

AERATED DRILLING SERVICES

FOR

THE PETROLEUM AND GEOTHERMAL INDUSTRIES



DRILLING, WORKOVER & DOWNSTREAM APPLICATIONS

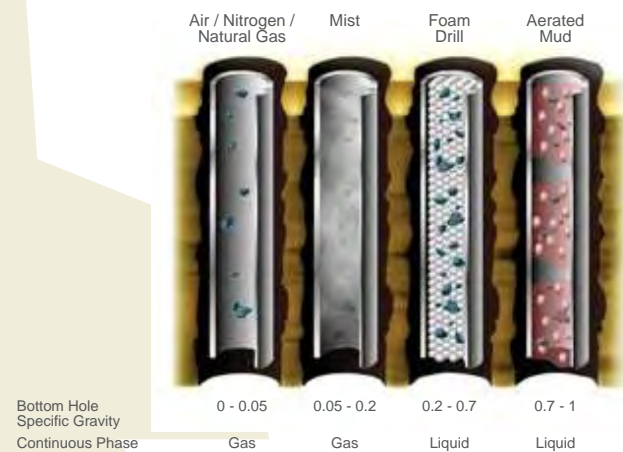


Air drilling techniques are used to drill formations prone to lost circulation, stuck pipe, slow rates of penetration, and other associated problems. The method of using air as a circulating “fluid” has been used for a long time, mainly to drill hard and dry formations. Larger diameter wells, particularly those with severe fluid loss zones, can be drilled using foam as a drilling fluid. Recently the advent of underbalanced drilling techniques has seen a surge in the application of aerated or nitrified fluid systems to reduce the hydrostatic column in the wellbore.



AIR DRILLING ASSOCIATES

Air Drilling Associates is a world leader in applying air-, mist-, foam-, aerated fluid, and underbalanced drilling techniques on petroleum and geothermal wells, led by a management team with over thirty years of experience running such projects on all continents of the world. With an average age of only two years our equipment fleet is among the youngest and most advanced in the industry. This is backed up with our strong commitment to quality, health, safety and the environment, adhering to the strictest regulatory and ISO requirements.



The above photographs show primary air compressors delivering medium pressure, aftercooled air which is then increased in pressure using a booster compressor. Sometimes a membrane nitrogen unit is used to reduce the oxygen content and create an explosion-proof nitrified air stream. For mist and foam drilling a mist pump is used to inject small amounts of water or chemical downstream of the booster outlet. This is then injected down the drillstring, circulated up through the wellbore annulus and returns are then safely diverted from the rig floor using a rotating control head.

The air compression packages provided by Air Drilling Associates operate as stand-alone, self-sustaining operations, stocked with abundant spare parts and redundancy in mind. Our equipment is working in the most remote corners of the world, such as the jungle highlands of Papua New Guinea and the steam fields of New Zealand. Customer references will gladly be provided upon request.

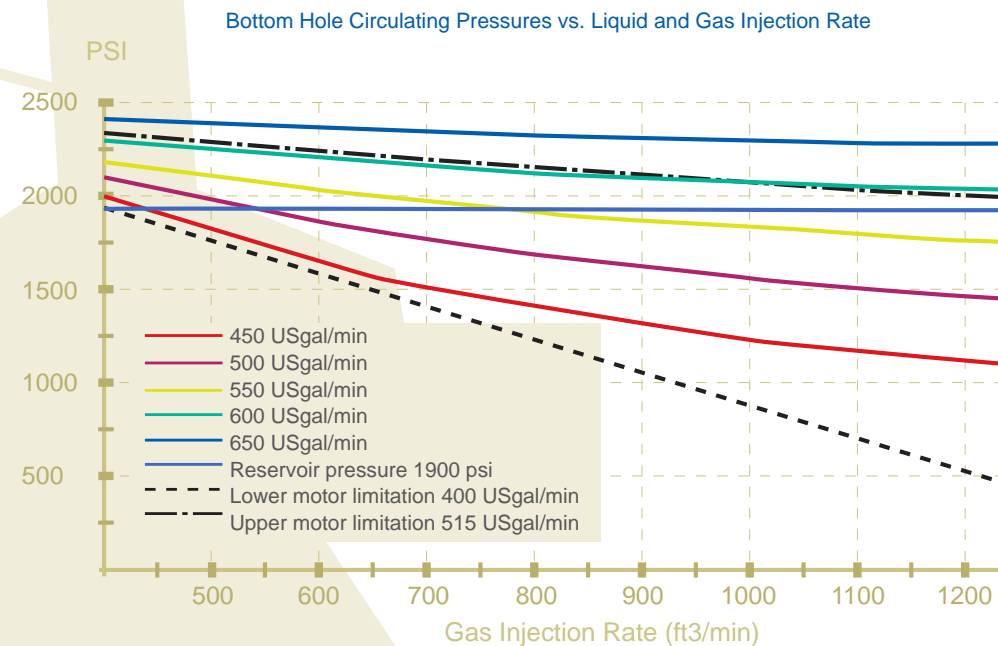
OUR SERVICES:

- Air, Mist, Foam drilling
- Aerated fluids drilling with air, natural gas, or nitrogen
- Coalbed methane cavitation
- Geothermal drilling
- Workovers and well interventions
- Pipeline dewatering, evacuation, pressure testing and commissioning
- Air, natural gas and nitrogen pressure testing of Process Facilities

FROM DESIGN TO EXECUTION



Aerated and underbalanced drilling techniques involve multi-phase flow conditions that may not be familiar to many drilling engineers. Air Drilling Associates uses advanced modeling software to design its more complex underbalanced drilling projects in order to determine the appropriate gas- and fluid injection rates and the resultant injection- and downhole circulating pressures. The models show excellent correlation between planned parameters and actual results in the field.



Air Drilling Associates puts great emphasis on the quality of its field supervisors, since they are the true face of the company. Our lean organization requires everyone to be independent self starters with sound judgment and extensive international experience.

Field-Proven Foaming & Corrosion Inhibiting Agents	
ADA Drill-Foam	Foaming agent with high tolerance for salt water and hydrocarbon influxes, as well as high temperatures.
ADA Inhibi-Foam	Drill-Foam with corrosion inhibiting properties.
ADA Estadrill F-100	Recyclable foaming system.
ADA Im-Hib Plus	Filming amine corrosion inhibitor.

The management and personnel of Air Drilling Associates are committed to being the "Supplier of Choice" by providing the highest level of performance through the implementation of safe, professional and innovative products and services. The company's Quality, Health, Safety and Environmental (QHSE) Management System conforms to the latest ISO 9001 (Quality), ISO 14001 (Environmental) and OHSAS 18001 (Safety) guidelines, and has been implemented at every facet of its scope of operations.



YOUNGEST FLEET IN THE INDUSTRY



Sullair 900 & 1150 XH Compressors

- Each unit capable of either 900- or 1150 scfm, at 350 psi
- Powered by the latest Caterpillar engines for reduced fuel consumption and emissions
- Silenced to meet US EPA requirement of less than 75 dBA at 7 m



Rotating Control Heads

- Used to seal around the drillpipe and divert harmful returns from the rig floor
- Various sizes and pressure ratings available
- Logging adapters and other accessories available



Membrane Nitrogen Producing Unit

- Requires 350 psi input air pressure
- Capable of producing up to 2000 scfm membrane nitrogen
- Purities of between 94 – 99%



Gardner-Denver Joy WB-12 Booster Compressor

- Capable of boosting 2700 scfm up to 2500 psi (continuous)
- Can also be run on single-stage: 3700 scfm to 800 psi
- Powered by latest Caterpillar C-16 engine, ensuring reduced fuel consumption and emissions
- Capable of pumping natural gas
- Modified to enable helicopter lifts in remote areas



National J-80 Mist Pump

- Single acting triplex liquid injection pump
- Rated for 2633 PSI at 46 GPM with 1" plungers
- Two x 20 bbl. stainless steel tanks

OTHER EQUIPMENT:

- Air hammers
- Geothermal and air/gas separators
- Chemical injection pumps
- String floats and jet subs



WORLDWIDE EXPERIENCE



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