



IWA PIPELINE



FALL 1997

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VOLUME 20 ISSUE 3

WHAT GOES IN, ALSO COMES OUT!



One of the basic laws of physics is known as the conservation of matter. Basically, you can neither create nor destroy matter ... or put more simply, "What goes in, also comes out." This is also true in the case of our Reverse Osmosis (RO) water treatment plant. The water from our wells that feeds the RO plant all has to leave the plant in one form or another.

For every 10 gallons of well water treated in the RO plant, we produce 8 gallons of drinking water. This leaves 2 gallons of something else. That something else is known as Brine. The well water contains around 3,000 parts per million (ppm) of mineral constituents. Our drinking water product contains only around 400 ppm. So the rest of the minerals end up in the Brine, at a concentration of around 13,000 ppm, most of which is common table salt ... Sodium Chloride.

In an RO unit (or train), the water is treated in what are known as two passes. In the first pass, both drinking water and Brine streams are produced. The Brine from that pass is then sent on to

the second pass where even more drinking water is produced and the Brine is further concentrated. From the second pass the Brine is reduced in pressure from around 200 pounds per square inch (psi) to only 10 psi. It then joins similar streams from the other five RO trains and flows on to the Brine treatment facilities.

In the treatment facilities, the Brine undergoes a couple of processes to improve its quality. First, it contains a significant amount of Hydrogen Sulfide gas, which has the familiar rotten egg odor that is common to all Florida ground water. This gas is converted into other odorless and harmless minerals by the addition of Chlorine, similar to the way in which we treat drinking water for disinfection purposes. However, unlike drinking water, environmental regulations require that zero Chlorine residual remains in the Brine after treatment, which is very difficult to achieve. Close to zero is easy. Zero is another story! The last step of Brine treatment helps us ensure that we do have zero Chlorine residual, while also solving another problem ... but first a little IWA history lesson.

Years ago, one of the steps we used in treating our drinking water was known as aeration, which basically involved blowing air through the water. This process removed the Hydrogen Sulfide gas, which is also present in that water stream as well. Unfortunately, this common process had two drawbacks. First it discharged the Hydrogen Sulfide gas to the atmosphere, resulting in a very foul odor from the plant, which many members may recall in years past. Second, it saturated the water with Oxygen, leading to corrosion problems in some of our members home piping. IWA engineers designed and patented a new process for removing the Hydrogen Sulfide without adding Oxygen, and the aerators were no longer needed. Then along came the need to add Oxygen to our Brine stream. We just

modified the aerators for the new service and piped them up to the Brine stream. As an added benefit, the aerators also remove any trace of Chlorine left in the Brine from the Hydrogen Sulfide removal process. Clever? And very cost effective too!

Well, after Hydrogen Sulfide removal and Oxygen addition, the Brine stream is finally ready to be pumped down a 10" diameter pipe about 600 feet out into the Gulf of Mexico for final disposal. Although there are a couple of trace minerals in the stream that require dilution for disposal, the Gulf more than takes care of that for us (and the EPA agrees!). It's important to realize that the Brine stream is only about one third as salty as the Gulf, so it's not hurting the quality of our environment. In fact, the ocean critters seem to love it. Horse conchs abound at the outfall, sometimes actually crawling up the pipe. At least once, a tourist has been seen catching a beautiful snook right at the outfall point.

So that, coupled with earlier *Pipeline* articles on our wells and RO treatment, ends our discussion of how we make our drinking water on Sanibel and Captiva. In the next issue, we'll discuss the distribution system that delivers the water to our members homes. Stay tuned!

WELCOME TO OUR HOME!

To our Internet Home Page that is. About a year ago, IWA entered the "CyberAge" and established our own Home Page on the Internet. We didn't hire any expensive consultants for this work. It was created by Information Services Coordinator, Jacque Owens, while she was home earlier this year recovering from the birth of her baby girl, Bailey. Jacque put a lot of interesting and useful information on our page, including:

- An extensive explanation of our treatment process and water quality.
- Information regarding our Board of Directors and employees, including a list of direct phone extensions for every employee.
- Our office hours and a map to help you find us.
- A list of surplus equipment for sale (Do you need any new 12" diameter stainless steel repair clamps?).
- A list of links to other interesting internet sites, including sites on the Islands and others of general interest.

- Links to all the major search engines.

In the future, as (Jacque's) time permits, we hope to add more features to our site, including the ability to look-up information on your IWA account. So if you're into "web surfing", be sure to visit our site at <http://www.islandwater.com/>. Over 1,800 people have already visited us!

HELPIII!

In every second or third issue of the *Pipeline*, we make a plea for more members to join our automatic bill paying program. We have been very pleased with the response by our members every time we make this plea. But guess what. It's that time again!!

Handling twelve monthly bill payments for every one of our 4,400 members is a very time consuming and expensive process for us (and therefore for our members). By the time we mail your bill and process your payment, we conservatively estimate it costs us 55¢. Multiply that by 4,400 bills twelve months per year, and you start to see why we make this plea. It amounts to nearly \$30,000!

Fortunately, over 650 members have already chosen to help us out by using our automatic bill paying option. Not only does that save us over \$4,200 per year, but these members are also saving twelve 32¢ stamps and envelopes! Not to mention avoiding the aggravation of remembering to pay their water bill every month.

In the automatic bill paying program, we debit your bank account every month on the last possible day, which is the due date. You will still receive a bill so that you can check it and give us a call if you believe there is a problem, long before your account is debited.

To make joining this program as painless as possible, we've printed on the following page an application form for your use. Just complete it and either mail it to us (P. O. Box 509, Sanibel) or drop it off at our offices. You can include it with your normal monthly payment check and save yet another stamp and envelope! Also, please include a blank check with "VOID" written across it. Your bills will clearly indicate when your automatic payment plan actually begins.

Thanks!! If you have any questions, just call our offices at (941) 472-1502.

**AUTHORIZED AGREEMENT FOR PRE-ARRANGED
WATER BILL PAYMENTS**

I (We) hereby authorize The Island Water Association, Inc. (IWA) to begin debits to the bank account listed below. I authorize the bank to debit the amount of my monthly water bill. I have the right to stop payment of a charge within seven days of receiving my bill from IWA. I am responsible for notifying both IWA and the bank of this stop-payment request.

This authorization is to remain in effect until I notify IWA in writing of its termination. My notification must allow the bank a reasonable opportunity in which to act on it. Both IWA and the bank may also terminate this agreement with 10 days written notice.

Name (as it appears on your bill):

Social Security or Federal ID number:

Address of water service:

Account number of water service:

Your telephone number:

() _____

Bank name:

Bank account number:

Signature(s):

Date:

TECHNOLOGY MARCHES ON

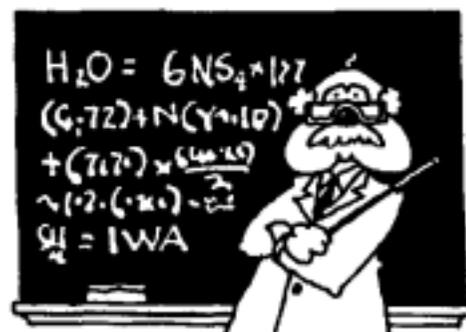
In the Spring edition of the *Pipeline*, we described a new type of water meter which we were testing. We hoped this new type of meter would more accurately measure water usage.

The problem with all water meters is that they

are not 100% accurate, and they normally read low. This is particularly true at low flow rates in larger meters, where the meters may actually fail to measure any usage at all. For example, a 4 inch meter cannot measure flows below about 4 gallons per minute (5,760 gallons per day!). The new meters utilize an improved technology that overcomes this low flow measurement problem. We've been testing one meter for nearly a year and it really does work! This is also confirmed by many other utilities who already have installed this type of meter.

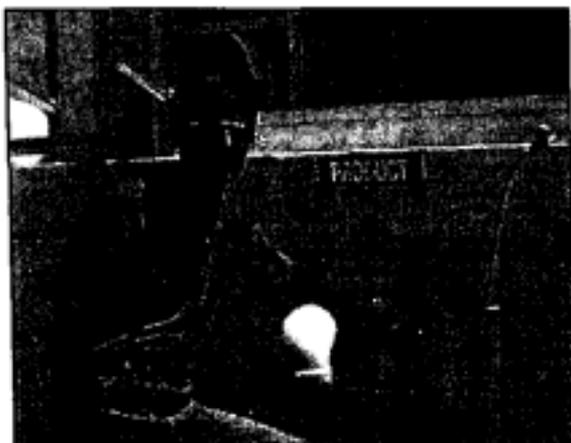
So we negotiated a good economic deal with the meter manufacturer and decided to replace all our aging, larger diameter meters with new ones using this new technology. Single family homes use small meters and therefore will not be affected. It is impossible to predict the effect of the new meters on any one member's account. However, in general, new meters read higher (more accurately) than old, worn-out ones, particularly considering the technology improvement involved in this case. One thing is certain. More accurate metering benefits all IWA members by enabling us to allocate our costs to those members who are actually using the water, as opposed to spreading the cost of unmeasured usage across all members!

QUIZ



1. How many deep wells does IWA currently use?
A. 2 B. 4 C. 10 D. 16 E. 23
2. What are IWA's normal work hours?
A. 8:00 to 4:30 B. 7:00 to 3:30 C. Shifts
3. Some IWA members have recently consumed water from Pine Island.
A. True B. False
4. The largest water meter used by IWA is:
A. 5/8" B. 2" C. 4" D. 8"

MEET RON FREITAG



Ron Freitag joined IWA as a Level I Plant Operator/Trainee in January of this year.

Before joining IWA, Ron, who is originally from Illinois, worked in a couple of local restaurants for over eight years and in various aspects of grocery store operations for 12 years before that. His career now seems to have moved from providing one of the "necessities for life" (food) to another (water).

At Island Water, Ron says he enjoys the opportunity to work in an entirely different field, where he has the opportunity to learn new skills. In the Reverse Osmosis Plant, Ron is busy learning how everything works and how to fix it when it doesn't. He's also already diligently studying to take the test for his "C" license early next year.

Ron, his wife Margot and their two children, Ryan and Lauren, live in Cape Coral where Ron enjoys fishing, camping and bike riding when he's not slaving-away at IWA. He says his goal is to live life to the fullest while not taking anything for granted. Of course, now he's going to have to pursue that goal in between working shifts at the RO Plant!

ANSWERS TO QUIZ

1. D. Island Water has 8 deep wells which produce 600 gallons per minute (gpm) each and 6 more at 300 gpm.

A., B., and C. Office staff works from 8:00 to 4:30. Distribution staff works 7:00 to 3:30, with someone on call for emergencies throughout nights and weekends. RO operators work shifts to cover 24 hours per day, 365 days a year.
3. A. True. IWA sent 250,000 gallons of water to Greater Pine Island Water Association to assist them during various pipeline construction activities. Pine Island later returned the water to IWA in mid-June. It was an equal exchange of water, with no dollars changing hands.
4. C. and D. The largest diameter water meter used by an IWA member is 4". We use an 8" meter on the line to/from Pine Island. The typical single family home uses a 5/8" meter.

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