



Baroid IDP

Performance Products and Comprehensive Services for Industrial Drilling Applications

Baroid Industrial Drilling Products (IDP), a Product Service Line of Halliburton, is an international supplier of drilling fluid additives and services, supported by a network of sales and service representatives, laboratory scientists and support personnel dedicated to servicing all facets of the non-oil and gas drilling industries. Baroid Industrial Drilling Products supplies a comprehensive line of drilling, grouting, plugging, abandonment, well rehabilitation and well development products engineered to optimize performance and cost-effectiveness to end-users in wide-ranging and diverse markets including:

- Water well drilling
- Mineral exploration
- Horizontal directional drilling
- Foundation/drilled shaft
- Construction applications
- Geothermal heat loop applications
- Geotechnical investigations
- Environmental monitoring wells
- Tunneling/micro-tunneling
- Shot hole drilling
- Pipeline crossings
- Auger boring
- Pipe bursting
- Water impedance and pond sealing

The unique nature of near-surface site-specific geology coupled with the diversity of the markets we serve are hallmark challenges faced within IDP. Under these circumstances, a *one size fits all* approach to product selection and development is not in the best interests of the end user. We provide innovative products that have wide-ranging capabilities within our diverse markets, supported by Baroid IDP field representatives with superior expertise in well site service providing solutions for each unique challenge.

THE *Original* DRILLING
FLUIDS COMPANY

Who are we?



Baroid IDP

Water well

Water Well/ Environmental

Baroid IDP first applied its vast experience and technology to the water well industry in the early 1950's. Armed with the philosophy of providing the highest quality products and unsurpassed on-site expertise Baroid IDP soon became the undisputed industry leader. Now, over 50 years later, the same principal of quality and service remains as our operating philosophy and proof of Baroid Industrial Drilling Products' commitment to the water well industry.

The water well industry requires drilling fluid products that are multi-purpose, easy-to-use, environmentally acceptable and most importantly, effective. These requirements were the driving force behind the development of BARO-GEL® easy-to-mix, finely ground (200 mesh), specially selected sodium activated bentonite. BARO-GEL viscosifier is specifically designed, with adequate make-up water and mixing equipment, to mix easily and completely yield within a matter of minutes. BARO-GEL viscosifier provides for the formation of a thin filtercake with low permeability and excellent suspension properties. These properties make BARO-GEL viscosifier the standard of the industry in providing hole stability and the basis for adequate filtration control in permeable sands and unconsolidated zones.

One of the greatest challenges faced in water well drilling is the extreme dynamics and variation in geologic formations that can be encountered during the drilling process. These formations can range from highly permeable sands, and unconsolidated gravels to reactive, swelling clays. Sands and gravels require additional filtration control for borehole stability. And when such reactive clay formations are encountered, the drilling contractor must recognize and react accordingly to the situation.

The addition of QUIK-TROL® or QUIK-TROL LV filtration control additives to a BARO-GEL drilling fluid lowers the filtrate volume and strengthens the filtercake to increase borehole stability.

The presence of swelling/reactive clays is an indication for the need of a polymer encapsulating or coating the clay particle to render it inert. This works to control otherwise problematic hole conditions that can be caused by swelling and disintegration of the reactive clay. Baroid IDP addressed this situation with the development of EZ-MUD® GOLD Clay/Shale stabilizer. This high molecular weight, PHPA polymer is designed to coat shale or clay and retard the swelling process long enough to complete the well. EZ-MUD GOLD Clay/Shale stabilizer provides shale/clay stabilization with minimal viscosity development and is highly compatible with BARO-GEL-based fluids.



Baroid IDP

Minerals Exploration

Minerals Exploration

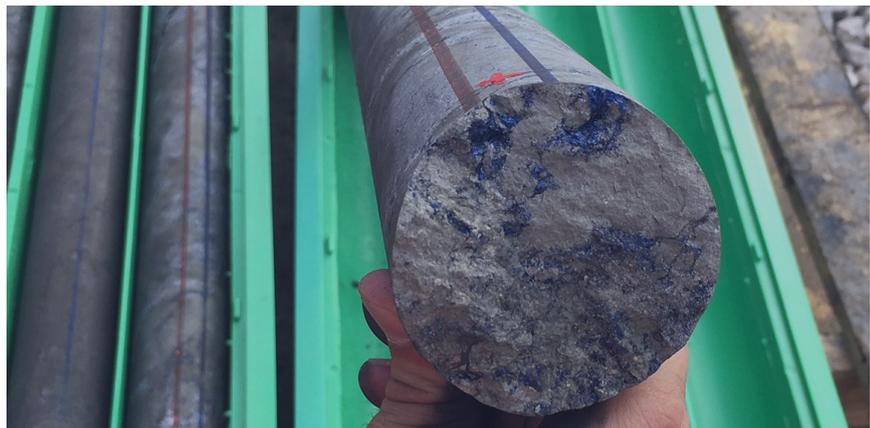
Minerals Exploration represents one of the largest and most challenging markets in the industrial drilling industry. This is a result of several factors including extreme geologic conditions, operator requirements, drilling methods and environmental concerns. These and other elements place a tremendous degree of importance on the drilling fluids utilized in coring and drilling operations.

Baroid IDP has long been a worldwide leader for drilling fluid applications in the Minerals Exploration industry. Baroid IDP has expertise in mineral drilling environments worldwide, from North and South America to Asia, Australia and Europe.

Baroid IDP has utilized the superior properties and performance of BARO-GEL® easy-to-mix, finely ground (200 mesh), specially selected sodium activated bentonite viscosifier to provide quick development of viscosity, fluid loss control and a high quality filter cake with low permeability. These factors provide for the stabilization of broken and unconsolidated formations predominate in mineralized regions. BARO-GEL viscosifier is specifically designed, with adequate make-up water and mixing equipment, to mix easily and hydrate within a matter of minutes. The rapid hydration and low-solids system provided by BARO-GEL viscosifier makes it the bentonite of choice for minerals exploration.

The dynamic geologic conditions encountered in mineralized areas require optimization of the drilling fluid properties. Permeable and unconsolidated formations coupled with reactive shales and clays present a threat to bore hole stability and potential loss of core recovery. The combination of BARO-GEL viscosifier and polymer additives such as QUIK-TROL® and QUIK-TROL LV filtration control agents allow for the effective reduction of filtration rate thereby promoting bore hole stability in permeable or unconsolidated formations.

Reactive shales and clays require more aggressive polymers to control swelling and sloughing. Baroid IDP addressed this requirement with the use of EZ-MUD® stabilizer. This high molecular weight, PHPA liquid emulsion is designed to encapsulate shale or clay and retard the swelling process long enough to complete drilling operations. Advancements in polymer chemistry led to the introduction of EZ-MUD GOLD dry polymer with superior mixing and inhibitive qualities. EZ-MUD additives provide shale/clay stabilization without excessive viscosity and is highly compatible with BARO-GEL-based fluids.





Baroid IDP

From October 29th - November 2nd 2018, Cebo organizes in cooperation with Baroid IDP and Herrenknecht 3 Mudschools in Leiden, The Netherlands.

The purpose of this 5-day course is to acquaint end users with the wide range of Baroid products and techniques that are used in Horizontal Directional Drilling, Micro Tunnelling Drilling or Vertical Drilling. Participants will see how drilling mud can contribute to a smooth drilling operation, whether drilling horizontally or vertically.

The workshop curriculum includes equal part lectures, demonstrations and hands-on laboratory exercises. Each topic is aimed at promoting a greater understanding of the correct use and application of drilling fluids for cutting removal borehole stabilization and lubrication. In conjunction with scheduled lecture and laboratory topics, additional discussions concerning field applications and specific problems are conducted.

The involvement of workshop participants are greatly encouraged.

Cebo offers 3 workshops*:

- 1) **Horizontal Directional Drilling**
- 2) **Micro Tunnelling**
- 3) **Vertical Drilling** (Core-drilling, Water-well and Geothermal)

*All courses start on Monday morning 8 o'clock and end on Friday in the beginning of the afternoon. All presentations are in English.

The purpose of these week long workshop is geared toward the proper utilization and application of drilling fluids and slurries in the directional drilling, micro-tunneling and vertical drilling business.

Program includes:

- Workshop introduction & overview
- Properties & testing of drilling fluids
- Mixing & handling of drilling fluids
- Clays
- Contaminants & their effects on drilling fluids
- Drilling fluid maintenance & solids control
- Lubrication
- Polymers
- Product selection
- Loss of circulation
- Effective sealing
- Product application to field drilling conditions
- Grouting techniques
- Daily laboratory exercises

Interested or join us in 2019? Send an e-mail to: mudschool@cebo.com

Partnering is the key to improve and finding ways to become even more efficient.

Looking forward sharing with you our experience and finding ways to increase production, minimize environmental impact and saving costs at the same time.

Mudschool