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## VALVETTE SYSTEMS

January 15, 2015

TO: Los Angeles World Airport

ATTN: Howard Putnam & Edward Melara

Gentlemen,

Yesterday, January 14, 2015, Nelson Loureiro and I met at Westchester Parkway along the north side of LAX where over two months before we had set into motion sprinkler testing protocol centered around the City of Los Angeles' efforts towards increased water conservation.

Although the original intention was to make a comparison test between three different valve systems, we ended up comparing only two systems because the third one developed a break in one of the lines knocking that system temporarily out of service. The good news is that the third system we would have liked in the comparison testing was the least important of the three and I believe Nelson and I got all the important information we sought from the trials.

The sprinklers in all of the valve systems all along Westchester Parkway are gear-drive rotors. The landscaping consists of 100% turf. For this simple comparison test, we took one of the valve systems and replaced all of its sprinklers with new 6" pop-up sprinklers supplied by the Toro Company with each sprinkler equipped with an In-Stem Flow Regulator; (aka LittleValve.) For nozzles, we used Toro's Precision Rotating Nozzles (PRN), that fit onto regular spray-type pop-up sprinkler bodies. Valvette Systems, supplied the 6" LittleValve pop-up stems for the Toro 570s.

The other system in the test was one of the existing [unmodified] valve systems with its rotor sprinklers. Hence the test was a comparison of rotors vs. PRN/LittleValve Combo sprinklers.

The testing consisted of reading the water meter to monitor usage for each valve system running for exactly 5 minutes, then after shut-off, reading the meter again – all to find out how much water each system used during its 5-minute period. We wanted to know the total usage for the 5-minute period for each valve system and also wanted to know the GPMs for each nozzle type.

The information below was provided with the water usage of 14 sprinklers in each valve system:

**In 5 minutes, the 14 rotors used a total of 38 cubic feet of water or 284.24 gallons. That translates into each rotor emitting 4.06 gallons per minute.**

**In 5 minutes, 14 PRNs used a total of 11.74 cubic feet of water or 87.83 gallons. That translates into each PRN emitting 1.25 gallons per minute.**

That translates into the PRNs using just 31% of the amount of water that the rotors use, or water savings of about 69%.

Understanding the results: It is true that the PRN/LittleValve Combo sprinklers saved 69% of the water but it must be assumed that during the Summer, the turf along Westchester Parkway would likely need more water. However, to begin with, based on the appearance of the turf after the change-out and before the rains came, along with our 3 years of experience field testing the Combo sprinklers, we know that for 3 seasons out of 4, the PRN/LittleValve Combo area would not need increased watering time to maintain a similar appearance as the rotor areas. In the summer time, we would advocate a maximum of a 100% increase for the watering time of the Combo area. In so doing, that means the water savings of the Combo usage over the rotor usage is almost 35%, still a very substantial savings of water.

One of the more important reasons for the Combo's water savings is the tremendous uniformity [of the water application] that one gets from rotating nozzles, which is the prime reason why rotating nozzles are on the rebate list of the Metropolitan Water District of Southern California, (MWD) and are strongly supported by the Los Angeles Department of Water & Power. (DWP) Additional assistance in achieving higher uniformity is provided by LittleValve parts.

Rotors are also notorious for creating excessive misting and fogging, which means the water is just atomizing and rising up in the air and with even a mild breeze, blowing or floating away. LittleValves are extremely useful in overriding all high pressure and usually eliminate all or most of the misting/fogging commonly seen.

Because LittleValves allow for precise placement of the water and total control over the distance of the water throw, they also eliminate over 85-90% of overspraying, the number one reason for excessive runoff.

The above reasons for water savings pertaining to the LittleValve is the reason why In-Stem Flow Regulators are also on the MWD Rebate list.

Lastly, the PRN's very low trajectory also contributes to water savings in that it undercuts the wind. Unless you have a very strong wind, the streams emanating from the PRN when its distance is longer than 8 -10 feet are hardly affected.

With the PRN/LittleValve Combo, every radius-style spray nozzle can be eliminated from the stock that your maintenance department needs to keep on hand. All your radius sprinkler areas can now be watered with just 2 models of sprinkler nozzles – an adjustable PRN and a full circle model. The only spray nozzles the department will need to keep are side strips and center strips.

This report was prepared by Ted Sirkin, licensed landscape contractor since 1963. Mr. Sirkin, who started his landscape and irrigation career in 1959, is also a board member of the San Fernando Valley chapter of the California Landscape Contractor's Association. (CLCA) For the

last 15 years, he has devoted his landscaping efforts exclusively to the practice of irrigation consulting, designing and manufacturing of irrigation products.