



# RECYCLING OF DRILLING FLUID

## ENVIRONMENTALLY FRIENDLY AND ECONOMICAL DRILLING FLUID SOLUTION

With an ever-growing focus on sustainability, reuse of bentonite-based drilling fluids is key priority when developing and optimizing our products. All products under the Cebo or BAROID IDP umbrella are designed to offer a predictable drilling fluid with awareness for the environment.

Recycling of a drilling fluid reduces environmental impact, lowers cost and promotes a more sustainable drilling process. The training program and technical support of the CEBO/BAROID IDP team is designed to promote the whole process of mixing to maintaining the drilling fluid. The operator is highly recommended to continuously test and monitor fluid properties, as this is crucial for maintain a high quality performing drilling fluid. As properties can decline addition of additives might be necessary.



**Cebo Holland B.V.**

Westerduinweg 1  
NL-1976 BV IJmuiden  
Nederland

E-mail: [info@cebo.com](mailto:info@cebo.com)  
Tel: 31 (0) 255 - 54 62 62



## BENEFITS OF BAROID & CEBO PRODUCTS



Customized fluids are designed to facilitate recycling, to promote extended use, and support clean passage through the recycling equipment. Our products sustain optimized viscosity and enhance functional properties.



Reuse of drilling fluids to decrease the carbon footprint.



Reuse use of drilling fluids to decrease costs.



Extended use of drilling fluids is part of the training program.



Efficient mixing.



Effective operation.

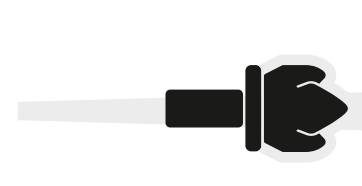


### RECYCLING

Mixing TUNNEL-GEL® PLUS, TUNNEL-GEL® MAX & CEBOGEL® OCMA is efficient due to the balanced design of the products. Due to the nature of the components, the fluid is capable of passing easily through the shaker screens.

## RECYCLE-READY VISCOSIFIERS

TGP



Drilling diameter



OCMA



### TUNNEL-GEL® PLUS

TUNNEL-GEL® PLUS is a bentonite-based viscosifier, defined by its lower mixing ratio, and designed to be used in small-diameter HDD operations. The product's lower mixing ratio creates subsequent low gel strength in a drilling fluid. The enhancement additives are specially selected to provide stable performance and promote re-use after recycling.

#### TUNNEL-GEL® PLUS allows

- To control the fluid & solids with stable performance in small diameter operations
- Easy recycling & re-use



### TUNNEL-GEL® MAX

MAX is a Bentonite-based viscosifier, defined by its higher mixing ratio, and designed to be used in larger-diameter HDD operations. The product's higher mixing ratio allows for increased Bentonite content per volume and creates subsequent high gel strength in a drilling fluid. The Bentonite-based gel strength allows for both efficient transports of drilled solids – regardless of lower annular velocity, and maintenance of its properties even after multiple re-uses.

#### TUNNEL-GEL® MAX allows

- To control the fluid & solids with stable performance in medium diameter operations
- Easy recycling & re-use



### CEBOGEL® OCMA

OCMA is a versatile drilling bentonite designed for large-diameter, long distance HDD operations given the high gel-strengths and stable viscosity. CEBOGEL® OCMA can be recycled and reused efficiently.

#### CEBOGEL® OCMA allows:

- To control the fluid & solids with stable performance in large diameter operations
- Easy recycling & re-use



### MAINTENANCE

Addition of TUNNEL-GEL® PLUS, TUNNEL-GEL® MAX, CEBOGEL® OCMA or specialized BAROID IDP polymers might be needed to maintain the properties of the drilling fluid.



### MIXING

Mixing TUNNEL-GEL® PLUS, TUNNEL-GEL® MAX, CEBOGEL® OCMA & BAROID IDP polymers is first in the essential steps of a drilling operation. All products are designed to offer efficient mixing when using dedicated mixing equipment, respecting hydration time and following proper order-of-addition.

### KEY PROPERTIES IN THE RECYCLING PROCESS

Drilling fluid properties should be customized for total project management.



#### 1. OPTIMAL VISCOSITY

Engineered drilling fluids allow for consistent and manageable viscosity that reduces excess pressures and supports efficient recycling.



#### 2. CUTTINGS SUSPENSION AND TRANSPORT

Proper selection of drilling additives suspends and transports cuttings for optimal bore advancement and hole cleaning. Inhibition of reactive solids contributes to readily removable cuttings, resulting in a sustainable recycled drilling fluid.



#### 3. SOLIDS REMOVAL

Efficient removal of cuttings and solids from a properly engineered drilling fluid is imperative for continued maintenance of fluid properties.



### TESTING FLUID PROPERTIES

After each phase in the process, the drilling fluids, containing TUNNEL-GEL® PLUS, TUNNEL-GEL MAX, CEBOGEL® OCMA & BAROID IDP polymers, should be checked and maintained using certified FANN® testing equipment. Continues testing of fluid properties is crucial for maintaining a high quality performing drilling fluid.



### DRILLING AND MAINTAINING THE DRILLING FLUID

Managing the drilling fluid, during the operation, is essential to overcoming the unique challenges of the encountered geology.

## BAROID IDP POLYMER ADDITIVES



### EZ MUD® GOLD

EZ-MUD® GOLD clay and shale stabilizer products provide inhibition of clay and shale in water-based drilling fluids.



### QUIK TROL® LV

QUIK-TROL® LV products are modified natural cellulosic polymers which provide filtration control in water-based drilling fluids.