



Clamshells_reach_deep

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The dredge at Capitol Sand & Gravel is one of 65 custom Rohr dredges operating nationwide. Rohr manufactures bucketladder dredge, catamaran floating dredge and luffing-jib floating clamshell dredge systems. But when aiming for depth, the traditional floating clamshell is the way to go.

Capitol Sand & Gravel can reach depths of 200 feet, which allowed them to discover additional material. And operations can go as deep as the deposit allows, Rohr Vice President Chris Nelson says. The company currently is retrofitting a twin clamshell in Southern California to dig 300 feet.

The biggest, most aggressive machine ever produced by Rohr is a twin 20-cubic-yard floating clamshell dredge. Nelson says it is two 20-cubic yard machines attached to each other that alternate digging. It is equipped with four 8- × 20-foot dewatering screens and four fine-sand dewatering screens. The unit features bi-directional rake grizzly assembly, on-board crushing, and bucket monitoring and diagnostics. At 80 feet, it is capable of more than 2,000 tons per hour.

“We can get into some pretty tough deposits and bring up whatever is down there,” Nelson says. “The issue now is making the most out of what you bring up and being smart about how you process it and how you get it to the conveyor belt.”

On-board crushers and screens help ensure material is not wasted and is processed more efficiently. Nelson says machines augmented with a fines recovery system collect material as small as minus 300. Most dewatering screens reduce material to about 11% moisture, allowing the plant to be fed directly, he says.

Using all of the oversize also is critical. Rather than carting boulders off by barge, they can be crushed immediately with an onboard crusher. This helps streamline the plant as material is sent straight to the secondary crusher.

Typically, crushers are supplied by the customer, and all Rohr needs is the drawing for the base and some weight information. Jaw crushers are the most popular because they are simple and effective for sand and gravel. But impact crushers and others are possibilities. Nelson says they once accommodated a Telsmith jaw crusher manufactured in 1948.

Processed material is transferred to shore by floating conveyor. Nelson says that larger sections of conveyors minimize the amount of motors and drives. Smaller sections, however, are required for versatility and mobility. Combined with proper dewatering and screening, conveyors carry material straight to the plant.

The clamshell dredge is a low-maintenance machine, Nelson says. It has a single-wrap cable on a drum. The hoist and trolley operate on variable-speed drives; starting and stopping, and control of the bucket is done electronically. He says the brake systems are basically just a safety feature, so there is little wear because they are not used.