



## Well Rehabilitation with CETCO Drilling Products DPA™ in Washington State

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Port of Morrow operates a port on the Columbia River near Boardman, OR. In addition to port management, Port of Morrow operates farms in the surrounding area. As part of the farm operation, they manage 22 irrigation wells and pivot systems for irrigating fields in the area.

One of the wells was drilled around 1970. This well was constructed with a 20 inch borehole and 16 inch well casing and when completed yielded 1,800 gallons of water per minute. In 2003, the well yield had dropped to essentially 0 gallons per minute. They were only able to get enough water to fill the well pipe. The screened area of the well had become encrusted with mineral deposits.

Port of Morrow contacted Jody Carpenter of Carpenter Drilling from the Tri-Cities area to drill a new well for them. Jody, who specializes in well rehabilitation, recommended that they try to rehabilitate the existing well first, before drilling a new well. Port of Morrow, although a little concerned about how well this would work, agreed to the rehabilitation.

### Preparation

In planning for this rehabilitation, Jody chose his 22W Bucyrus Erie rig for the project. Jody decided on a two-step approach for the rehabilitation, mechanical and chemical. The mechanical phase consisted of wire brushing the well before chemical treatment.

The second phase of the project was to introduce a chemical, and Jody chose CETCO Drilling Products DPA™, Dry Penetrating Agent, which he purchased from United Pipe & Supply in Pasco, WA. United Pipe & Supply is a major distributor of CETCO Drilling Products for the drilling industry, with 36 branches in the Northwest. DPA is a granular acid, safe to handle, and is designed to clean casing, screens, gravel pack, and water bearing formations that are clogged with mineral scale. The most common types of scale are iron, magnesium, and calcium carbonate. DPA, in addition to being a very effective acid, contains chelating agents, which suspend mineral scale once it has been dislodged so that it can be pumped out of the well.

### Mobilization and Operation

To begin the rehabilitation, Jody needed to mobilize his equipment from the Tri-Cities area of Washington state to the well site near Boardman, OR. Jody positioned his rig above the well, removed the pump, and proceeded to wire brush the screens. He then mixed the DPA in a water tank and introduced it in to the screened area of the well through a tremie pipe. He pulled the tremie back until all of the DPA was deposited in the well.

Jody then used a sonar jet to crack and open the encrusted area of the well. He then swabbed the well with a surge block that he had constructed. After this, Jody allowed the well to soak in the DPA treatment for 48 hours. When the 48 hour soaking was complete, Jody then swabbed the well vigorously for 8 hours. When the treatment process was complete, the waste was pumped from the well for disposal after being neutralized with soda ash.

## Results

When the pump was reinstalled in the well, the water came gushing out at 1,800 gallons per minute, which was the well's original output when it was new. Port of Morrow was very happy! Not only did they have their well back at original production, but also they were spared the cost of drilling a new well to replace the one they thought was no longer usable.

## Follow-up

Four years later, the Port of Morrow well continues to yield 1,800 gallons per minute. The well is not used during the winter, but continues to pump its original yield at start up each spring.

As for Jody Carpenter and Carpenter Drilling, they are busier than ever. With success after success in rehabilitating wells, Jody has all the work he can do during the year. He has mostly given up water well drilling in favor of rehabilitating wells, an art that he has perfected.

Jody says with the price of grain these days and land coming out of government CRP programs, "Water is very valuable, even more valuable than the land." Jody goes on to say, "the key to successful well rehabilitation with DPA is the swabbing action with my surge block." He went on to say that without the swabbing agitation, well rehabilitation will be as effective and only tends to give well rehabilitation, DPA, and similar products a bad name. Jody feels the most important thing to remember is to always follow the manufacturer's recommendation for successful well treatment.

Rolf Prag, an employee of Port of Morrow says, "Well rehabilitation was well worth the cost. It sure beat drilling a new well." Rolf went on to say that, they worried about the extra cost if rehabilitation did not work, but the results proved those worries to be unfounded.



**CETCO Drilling Products**

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