Fluid Dynamics
Hard water solutions since 1973

Case Study: Swamp Coolers

Customer: UA Local 525 Plumbers & Pipefitters Training Center

Category: Commercial

Application: Evaporative Coolers

US Case Study

The Challenge: Las Vegas water is classified as “very hard” at an average of 17 Grains per Gallon. Evaporative coolers, a.k.a. "swamp coolers" are *very hard* pieces of equipment to protect from calcium limescale deposition in this water environment because of the principles they operate under.

Evaporative cooling differs from typical air conditioning systems which use vapor-compression or absorption refrigeration cycles. The temperature of dry air can be dropped significantly through the phase transition of liquid water to water vapor (evaporation), which can cool air using much less energy than refrigeration.

The Las Vegas Pipe Trades Training Center, local 525 is running two of these swamp coolers for one of its buildings. With the desert summer temperatures of 115 Degrees F, they run a lot and swamp coolers can take a beating from scale in Las Vegas!

The Solution: On each of the two coolers a ¼” Minitron was installed on the incoming feed line and a ½” Scaletron on the re-circulating loop within the cooler

Results: The Facilities Manager reports having a fraction of the accumulation from the prior full year…only about 10%! The pads are disposable design and replaced monthly. What is left behind is much easier to manage than before and the Scaletron unit in the loop is routinely backwashed to simply remove any debris built up from the disposable pads. They are delighted and Fluid Dynamics is working with their team to specify treatment for their larger cooling tower in January of 2016.

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Local 525 Pipetrades J.A.T.C.

750 Leigon Way

Las Vegas, NV. 89110

To whom it may concern,

I am the Facilities Manager here at the J.A.T.C. and I am in charge of all maintenance. At the beginning of last year's hot season, 2014, we installed 2 new large evaporative coolers to replace the severely corroded existing units servicing our weld shop. These units run 24/7 from mid-April through October every year. After the first year of service I became convinced that replacement would be on a 3 to 4 year basis even with our extensive maintenance schedule due to the water here in the desert and the principles of operation of an evaporative cooler.

Upon approach of our second season, 2015, we installed the Fluid Dynamics products, 2 each, on our units and proceeded with our normal maintenance schedule. Immediately I noticed that the scale was significantly less inside the units and that the pads were the only location of buildup. I replaced the pads monthly and I am very happy to say that the severe reduction of scale in my units continued all season.

I have to admit that I was skeptical and in fact expecting a fail in trying this product but I am now expecting to increase the life span of my units by 2 to 3 years with regular maintenance. The end of season shut down was easier than ever before and with the potential of nearly doubling the life expectancy of my evaporative coolers we are now seeking pricing on the installation of this product on our 2 closed loop systems and our condenser loop to the cooling tower.

I would recommend this product to anyone looking to increase life expectancy and efficiency of their equipment and systems.

Sincerely,

Rodger Tippetts

Facilities Manager