



Baroid Water-Based Fluid Systems

Fluid System Name/Base Fluid	Description	Benefits	Applications
STANDARD WATER-BASED FLUID SYSTEMS			
KCl/Polymer Non-dispersed fluid	Potassium (polymer) system designed with various potassium salts to provide inhibition and wellbore stability	<ul style="list-style-type: none"> ▪ Good Inhibition ▪ Meets environmental standards ▪ Minimize bit balling ▪ Flexibility of design with KCH_3COO, $KHCOO$, and KCl 	Alternative to conventional WBM system for additional inhibition of shale
Chrome Lignosulfonate Systems Dispersed Systems <ul style="list-style-type: none"> ▪ QUIK-THIN® fluid ▪ KOH fluid ▪ GEM™ applications 	Conventional chrome-free lignite / lignosulfonate system	<ul style="list-style-type: none"> ▪ Versatile and economical ▪ Fresh water or seawater system ▪ Stable to 350°F (176.6°C) 	High density applications greater than 17.0 lb/gal
BARASILC™ Non-dispersed fluid	Silicate system used to provide inhibition and wellbore stability	<ul style="list-style-type: none"> ▪ Highly inhibitive ▪ Provides similar performance and hole calipers to NAFs ▪ Provides a semi-permeable membrane to enable dehydration of formation clays, similar to NAFs 	Drilling in highly-reactive clays, shales and highly-dispersible formations
SUPER-SAT® Non-dispersed fluid	Deepwater riserless, salt saturated drilling fluid	<ul style="list-style-type: none"> ▪ Saves operator time and money by cutting back high-density fluid with seawater. ▪ Formulated to provide salt saturation and drilling mud properties after cutback when drilling salt ▪ Achieve gauge hole through shallow salt close to the mud line ▪ Safely dischargeable at the mud line 	Deepwater riserless drilling where salt formation is present and potential shallow flows may occur

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STANDARD WATER-BASED FLUID SYSTEMS (continued)

RISER-VIST™ Non-dispersed fluid	Deepwater riserless drilling fluid can be saturated for drilling through shallow salt in deepwater	<ul style="list-style-type: none"> Saves operator time and money by cutting back high-density fluid with seawater. Formulated to provide required drilling mud properties (density, rheology, filtrate control) after cutback with little or no treatment Achieve gauge hole through shallow salt close to the mud line Safely dischargeable at the mud line 	Deepwater riserless drilling where salt formation is present and potential shallow flows may occur
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HIGH-PERFORMANCE WATER-BASED FLUID SYSTEMS

BOREMAX® (freshwater base) Non-dispersed fluid	Non-dispersed, low-solids high-performance freshwater system	<ul style="list-style-type: none"> Shear thinning Highly inhibitive Reduces dilution Low-colloidal content 	<ul style="list-style-type: none"> Environmental alternative to NAF Areas with highly-dispersive and highly reactive shales Land / Shelf / Inland
HYDRO-GUARD® (10-24% NaCl brine base) Non-dispersed fluid	Deepwater fluid solution — clay-free polymer designed for shale inhibition	<ul style="list-style-type: none"> Good Lubricity Highly Inhibitive High ROP & similar to invert emulsion deepwater performance Gas hydrate suppression 	<ul style="list-style-type: none"> Shelf application Deepwater prospects as NAF alternative
PERFORMADRIL® (Monovalent brine base) Non-dispersed fluid	Non-dispersed, low-solids high-performance seawater system	<ul style="list-style-type: none"> Highly inhibitive Unrestricted cuttings discharge Good lubricity High ROP—Low friction coefficient 	<ul style="list-style-type: none"> Shelf application / Deepwater Works in salinity from seawater to saturation

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SPECIALTY WATER-BASED FLUID SYSTEMS			
THERMA-DRIL™ Non-dispersed fluid	Designed for drilling HP/HT environments	<ul style="list-style-type: none"> ▪ Thermal stability > 500°F ▪ Contaminant tolerant ▪ Effective rheology control at high-temperatures 	High temperature drilling environments
BaraXtreme™ HPHT Fluid System Non-dispersed fluid (choice of fresh water, brine and seawater)	High-performance black powders free and chrome-based products free, water-based fluid system designed for drilling HP/HT environments	<ul style="list-style-type: none"> ▪ Temperature stability up to 400°F+ (204°C) ▪ Density range 10-17 lb/gal ▪ New, unique temperature resistant polymers <p>*Potential for higher temperatures and heavier densities. Local lab testing is recommended.</p>	BaraXtreme™ HPHT water-based drilling fluid system can be utilized in land and offshore drilling operations using fresh or sea water.
BaraNhance™ Oil Sands Drilling System Non-dispersed fluid	Engineered specifically for oil sands / heavy oil applications with unique polymeric additive	<ul style="list-style-type: none"> ▪ Oil sands stabilizer encapsulates bitumen and is not a solvent / emulsifier / dispersant additive ▪ Helps inhibit bitumen accretion up to 200° F ▪ Excellent freeze-thaw stability (-40° C) ▪ Low foaming. 	BaraNhance™ Oil Sands Drilling System can be used in heavy oil, extra heavy oil and oil sand zones <ul style="list-style-type: none"> ▪ SAGD & CSS
BaraShale™ Lite Non-dispersed fluid (choice of NaCl and field brine)	Designed for Salt Formations and Low Fracture Pressures	<ul style="list-style-type: none"> ▪ Direct Emulsion System ▪ Brine with 10-50% Diesel base ▪ Straightforward product mix ▪ Highly maneuverable mud weight 	<ul style="list-style-type: none"> ▪ Salt formations and underlying weak, loss-prone formations ▪ Applications where rapid density reductions may be required to prevent mud losses