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11	DIRECT TESTIMONY OF GARY S. MORSE
12	BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
13	on behalf of
14	SOUTHERN STATES UTILITIES, INC.
15	AND DELTONA UTILITIES, INC.
16	DOCKET NO. 920199-WS
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DOCUMENT NEMBER -DATE 08058 JUL 22 1992 FPSC-RECORDS/REPORTING

a,

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Gary S. Morse. My business address
is Southern States Utilities, Inc., 1000 Color
Place, Apopka, Florida 32703.

5 Q. WHAT IS YOUR POSITION WITH SOUTHERN STATES 6 UTILITIES, INC.?

7 A. I serve as Senior Rate Engineer under the
8 Director of Rates and Rate Engineering for
9 Southern States Utilities, Inc.

10 Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

11 A. I received an Associate's Degree in Civil 12 Technology from Delhi College in 1972. In 1974, 13 I received a Bachelors Degree from the University 14 of Central Florida in the field of Engineering. 15 In addition, I have attended a number of schools, 16 seminars, conferences, workshops and short 17 courses on utility rate making, cost of service, 18 rate design, and treatment system operation and 19 various professional design sponsored by 20 associations, universities, and accounting firms. 21 Q. HOW LONG HAVE YOU BEEN EMPLOYED IN THE UTILITY 22 INDUSTRY AND WHAT POSITIONS HAVE YOU HELD? 23 A. Prior to my employment as Senior Rate Engineer at Southern States Utilities, Inc., I've held 24 various positions within the rates and revenue 25

requirements areas. Upon graduating in 1974, I 1 was employed as an engineer for the water and 2 sewer section of the Florida Public Service 3 Commission ("Commission"). In 1979 I left the 4 Commission for a position as a Utility Consultant 5 with Plantec Corporation which was a subsidiary 6 7 of Reynolds, Smith, and Hill Consulting Engineers. In 1981, I took a position with R.W. 8 Beck and Associates as a Rate Analyst in the rate 9 In 1985, I was one of several 10 department. employees that left R.W. Beck and Associates to 11 form the consulting firm of Saffer Utility 12 Consultants, Inc.. The firm provided rate and 13 regulatory services to municipal/governmental 14 entities involved in supplying water, sewer, 15 electric and gas service. In 1990 I left the 16 firm to join the consulting engineering firm of 17 Dyer, Riddle, Mills, and Precourt, Inc. as a rate 18 engineer. In August of 1990, I became employed 19 by Southern States Utilities, Inc. as a Senior 20 Rate Engineer. 21

22 Q. TO WHAT TRADE AND/OR PROFESSIONAL ORGANIZATIONS 23 DO YOU BELONG?

24A.I am a member of the American Water Works25Association and the Florida Chapter of the

1 National Association of Water Companies.

2 Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE FLORIDA 3 PUBLIC SERVICE COMMISSION?

A. Yes. During my five years as an engineer with the
Commission, I testified in numerous water and
sewer rate proceedings.

7 Q. WHAT ARE YOUR RESPONSIBILITIES AS SENIOR RATE 8 ENGINEER?

9 Α. As Senior Rate Engineer, I am responsible for 10 activities related to water and wastewater rate 11 case preparation. This includes the preparation 12 of Minimum Filing Requirement Schedules which 13 contain the engineering information (#₽# 14 Schedules), the determination of Service 15 Availability Charges and Allowance for Funds Prudently Invested ("AFPI") charges as well as 16 17 the determination of reclaimed water charges for reuse water. In addition, I perform used and 18 19 useful analyses in connection with rate cases and new system acquisitions or other such special 20 21 projects requested by Senior Management.

22 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS 23 PROCEEDING?

A. The purpose of my direct testimony is to briefly
describe the information that is contained in the

1 Commission's Minimum Filing Requirement Schedules 2 F-1 through F-10 as presented in Volume II, Book 11 of 11 (Water) and Volume III, Book 6 of 6 3 (Wastewater) of the rate application. 4 Specifically, my testimony will address the F-1 5 through F-10 Schedules for the water 6 and 7 wastewater systems in the following counties: Brevard, Clay, Hernando, Highlands, Lake, Nassau, 8 9 Orange, Osceola, Pasco, Putnam, and Seminole Counties. Mr. Gerald C. Hartman will present 10 11 direct testimony pertaining to the F-1 through F-10 Schedules for the systems in the following 12 counties: Citrus, Collier, Duval, Lee/Charlotte, 13 14 Marion, Martin, Volusia, and Washington Counties. In addition, I will discuss the sources of the 15 information and the rationale used in completing 16 17 these schedules. I am also sponsoring Volume I, Book 4 of 4 of the Minimum Filing Requirements 18 which contains the development of AFPI charges. 19 WERE THESE SUMMARIES AND SCHEDULES PREPARED BY 20 Q. YOU OR UNDER YOUR DIRECTION AND SUPERVISION? 21 22 Α. Yes, they were. WOULD YOU DESCRIBE THE "F" SCHEDULES CONTAINED 23 Q.

24 IN VOLUME II, BOOK 11 (ENGINEERING INFORMATION -25 WATER)?

1 Α. Book 11 of Volume II presents Schedules F-1 through F-10 of the Minimum Filing Requirements 2 for each water system. Schedule F-1 is entitled 3 "Gallons of Water Pumped, Sold, and Unaccounted 4 5 For." Column 2 of this schedule indicates the "Total Gallons Pumped" for the historic test year 6 7 period January 1, 1991 through December 31, 1991. 8 These numbers are taken directly from the monthly 9 Water Treatment Plant Operation Report submitted 10 to the Florida Department of Environmental 11 Regulation ("FDER"). These reports are provided 12 in Volume IV, Books 5 and 6, Additional Engineering Information. 13

Column 3 of Schedule F-1, entitled "Gallons Purchased", is applicable only to a select few systems where water is purchased to either supplement our supply or is the sole source of supply for the water system. The data in this column comes from the bills received from the supplier each month.

Column 4 of Schedule F-1, entitled "Gallons
Sold", is derived from information contained in
the billing analysis.

Column 5 of Schedule F-1 is entitled "Other Uses"
and is expressed in thousands of gallons. As

indicated on the bottom of the table, "Other
 Uses" is broken into Flushing of lines, Utility
 Use, Water Main Breaks, Unmetered and Stuck
 Meters, and Fire Dept. Use.

5 Columns 6 and 7 of Schedule F-1 show the 6 resulting "Unaccounted For Water" in thousands 7 of gallons and as a percentage, respectively. 8 The unaccounted for water information is 9 sponsored by Mr. Charles Sweat and is further 10 discussed in his direct testimony.

11Q.WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON12SCHEDULE F-3 IN VOLUME II, BOOK 11 (WATER)?

Schedule F-3 is entitled "Water Treatment Plant 13 Α. Data." Part 1 of the schedule shows the rated 14 plant capacity. The source of this data is the 15 16 FDER permit. I have added a line to include the firm reliable capacity of the treatment plant 17 based on the largest unit being out of service. 18 19 Part 2 requests the maximum day demand which is defined as being the single day with the highest 20 pumpage rate for the test year. The source of 21 this data is the monthly FDER Water Treatment 22 Plant Operation Reports. 23 Part 3 requests information on the "Five-Day Max Month" demand, 24 which is defined as "the five days with the 25

1 highest pumpage rate from the month with the highest pumping rate during the test year." The 2 3 average of these five figures is also requested, 4 but has no real bearing upon the planning and/or 5 design of a water system. The average of the five maximum consecutive days of the maximum 6 7 month of the historic test year may be a significant factor in the planning of a very 8 9 large systems; however, this information is not requested in Schedule F-3. 10 Part 4 requests information on the "Five-Day Max Year" demand, 11 12 which is defined as "the five days with the highest pumpage rate from any one month in the 13 14 test year." Here again, the monthly FDER Water 15 Treatment Plant Operation Reports were the source of this data. Part 5 requests the "Average Daily 16 Flow" during the test year which is a calculated 17 18 value. Its source again is the monthly FDER Water Treatment Plant Operation Reports. Part 6 19 is the "Required Fire Flow" for the water system. 20 Typically, the source of this data is the 21 22 Insurance Services Office "Fire Suppression Rating Schedule" dated June, 1980 or the County 23 Fire Code Ordinance. Copies of local county 24 25 ordinances, where applicable, are included in the

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Appendix of Volume II, Book 11 of 11.

2 Q. WOULD YOU DESCRIBE THE "F" SCHEDULES CONTAINED 3 IN VOLUME III, BOOK 6 (ENGINEERING INFORMATION -4 WASTEWATER)?

5 A. Book 6 of Volume III presents Schedules F-2, F-6 4, F-6, F-7, F-8 and F-10 of the Minimum Filing 7 Requirements for each wastewater system.

WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON 8 Q. SCHEDULE F-4 IN VOLUME III, BOOK 6 (WASTEWATER)? 9 Schedule F-4 is entitled "Wastewater Treatment 10 Α. Plant Data" and indicates the overall rated 11 capacity of the wastewater treatment facilities 12 and some basic information concerning the flows 13 during the historic 1991 test year. The 14 treatment plant capacity is that which is 15 approved by the FDER and noted on the operating 16 permit. Copies of the current FDER operating 17 permits are provided in Volume IV of the rate 18 19 filing.

Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON
SCHEDULE F-5 IN VOLUME II, BOOK 11 (WATER)?
A. Schedule F-5 is entitled "Used and Useful
Calculations - Water Treatment Plant." As the
title indicates, Schedule F-5 presents the used
and useful analysis proposed by the Company for

1 water supply, treatment (if any), storage, pumping facilities, and the water distribution 2 system for the 1991 test year. The used and 3 useful methodology is described in detail in the 4 Introduction section at the front of Volume II. 5 WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON 6 Q. 7 SCHEDULE F-6 IN VOLUME III, BOOK 6 (WASTEWATER)? Schedule F-6 is entitled "Used and Useful 8 A. 9 Calculations - Wastewater Treatment Plant." As the title indicates, Schedule F-6 presents the 10 used and useful analysis proposed by the Company 11 12 for wastewater treatment plants, the effluent disposal systems, and the collection systems. 13 Data specific to the treatment plant is shown at 14 the top of the Schedule and is referred to as 15 16 Input Data. This data includes some basic 17 information contained in the FDER operating permits, the average daily flow during the 18 19 maximum month of the test year, a determination of usage per equivalent residential connection 20 ("ERC") and the average number of ERCs connected 21 For those particular systems to the system. 22 requiring a margin reserve, the margin reserve 23 flow and margin reserve growth are shown on lines 24 21 and 22, respectively. The resulting used and 25

useful determination with the margin reserve
 taken into consideration is shown on line 23 for
 the wastewater plant, line 24 for the effluent
 disposal system, and line 25 for the collection
 system.

6 Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON 7 SCHEDULE F-7 IN VOLUME II, BOOK 11 AND VOLUME 8 III, BOOK 6 FOR THE WATER AND WASTEWATER SYSTEMS, 9 RESPECTIVELY?

Schedule F-7 is entitled "Used and Useful 10 Α. Calculation - Water Distribution and Wastewater 11 Collection Systems." As the title indicates, 12 this schedule is generic to both water and 13 14 wastewater systems. However, the used and useful determination for the water distribution systems 15 is shown on Schedule F-5 and the used and useful 16 determination for wastewater collection systems 17 18 is shown on Schedule F-6.

19Q.WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON20SCHEDULE F-8 IN VOLUME II, BOOK 11 AND VOLUME21III, BOOK 6 FOR THE WATER AND WASTEWATER SYSTEMS,22RESPECTIVELY?

A. Schedule F-8 is entitled "Margin Reserve
 Calculations" and is generic to both water and
 wastewater systems. A description of the margin

1 reserve determination is contained in the Introduction at the front of Volume II Book 11 2 3 for water systems and Volume III Book 6 for 4 wastewater systems. The margin reserve is computed for an eighteen month period of time for 5 6 treatment plants and one year for distribution and collection systems. However, for large 7 8 utility systems, it often takes more time to permit, construct 9 design, and treatment facilities. Mr. Hartman will address this issue 10 11 in more detail in his direct testimony.

12Q.WOULD YOU DESCRIBE THE INFORMATION CONTAINED IN13SCHEDULE F-9 IN VOLUME II, BOOK 11 FOR WATER14SYSTEMS?

Schedule F-9 is entitled "Equivalent Residential 15 Α. Connections -Water." This schedule provides the 16 17 beginning of year, end of year, and average 18 number of ERCs for each of the last five years, including the test year. The source of the data 19 is the company's billing records for actively 20 metered customers. The average growth for the 21 22 last five years is calculated in column 9 as 23 required.

24Q.WOULD YOU DESCRIBE THE INFORMATION CONTAINED IN25SCHEDULE F-10 IN VOLUME III, BOOK 6 FOR

1 WASTEWATER SYSTEMS?

Schedule F-10 is entitled "Equivalent 2 Α. Residential Connections - Sewer." This schedule 3 4 provides the same basic information for the wastewater systems as contained in Schedule F-9 5 for the water systems. The source of the data is 6 7 the company's billing records.

8 IS THERE A SUMMARY OF THE USED AND USEFUL Q. 9 PERCENTAGES AND THE ASSET ACCOUNTS TO WHICH THEY ARE APPLIED FOR THE WATER AND WASTEWATER SYSTEMS? 10 11 Α. Yes. A summary of the non-used and useful percentages by asset account is contained in 12 Volume I, Book 1 of 4 behind tabs "W-Schedule F" 13 and "WW-Schedule F". 14

15Q.DID YOU CALCULATE THE NON USED AND USEFUL16PERCENTAGES CONTAINED IN THE SUMMARY?

17 A. Yes, I did.

18 Q. DO YOU HAVE ANY CORRECTIONS YOU WOULD LIKE TO 19 MAKE TO THE "F" SCHEDULES PREPARED BY YOU?

A. Yes. The first correction I have is to Schedule
F-5, the used and useful model for the Beechers
Point water system contained in Volume II Book 11
of 11 on page 46. Lines 26 and 27 show that
there is two hydropneumatic tanks with capacities
of 5,000 and 15,000 gallons. That is incorrect.

1This system is equipped with one 3,000 gallon2hydro tank. Therefore, the correct used and3useful percentage for the 3,000 gallon tank is463%.

5 Q. I SHOW YOU EXHIBIT ____ (GSM-1) UNDER COVER PAGE 6 ENTITLED "SCHEDULE F-5 (CORRECTED) - BEECHERS 7 POINT." WAS THIS EXHIBIT PREPARED BY YOU OR 8 UNDER YOUR DIRECTION AND SUPERVISION?

9 A. Yes, it was.

10 Q. COULD YOU BRIEFLY DESCRIBE THIS EXHIBIT?

A. Exhibit _____ (GSM-1) is a corrected Schedule F-5
for the Beechers Point water system to reflect
the change I just discussed.

14Q.DO YOU HAVE A CORRECTION YOU WOULD LIKE TO MAKE15TO SCHEDULE F-5 FOR THE AMELIA ISLAND WATER16SYSTEM?

17 A. Yes. During the preparation of this schedule,
18 three high service pumps were not included in the
19 used and useful determination for the water
20 system. They are identified as 680, 340, and 160
21 GPM pumps located at the repump station.

22Q.I SHOW YOU EXHIBIT (GSM-2) UNDER COVER PAGE23ENTITLED "SCHEDULE F-5 (CORRECTED) - AMELIA24ISLAND." WAS THIS EXHIBIT PREPARED BY YOU OR25UNDER YOUR DIRECTION AND SUPERVISION?

1 A. Yes, it was.

2 Q. COULD YOU BRIEFLY DESCRIBE THIS EXHIBIT?

Exhibit (GSM-2) is a corrected Schedule F-5 3 A. for the Amelia Island water system. As indicated 4 in this exhibit, I have added the three high 5 service pumps to the used and useful model on 6 lines 20, 21, and 22 of column (b). This 7 correction changes the used and useful percentage 8 for the high service pumps from 86% to 75% for 9 the test year before the application of any 10 margin reserve. 11

12Q.I SHOW YOU EXHIBIT(GSM-3) UNDER COVER PAGE13ENTITLED "SCHEDULE F-S (CORRECTED) - AMELIA14ISLAND." WAS THIS EXHIBIT PREPARED BY YOU OR15UNDER YOUR DIRECTION AND SUPERVISION?

16 A. Yes, it was.

17 Q. COULD YOU BRIEFLY DESCRIBE THIS EXHIBIT?

This exhibit contains a corrected Schedule F-8 18 A. for the Amelia Island water system to reflect the 19 correct used and useful percentage on line 8 for 20 the high service pumps. As indicated in Exhibit 21 (GSM-3), after the application of the margin 22 reserve, the used and useful percentage is 80% 23 rather than 92% as originally filed and shown on 24 page 11 of Volume II, Book 11. 25

1 Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

2 A. Yes, it does.

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Exhibit ____ (GSM-1) Cover Page

SCHEDULE F-5 (CORRECTED) - BEECHERS POINT

USED AND USEFUL CALCULATIONS Water Treatment Plant

Company: SSU / Putnam / Beechers Point

Docket No. 920199-WS Test Year Ended: 12/31/91

Explanation: Provide all calculations, analyses and governmental requirements used to determine the used and useful percentages for the water treatment plant(s).

Recap Schedules: A-9,B-19

Line Beachers No, Description Point INPUT DATA SECTION (a) Total Gallons Pumped (000's) 6.935 1 19,000 2 Annual Average Daily Demand Maximum Day Demand - Date Maximum Day Gallons Pumped 3 06/21/91 4 62,000 Gallons Per Minute Pumped 43 N/A 5 6 7 Fire Flow Requirement (Gallons) Fire Flow Requirement (GPM) N/A Beginning No. of ERCs Ending No. of ERCs 70 8 89 9 10 Average No. of ERCs 80 Supply Wells: (Acct No.304.2, 307.2, 308.2, 309.2) No. 1 (GPM Capacity)largest No. 2 (GPM Capacity) 45 11 40 12 No. 3 (GPM Capacity) 0 13 85 14 Total Well Capacity (GPM) 15 Percent Used and Useful 100% Finished Water Storage: (Account No. 330.4) Tank No. 1 16 40,000 Tank No. 2 17 O Tank No. 3 18 ۵ 19 Total Storage Capacity in Gallons 40,000 Percent Used and Useful 20 52% High Service Pumps: (Account No. 311.2, 325.0_) No. 1 & 4 (Capacity in GPM) No. 2 & 5 (Capacity in GPM) No. 3 & 6 (Capacity in GPM) 21 125 22 125 23 0 250 24 Total High Service Pump Capacity 25 Percent Used and Useful 69% Hydropneumatic Tanks: (Account No. 320.3, or 330.4) Tank No. 1 26 3,000 27 Tank No. 2 Ó Total Hydro Tanks (Gallons) 3,000 28 Percent Used and Useful (Tank No. 1) 63% 29 Percent Used and Useful (Tank No. 2) 30 31 Auxiliary Power: (Acct. 310.2) N/A Distribution System: (Acct No. 331.4 & 335.4) Average No. of ERCs 32 80 33 Permitted No. of Lots/ERCs 85 34 Percent Used and Useful 100% (1)

Note: Buildings, Land, and Chlorination Equipment are considered 100% used and useful.

(1) Distribution system considered 100% used and useful

due to customer distribution and pipe sizes.

FPSC Docket No. 920199-WS Gary S. Morse Exh. No. 1 Schedule F-5(Corrected) Page 1 of 1 Exhibit No. _____ (GSM-1)

Exhibit (GSM-2) Cover Page

SCHEDULE F-5 (CORRECTED) - AMELIA ISLAND

USED AND USEFUL CALCULATIONS Water Treatment Plant

Company: SSU / Nassau / Ameila Island

Docket No. 920199-WS Test Year Ended: 12/31/91

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Explanation: Provide all calculations, analyses and governmental requirements used to determine the used and useful percentages for the water treatment plant(s).

Test Year Ending: 1991 w/o Margin Reserve

FPSC Docket No. 920199-WS Gary S. Morse Exh. No. 2 Schedule F-5 (Corrected) Page 1 of 1 Exhibit No. _____ (GSM-2)

Line No.	Description	Amelia Island	Amelia Island Cont	Amelia Island Fire Protect
	INPUT DATA SECTION	(a)	(b)	(c)
1	Total Gallons Pumped (000's)	302.070		
2	Annual Average Daily Demand	827.589		
3	Maximum Day Demand - Date	08/12/91		
- 4	Maximum Day Gallons Pumped	1.333.000		
. 5	Gallons Per Minute Pumped	926		
6	Fire Flow Requirement (Gallons)	180.000		480 000
7	Fire Flow Requirement (GPM)	1,000		2.000
8	Beginning No. of ERCs	1.602		2,000
8	Ending No. of ERCs	1.865		
10	Average No. of ERCs	1,733		
	Supply Wells: (Acct No.304.2, 307.2, 306.2, 309.2)			
11	No. 1 (GPM Capacity)largest	1,400		
12	No. 2 (GPM Capacity)	1,400		
13	Total Well Capacity (GPM)	2,800		
14	Percent Used and Useful	66%		
	Finished Water Storage: (Account No. 330.4)			
15	Tank No, 1	600,000		400,000
16	Total Storage Capacity in Gallons	600,000		400,000
17	Percent Used and Useful	100%		100%
	High Service Pumps: (Account No. 311.2, 325.0_)			
18	(Capacity in GPM)	1.875 (2)	620 (3)	1 000
19	(Capacity in GPM)	1,270 (2)	310 31	1.000
20	(Capacity in GPM)	625 (2)	680 (3)	1,000
21	(Capacity in GPM)	500 (2)	340 (3)	- ,
22	(Capacity in GPM)		160 (3)	
23	Total High Service Pump Capacity	6,380		3,000
24	Percent Used and Useful w/largest pump at each plant out of service	75%		100%
	Hydropneumatic Tanks: (Account No. 320.3, or 330.4)			
25	Tank No. 1	10.000		10.000
				10,000
26	Total Hydro Tanks (Gallons)	10,000		10,000
27	Percent Used and Useful	100%		100%
28	Auxiliary Power: (Acct. 310.2)	100%		100%
	Distribution System: (Acct No. 331.4 & 335.4)			
29	Average No. of ERCs	1,733		
30	Permitted No. of Lots/ERCs	1,700		
31	Percent Used and Useful	100%		
NOTE	(1) Buildings, Land, Aeration, and Chlorination Equipment are			

considered 100% used and useful. (2) Main Plant High Service Pumps. (3) Repump Station High Service Pumps.

Exhibit ____ (GSM-3) Cover Page

SCHEDULE F-8 (CORRECTED) - AMELIA ISLAND

MARGIN RESERVE CALCULATIONS - WATER

Company: SSU / Nassau / Amelia Island

Docket No. 920199-WS Test Year Ended: 12/31/91

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Explanation: If a margin reserve is requested, provide all calculations and analyses used to determine the amount of margin reserve for each portion of used and useful plant.

Recap Schedules: F-5,F-6,F-7

FPSC Docket No. 920199-WS Gary S. Morse Exh. No. 3 Schedule F-8 (Corrected) Page 1 of 1 Exhibit No. _____ (GSM-3)

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Line No.	Description	Amelia Island
		(a)
1	Annual Growth From Schedule F-9	7.0%
2	Average Number Of Test Year ERC's	1,733
3	Number Of ERCs Associated With 1.5 Years Growth	181
4	Projected Number Of ERCs	1,914
5	Test Year Usage Per ERC @ MDD	769
6	MDD 1.5 Years Into Future	1,472,350
	Used and Useful with Margin Reserve:	
7	Supply Wells	73%
8	High Service Pumps	80%