

Application Engineering Bulletin

DW Pump Uses Thompson Pumps to Evaporate Problem

DW Pumps, a new addition to the nationwide Thompson Pump distributor network with locations in Sacramento and Oakland, CA, was instrumental in solving an almost unsolvable dewatering application during construction of a new subdivision outside Sacramento.

A project spanning five years, the subdivision “Anatolia,” located in the Sacramento suburb of Rancho Cordova, is being constructed to allow for over 3,000 residences consisting of single-family homes, townhouses and apartments. Anatolia will also include parks and recreation facilities, area schools, businesses, and a shuttle system to nearby metropolitan areas - all while maintaining the natural beauty of the area.



Thompson Pump's 8-inch Solids Handling High Pressure pump was used to handle the water in the storage pond.

The first phase of construction consisted of clearing and leveling the land. While the first phase was in operation, the project site experienced a large amount of rainfall – approximately 9.5-inches more than the area’s average rainfall of 7.5-inches. The soil conditions on the site caused some environmental problems as well. The red clay soil on the project mixed with the rainwater creating a thick mud. California’s environmentally-concerned Regional Water Control Board mandates that water be collected and treated to clarity levels equal to near the clarity of spring water before it is introduced into the environment. The red clay/rainwater mixture reached levels, which were unacceptable to the Regional Water Control Board’s mandated safe levels. This meant that it needed to be determined how the water issue should be handled so construction could continue on schedule.



The system consisted of 1,800-feet of 12-inch discharge pipe.

The contractor explored many options in order to overcome this dilemma, such as storing the water in a storage tank to be removed and treated outside, or treating the water themselves, and others - all of which proved to be costly and time-consuming. The last option was to move the water to a nearby storage pond, which was capable of containing approximately 55-million gallons allowing construction to continue. With the storage issue finalized, the next issue was how to treat the red clay/rainwater fluid so that the water could be introduced back into the environment without costly treatments. The contractor contacted Dan Wathor, co-owner of DW Pumps, a new distributor for Thompson Pump, to see if they had any ideas to overcome this obstacle.

Wathor visited the jobsite to obtain information to find the best way to treat the stored pond water, or even remove it altogether.

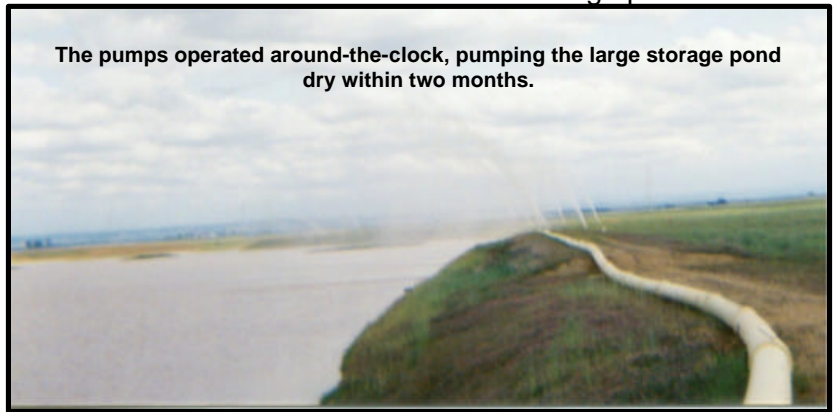
Wathor concluded that water evaporation would be enough to remove the water from the storage pond. The idea was to pump the water into the air to aerate it, causing a percentage of the water to evaporate before it landed back in the storage pond. After the visit to the jobsite and proposing this to the job superintendent, DW Pumps calculated approximately how long the pump would have to run to remove the water from the



Fifteen one-inch nozzles were installed along the discharge pipe and expelled the water 80-feet into the air, causing most of the discharged water to evaporate into the air.

storage pump. After establishing a baseline of a 10% evaporation rate, Wathor factored in temperatures of about 70° at night, and 100° in the heat of the day, along with wind conditions that were prevalent most afternoons at the jobsite. Taking these elements into consideration, it was estimated that the evaporation rates could range from 10-30%.

The system that DW Pumps suggested consisted of a single Thompson Pump – an 8JSC, 8-inch Solids-Handling High Pressure Pump with the *ENVIROPRIME*® Priming System, which would ensure that the red clay/water mixture would not escape the pump and into the environment, along with 1,800-feet of 12-inch diameter discharge pipe. The pipe had fifteen one-inch nozzles strategically placed along the discharge pipe and directed over the storage pond. The red clay/water mixture exited the nozzles at 225-gallons per minute (324,000-gallons per 24-hour period) and at 80-psi, which would spray the water 80-feet into the air above the storage pond.



The pumps operated around-the-clock, pumping the large storage pond dry within two months.

“By operating the pump around-the-clock, we were able to evaporate the 55-million gallons of water in less than two months,” says Dan Wathor. “This ensured the project stayed on schedule and on budget, saving the developer enormous related costs.”

Dan Wathor and his brother, Doug Wathor, formed DW Pumps in 2004. Both Wathors have extensive pumping and dewatering experience. DW Pumps has locations in Sacramento and Oakland, CA and cover the central and northern California markets.



L to R: Dan Wathor, co-owner of DW Pumps; George Olsker, West Coast Regional Manager, Thompson Pump; Doug Wathor, co-owner DW Pumps in front of the 8JSC Thompson Pump.