

JET-LUBE®

HORIZONTAL DIRECTIONAL DRILLING SOLUTIONS

HDD DIAGRAM APPLICATIONS & PRODUCTS



1. Hydraulic Systems

Jet-Lube®

- FR Hydraulic Oil
- Petro-Tape™ (hydraulic lines and fittings)
- V2® (hydraulic lines and fittings)

Air Sentry®

- D-Series Desiccant Breathers
- Z-Series Desiccant Breathers
- X-Series Desiccant Breathers
- Guardian®-Series Desiccant Breathers

OilSafe®

- Sight Glasses
- Quick Connects
- Grease Fitting Protectors
- Pistol Grip Grease Guns

Toolbox Items - General Maintenance

Jet-Lube®

- FR Hydraulic Oil
- 12|34®
- 769 Lubricant®
- Magic Wrench®
- Rust-Guard™
- Gear Guard™
- Moly-Mist™
- Jet-Lok® III
- Clean-Up™ II
- Easy-Clean®
- 550® Extreme®
- Korr-Guard Extreme™
- WRL™
- Jet-Red™

2. Crawler (Bearings/Pivots/Axles)

Jet-Lube®

- HD Gear Oil
- FR Hydraulic Oil
- Alco-EP™
- Rust-Guard™

3. Tongs (Clamps)

Jet-Lube®

- Alco-EP™

4. Bit, Back Reamer, Sub-Saver

Jet-Lube®

- Jet-Lok® III

5. Pipe Threads

Jet-Lube®

- HDD™ Kopr
- HDD™ Environmental

6. Rotating Bearing, Ring Gear, Pinion Gear

Jet-Lube®

- Alco-EP™
- Gear Guard™
- Gear Guard® Aerosol
- WLD®

Other Applications

Bearings

- Jet-Lube® EP Bearing Grease

Machine Body

- KATS 6000 Series Coatings
- Jet-Lube® Easy-Clean® Liquid (for cleaning)
- OilSafe® Spill Deck (under)

If Applicable

- Jet-Lube® Dope Brush

ProAction Fluids

Drilling Fluids

Clay

- ProDrill™
- ProDyne™
- ClayLock™

Clay/Sand

- GeoSweep HD™ & LQ™

Sand/Gravel/Rocks

- TurboBore™

Bentonite Additives

- pH Boost™
- Provis XP™
- Provis MMX™

Horizontal Directional Drilling (HDD) has become one of the fastest growing trenchless technology construction methods for the installation of underground pipelines and conduits. Our Complete Line of High-Performance Products are designed to stand up to high pressure and temperature extremes ensuring that the drill pipes, reamers, tool joints, bearings, gears, and other components are able to operate at peak performance while maintaining low maintenance costs.

MINIMIZE WEAR AND DOWNTIME.



***HDD Kopr and HDD Environmental available in 2 GAL Clear Pail and Bellows.**

COMPOUNDS

HDD™ KOPR
METALLIC TOOL JOINT & DRILL COLLAR COMPOUND

Unleaded, zinc-free compound containing copper flake, graphite, and other natural extreme pressure and anti-wear additives. HDD KOPR uses the same solids package formulated to prevent excessive circumferential makeup by increasing the coefficient of friction under compressive forces as standard KOPR-KOTE but in a smaller particle size range to accommodate automatic application systems.

- Certifications: Not classified as marine pollutant (DOT Approval CA2004080025)
- Application: Pipe Threads
- Service Rating: -65°F to 300°F (-55°C to 149°C)

HDD™ ENVIRONMENTAL
NON-METALLIC TOOL JOINT COMPOUND

Non-conductive compound containing natural extreme pressure and anti-wear additives. These are blended into JET-LUBE's all-weather calcium complex base grease. HDD ENVIRONMENTAL's base grease offers the additional advantage of low temperature application and service, superior adhesion to wet steel surfaces, resistance to water wash-off, and most drilling muds. HDD ENVIRONMENTAL's pumpability makes it ideal for HDD and other construction drilling applications.

- Certifications: NSF 61 Certified
- Friction Factor: Relative to: API RP 7G - 1.0
- Application: Pipe Threads
- Service Rating: -40°F to 350°F (-40°C to 177°C)

DOPE BRUSH
HEAVY-DUTY THREAD COMPOUND BRUSHES

Engineered to hold up to the rough conditions where they are used and the materials that are being applied. Solid wood handles with rubber drip collars make for safe handling. Available in two styles: tapered and beveled, 16" and 30" brush lengths. (Handle guard not included on 30" length.)

- Application: Pipe Threads, General Maintenance



EPOXY & THREAD SEALANTS

JET-LOK® III
ZINC-FREE THREADLOCKER / TWO-PART EPOXY

Zinc-free epoxy with non-metallic fillers that can be used to permanently lock threaded connections under normal operating conditions. JET-LOK III uses a new catalyst for added pot life and durability with lower toxicity and less heat generation, making it the optimum choice for its recommended applications. It is specially designed for use on all threaded joints or fasteners where an exceptionally strong and durable bond is required. Ideal on drilling tools, casing, and other tubulars where the effective prevention of joint loosening is required. JET-LOK III's purpose is to sustain engagement on thrust and pull back. Available in 8oz and 2oz kits.

- Application: Bit, Back Reamer, Sub-Saver
- Service Rating: -50°F to 400°F (-46°C to 204°C)

PETRO-TAPE™
HEAVY-DUTY INDUSTRIAL GRADE PTFE THREAD SEAL TAPE

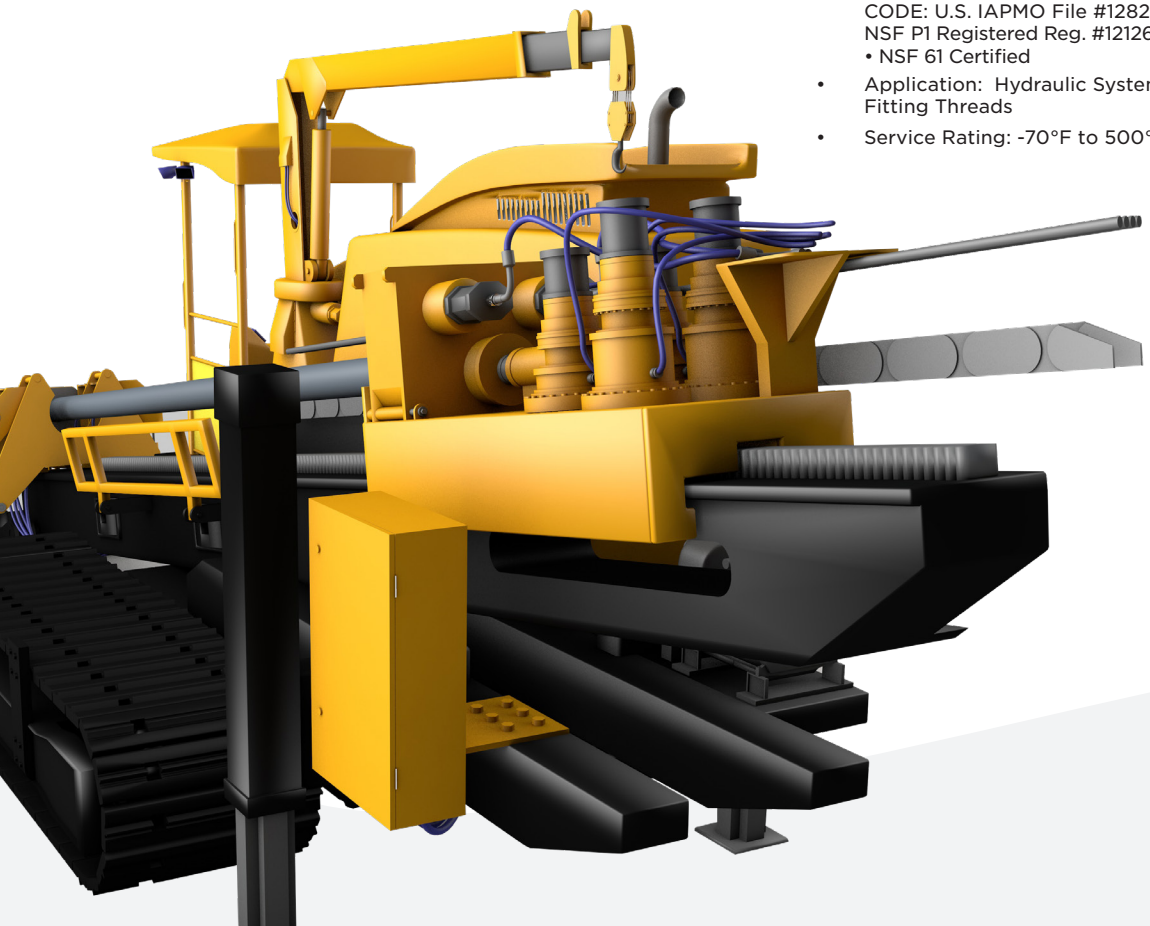
Multipurpose, rugged, inert and highly resistant tape. It's impervious to steam, salt water, air, fuels, refrigerants, acids and alkalis (including sulfuric, hydrochloric, nitric, sodium hydroxide and chromic), solvents (including kerosene, aircraft oils, gasoline, diesel, carbon tet. and cleaning fluids), gases (including liquid and gaseous oxygen, ammonia, freon, chlorine, propane, natural gas, butane, acetylene and nitrogen). PETRO-TAPE is ≥3-mil thick and contains a light green pigment for easy identification. PETRO-TAPE's purpose is to seal threaded connections <3" in order to prevent leaks.

- Certifications: MIL-T-27730A • Canada ULC Listed
- Application: Engine, Fuel Tank, Hydraulic System
- Service Rating: -400°F to 500°F (-240°C to 260°C)

V2®
MULTIPURPOSE THREAD SEALANT W/ PTFE

Water-resistant joint compound that is soft-setting, non-petroleum based for use with potable water, liquids and gases where immediate pressurization is desirable or necessary. V2 is a water-resistant, non-staining, low-odor sealant which includes PTFE and unique natural fillers for tighter joint make-up due to increased thread lubrication.

- Certifications: MIL-TT-S-1732 • Nato S-716 • UNIFORM PLUMBING CODE: U.S. IAPMO File #1282 • ULC Listed for petroleum products • NSF P1 Registered Reg. #121265 • Conforms to assembly bill 1953 • NSF 61 Certified
- Application: Hydraulic System, Water, Oil, Diesel Fuel, Gas Pipe, Fitting Threads
- Service Rating: -70°F to 500°F (-57°C to 260°C)



GREASES

EP BEARING GREASE™
EXTREME PRESSURE MULTIPURPOSE GREASE

Highly adhesive lithium grease containing naturally occurring extreme pressure and boundary lubricants. EP BEARING GREASE's additive package enhances the shear stability, lubrication properties and high temperature characteristics of lithium based grease, making it a versatile, cost-effective, grease. The extreme pressure additive has the added benefit of reducing acidity created by oxidation of the base fluid and organic additives in high temperature environments.

- Certifications: API spec. 5CT and set forth in API RP 5A3
- Application: General Bearing Greasing, Track Rollers
- Service Rating: -0°F to 325°F (-18°C to 163°C)

ALCO-EP™
EXTREME PRESSURE MULTIPURPOSE GREASE W/ MOS2

Versatile aluminum complex grease with a high level of rust and oxidation inhibitors. ALCO-EP contains molybdenum disulfide (MoS2) and graphite, which plate out to resist metal-to-metal contact in boundary modes of lubrication. ALCO-EP provides superior wear protection against extreme pressure and is highly water-resistant. Its 60-pound rating in the Timken load test proves ALCO-EP to have excellent load-carrying ability.

- Application: Boom Assembly, Stabilizers, Crawler (Bearings/Pivots/Axles), Track Assemblies, Tongs (Clamps), Rotating Bearing, Ring Gear, Pinion Gear, Rack Rollers, Bushings, Sliding Surfaces, Low to Moderate Speed Anti-friction Bearings
- Service Rating: -25°F to 450°F (-32°C to 232°C)

OILS

HD GEAR OIL
HEAVY-DUTY GEAR OIL

Extreme pressure gear oil formulated to meet the exacting demands of most types differentials and transmissions including heavy-duty off-road fleets and mobile equipment including HDD machinery. HD GEAR OIL is designed to perform under adverse conditions such as, heavily loaded gears, shock loading and frequent reversing action.

- Application: Crawler (Bearings/Pivots/Axles), Gearboxes, Pumps
- Service Rating: 80W-90 -20°F to 350°F (-29°C to 177°C)
  85W-140 0°F to 350°F (-18°C to 177°C)

FR HYDRAULIC OIL
FIRE RESISTANT HYDRAULIC OIl

Formulated to meet guidelines for Factory Mutual (FM) 6930. Factory Mutual approved oils are designed for enhanced safety where potential fire hazards may exist. The formulation is based on polyol ester synthetic fluid. This type of oil is exceptionally robust. Reinforcing this outstanding lubricity, selected additives enhance wear protection. Extended pump and component service will result in in reduced downtime and maintenance costs.

Certifications: Factory Mutual – meets guidelines for FM 6930
Application: Hydraulic Systems, Crawler (Bearings/Pivots Axles), Gearboxes, Pumps
Service Rating: -40°F to 350°F (-40°C to 177°C)



TOOLBOX ITEMS

GEAR GUARD™
OPEN GEAR LUBRICANT W/ MOLY AND GRAPHITE

Zero VOC, paste-like, viscous lubricant for reducing friction and wear. GEAR GUARD is a heavy-duty compound, specially prepared to penetrate pores of metal, with exceptional "stay-put" characteristics. It provides maximum lubrication and shock-load protection, reduces gear noise, lubricates, prevents scoring, spalling or welding of the gear teeth; assuring a smooth, long-lasting, economical and effective coating. Its black color guides proper coverage, allowing easy touch up. GEAR GUARD resists heat and pressure, will not wash or wear off because of weather, and will not break down after repeated working.

- Application: Rotating Bearing, Ring Gear, Pinion Gear, General Maintenance
- Service Rating: -25°F to 350°F (-32°C to 175°C)

550® EXTREME®
LOW "E" NONMETALLIC ANTI-SEIZE & THREAD LUBRICANT

Zero VOC, lead-free enhanced formulation that uses a balance of molybdenum disulfide and surface modified synthetic graphite in a corrosion resistant calcium sulfonate complex base combined to provide protection for a wide variety of applications over a wide temperature range. Its composition offers maximum protection against seizure and heat freeze. 550 EXTREME eases assembling and dismantling saving man hours. It assures protection against rust, oxidation, and corrosion. It will not harden, evaporate, or settle out; and it requires no thinning.

- Certifications: MIL-PRF-907F • Raytheon Specification - M8656839 Type III
- Application: Stabilizers, Track Assemblies, General Maintenance
- Service Rating: Select Applications/Services: 2400°F (1316°C) • Brushable to or as a lubricant: -10°F (-23°C) • Static Applications: -265°F (-165°C) **Based on component literature data in cryogenic applications.

JET-LOK® III
ZINC-FREE THREADLOCKER / TWO-PART EPOXY

Zinc-free epoxy with non-metallic fillers that can be used to permanently lock threaded connections under normal operating conditions. JET-LOK III uses a new catalyst for added pot life and durability with lower toxicity and less heat generation, making it the optimum choice for its recommended applications. It is specially designed for use on all threaded joints or fasteners where an exceptionally strong and durable bond is required. Ideal on drilling tools, casing, and other tubulars where the effective prevention of joint loosening is required. JET-LOK III's purpose is to sustain engagement on thrust and pull back. Available in 8oz and 2oz kits.

- Application: Bit, Back Reamer, Sub-Saver
- Service Rating: -50°F to 400°F (-46°C to 204°C)

TOOLBOX ITEMS



MOLY-MIST™
DRY FILM LUBRICANT W/MOS2

Consists of a high percentage of micro-fine MoS2 suspended in a unique liquid, quick-drying vehicle. MOLY-MIST bonds dry-form MoS2 powder to surfaces without heating or baking. It prevents galling and reduces torque. When sprayed on any surface it 'touches dry' quickly and cures to an even, tenacious coating in a matter of 30 minutes.

- Application: Boom Assembly, Stabilizers, General Maintenance
- Service Rating: -300°F to 750°F (-184°C to 399°C)

RUST-GUARD™
CORROSION INHIBITOR

Non-toxic specialized, water-displacing formula that dries to a uniform, thin waxy film to effectively seal out moisture and corrosion. RUST-GUARD provides long-term protection on all metal and alloy surfaces, even under harsh environmental conditions such as water, high humidity or salt spray. It may be used both indoors or outdoors as a protective coating on raw materials, new machined parts, tools, pipe, fittings, valve, etc., while they are being stored or in transit.

- Certifications: Conforms to MIL-PRF-16173E (Grades 1 and 2)
- Application: Boom Assembly, Stabilizers, Crawler (Bearings/Pivots/Axles), Track Assemblies, General Maintenance

12|34®
LUBRICANT & PENETRANT (available in Canada only)

Multipurpose penetrating, moisture displacing, lubricating and corrosion preventative. Unequaled where salt water, salt spray or other harsh environments are encountered. 12|34® gives total performance while being environmentally safe and easy to use.

- Certifications: MIL-C-23411
- Application: General Maintenance
- Service Rating: -100°F to 300°F (-75°C to 150°C)

769 LUBRICANT®
LUBRICANT & PENETRANT

A leading multipurpose, penetrating, lubricating, moisture displacing and corrosion preventative product for use where salt water, salt spray or other harsh environments are present. 769 Lubricant gives total performance while being environmentally safe, easy to use and non-flammable.

- Certifications: NSF H2 Registered #137551 (Bulk), #137644 (Aerosol) • MIL-PRF-81309H (Aerosol) Type II & III Class II • CO2 Grade MIL-PRF-81309H (Bulk) Type II & III • Class I MIL-C-16173E Grade 3 MIL-C-23411A VV-P-216B CID A-A-50493C Class B Type I
- Application: General Maintenance

EASY-CLEAN® LIQUID
FRAC AND RIG WASH

Nonflammable, biodegradable cleaner/degreaser that uniquely combines cleaning agents with newly-developed emulsifying technology to provide a product that can effectively remove carbon, grease, oil, and other organic deposits while being both safe and ozone friendly.

- Application: General Maintenance

MAGIC WRENCH®
SUPER PENETRANT

Silicone-free penetrating oil that attacks rust and corrosion quickly and safely to free corroded parts, loosen nuts and aid in the disassembly of mechanical components. MAGIC WRENCH'S versatile synthetic formula penetrates, lubricates, removes moisture and protects chains, cables, slides and other moving parts. Safe on all metals and plastics.

- Certifications: NSF H1 Registered #048231 (Bulk), #048230 (Aerosol)
- Application: General Maintenance
- Service Rating: -40°F to 350°F (-40°C to 177°C)

CLEAN-UP™ II
INDUSTRIAL GRADE DEGREASER

Low VOC blend of solvents designed to quickly dissolve and rinse away dirt, grease, grime, oil, tar and wax while being both environmentally responsible and ozone friendly. CLEAN-UP II contains no chlorinated or fluorinated solvents, no hazardous air pollutants, and evaporates residue-free quickly.

- Certifications: California Compliant and acceptable for use in CARB/OTC States
- Application: General Maintenance

WRL™
WIRE ROPE AND CHAIN LUBRICANT

Coats the internal strands of wire ropes with a nearly VOC-free lubricant to prevent friction and wear. This results in longer life, less downtime for rope changes and more production. WRL quickly penetrates to the cores to ensure that the rope is lubricated throughout while providing a non-drying, non-tacky film on the outside of the rope that protects outer strands from corrosion, as well as lubricating the wire rope drums and sheaves.

- Application: General Maintenance
- Service Rating: -25°F to 350°F (-32°C to 175°C)

KORR-GUARD™ EXTREME
THREAD PIPE STORAGE COMPOUND

Specialized water-displacing formula that utitlizes a unique approach to rust and corrosion prevention. KORR-GUARD EXTREME is enhanced formulation provides extended corrosion protection, moisture resistance, excellent adhesion to metal surface, and persistence protective film under demanding storage conditions.

- Application: General Maintenance
- Service Rating: -20°F to 425°F (-29°C to 218°C)

JET-RED™
PREMIUM MULTIPURPOSE GREASE

Versatile, high-temperature lithium complex grease designed to meet a wide range of lubrication needs. JET-RED offers superior protection in environments with dirt, dust, high humidity, rain, snow, and extreme temperatures due to its high dropping point and exceptional resistance to heat, water, oxidation, and heavy loads. This multipurpose grease is specially formulated to provide lubrication for bearings, journals, and other greasing applications. Its versatility makes it ideal for use in oil drilling, construction, road building, mining, shipbuilding, and any other application that requires high-quality lubrication.

- Application: Bearings, Journals, General Maintenance
- Service Rating: EP -10°F to 300°F (-23°C to 149°C)
  EP 2 0°F to 400°F (-18°C to 204°C)

DRILLING FLUIDS

Jet-Lube's ProAction Fluids line delivers a complete range of performance-tested drilling fluids, engineered to enhance operational efficiency while reducing equipment wear and downtime. Designed for a wide variety of drilling applications, these fluids help ensure smoother, safer, and more cost-effective drilling performance.

PROBORE™ SERIES

Polymer-based fluids that work without clay-based products like bentonite.

Dosed Per 500 Gallons	ProDrill & ProDrill Eco	ProDyne	ClayLock	GeoSweep HD & LQ	TurboBore
	If you are drilling in CLAY, use ProDrill as your base fluid	If your CLAY's sticky, add this to ProDrill for incredible results	If your CLAY's reactive, add this to ProDrill to stop the swelling	If you are drilling in CLAY/ SAND MIX, this is your base fluid	If you are drilling in SAND, this is your base fluid
CLAY – Sticky Clay	1 EZB	1 EZB			
CLAY – Swelling Clay		AS NEEDED	1 EZB		
CLAY – Clay/Sand Mix			AS NEEDED	1 EZB	
SAND – Fine Sand					1 to 2 EZB
SAND – Coarse Sand					
ROCK – Pea Gravel					
ROCK – Cobble Rocks		EZB = EZ Bag or EZ Bottle depending on the product			

ProDrill™



SOIL STABILIZER AND VISCOSIFIER

Rapid hydration • Decreased pressures • High cuttings content on returns • Reduced cleanup time • Base of the ProBore Series, can be used in conjunction with ProVis bentonite and other bentonite-based products

PRODRILL is an anionic, multi-polymer blend formulated to build viscosity and bind to clay and other low-density solids for efficient removal from a bore hole. Its high affinity to clay provides a slick bore hole and a smooth, creamy cuttings consistency. PRODRILL also functions as an effective pipe friction reducer, lowering fluid pump pressures, and extended pump life.

- Application: Clay

ProDyne™



WATER-BASED, WATER-SOLUBLE NON-FOAMING DRILLING DETERGENT BUILDER AND WATER CONDITIONER/ CHELATOR

Softens hard water for polymers, leading to faster hydration • Non-foaming • Keeps drill bit clean of debris by reducing the "stickiness" of clay materials and cuttings • Can be used in conjunction with ProBore or ProVis Series, along with bentonite-based products

PRODYNE is a water-based formulation that disperses easily in water and requires minimal mixing energy. It conditions hard or mineral-laden water while effectively wetting downhole equipment, including rods and tooling. The result is lower drilling temperatures, along with extended tooling and rod life.

- Application: Clay

ProDrill™ Eco



WATER-BASED PETROLEUM / DISTILLATE FREE SOIL STABILIZER AND VISCOSIFIER

Hydrates rapidly • Hydrocarbon and Oil-Free • Can be used in conjunction with ProBore or ProVis Series

PRODRILL ECO is a proprietary, water-based polymer blend designed to bind with clay and other low-density solids for efficient cuttings removal from the bore path. Free of oil and hydrocarbons, PRODRILL ECO provides an alternative to ProDrill in projects with environmental restrictions.

- Application: Clay

ClayLock™



WATER-BASED CLAY CONTROL ADDITIVE

Prevents clay deconsolidation • Reduces torque by keeping pipe/tooling free from the "grabbing effect" of reactive clays • Can be used in conjunction with ProBore or ProVis Series

CLAYLOCK is a proprietary clay inhibitor blend formulated to prevent reactive clays from swelling. Water intrusion is the primary cause of clay swelling. CLAYLOCK combats this by binding to and encapsulating clay platelets, effectively preventing water intrusion between them. CLAYLOCK can be added to water using multiple application methods, and its water-based formulation requires significantly less mixing energy than traditional clay swelling prevention products.

- Application: Clay

GeoSweep™ HD & GeoSweep™ LQ

VISCOSIFIER, LUBRICANT, AND FILTRATION CONTROL ADDITIVE



High cuttings content from unique suspension properties and high gel strength that allow it to float and carry high-density cuttings, such as coarse sand and gravel, out of the hole • Filtration control - allows the polymers to create a cake along the bore wall with a hydraulic seal, keeping fluid in the hole and moving cuttings down the bore path • 100% silica-free

GEOSWEEP HD and GEOSWEEP LQ are all-in-one solutions, formulated with the same active chemistry, that combine viscosity, lubrication, and friction reduction for high-density, high-permeability conditions ranging from sand to rock. GEOSWEEP HD is a high-molecular weight, multi-polymer granule blend with a patented coating that helps eliminate dust, reduces clumping, and aids in dispersion during mixing. GEOSWEEP LQ is blended in a liquid slurry for quick dispersion and rapid hydration. Their inherently slick characteristics reduce thrust and rotational forces, lowering friction between the bore wall and pipe.

- Application: Clay, Sand

TurboBore™

SYNTHETIC POLYMER HDD FLUID



Standalone solution • Cuttings fluidization that leads to lower torque • High concentration debris removal aided by unique high gel strength/yield point properties • Effective filtration control created by the polymer matrix interacting with the bore wall

TURBOBORE is a proven, one-of-a-kind solution in the HDD market. Its proprietary fluid technology is comprised of synthetic polymers that activate upon contact with water, delivering exceptional performance without traditional bentonite. Best suited for sand and rocky soils, TURBOBORE's rheology can match or exceed traditional bentonite and bentonite with additives while reducing material weight by up to 85%. This dramatic reduction lowers freight costs, improves warehouse efficiency, and provides HSE benefits.

- Application: Sand, Gravel, Rocks

PROVIS™ SERIES

Bentonite and bentonite additives that improve overall bentonite performance with an increase of gel strength and filtration control.

pH Boost™

CHLORINE NEUTRALIZER AND PH BOOSTER



Adjusts the pH of makeup water (the ideal pH range is 8.5-9.5) • Enables better performance from bentonite and specialty additives

PH BOOST enhances the quality of makeup water by adjusting pH and tying up harsh minerals that can negatively impact fluid performance. Because water typically makes up more than 96% of a fluid system, optimizing it before mixing is critical. Treating water with PH BOOST improves the overall performance of the drilling fluid system.

- Application: Makeup water

ProVis™ XP

GEL STRENGTH AND FILTRATION BOOSTER



Effective carrying capacity and gel strength

PROVIS XP is a biopolymer blend that modifies gel strength and filtration control with minimal increase in overall fluid system viscosity. In most applications, adding just 5 lbs of PROVIS XP to 100 lbs (~2%w/w) of bentonite extends system performance, often outperforming fluid mixes with substantially higher loadings of bentonite alone.

- Application: ProBore Series and Bentonite Additive

ProVis™ MMX

GEL STRENGTH AND BENTONITE ENHANCER



Effective solids carrying capacity and borehole stability

PROVIS MMX is a metal oxide and xanthan gum blend that boosts gel strength and suspension in bentonite-based HDD fluids. Its shear-thinning behavior suspends sand and heavy cuttings while keeping pump pressures manageable. Dosed at approximately 2% by weight of bentonite, it improves borehole stability in all ground types.

- Application: ProBore Series and Bentonite Additive

Jet-Lube combined with ProAction Fluids offers a complete line of high-performance lubricants, sealants, compounds, and drilling fluids for the Horizontal Directional Drilling Industry.

LEARN MORE:
jetlube.com/industries/horizontal-directional-drilling-hdd