Agricultural Pumping Efficiency Program

Helping California…

*"The Program was financially helpful to the District, enables us to drain Bouldin Island much faster than before and reduced our utility bills by about **20%** from previous years,"-*
Ralph Heringer, General Manager, Bouldin Farming Company

PROJECT SUMMARY

Client: Reclamation District 756
Isleton, California, Sacramento County
Ralph Herringer, Manager

Utility: PG&E/ Electricity

Project: Retrofit four Sacramento Delta drainage pumps to increase overall pumping plant efficiency

Consulting Engineer: MBK Engineers, Sacramento, Gilbert Cosio P.E.

Pump Test Company: Power Hydrodynamics, Modesto, Bill Power, Owner

Contractor: Delta Pumps, Stockton, Tracey Miller, Owner

Project Cost: $80,000

Incentive Grant from Agricultural Pumping Efficiency Program: $16,500

Annual dollar/energy savings: $ 24,000 / 200,000 kWh

Increase in Water Flow: 27,000 gpm (120 ac-ft/24 hours) total for four pumps

Simple Payback: 3 years

Contact the Agricultural Pumping Efficiency Program at (800) 845-6038 for information on how we can help your water district save money and energy.

What They Say About the Ag Pumping Efficiency Program…

Bouldin Island is adjacent to the small community of Isleton and about 30 miles northwest of Stockton at the confluence of the San Joaquin and Mokelumne Rivers. Oceangoing ships transiting through the Delta to the Port of Stockton look down on Bouldin Island's farm fields as Sea Level is 20 feet up from the lowest point. California State Highway 12 connecting Interstates 5 and 80 is routed directly through Bouldin Island.

The Island's peat soils were reclaimed at the turn of the Twentieth Century by area farmers who raised and shipped market vegetables to San Francisco by boat before the road and bridge network was developed. Reclamation District 756 is responsible for all levee repairs and pump maintenance on the 6,000 acre island. Bouldin Island has not flooded since 1906.

Irrigation water for the diversified crop mix of corn, rice, wheat, and fresh market tomatoes is through large 12-24" siphons routed through levees from the two adjacent rivers. Two large pump stations at Camp 5 and Camp 29 provide the infrastructure for six large pumps that drain irrigation water out of the fields back up to sea level. Unscheduled electric power outages have a completely different meaning when farming below sea level.

"Peat soils farmed in the Delta have oxidized over the last 100 years lowering the working ground level" said Ralph Heringer, manager. "Over time our pump performance was reduced as they pumped against higher and higher heads." "It took longer and longer for us to drain the fields after each irrigation."

Both the District's consulting engineer, Gilbert Cosio of MBK Engineers, Sacramento and pump dealer Tracy Miller of Delta Pumps, Stockton recommended that all six drainage pumps be tested as part of the Agricultural Pump Efficiency Program and inefficient units be considered for cost-sharing repairs and retrofits.

Bill Power of Power Hydrodynamics, Modesto tested the pumps and found that repairs/retrofits were warranted on all six units. The District chose to repair the first four pump units that were the least efficient saving the remaining two pumps for the 2005 season.

A total of $80,000 was spent on upgrading the four pumps. The APEP cost-share was $16,500. 2004 season energy savings were kWh. This resulted in a savings of $24,784 from 2003 power bills to pump the same amount of drainage water. The simple payback time is approximately 3 years.

"Since we are now pumping an additional 27,000 gpm or 120 acre-feet per 24 hours, we are able to pump down the drainage canals much faster than before" said Heringer. "We think overall it was a good investment."

"Other Reclamation and water districts could benefit financially from Program participation commented Gilbert Cosio, District Engineer. " Upgraded pumps need to be operated for less time reducing maintenance and increasing each district's operational flexibility. We recommend the Agricultural Pump Efficiency Program to all our MBK Engineers' California clients."