

Pumping Efficiency Testing Services

Optimizing Pumping System Efficiency with PETS Evaluation, Testing, and Cost Savings Analysis

At Pumping Efficiency Testing Services (PETS), we specialize in evaluating and optimizing the performance of your pumping systems. With over three decades of experience as a PG&E APEP subcontractor, we provide detailed pump testing and energy cost-saving analysis to ensure your operations are running at peak efficiency, helping you save on energy costs while maintaining optimal performance.



According to the CPUC Energy Efficiency Programs, pumping facilities in the 50 percent efficiency range and below are regarded as “Low Efficiency” and operators are encouraged to evaluate these pumping facilities to identify if there are potential savings that could be obtained by retrofitting or replacing the facilities. With that being said, some lower-horsepower or wastewater pumping efficiency with lower operation requirements may not be cost effective to be retrofitted or replaced until they are functioning at an Overall Pump Efficiency (OPE) of approximately 40 percent.

Before jumping to the conclusion that low efficiencies automatically mean that your pumping facilities are worn out, we still recommend reviewing operating conditions. Is the pump running as designed, or are there system design issues or operating conditions that may be responsible for low efficiency ratings? Does the testing indicate that the optimal point on the pump curve was met, and that a high efficiency rating was established at one or more of the operating conditions for the plant? After addressing these questions, compare the pump's efficiency to the manufacturer's pump curves to determine if the pump is damaged or if operating conditions are affecting the OPE. PETS' clients frequently request additional services when evaluating pumps for replacement, such as Multi Point tests with three or more runs at varied operating conditions, including a fully loaded test to create an operational curve. Matching this curve to the pump's specifications indicates the pump is likely not worn out.

Recent advancements in pump design have led to more efficient pumps, including submersible models. Engage with your pump contractors, suppliers, and engineers to ensure you select the most efficient pumps and system designs. We recommend that our clients avoid defaulting on standard pumps. The Hydraulic Institute (HI) provides Pump Efficiency Ratings, similar to Energy Star Ratings for appliances and HVAC, through rigorous testing and certification.

The PG&E TRC AESAP Agricultural Energy Savings Action Plan offers direct rebates for Hydraulic Institute (HI) Rated High Efficiency Pumps. To qualify for these rebates, the selected pump must be listed on the HI Pump Efficiency Index (PEI). Additionally, rebates are available for Variable Frequency Drives (VFDs). Both types of rebates are deemed, meaning they are a fixed dollar amount per horsepower. Over the lifetime of your pump, about 40% of the cost comes from energy and demand charges, compared to 20% for the pump and installation. Investing in an efficient pump and well-designed system can lead to significant savings. Efficiency improvements directly translate to energy cost savings. For instance, increasing efficiency from 40% to 60% or 70% OPE results in a 20-30% reduction in energy costs due to reduced operational hours and increased GPM output.

Pumping Efficiency Testing Services, PETS
PG&E APEP Subcontractor Since 1989
Cell/Text: (707)888-8963
Toll Free: (866) 774-4812

Using a Variable Frequency Drive (VFD) or Variable Speed Drive (VSD) system reduces energy costs by decreasing the pump shaft speed, lowering power consumption exponentially.

A properly designed system offers additional benefits, such as reduced maintenance and labor. Efficient pumps can take advantage of PG&E time-of-use rates, allowing you to pump more water during off-peak hours and avoid higher on-peak energy and demand charges. Contact your PG&E representative to explore time-of-use rate options for further cost savings.

Watch List 2024: Pump Tests Indicating Low Efficiency or Feasible Annual Cost Savings

- Dave McFadden Well 2 – 31 % OPE, 41.07% and \$9,392 estimated annual cost savings
- Knight Well 1 – 40% OPE, 28.65% and \$2,784 estimated annual cost savings
- Nuttall B1 – 15% OPE , 15.54% and \$1,663 estimated annual cost savings
- Porter Top Well 1 – 45% OPE, 28.91% and \$1,258 estimated annual cost savings
- Spreckles Well 4 - 30% OPE, 52.72% and \$23,671 estimated annual cost savings
- Secondo Blue Well – 41% OPE, 35.02% and \$7,003 estimated annual cost savings
- Secondo Yellow Well – 43% OPE, 27.84% and \$3,758 estimated annual cost savings
- Bianica B2 - 48% OPE , 27.84% and \$3,758 estimated annual cost savings
- Well 2 (Wing Ranch) – 54% OPE, 21.86% and \$15,738 estimated annual cost savings
- Black Well 1 – 13% OPE, 42.55% and \$1,289 estimated annual cost savings
- Christensen Well 1 – 34 % OPE, 43.04% and \$2,066 estimated annual cost savings
- Abrams Well 2 – 48% OPE, 25.93% and \$6,001 estimated annual cost savings
- Uchida Well 2 – 55% OPE, 19.51% and \$5,795 estimated annual costs savings

Please give PETS a call or send us an email to schedule a time to discuss these reports in detail and plan the next steps. I can provide valuable insights if we spend an hour reviewing the Pump Testing and Energy Cost Saving Analysis together.

Thank you for the opportunity to support your data acquisition and energy cost-saving efforts. is value that I can add if we take an hour to go over the Pump Testing and Energy Cost Saving Analysis and walk through the pieces of data.

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All our Best to You and Yours



*Nancy Comstock
Pumping Efficiency Testing Services, PETS
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Cell/Text: (707)888-8963
Toll Free: (866) 774-4812
pumpingefficiency1@pacbell.net*