IWA PIPELINE

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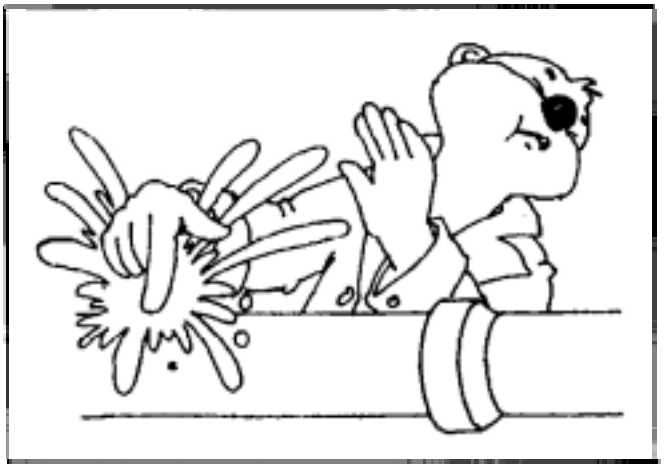
WATCH THOSE MUD PUDDLES!!



The recent return of the rainy season has cre ated the usual collection of mud puddles aroun the islands ... nothing out of the ordinary. Hov ever, it's funny how when you work for the wate company, every mud puddle looks suspicious. you ever see one of our trucks pull over and th driver gets out to stare at a mud puddle, that's n because he's checking out the tadpole populatio It's because we are always on the lookout f leaks, and every mud puddle is a candidate, esp cially the ones with relatively clear water. Som times we get a little paranoid about the whole su ject.

Actually, at IWA we are lucky, because w generally have less leaks than most water comp nies. That's because our distribution piping sy tem is in better condition than that of most oth utilities. We are constantly analyzing our syste and upgrading/replacing those portions which a the oldest and/or which have had the worst le history. At some point, it becomes cheaper to r place an old pipe than to continue to repair However, when we do have a leak, that's when the "fun" begins.

For small to medium size leaks (and some large ones), IWA Distribution Department employees normally perform the repair themselves. We maintain enough spare parts in our inventory for two repairs on each size and type of pipe. A typical repair can cost from just a few hundred to several thousand dollars. There are labor costs, parts costs, and often extensive restoration costs, involving landscaping and roads/driveways. It can take from a couple of hours to several days to complete a repair. Of course the leaks often occur in the middle of the night and in inclement weather. Throw-in the ever-present heat and mosquitoes, and working conditions are often far from ideal. Sometimes (but not often) a leak is just too large for IWA employees to handle, and in those cases, we employ the services of a piping contractor, who has more equipment and personnel. This contractor works under the watchful eye of an IWA employee, as the leak is repaired.

So what's involved in actually repairing a water main leak? Well, first of all, many of the leaks fortunately are not on the main pipes themselves. In fact, the least common type of leak is an actual break in a water main pipe. The pipe is very durable, as long as someone doesn't drive a road sign through it or otherwise physically abuse it. The problem is more commonly with the various "fittings" on the pipe, which include elbows, tees, valves, and the service line connections to our members' homes. The causes of the leaks are myriad, including the aforementioned physical abuse from other construction activities, corrosion, faulty installation (sometimes many years previously) and ground settlement.

One of the major challenges of repairing a water main leak results from the fact that they are in-

stalled around 3 feet below ground. Sometimes it takes hours just to find where the leak is actually located, often by trial and error digging. Also, since there is usually a lot of water in the area, we often have to set-up one or more portable pumps to dry-out the site, before we can even begin to dig. Speaking of digging, we have several choices as to how we do that. We have a full size "backhoe" for the larger jobs and also a smaller one we recently purchased to minimize the damage caused by using the larger machine on small jobs. Of course, there is also the trusty old shovel, which can't be replaced in some instances. Often it takes all three types of equipment to complete a job. Not uncommonly, the leak may be located under the road or driveway pavement, necessitating that we cut that out of the way before we can start digging.

Before we can even begin the repair, there is one other very important step we must always take. We have to have all other underground facilities in the area located so that we don't damage them and make things even worse when we do start digging. We can generally make just one call to Sunshine State Call-One of Florida, and they take care of notifying all the other utilities of the need to locate their facilities. So if you see our employees just standing around in the vicinity of a water main leak, they are not "goofing-off," but rather just waiting on these "locates" to be completed so that they can do their job safely and without causing further utility outages.

Once we have finally located the leak and uncovered it, the actual repair method can be one of several available to us, depending on the exact nature of the leak. Sometimes we have to remove the leaking fitting and replace it with a new, identical one. Occasionally, if the leak is a very small one, we can use a "repair clamp," which is nothing more than a rubber-lined stainless steel band that we bolt over the leak. When there is a more major break in the pipe, we typically cut-out the damaged section and replace it with a new piece that we join back to the existing pipe with a "repair sleeve" on both ends. We use very high quality repair parts. We don't want to have to spend the time and money to do it twice, since we have found that cheap repair parts often fail again in a short time. All our repair parts are approved by the National Sanitation Foundation as safe for contact with potable water. After the repair is complete, we perform the necessary flushing and disinfection procedures to ensure a safe and clean water supply, before returning the pipe to service.

The next to last thing we do is fill the hole back in and make the roadway passable, if necessary. The final restoration effort may be delayed a few days to allow time for the soil to settle a little, but in most cases, we try to complete the restoration as soon as possible and touch it up again later, if necessitated by settlement. We always leave barricades around the repair to alert everyone to the fact that a repair has been done, and a dangerous condition may exist until restoration is complete.

The last thing we do is get in the shade, lean on our shovels, and give a collective sigh of relief, while silently praying that the next one won't occur for a few days so that our aching bodies have time to heal first. The next time you see our trucks, employees and a big pile of dirt along the side of the road, remember all the steps we are having to go through. It's not a simple, nor an easy job!

FAREWELL PETE...

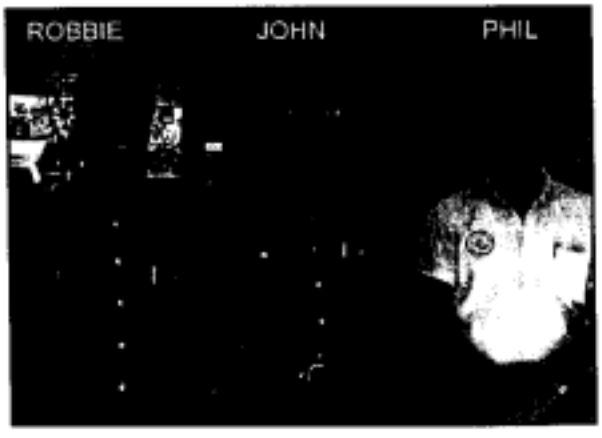
Pete Wilson, IWA's Production Manager, has decided to retire on October 7th, after over 22 years of dedicated and meritorious service . Pete joined IWA after a long career in the Navy as a diver. Apparently he just couldn't get totally away from the water! At IWA, for the last many years, Pete has been in charge of all of our water treatment plant and pumping facilities, as well as all maintenance activities. He has also served as IWA's Safety and Compliance Advisor, assuring that we work safely and that we comply with all the many regulations that apply to our business. You are probably wondering what everyone else at IWA

does, if Pete does all that!!

At home, Pete lives in Cape Coral with his wife, Barbara, where he enjoys golfing, fishing and complaining about the drinking water in Cape Coral. He is rumored to actually carry IWA water home in gallon bottles for drinking purposes. We are trying to calculate the value of that water so that it can be reflected in his final pay check!

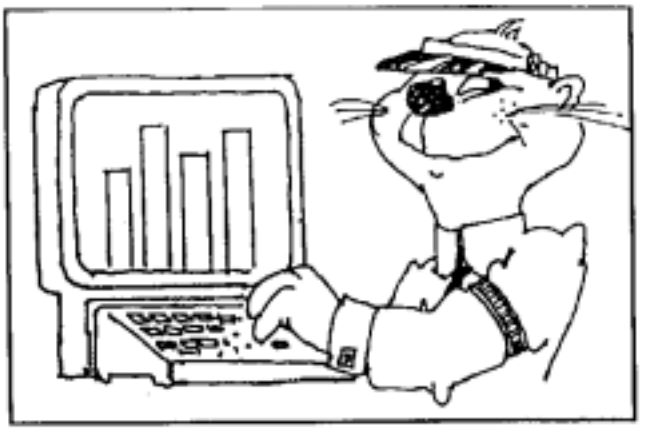
Pete and Barbara will be moving to York, Pennsylvania for reasons that we hope he understands (because we don't!). We will be giving him a can of orange paint so he can paint his golf balls to make them easier to find in the snow. We also plan to give him a saw so he can continue his fishing hobby (through a hole in the ice!). Pete insists that he doesn't want a retirement party, but we're not sure whether we can pass-up our last opportunity to give him a hard time.

... AND CONGRATULATIONS PHIL, ROBBIE & JOHN



Phil Noe, currently Chief Plant Operator/ Production Supervisor, will replace Pete as Production Manager. Phil has been with IWA for over 11 years and has been instrumental in keeping our RO Plant operating smoothly and efficiently. Phil will be replaced by Robbie Smith, currently a Level Three Plant Operator. Robbie has been with IWA for 8 years and has an A operating license (as does Phil), the highest there is. At the same time, we are splitting maintenance out of Production Department and making it a separate department, reflecting the company-wide nature of our maintenance activities. John Leiter, who has been with IWA for over 17 years, will be promoted from Senior Electronic Technician to Maintenance Manager to head-up this new department. Everyone at IWA wishes these men the best with their new, expanded responsibilities.

Y2K? ... "Y" NOT?



"Y2K" is the latest computer gibberish to describe what many "experts" predict may be a cyber Armageddon at 12 midnight on December 31, 1999, just a little over a year from now. Y2K stands for Year 2000, and the problem stems from the fact that many computer programs, developed years ago, used a two digit shorthand to designate years. For instance, 98 is interpreted by the computer programs as the year 1998. It's the number 00 that presents the problem, since the computers think it stands for the year 1900, and not 2000. The mind boggles at what this could mean. Will grocery store computers return prices to the level in 1900, which might not be all that bad? Will bank computers also return account balances to 1900 levels, which wouldn't be so great?

Anyway, it seems that solving this problem is a colossal and extremely expensive, world-wide undertaking, involving all of the computer chips that have pervaded our lives in recent years in innumerable ways. That brings us to the inevitable question, "Will we still have drinking water?"

Well, our computer gurus at IWA assure us that they have the matter well in hand. Fortunately, it is IWA policy to keep our computer equipment and programs updated, as new, proven technology becomes available. We do that to improve our operating efficiency and to therefore keep our water rates as low as possible. However, a happy side effect of that policy is that our computer equipment is relatively new and much of it is already "Y2K Compliant," which means it will work on 1/1/00 (whoops...better make that 01/01/2000).

We do have a few systems that still require a little more work, but we already have plans for these areas, which should resolve the problems in plenty of time. We are confident that the systems

which enable us to produce and distribute water are compliant now. The problems are in the accounting area, where we have to make some changes before we can bill you for your water consumption. Those changes require actions by some of our computer suppliers and vendors, whom we are constantly "bugging" to get on with fixing the problems. Overall, we are cautiously optimistic that we will have no major problems on the day of reckoning, and we plan to keep working on the problem until we are sure that our water supply is safe from this computer "bug."

RO PLANT HAPPENINGS

Things continue to change and improve at our Reverse Osmosis (RO) water treatment plant. In previous issues of the *Pipeline*, we described our installation of new membranes in two of our six RO treatment trains late last year. We made this investment because the new membranes were guaranteed to require a much lower operating pressure. Our calculations indicated that the reduced electricity consumption resulting from this lower pressure would more than pay for the new membranes in just a few years. Well, we have been watching carefully to see if this is actually happening, and we are very happy to report that it is. Through July, we had used 6.8% less power than last year, and produced 2.2% more water. That's impressive ... especially since we only replaced 33% of the membranes in the plant! The others were already operating at a somewhat lower pressure and replacement could not quite be economically justified. The new membranes are cutting-edge technology, which is only available to us because of our good relationship with the membrane manufacturer, Dow FilmTec. The membranes have been featured in publications and presentations throughout the industry. It's technology improvements like this that have helped us keep our water rates unchanged for many years.

In other RO Plant happenings, we are finally nearing the end of our building remodel project. The plant building was built in 1979, and in addition to the normal wear and tear of 20 years' use, many things have changed over that time period. After delaying this project for many years in favor of other projects, such as new pipes and pumps, we finally got around to it this year.

Long ago we moved our Chlorine equipment to an adjacent building. This move opened-up vacant space in the RO building. By enclosing the old Chlorine Room, we have been able to add a private office for the Chief Plant Operator, and generally relieve very cramped office and shop space.

We have also replaced old, barely operable doors and windows with new corrosion-resistant ones that should also be better from sound abatement and cooling efficiency standpoints. The outside propane-driven auxiliary pump has also finally been enclosed like all our other pump stations, to minimize maintenance and to maximize operability in adverse weather conditions. Finally, we have updated the entire building to the new requirements of the Americans with Disabilities Act and painted it white to match all our other facilities. We hope to be totally complete with this remodel project by the end of the year. Staff Engineer, Shelly Storves, served as General Contractor on the project and the RO Plant operators did a lot of the construction themselves, thereby saving us a lot of money.

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