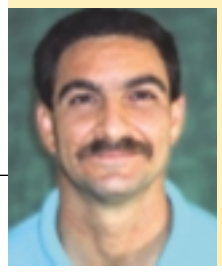

By Roger Nathanson

About the Author
Roger Nathanson is president of Ozone Pure Water, Inc., Sarasota, Fla. His background includes mechanical engineering, plumbing/pipe fitting, swimming pool remodeling/repair, sales and marketing. Ozone Pure Water has been a full service ozone/water treatment supplier since 1980. Nathanson can be contacted at 800-633-8469 or 941-923-8528; opw01@acun.com; www.ozonepurewater.com.

The O-Zone

Today's Lesson: Troubleshooting Ozone Water Treatment Equipment Problems

Troubleshooting an ozone system is no different than troubleshooting any other water treatment system. The main principles apply; only the specifics change slightly.

Ascertain the Problem

Your job is to find out as much information over the phone prior to dispatching your service technician. Certain questions must be asked. It is best to ask direct questions that require an exact answer.

- Does the problem occur on the hot or cold?
- Where do you notice the problem?
- Is it isolated to one location?
- When did the problem start?
- How many people use the water?
- Does the water system supply only the home?

Our technicians are trained to follow a set protocol from the time the customer calls until the service call is finished. Everything that has been discussed, checked and discovered is recorded on a service form. There is no such thing as having too much information.

How to Locate the Problem

The tools you will need are a clean, white five-gallon bucket, appropriate test kits, 200 psi gauge and a short hose to adapt to the backwash outlet fitting.

- Use your test kits to test the water at the location the customer has indicated.
- Test the water immediately after the filter. This will determine that it is not the piping giving off accumulated contamination.
- Test the raw water to verify that the ppm levels are within normal parameters for the system installed.
- Draw the treated water after filtration into the white bucket. Is there any yellow color? Is the water milky/cloudy?

Equipment checks—ozonator. Most manufacturers will have set guidelines and troubleshooting procedures to follow. Generally, there is an indicator light that is on when the ozonator operates. Check the inlet and outlet tubing and be sure they are securely fastened to the appropriate fittings. Loose fittings are air leaks. (Air is a very weak oxidizer compared to ozone.)

Testing for ozone residual. Unfortunately, this is not a practical method of troubleshooting for two reasons.

- Accurate test kits on the market are too expensive, thus making them impractical as a diagnostic tool. The inexpensive kits are very inaccurate and cannot be relied on.
- Small-scale ozonators for home well water use are not designed to have an ozone residual detectable by the less expensive test kit.

Principle: It is not necessary to have detectable ozone residual to oxidize iron, sulfur and manganese as it is with chlorine. While this is a benefit of ozone it makes troubleshooting slightly more difficult.

Checking for ozone injection. Once you have established that you are producing ozone, you must be sure that the ozone is getting into the water. The are two methods of injecting ozone.

- **Ozone pump. A** positive displacement injector similar to a compressor.

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Tips for Serving Customers

- Don't make promises you cannot keep.
- Be punctual.
- Be professional in your dress, service truck, language and paperwork.
- Know your product and demonstrate technical prowess.
- Don't pretend you know things that you don't; seek answers from respected professionals when faced with questions you cannot answer.
- Inform your customers of charges prior to the visit.

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This device is easy to check. Disconnect all tubing, fittings or check valves from the outlet of the pump and connect a 200-psi gauge. A standard ozone pump must have a minimum of 80 psi. Consult the factory for details and service specifications.

- **Venturi.** This device creates a vacuum that sucks the ozone into the water. It is imperative that there is 100 percent suction through the entire well pump cycle. You can check this by connecting clear tubing to the venturi's suction port. Take the other end of the tubing and dip it in/out of water. You will see water/bubbles rushing toward the venturi while the well pump operates. There should always be movement/suction in the tubing while the well pump operates. If the suction stops at any time before the well pumps stop, the venturi will have to be serviced or changed for a smaller model.

Treat service calls as a new opportunity to make money and inform your customer of your potential.

Off gas tank (OGT). This device is either water logged and venting properly or air logged and letting air/ozone carryover. Complaints of continuous air spitting from the faucets, indicates air/ozone carryover.

- Run water down line of the OGT and verify that there is a spitting problem.
- While the water is running, sound/knock on the tank. The tank should be almost completely full of water. If it sounds hollow or you can hear water splashing inside then the gas release device is not venting properly.
- If it is full of water, you will need to check for gas/water bypassing around the head as if the risor/baffle became dislodged.

Filtration. Use a five-gallon bucket and catch the first 5–30 gallons of backwash water. Let the bubbles rise. Can you see the bottom? If the media are fouled, you most likely will not be able to see below the surface. The water might be discolored and dirty, but never so bad that you cannot read a quarter on the bottom. Problems associated with filtration occur from the following.

- Insufficient backwash psi, flow or time to raise the bed for cleaning.
- Water usage during the backwash cycle.
- Backwashing with the same muddy/slimy water that you have been filtering.
- Media dose during the backwash cycle. This can occur if the OGT is passing gas.
- Too much water usage between backwash cycles.
- Wrong media for the water quality.

In closing, treat service calls as a new opportunity to make money and inform your customer of your potential. Plumbers never run away from service calls. They have set charges and everyone expects to pay for their time and material. Water treatment customers are no different as long as they have not been promised something that you, the dealer, cannot keep. Proper troubleshooting techniques will save time, increase profit and the professional impression left on the customer will be invaluable. WQP

For more information on this subject, write in 1016 on the reader service card.

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