Alan Watts, the British-American philosopher, is quoted as saying, “Muddy water is best cleared by leaving it alone.” I’m sure in philosophy that is very deep and true; in water well drilling, not so much. In fact, let’s coin a new quote, “Muddy water on a gravel pack or screen should not set.” I know — very deep right?

What is the best way to reduce remnant drilling mud from the well before installing the pumping system? The grouting process will displace the bentonite drilling fluid introduced during the drilling process. The heavier grout (~9.4 pounds/gallon for 20% solid) forces the lighter drilling fluid (~9 lbs/gal) to rise and exit the hole. The grout fills the void between the casing and the borehole.

Regulations for grouts vary state to state and county to county. Many require the top to be grouted; others require the entire hole to be grouted. We believe the best way to protect the water well owner is to grout the entire length of the well. This not only protects the health of the well owner, but it prevents the comingling of good aquifers and aquifers with poorer quality water. As a rule of thumb, unless your local grouting regulations say otherwise, the following types of grouts should be used:

- Residential, high-solid bentonite, 20% solid grouts
- Commercial, high-solid bentonite, 30% solid grouts
- Environmental, high-solid bentonite, 30% solid grouts
- Grounding, high-solid specialty bentonite, 30% solid grouts
- Geothermal, high-solid specialty bentonite blend, 30% solid grouts or greater

Note that many local guidelines and regulations require cement or cement/bentonite blends in certain applications.

The well is all grouted up, the excess drilling fluid purged from the well, and the well has been flushed clear. The water production is lower than expected and, after a bit, the water starts to cloud up again. You may have clay blocking the gravel pack and/or screen. There are many commercial products available to help you chemically clean the gravel pack, screen and casing.

The three culprits are:

- Drilling mud residue built up during the drilling process.
- Bentonite grouts unintentionally pushed into the gravel pack.
- Natural clays migrating inward during water production.

If the well pump was installed, remove it before treatment. The products used for cleaning clay residue remove bentonite introduced as a drilling fluid during well construction. This can build-up a tough layer of mud that is sometimes difficult to remove by flushing alone. These products can also remove naturally occurring clays that intrude into the gravel pack.

Whichever brand of product you choose to use, follow the instructions provided by the manufacturer for proper use and disposal. Dosages and chemical makeup will vary by brand, so never assume the dosages are industry standards. Also, as with any chemicals, never mix brands, as this could create an on-site hazard.

Chlorinating the well is listed as a final step for many of these products. In the end, it is and always has been about delivering good, clean and abundant water.

Todd Tannehill is technical sales manager for CETCO Drilling Products, a Mineral Technologies Inc. company.

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