admin. Code. 25-30.432 states that the
18 extent to which the area served is built out should be considered, implying that projected
19 growth based on factors other than a strict percentage should reasonably be allowed.

20 To ensure that wastewater treatment facilities have adequate capacity to treat current and
21 future flows, Fla. Admin. Code 62-620.405 requires evaluation of current and future
22 flows and requires planning for expansion of wastewater treatment facilities, requiring
23 data including: “*flow projections based on local population growth rates and water*
24 *usage rates for at least the next 10 years; an estimate of the time required for the three-*
25 *month average daily flow to reach the permitted capacity; recommendations for*

1 *expansions; and a detailed schedule showing dates for planning, design, permit*
2 *application submittal, start of construction, and placing new or expanded facilities into*
3 *operation.”* KWRU performed the required evaluations and planning. The data indicated
4 that an expansion of the facility to a total treatment volume of 0.849 MGD was required
5 in order to accommodate local population growth rates and water usage rates *for the next*
6 *ten years.*

7 A plant with a .849 MGD capacity is necessary in order to ensure KWRU has the
8 capacity to treat future flows for the period prescribed by FDEP. As provided in Florida
9 Statute §367.081(2)(a)2c., “the commission shall approve rates for service which allow a
10 utility to recover from customers the full amount of environmental compliance costs.”

11 Expansion to .849 MGD was determined to be the minimum necessary to effectuate the
12 statutory and administrative provisions set forth above. Because the construction of the
13 expanded plant is a direct result of these environmental mandates, particularly
14 accommodating flows for the next ten (10) years, construction of the additional capacity
15 is an environmental compliance cost. Mr. Woodcock overlooked this fact.

16 **Q: Could KWRU have expanded to a design capacity based on the 5% annual flow**
17 **increase for five years “cap” set forth in 25-30.432, F.A.C.?**

18 A: Not while complying with FDEP regulations requiring facilities planning for twenty (20)
19 years. Anything else would not allow for the issuance of the DEP permit to build the
20 plant expansion. In fact, FDEP’s .350 MGD plant expansion permit was appealed by
21 Last Stand. Last Stand alleged that KWRU’s proposed design capacity *was not sufficient*
22 *to meet DEP’s regulatory and environmental requirements* for a plant sufficient to meet
23 the needs of the Florida Keys based on the requirements contained within Florida law.
24 One point of Last Stand’s contentions was that KWRU failed to provide reasonable
25 assurances that the plant expansion to .849 MGD would provide KWRU with the needed

1 capacity to address future connection needs while meeting the strict environmental
2 standards in the Florida Keys.

3 Essentially, Last Stand's contention as to facilities planning was that a .849 MGD plant
4 was not sufficient to handle future projected growth, and that the plant needed a design
5 capacity over 1 million gallons in order to comply with projected demand and meet the
6 engineering and environmental regulations applicable to KWRU and the Florida Keys. In
7 that action, KWRU was required to present evidence as to why the .849 MGD capacity
8 was *large enough to comply with FDEP regulations*. Projected build-out of the service
9 area based on applicable data indicates that KWRU will be able to handle flows *for the*
10 *next ten (10) years*, as required by law. A projection of 5% annual growth for only five
11 years in facilities planning would have resulted in a finding that the projected expansion
12 was not of sufficient size to comply with FDEP regulation in the Last Stand permit
13 appeal.

14 If KWRU would have used 5% annual increases for five years to determine capacity,
15 yielding a design capacity of approximately .650 MGD, the permit issuance would have
16 been subject to challenge under FDEP regulations. Undoubtedly, if FDEP compelled
17 KWRU to expand to .849 MGD, rather than a lower capacity, in order to comply with
18 FDEP regulations, the full plant expansion cost would be considered an environmental
19 compliance cost. It is incongruous to fail to classify the expansion, where KWRU utilized
20 actual flow projections in compliance with FDEP regulations, as environmental
21 compliance costs.

22 **Q: Why did KWRU develop a design capacity of .849, rather than some other, lower,**
23 **capacity?**

24 A. I generated preliminary documents regarding a .150 MGD expansion, which would bring
25 total capacity to .649 MGD. This approach was rejected based upon historic flow data

1 and review of upcoming development and connection; KWRU will require a .849 MGD
2 capacity in order to accommodate flows over the FDEP required planning horizon.

3 I projected build-out of the service area to occur between 2018 and 2020. By anticipating
4 build out within ten years, it ensured the plant would be sized appropriately to comply
5 with its FDEP permits. From an operational standpoint, that means that the entirety of the
6 Plant's capacity (with a built-in safety factor) is projected to be utilized by that date.
7 While Last Stand contended that this did not comprise the necessary planning horizon
8 under FDEP regulation (which require submission of a flows report looking ahead 20
9 years), the FDEP recognized that "the proposed design capacity of .849 MGD AADF for
10 the Expanded Wastewater Facility is appropriate under [applicable rules] in chapter 62-
11 600 and conforms to sound engineering principles applicable to the Expanded
12 Wastewater Facility" and that "the proposed permitted capacity of .849 MGD AADF for
13 the Expanded Wastewater Facility is [applicable rules] in chapter 62-600 and conforms to
14 sound engineering principles appropriate applicable to the Expanded Wastewater Facility.
15 The intent of wastewater treatment regulations in Florida is clearly expressed in Chapter
16 62-604.100(1) FAC, which states, in part: "*no wastes are to be discharged to any waters
17 of the state without first being given the degree of the treatment necessary to protect the
18 beneficial uses of such water.*"

19 It has been demonstrated that discharges to groundwater in the Florida Keys from septic
20 tanks and shallow injection wells affect both the groundwater and the nearshore surface
21 waters. It has also been demonstrated that septic systems, onsite aerobic treatment
22 systems and small conventional activated sludge wastewater treatment do not provide the
23 level of treatment needed to protect the waters of the state.

24 With the passage of Fla. Stat. §380.0552, the Florida Legislature also designated the
25 Florida Keys an Area of Critical State Concern. § 380.0552, Fla. Stat. A stated purpose of

1 this designation is to protect and improve the Florida Keys nearshore water quality
2 through construction and operation of wastewater facilities that meet the requirements of
3 section 403.086(10).

4 Chapter 2010-205 Laws of Florida attempts to protect the waters of the state by
5 eliminating, to the extent practical, discharges from septic systems, onsite aerobic
6 treatment systems and package plants. Properties served by these types of wastewater
7 disposal systems are required to connect to publicly- or investor-owned central
8 wastewater treatment systems in areas where central systems are planned. Permits for
9 on-site systems will only be issued for properties where no central wastewater treatment
10 system is available (Page 59).

11 KWRU is an investor-owned central wastewater treatment system, and has been
12 identified as an integral component for wastewater treatment in the Monroe County
13 Sanitary Wastewater Master Plan, issued in June, 2000. KWRU is the designated
14 wastewater treatment provider for Stock Island. As such, KWRU has an obligation to
15 provide adequate treatment volume to accept all current and future discharges from
16 properties located within the area to be served.

17 **Q. In your professional opinion was the design and permitting of the plant at .849**
18 **MGD due to environmental compliance?**

19 A. It is for the reasons stated above.

20 **Q. You mentioned that a point of the Last Stand litigation was the contention that the**
21 **design capacity of the new plant was not sufficient, was there any other issue raised**
22 **regarding the plant modification that did not deal with the capacity of the plant?**

23 A. Yes, a more significant focus of the Last Stand litigation was whether the permit, if
24 issued, provided reasonable assurance that the wastewater treatment facility would not

1 degrade water quality per F.S. 403.086(10). Beyond the design capacity, which took up a
2 small portion of the case, most of the focus was on water quality.

3 **Q. Why is this significant?**

4 A. In terms of environmental compliance, 403.086(10) requires all treatment plants in the
5 Florida Keys treat to AWT and if they exceed 1 MGD, that a deep injection well be
6 installed. Notwithstanding these requirements, in no circumstance can a wastewater
7 treatment plant degrade water quality. Because of this, the Last Stand Petitioners spent a
8 significant portion of the case arguing that the plant as designed did not provide
9 reasonable assurance that injecting effluent down a shallow well would not degrade water
10 quality. In other words, a large portion of the case focused on the use of shallow wells,
11 which are utilized by the existing plant as well as the new plant. Because of this, the
12 permit challenge was not singularly related to the plant expansion, but rather dealt with
13 the environmental compliance issue of water quality and shallow injection wells.
14 Ultimately, the design as proposed by KWRU was found to comply with Florida Statutes
15 and provided reasonable assurance that it would not degrade water quality. Therefore,
16 the permit was issued, and it is my professional opinion that the permit modification and
17 plant expansion was for environmental compliance.

18 **Q. Ms. Merchant claims that the new plant is for future customers.**

19 A. This is incorrect. DEP environmental regulations, until recently, required expansion at
20 90%. This rule has been amended to eliminate the requirement to be expanding at 90%,
21 but it is still the general rule followed on when to expand a wastewater treatment plant to
22 ensure compliance with the wastewater treatment facilities' FDEP permit. If KWRU did
23 not expand, in my professional opinion, KWRU would in the next five (5) years violate
24 its permit. Therefore, it is regulatory requirement related existing customers. Although it

1 certainly will be utilized by new customers, the expansion to .849 is requirement to
2 maintain environmental compliance with FDEP

3 **Q. Ms. Merchant states that January-April expenses can be annualized to indicate the**
4 **total expenses for AWT. Do you agree?**

5 A. No. These are the four driest months and 2016 was an atypically very dry year as
6 compared to prior years. There is typically a 15% increase in flows between the driest
7 and wettest months, i.e. – January – March and September – November. The 15%
8 increase results in a minimum 15% increase in expenses. This is because outside of the
9 driest months flows increase between 0 and 15% which means all months' expenses are
10 more than the 4 months Ms. Merchant annualized.

11 **Q. Ms. Merchant makes adjustments to purchased power, chemicals and material of**
12 **7.75% based on Woodcock's estimate that flows will be 507,370 gpd, not 550,000**
13 **gpd. Is this adjustment correct?**

14 A. No. Once the plant is operating, whether it is 507 or 550, the difference in cost is
15 nominal because you must now use chemicals, purchase power, materials and remove
16 sludge from 3 treatment plants, not 2, so the cost does not change proportionately based
17 on flows.

18 **Q. As to the permit modification, can you please explain what the permit modification**
19 **provided for?**

20 A. First, it was a substantial modification and expansion. The key is there are two parts of
21 the construction project, (1) modification of the existing plant which will provide
22 assurance that AWT is continually met, and (2) expansion of the wastewater treatment
23 plant from a permitted capacity of .499 MGD to .849 MGD. The modification of the
24 plant was undertaken based on trial test runs at AWT and known problems with the
25 current AWT design. Although the plant currently operates at AWT, it could have issues

1 maintaining AWT without these modifications. Therefore, the plant was modified to
2 include expanded sand filters and a chemical storage and dosing system as well as the
3 addition of a dual influent screen and two new injection wells. These modifications
4 encompass approximately \$1,253,675 dollars of the total cost.

5 **Q. Has this portion of the project been completed?**

6 A. It has not.

7 **Q. When is the new dual influent screen on the existing plant and new injection wells**
8 **expected to be placed into service?**

9 A. November 2016

10 **Q. The other portion of the project is the plant expansion; can you explain what this**
11 **entails?**

12 A. Yes, this includes the 0.350 MGD treatment train and associated equipment, including
13 the new blowers.

14 **Q. Based on the current status of the project, when is the new treatment tank**
15 **anticipated to be placed into serve?**

16 A. March, 2017

17 **Q. When is the new vacuum tank expected to be placed into service?**

18 A. December 2016

19 **Q. As to the current wastewater treatment plant projects, do you have a continuing roll**
20 **as the engineer of record?**

21 A. I do. As the engineer of record, it is my company's job to inspect the on-going work to
22 ensure that when completed the AWT modifications, new plant, and vacuum tank all
23 operate as intended. This entails almost daily inspections and reports, along with
24 construction administration, shop drawing reviews, testing, processing of requests for
25 information, processing contractor's applications for payment and other duties associated

1 with the construction projects. I have provided engineering cost estimates for completion
2 attached as Exhibits ERC-5 and ERC-6.

3 **Q. Does this conclude your rebuttal testimony?**

4 A. It does.

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KWRU CEI Estimate for Expansion Oct 2016 through Mar 2017

Description	Principal	Project Manager	Licensed P.E.	Licensed EI	Sr Engineering Inspector	Clerical	Cost
Construction Phase							
Construction Inspections		104.00			520.00		\$72,280.00
Progress Meetings	26.00	26.00					\$8,840.00
RFI responses and supplementary instructions				52.00			\$5,980.00
Weekly Project Documentation for Financing		39.00					\$5,655.00
Startup and Performance Testing	16.00			16.00			\$4,960.00
Produce Record Drawings	12.00			60.00			\$9,240.00
FDEP Certifications for WWTP	1.00	4.00					\$775.00
FDEP Certification for Wells	2.00	6.00					\$1,260.00
Prepare O&M Manuals	4.00			24.00			\$3,540.00
						Subtotal	\$112,530.00
Total Hours	61.00	179.00		152.00	520.00		
Rate	\$195.00	\$145.00	\$145.00	\$115.00	\$110.00	\$50.00	
CEI Subtotal	\$11,895.00	\$25,955.00		\$17,480.00	\$57,200.00		\$112,530.00

Reimbursable Expenses	QTY	Unit Cost					Total
Survey of Wells	1	\$1,150.00					\$1,150.00
Reimbursable Subtotal							\$1,150.00

Total Cost \$113,680.00

