



George Watte & Sons

Mark Watte, owner/partner of the George Watte & Sons farm



One Hundred Years of Free Pump Testing Services from SCE: Pump Test Results Get to Heart of Energy Savings for Tulare Farm

Pumps: A Farming Lifblood

“Our pumps are as important to our farm as a heart is to a person. How we measure and monitor those is obviously very important. When you get a single pump test, it’s one snapshot. What’s essential is to test over time to see trends. That’s helpful in diagnosing what might be wrong and how to fix it.”

Mark Watte, owner/partner of the George Watte & Sons farm, speaks of the value of Southern California Edison’s (SCE) free pump testing services. In 2011, SCE marks 100 years of offering these services to customers through one of the largest and longest-running pump-related energy efficiency programs in the nation. Benefits of SCE’s pump testing services may include:

- Increased energy efficiency
- Reduced costs
- Improved system efficiency

Over the years, SCE’s services have evolved to incorporate the latest in

fluid flow and electronic measurement instrumentation to test thousands of pumps annually in conformance with pumping standards established by the American Water Works Association.

Pump Testing: A Money-Saving Solution

George Watte & Sons dates to the late 1950s, when Mark’s father and uncle bought their first properties and began farming. In the mid-1980s, Mark, his brother, Brian, and their father formed a partnership to operate the farm together. A few years later, their father retired and the brothers took over the business.

Today the brothers own, lease and farm about 4,000 acres, plus harvest approximately 300 acres of trees, and milk about 1,800 cows in the farm’s dairy. On average, Watte says, canal water meets about half of the crops’ water needs, with the rest depending on water pumped from below ground. For those crops, the farm relies on 42 pumps, which Watte says probably account for about 90 percent of its energy use.

Estimated Savings by Managing Energy

- *Location:* Tulare, CA
- *Industry:* Agriculture
- *Description:* Approximately 4,000 acres of crops (primarily cotton and dairy feed), 300 acres of trees and 1,800 cows
- *SCE Programs Utilized:* Free Pump Testing Services
- *Results:* Increased overall pumping plant efficiency and lower electricity costs



Energy Management Success Story

Pump Test Results Get to Heart of Energy Savings for George Watte & Sons Farm

The farm uses SCE's pump testing services to check the efficiency of each of its pumps every other year. Though some utilities outsource this function, Watte values the availability of SCE's in-house services.

"I feel like SCE employees are much more thorough and caring about having it done right," Watte says. "It's expensive to pull pumps, and there's no opportunity for visual inspection. It's all about the measurements. When I get the results of an SCE pump test, I feel it's absolutely done right."

Energy Savings of 30 Percent to 40 Percent

Watte points to an example of a pump tested in 2006. The results showed an overall plant efficiency of 41.1 percent, with a kilowatt per acre-foot requirement of 309 and a gallons-per-minute production of 583. Based on the results, Mark discovered that the pump's bowl was worn out, so he replaced it.

SCE came back the following month to recheck the pump, and its efficiency had gone to 65.2 percent — generally in the range for a new, highly efficient pump — with a kilowatt per acre-foot requirement of 207. The pump's gallons-per-minute production had almost doubled, to 1,117.

Watte estimates that the energy savings added up to about \$17 per acre-foot, or 30 percent to 40 percent. "The payback was right away," he says.

George Watte & Sons also takes other steps to utilize both energy and water resources as effectively as possible. Use of a variable speed vacuum pump in the dairy saves energy by matching the vacuum pump motor's speed and energy consumption with the vacuum needed. Water savings result from drip irrigation for the trees and field laser leveling to make the flow of water across the crops more uniform and efficient.

However, the biggest bottom-line impact for George Watte & Sons comes down to keeping its pumps at their optimal efficiency, and using SCE's pump testing services to accomplish this.

According to Watte, "When you get a test from SCE, you can bet the farm on it."

More About SCE's Hydraulic Pump Test Products and Services

SCE's free pump testing services determine the overall "wire-to-water" efficiency of a pumping plant by analyzing the water level in a well during pumping, discharge flow rates, and power input to the pump motor. These measurements of pump performance in progress allow customers to track pumping plant efficiency and determine when maintenance or overhaul will be cost-effective.



Energy Management Success Story

Beyond measuring plant performance, SCE also offers recommendations to capture efficiency and cost-saving opportunities elsewhere in the pumping system. These considerations may include minimizing piping friction losses, maintaining adequate pumping pressure, matching pressure to varying flow requirements through variable speed drives, and determining priority pumping and/or reservoir storage strategies.

Because of the popularity of these services, SCE has expanded the program to include several fee-based predictive maintenance services, such as infrared panel inspection and cleaning, vibration detection analysis, meg-ohm testing and industrial services.

To learn more about SCE's hydraulic pump test products and services, as well as other energy management solutions for agricultural properties, contact your account representative or visit www.sce.com/agriculture/. To schedule a pump test, log onto www.sce.com/wps/portal/home/apps/forms/requestpumptest



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of the George Watte & Sons farm, on
SCE's free pump testing services

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NR-768-V1-1210



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