

Focus on VWWA



You are invited to attend the Virginia Water Well Association (VWWA) Winter Conference and Trade Show at the Holiday Inn Kroger Center in Richmond, Virginia, February 15-17.

As one of the best state shows in the industry, the Winter Conference features a great trade show as well as excellent educational courses.

Join fellow water well professionals for the fun and excitement of the annual auction and reception on Wednesday.

You are sure to find all of the supplies and equipment you need at the trade show on Wednesday and Thursday. Discover the latest, innovative products on the market! Be sure to stop by the **WWD** booth. We love to hear from our readers, especially when we're on the road.



Zane with Cotey Chemical Corporation took a moment to pose for the **WWD** camera at the 2011 Winter Conference.

Looking for vocational education hours? With basic classes for beginners and educational classes for the experienced drilling professional, there is something for everyone. Learn about well rehabilitation and development; get in on the great fracking debate; discover how to calculate fluid volumes for drilling mud rotary wells; and much more at this year's event.

The conference concludes with a breakfast and membership meeting. This is a great opportunity to get firsthand updates on the issues facing the industry as well as upcoming projects and educational opportunities.

Call 804-482-3586 or visit www.vawaterwellassociation.org for more information.

Drilling Fluid Updates



by Ray McLarty

Drilling Fluids & Grouts Questions & Answers

Question

I was talking to some drilling professionals, actually listening to them, at the national show and one kept referring to using two-step grout for geothermal loops. What exactly is a two-step grout? Is it geothermal grout or plain bentonite grout, and why is it called two-step grout?

Answer

I am not sure exactly when the name two-step grout was first given to a product, but before we had all the bentonite grouts on the market today - 20% solids, 30% solids, thermally-enhanced, etc. - the only way to apply bentonite down the hole was in a granular or tablet form. Bentonite in chip-like form, such as **Baroid IDP HOLEPLUG**® and **CETCO Chips** were not yet available. Baroid came out with a grout called **BENSEAL**® **EZ-MUD**® Grout.

The first time I had ever heard of it or saw a demonstration was by Carl Mason, a longtime Baroid employee, at a show where he and I were both making a presentation. [See note at end of article.] Carl was an extremely knowledgeable individual of both bentonite and mud rotary drilling. Carl described **BENSEAL**® **EZ-MUD**® Grout as 50 pounds* of **BENSEAL**®, granular bentonite, added to 30 to 35 gallons* of water that had been pretreated with **EZ-MUD**® Polymer, to retard or slow hydration. The ingredients were mixed at low shear and pumped immediately into place. The solids content was 15 to 17%.

Pretty close to the same time Baroid came out with **BENSEAL**® **EZ-MUD**® Grout, CETCO (which was American Colloid at the time) was experimenting with a 20% solids grout they called **High Solid Bentonite Grout**. This product originally consisted of two ingredients: a 50-pound* bag of grout and a small bag, I don't recall the exact amount, of a product called an initiator. The initiator was added to 24 gallons* of water,

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to bring you more information about the benefits of geothermal drilling.

then the 50-pound* bag of grout was added to the mix. The initiator slowed the hydration rate of the granular bentonite much as the **EZ-MUD**® did with the Baroid IDP product **BENSEAL**®. Later, the initiator bag was eliminated and the CETCO product was all in one 50-pound* bag. Both of the above products consisted of two products which required two steps to mix.

Both products have undergone changes and have been improved over the years. Today, all of the bentonite companies have polymer and granular bentonite grouts I call two-step grouts. These grouts are very similar to the original **BENSEAL**® **EZ-MUD**® Grout. They consist of a 50-pound* bag of granular bentonite added to water treated with a multifunctional liquid polymer, used to slow hydration of the bentonite. They also have 20% solids and 30% solids one-step grouts; and they have two-step geothermal grouts consisting of one 50-pound* bag of bentonite thermally-enhanced grout and varied amounts of silica sand, depending on the conductivity desired.

*(1 pound ≈ .45 kilograms)
(1 gallon ≈ 3.78 liters)

Note: I received word right after Christmas that Carl Mason had passed away. As I stated previously, Carl was very knowledgeable about the various uses of bentonite clays and polymers, and he was an expert on mud rotary drilling. A lot of what I know about bentonite and drilling came courtesy of Mr. Mason and his willingness to share his knowledge with others. My condolences to Carl's family and his many friends in the drilling industry.

The statements and comments in this article are my own and are based on information and references believed to be true and factual. If you have a question on bentonite drilling fluids, grouts, and sealants, or a comment or question on this article, please forward them to me care of **WWD**.

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