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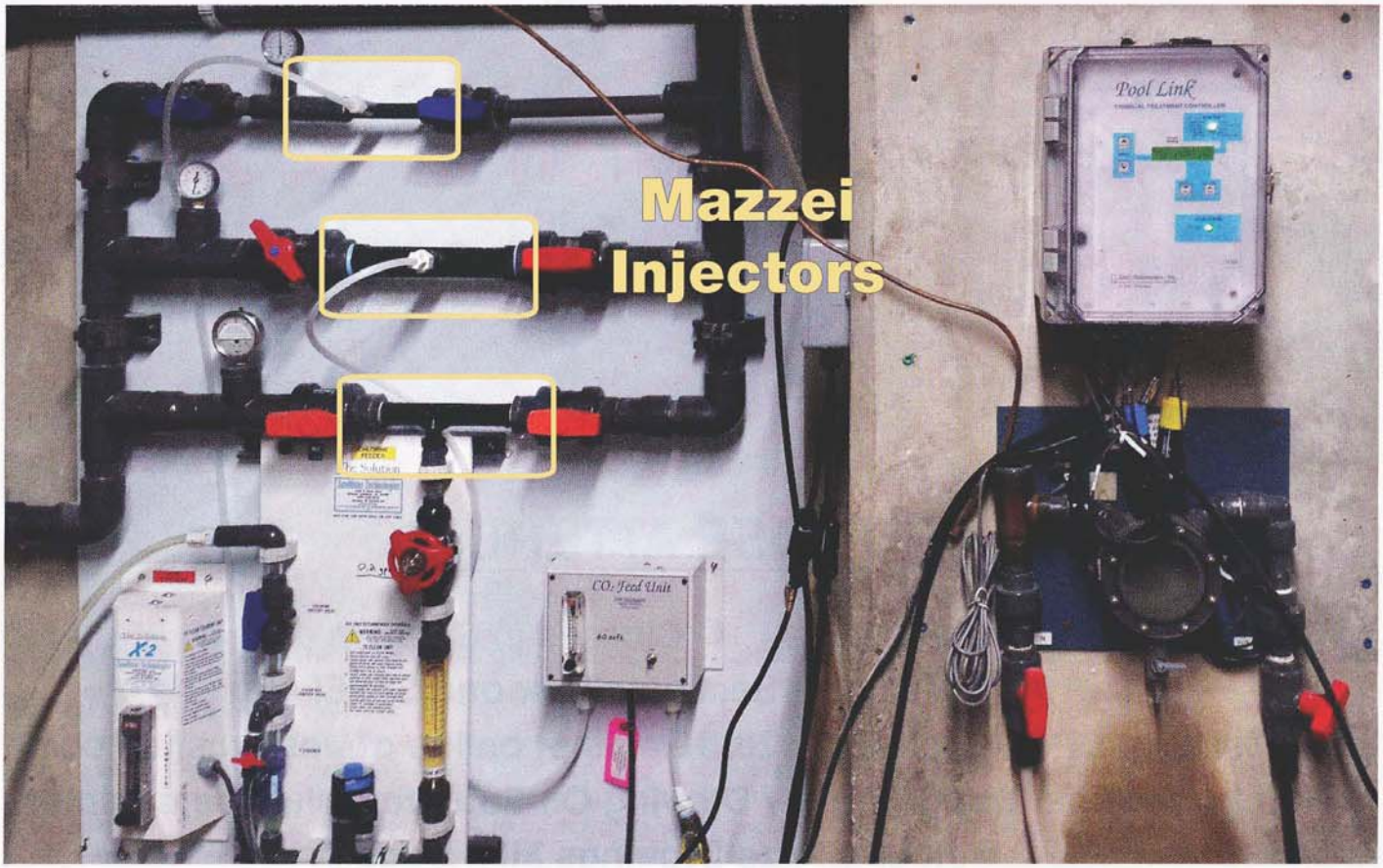

CLEMENTE RIVERA

ORP Control

Here's a simple explanation for a misinterpreted concept

ORP is the oxidation reduction potential of water that is treated with an oxidizer, such as chlorine. Over the years, I have heard plenty of explanations of what ORP actually is, and how it works, with unfortunate results. Recently, I was driving and while playing with the gadgets on my new car, it dawned on me — ORP control can be compared to the cruise control in a modern automobile!

You see, ORP is a *qualitative* measurement of how well the oxidizer is performing. Regardless of the residual of oxidizer, a steady ORP will provide superior water quality, keep chloramines at bay, and, with further research, can provide the keys to today's sanitation issues.

On a side note — pH control has to be stable at all times; if your pH is all over the place, have it evaluated by a pool professional. A pH system should be capable of maintaining a rock steady pH at all times, or else your ORP control will falter. I recommend a pH set point of 7.4 — the pH of the human tear.

So let's get started with the explanation:

In your car, you have a cruise control system that maintains a steady mph (speed) regardless of the amount of gasoline being utilized (this is measured in mpg). If you activate the cruise control on your car, and set your odometer display to show the mpg's your car is using, you will see the following:

- Mph is steady throughout the time cruise control is on.
- Mpg varies, depending on the road conditions.
- If the road is level, your mpg's remain stable with a stable speed (mph).
- If the road goes on an incline, mpg's go down because more gasoline is used to get more power to climb the hill at the same mph.
- If the road goes on a decline, mpg's go up because less gasoline is used to reduce the power needed to maintain the same mph.

Now let's translate this to ORP control:

In your pool, you have an ORP/pH control system that maintains a steady ORP regardless of the amount of oxidizer residual in the pool water. If you activate the ORP control, you will see the

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following:

- Mph = ORP
- Gasoline use = Chlorine ppm (residual).
- Mpg = Patron use in a pool (up means lower usage, down means heavier bather loads).
- When a pool is opened in the morning, you will have a "level road condition" — the pool ORP is steady, and chlorine ppm is at a starting point.
- Once a pool starts being used by patrons, the chlorine level (ppm) will fluctuate, while ORP remains the same throughout the day.
- As usage increases — it's like going up an incline in the car — more gasoline (ppm) is needed to maintain a steady mph (ORP).
- As usage decreases — it's like going down a decline in the car — less gasoline (ppm) is needed to maintain a steady mph (ORP).

At day's end, you may end up with a higher ppm, and the ORP will start to climb — think of it as the cruise control being shut off while going down a decline — mph goes up, and mpg's go up. The car will stay this way until it makes it to a level road, and then ORP and ppm will stabilize. When the pool is reopened the next morning, you should be back to that "level road" condition, and the cycle will repeat.

Maybe now some of you will start having an "aha!" moment, and start recognizing that while ORP is steady, chlorine will fluctuate. This is a normal occurrence, and anyone thinking that ORP is supposed to maintain a steady ppm will be pleasantly corrected of this notion at this point.

Now if your pool tends to drop off its ORP set point and stays that way during busy periods, that's an indicator that your "engine" (the chlorinator) is too small for your application. I suggest you have your system re-evaluated by a pool consultant (one who knows about HCF — high capacity feed chlorination).

Installing larger chlorinators will ensure that your water quality control equipment is properly sized and configured to meet the demands your pool will throw at you. Remember: Consistent maintenance of an ORP level will result in better water/air quality.