STATE OF FLORIDA

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Public Service Commission

August 31, 1998

STAFF DATA REQUEST

James L. Ade, Esquire
Martin, Ade, Birchfield & Mickler, P.A.
One Independent Drive
Suite 3000
Jacksonville, Florida 32202

RE: Docket No. 980214-WS - Application for rate increase in Duval, St. Johns and Nassau Counties by United Water Florida, Inc.

Dear Mr. Ade:

By this letter, Commission staff requests that United Water Florida, Inc. (UWF or utility) please provide responses to the following data requests:

1. Please provide, on 3 ½" disks in a format compatible with Lotus 5.0 for Windows, copies of all electronic files containing all forecasts (and all tables and workpapers supporting those forecasts) created in the process of filing **or revising** the current rate increase request. For each electronic file provided in this response, please provide its file name and a description of the purpose and/or contents of the file. In addition, for each forecast provided, please identify and provide all inputs and outputs associated with each respective forecast.

2. Please provide, on 3 ½" disks in a format compatible with Lotus 5.0 for Windows, copies of the electronic files containing MFR Schedules E-2, E-3 and E-13 created in the process of filing **or revising** the current rate increase request. For each electronic file provided in this response, please provide its file name and a description of the purpose and/or contents of the file.

See

3. On page 2 of EXH 18 in Docket No. 960451-WS, with regard to the residential sector consumption analysis and forecast, UWF's witness Gradilone stated:

> Exploratory data analysis revealed that weather conditions, as expected, had an impact on water consumption, particularly during the summer season. Therefore, a methodology that

> would enable analysis of the impact of weather conditions on water was deemed appropriate for the forecast. In addition, two systems (Ponte Vedra and San Pablo) had been acquired and incorporated into the United Water Florida system during the 1991-1995 period. The addition of these systems in effect represent a discontinuity in the historical data record, and therefore suggested that a way would have to be found to explicitly account for the addition of these systems in the analysis. **Multiple** linear regression is a methodology that can handle such a data history, and therefore was selected as the primary data analysis tool for this projection. (emphasis added)

However, in the instant case, as shown on pages 3 and 9 of Schedule G-41, while the circumstances are the same as in Docket No. 960451-WS with respect to weather having been identified as having an effect on residential sector consumption and the incorporation of the Ponte Vedra and San Pablo systems into UWF's system, it appears that UWF used regression with **one** independent variable (time), rather than **multiple** independent variables, to forecast residential consumption.

a) Why were the inclusions of a weather variable (average monthly temperature) and a system additions dummy variable appropriate in the last case but not appropriate in the instant case?

b) What is the basis for using time as the only independent variable to forecast residential water consumption?

c) Did the utility prepare forecasts including or based on any variables **(or combinations of variables)** other than time?

d) Did the utility prepare forecasts including dummy variables to account for the additions of the Ponte Vedra, San Pablo and Sunray systems into UWF's system?

e) If the response to (c) and/or (d) is affirmative, please provide the inputs and outputs of any and all such forecasts, and present the results of each forecast in a manner consistent with the corresponding forecast presented in Table 1 on page 9 of Schedule G-41. For each forecast that was prepared, please identify the variable or variables that were used in each respective forecast.

f) Were weather and/or the discontinuity in the historical data record created by the additions of the Ponte Vedra, San Pablo and Sunray systems explicitly or implicitly accounted for in this case?

g) If the response to (f) is affirmative, please explain how UWF accounted for weather and/or the discontinuity in the historical data record in its residential consumption forecast.

4. On page 3 of Schedule G-41, the utility states "The number of customers served to derive normalized water consumption for 1991 through 1997 (see Table 1 and Figure 2) then multiplied the trended used per customer."

a) It appears as though there are words that are missing and/or that incorrectly appear in the above-referenced sentence. If the sentence is incorrect, please restate the corrected sentence.

b) If the above-referenced sentence is correct, please explain the meaning of the sentence.

5. On page 9 of Schedule G-41, the 1995 actual consumption (000 gallons) for 1995 is shown as 2,113,598. However, as shown on Table 4 of EXH 18 in Docket No. 960451-WS, actual annual consumption for 1995 was 2,118,639.

a) Is the value for 1995 consumption as shown on page 9 of Schedule G-41 correct?

b) If the response to (a) is negative, what is the correct value for 1995 actual consumption?

c) Please explain the reason for the discrepancy in the 1995 actual consumption as shown in the instant case versus what was presented in Docket No. 960451-WS.

6. As shown on page 9 of Schedule G-41, the r^2 value for the residential water consumption projection is 2.09%.

a) Doesn't an r^2 value of 2.09% indicate that the regression line is a very poor fit, and that there is very little to virtually no correlation between the independent variable and the dependent variable?

b) If the response to (a) is affirmative, what is the utility's rationale for relying on its selected regression model to forecast residential water consumption?

c) If the response to (a) is negative, does the utility believe the r^2 value of 2.09% indicates its residential consumption regression model is reliable in this instance?

d) If the response to (c) is affirmative, please explain why the r^2 value of 2.09% indicates the residential consumption regression model is reliable.

7. On page 10 of Schedule G-41, the 1996 annual change in number of customers (1,254) appears anomalous compared to the 1995 and 1997 figures of 434 and 584, respectively. In addition, the actual 1996 figure is significantly greater than the 1996 and 1997 projected annual average increase in customers of 468 as projected by UWF on Table 2 of EXH 18 in Docket No. 960451-WS.

   a) Please explain, if possible, the reason for the actual growth in the number of customers in 1996 versus what was projected in the utility's last case.

8. On page 8 of EXH 18 in Docket No. 960451-WS, with regard to the commercial sector consumption analysis and forecast, UWF's witness Gradilone stated:

> To project commercial consumption for calendar years 1996 and 1997, a linear regression of total annual consumption versus commercial bills rendered, average monthly temperature and the addition of service areas to the system proved to be the best model.

However, in the instant case, as shown on page 4 of Schedule G-41, UWF states that a linear regression of consumption per bills rendered was employed to forecast commercial consumption.

   a) Why were the inclusions of a weather variable and a system additions dummy variable appropriate in the last case but not appropriate in the instant case?

   b) What is the basis for using consumption per bill as the only independent variable to forecast commercial water consumption?

   c) Did the utility prepare forecasts including or based on any variables **(or combinations of variables)** other than consumption per bill?

   d) Did the utility prepare forecasts including dummy variables to account for the additions of the Ponte Vedra, San Pablo and Sunray systems into UWF's system?

   e) If the response to (c) and/or (d) is affirmative, please provide the inputs and outputs of any and all such forecasts, and present the results of each forecast in a manner consistent with the corresponding forecast presented in Table 3 on page 14 of Schedule G-41. For each forecast that was prepared, please identify the variable or variables that were used in each respective forecast.

f) Were weather and/or the discontinuity in the historical data record created by the additions of the Ponte Vedra, San Pablo and Sunray systems explicitly or implicitly accounted for in this case?

g) If the response to (f) is affirmative, please explain how UWF accounted for weather and/or the discontinuity in the historical data record in its commercial consumption forecast.

9. On page 14 of Schedule G-41, the actual consumption (000 gallons) for 1993-1995 is 1,851,766 for 1993, 1,987,569 for 1994 and 2,059,072 for 1995. However, as shown on Table 4 of EXH 18 in Docket No. 960451-WS, actual annual consumption for those years was listed as 1,821,766 for 1993, 1,992,569 for 1994 and 2,118,639 for 1995.

a) Is the value for 1993 consumption as shown on page 14 of Schedule G-41 correct?

b) If the response to (a) is negative, what is the correct value for 1993 actual consumption?

c) Please explain the reason for the discrepancy in the 1993 actual consumption as shown in the instant case versus what was presented in Docket No. 960451-WS.

d) Is the value for 1994 consumption as shown on page 14 of Schedule G-41 correct?

e) If the response to (d) is negative, what is the correct value for 1994 actual consumption?

f) Please explain the reason for the discrepancy in the 1994 actual consumption as shown in the instant case versus what was presented in Docket No. 960451-WS.

g) Is the value for 1995 consumption as shown on page 14 of Schedule G-41 correct?

h) If the response to (g) is negative, what is the correct value for 1995 actual consumption?

i) Please explain the reason for the discrepancy in the 1995 actual consumption as shown in the instant case versus what was presented in Docket No. 960451-WS.

10. As shown on page 14 of Schedule G-41, the r^2 value for the commercial water consumption projection is 3.20%.

a) Doesn't an r^2 value of 3.20% indicate that the regression line is a very poor fit, and that there is very little to virtually no correlation between the independent variable and the dependent variable?

b) If the response to (a) is affirmative, what is the utility's rationale for relying on its selected regression model to forecast commercial water consumption?

c) If the response to (a) is negative, does the utility believe the r^2 value of 3.20% indicates its commercial consumption regression model is reliable in this instance?

d) If the response to (c) is affirmative, please explain why the r^2 value of 3.20% indicates the commercial consumption regression model is reliable.

X. As shown on Table 3 on page 14 of Schedule G-41, average temperature is listed as the independent variable in the commercial consumption forecast. However, as discussed on page 4 of Schedule G-41, consumption per bill was used as the independent variable in the commercial consumption forecast. In order to clarify this apparent inconsistency, please state which variable was used in the utility's commercial consumption forecast.

11. On page 15 of Schedule G-41, the annual average customer count for 1994-1995 is 2,392 for 1994 and 2,454 for 1995. However, as shown on Table 5 of EXH 18 in Docket No. 960451-WS, the corresponding values for those years are 2,399 and 2,444, respectively.

a) Is the value for 1994 customers as shown on page 15 of Schedule G-41 correct?

b) If the response to (a) is negative, what is the correct value for 1994 customers?

c) Please explain the reason for the discrepancy in the 1994 customers as shown in the instant case versus what was presented in Docket No. 960451-WS.

d) Is the value for 1995 customers as shown on page 15 of Schedule G-41 correct?

e) If the response to (d) is negative, what is the correct value for 1995 customers?

f) Please explain the reason for the discrepancy in the 1995 customers as shown in the instant case versus what was presented in Docket No. 960451-WS.

12. On page 9 of EXH 18 in Docket No. 960451-WS, with regard to the public sector consumption analysis and forecast, UWF's witness Gradilone stated:

> Again, a regression equation that incorporated the number of bills rendered, average monthly

> temperature, and the addition of systems to the service area is (sic) the predictive variables proved (sic) to be the best model.

However, in the instant case, as shown on pages 4 and 5 of Schedule G-41, UWF states:

> ... a regression that incorporated the number of bills rendered and the addition of large blocks of public sector customers to the service area were the variables that proved to be the best model.

a) Why was the inclusion of a weather variable (average monthly temperature) and a system additions dummy variable appropriate in the last case but not appropriate in the instant case?

b) Why is the inclusion of variables representing large customer block additions appropriate in the instant case but not appropriate in the last case?

c) Did the utility prepare forecasts included or based on any variables **(or combinations of variables)** other than the number of bills rendered and the addition of large blocks of public sector customers?

d) Did the utility prepare forecasts including dummy variables to account for the additions of the Ponte Vedra, San Pablo and Sunray systems into UWF's system?

e) If the response to (c) and/or (d) is affirmative, please provide the inputs and outputs of any and all such forecasts, and present the results of each forecast in a manner consistent with the corresponding forecast presented in Table 5 on page 19 of Schedule G-41. For each forecast that was prepared, please identify the variable or variables that were used in each respective forecast.

f) Were weather and/or the discontinuity in the historical data record created by the additions of the Ponte Vedra, San Pablo and Sunray systems explicitly or implicitly accounted for in this case?

g) If the response to (f) is affirmative, please explain how UWF accounted for weather and/or the discontinuity in the historical data record in its public sector consumption forecast.

13. On page 19 of Schedule G-41, the actual consumption (000 gallons) for 1995 is 103,657. However, as shown on Table 7 of EXH 18 in Docket No. 960451-WS, actual annual consumption for 1995 was listed as 104,016.

a) Is the value for 1995 consumption as shown on page 19 of Schedule G-41 correct?

b) If the response to (a) is negative, what is the correct value for 1995 actual consumption?

c) Please explain the reason for the discrepancy in the 1995 actual consumption as shown in the instant versus what was presented in Docket No. 960451-WS.

14. As shown on page 19 of Schedule G-41, the number of observations is seven (7), indicating that the public water consumption regression is based on **annual** consumption figures for the years 1991-1997. However, as shown on pages 9 and 14 of Schedule G-41, the number of observations for both the residential and commercial sectors was 84, indicating that those regressions are based on **monthly** consumption figures for the same 1991-1997 period. Furthermore, based on Table 7 of EXH 18 in Docket No. 960451-WS, the corresponding number of observations in that case was 60, indicating that the public water regression in that case was also based on **monthly** information during the 1991-1995 period.

a) What is the utility's rationale for basing its public water projection on 7 annual observations, while basing its residential and commercial sector projections on 84 monthly observations during the same 7-year period?

b) Why was it appropriate to base the utility's public water projection in the last case on monthly observations, but not appropriate in the instant case?

c) Did the utility prepare public water forecasts based on monthly observations in the instant case?

d) If the response to (c) is affirmative, please provide the inputs and outputs of any and all such forecasts, and present the results of each forecast in a manner consistent with the corresponding forecast presented in Table 5 on page 19 of Schedule G-41.

15. As shown on page 19 of Schedule G-41, the explanatory variables titled "Addition of Systems 94 and Additions of Systems 95" both yielded negative X coefficients.

a) Do the negative X coefficients for the Addition of Systems 94 variable and the Addition of Systems 95 variable indicate a negative relationship between the addition of systems in 1994 and 1995 and consumption, i.e., that the addition of systems in those years corresponds to a **decrease** in consumption for the public water sector?

b) If the response to (a) is negative, please explain why the negative X coefficients for the Addition of Systems 94 variable and the Addition of Systems 95 variable does

not indicate a negative relationship between those variables and public water consumption.

c) If the response to (a) is affirmative, please explain why the utility included Addition of Systems 94 and Addition of Systems 95 as explanatory variables in its selected regression model for public water consumption.

16. a) Please describe in detail the customer growth projection methodology(ies) utilized by the utility in the instant case. This information should be provided by customer class, separated between water and wastewater. In the event the methodology(ies) differ between customer classes, this response should explain the difference(s) and the reasons therefor.

b) To the extent the customer growth projection methodology(ies) provided in response to (a) above differ from the corresponding methodology(ies) in Docket No. 960451-WS, please indicate each instance in which the method differs and explain the reason(s) therefor.

c) If not provided in response to a previous staff data request, please provide both the electronic files and hard copy versions of each customer growth forecast made in this case. Please ensure that all inputs and outputs (and variables, if applicable) are clearly identified. All electronic files should be on a 3 ½" disk in a format compatible with Lotus 5.0 for Windows.

17. For the purpose of this request, please provide the responses to (a) and (b) in the following format:

	Avg No. Customers	No. Bills Rendered	Billed Consumption
WATER:			
Residential			
Commercial			
Public			
Private Fire Protection			
TOTALS:			
WASTEWATER:			
Residential			
Commercial			
Public			
TOTALS:			

a) Please provide the average number of customers, the number bills rendered and billed consumption information for the calendar year 1997.

b) Please provide, by customer class, the actual number of customers, the bills rendered and billed consumption information for each month during the period January 1998 - June 1998.

18. Please provide the average temperature and total inches of rainfall for each month during the period January 1996 - December 1997 for the utility's service area. This information should be provided in a format consistent with the analogous data contained on page 5 of EXH 34 in Docket No. 960451-WS.

19. a) Has the utility entered into discussions and/or negotiations to purchase any other water or wastewater systems in Florida?

b) If the response to (a) is affirmative, does the utility anticipate acquiring the system(s) prior to the end of the 1999 projected test year?

c) If the response to (b) is affirmative, please list each water or wastewater system the utility anticipates acquiring prior to December 31, 1999. The information provided should be the most recent annual information available, presented in the format shown below:

	Water	Wastewater
Name of Utility		
County		
Data for 199X:		
Number of Customers	xx,xxx	xx,xxx
Billed Usage (kgal)	x,xxx,xxx	x,xxx,xxx

20. On pages 11-12 of EXH 18 in Docket No. 960451-WS, with regard to the residential wastewater use analysis and forecast, UWF's witness Gradilone stated:

> Wastewater usage is clearly a function of water consumption. Therefore, to project wastewater consumption by sector, water consumption was **regressed** against wastewater use. Since the additions of the Ponte Vedra and San Pablo service areas had the same type of effect on the wastewater customer service base as adding the system had to the water service base, dummy variables were added to the regression analysis for the residential and commercial to take this into account. (emphasis added)

However, in the instant case, as shown on pages 5 and 22 of Schedule G-41, UWF applied the approximate average ratio of wastewater consumption to water consumption for the 1995-1997 period to projected residential water consumption for the years 1998 and 1999 to arrive at the corresponding projections for residential wastewater consumption.

a) Why were the inclusions of a water consumption variable and systems dummy variables appropriate in the last case but not appropriate in this case?

b) What is the basis for using the average ratio of wastewater consumption to water consumption over the 1995-1997 period, rather than using the corresponding average over the 1991-1997 period, as the basis for the residential wastewater consumption forecast?

c) What is the basis for selecting the above-referenced methodology to forecast residential wastewater consumption in this case, as opposed to selecting the corresponding forecasting methodology that was used in Docket No. 960451-WS?

d) Did the utility prepare forecasts including or based on any variables **(or combinations of variables)**?

e) Did the utility prepare forecasts including dummy variables to account for the additions to the Ponte Vedra, San Pablo and Sunray systems into UWF's systems?

f) If the response to (d) and/or (e) is affirmative, please provide the inputs and outputs of any and all such forecasts, and present the results of each forecast in a manner consistent with the corresponding forecast presented in Table 13 of EXH 18 in Docket No. 960451-WS. For each forecast that was prepared, please identify the variable or variables that were used in each respective forecast.

g) Was the discontinuity in the historical data record created by the additions of the Ponte Vedra, San Pablo and Sunray systems explicitly or implicitly accounted for in this case (other than as a dummy variable in a regression calculation)?

h) If the response to (g) is affirmative, please explain how UWF accounted for the discontinuity in the historical data record in its residential consumption forecast.

21. UWF states on page 6 of Schedule G-41 that the analysis of commercial wastewater consumption followed the analysis for the residential sector.

a) Why were the inclusions of a water consumption variable and systems dummy variables appropriate in the last case but not appropriate in this case?

b) What is the basis for using the average ratio of wastewater consumption to water consumption over the 1995-1997 period, rather than using the corresponding average over the 1991-1997 period, as the basis for the commercial wastewater consumption forecast?

c) What is the basis for selecting the above-referenced methodology to forecast commercial wastewater consumption in this case, as opposed to selecting the corresponding forecasting methodology that was used in Docket No. 960451-WS?

d) Did the utility prepare forecasts including or based on any variables **(or combinations of variables)**?

e) Did the utility prepare forecasts including dummy variables to account for the additions to the Ponte Vedra, San Pablo and Sunray systems into UWF's systems?

f) If the response to (d) and/or (e) is affirmative, please provide the inputs and outputs of any and all such forecasts, and present the results of each forecast in a manner consistent with the corresponding forecast presented in Table 14 of EXH 18 in Docket No. 960451-WS. For each forecast that was prepared, please identify the variable or variables that were used in each respective forecast.

g) Was the discontinuity in the historical data record created by the additions of the Ponte Vedra, San Pablo and Sunray systems explicitly or implicitly accounted for in this case (other than as a dummy variable in a regression calculation)?

h) If the response to (g) is affirmative, please explain how UWF accounted for the discontinuity in the historical data record in its residential consumption forecast.

22. UWF states on page 6 of Schedule G-41 that the analysis of public sector wastewater consumption followed the analysis for the residential sector.

a) Why was the inclusion of a water consumption variable appropriate in the last case but not appropriate in this case?

b) What is the basis for using the average ratio of wastewater consumption to water consumption over the 1995-1997 period, rather than using the corresponding average over the 1991-1997 period, as the basis for the public sector wastewater consumption forecast?

c) What is the basis for selecting the above-referenced methodology to forecast public sector wastewater consumption in this case, as opposed to selecting the corresponding forecasting methodology that was used in Docket No. 960451-WS?

d) Did the utility prepare forecasts including or based on any variables **(or combinations of variables)**?

e) If the response to (d) is affirmative, please provide the inputs and outputs of any and all such forecasts, and present the results of each forecast in a manner consistent with the corresponding forecast presented in Table 15 of EXH 18 in Docket No. 960451-WS. For each forecast that was prepared, please identify the variable or variables that were used in each respective forecast.

Please file the original and five copies of the requested information by Friday, September 8, 1998 with Ms. Blanca Bayo, Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850. Please feel free to call me at (850) 413-6216 if you have any questions.

Sincerely,

Bobbie L. Reyes
Senior Attorney

BLR:lw
Enclosure

cc: Division of Records and Reporting
Division of Water and Wastewater (Willis, Crouch, Merchant)

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