# *Willard Says……*

# Success Story #2

We were asked by the owner of a two-year-old ladderpump dredge to help solve his lousy production/high maintenance problems. The dredge manufacturer had fired off his full quiver of excuses and missed the mark every time. Now, the owner was getting desperate.

The dredge did not have a velocity meter so we installed one.

The dredge did not have a vacuum gauge so we installed our LADDERVAC; a differential pressure gauge that indicates the reduction of pressure in the ladderpump inlet port relative to the ambient pressure outside the inlet port.

The dredge had a dysfunctional bypass valve installed in the suction pipe. It took a while to dope out the valve operating theory because it was so dumb.

Incredibly, *the bypass valve was programmed to open each time the operator raised the ladder.*

Evidently the design engineer had a brainfart; how else could he have spawned such a goofy bypass valve control concept? The idea that density should be reduced whenever the ladder is raised bespoke a vast ignorance of dredge system operation.

This dredge was equipped with a rotary cutter, a severe misapplication because the deposit had a lot of oversized rock. The oversize frustrated cutter function, caused repeated shaft breakage with consequent loss of the cutter basket and prevented mining to the bottom of the deposit. The operator had to work his tail off to maintain any kind of production. All that maneuvering meant that the ladder went up and down frequently, the bypass valve opened frequently and production—such as it was—went down frequently.

The owner replaced the funky bypass valve with a CONVAC modulating bypass valve and replaced the rotary cutter with a linear cutter. Production soared, the operator started enjoying his job, the linear cutter enabled mining to the desired depth and the owner has prospered happily ever since.

The final problem—the oft-broke, ladderpump hydraulic drive—was solved by adding a booster pump to the dredge system so the puny drive could live longer with a reduced load.

Comment, question, criticism, information on products mentioned? Contact Willard@willardsays.com