HARTENERGY

E&P

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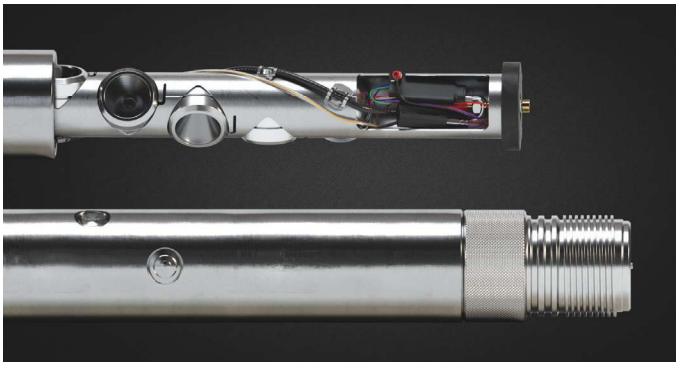
- Potential Fields
- MWD/LWD
- Proppants
- Production Chemicals
- Deepwater Pipeline Inspection
- Special Section: SPE ATCE Technology Showcase

Unconventional Report:
MARCELLUS-UTICA

Optimizing PRODUCTION

Operators set sights on enhancing recovery techniques

damage electrical connections, has no port plugs that can get lodged in the well and significantly decreases the chance of flooded guns. Addressable switches provide real-time confirmation throughout the downhole descent, and with no wires running between guns, the GameChanger system provides a high level of confidence in the wellbore. Using the compact C&J top sub and plug shoot sleeve, the system reduces the length and weight of the gun string, which requires less rigup equipment and provides safer onsite handling. *cjenergy.com*



To avoid crimped or scraped electrical connections, the GameChanger perforating system features a port-free design, no wires running between guns and a strategically placed detonator/switch assembly. (Source: C&J Energy Services)

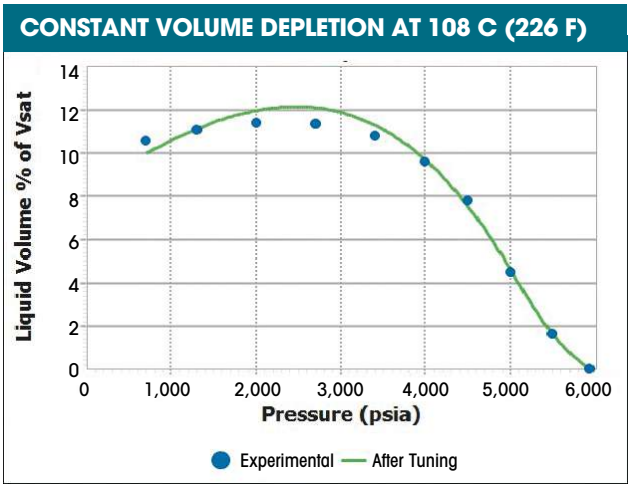
Identify diversion in real time with zero false positives

Traditional methods of identifying successful diversion assume that when the diverter material reaches the perforation, an increase in treating pressure is observed. While this might be an indication of diversion, it can be misleading. Calfrac's charting overlay approach identifies diversion in real time with zero false positives. No time-consuming or resource intensive analyses are required. Through the application of this technique, diversion can be identified with greater confidence and in a timely manner such that adjustments can be made to improve stimulation effectiveness in subsequent applications. *calfrac.com*

From left to right, CalVert PS (small particulate), CalVert P10 (large spherical particulate 8 mesh) and CalVert PF (flake particulate) are shown. (Source: Calfrac)

Automated tools for quality checking experimental PVT data, EoS modeling

Calsep has released PVTsim Nova 4.0, which features new pressure-volume-temperature (PVT) technology. Modeling reservoir fluids (EoS modeling) is considered to be a difficult task requiring the experience of experts in the field. Experts often will need days or weeks to construct a robust model. With Calsep's new Auto QC and Auto EoS technology, even engineers with limited experience in EoS modeling will be able to develop an EoS model in a much shorter time. Auto QC evaluates an input fluid composition. If the data turn out to be inconsistent, the software will automatically make the necessary adjustments. The user selects the number of components for the final EoS model, and PVT data importance is automatically ranked. Calsep's new Auto EoS tool will deliver an EoS model that provides a good match of all PVT data within minutes. *calsep.com*



PVTsim's Auto EoS menu generates a good match of PVT data in one click. (Source: Calsep)

Proppant prevents salt precipitation, eliminates freshwater injection costs

SALTGUARD is an encapsulated, porous ceramic proppant infused with halite-inhibiting chemicals that is placed throughout the entire fracture as part of the standard fracturing process. CARBO engineered SALTGUARD technology to be uniformly distributed with interconnected porosity in the proppant. The proppant is infused with a halite inhibitor and is then encapsulated to ensure a controlled release of the halite inhibitor on contact with produced water. This technology prevents salt precipitation from the fracture through the surface equipment and eliminates freshwater injection costs. SALTGUARD technology is cost-effective due to

reducing the amount of chemical washout; preventing production impairment; eliminating costly remediation treatments, equipment failures and production loss from halite scaling in the fracture; and removing freshwater consumption and associated disposal cost. SALTGUARD has low minimum inhibitor concentration and is effective in brines with a presence of calcium and iron. *carboceramics.com*

Facility provides testing for downhole drilling technologies

Catoosa Test Facility (CTF) provides confidential oilfield tool and technology testing for companies that are developing new drilling, completion and production technologies. All types of advanced prototype downhole drilling technologies are tested and validated at this private and independent testing campus. CTF has discretely tested hundreds of downhole tools and has allowed the largest service companies and the smallest startups the ability to test and find solutions in a safe and cost-effective environment. CTF will be highlighting the new addition of test rig M37 at ATCE. This rig is an all-electric, triple cyber-walking rig custom designed by Nabors Industries to meet the information and data requirements needed to record and capture testing information. CTF has the privilege to be an integral part in the testing of many of the innovative tools and technologies being used today. *ctfok.com*

CTF's automated, all-electric triple cyber rig is capable of performing any type of downhole tool and technology drilling test. (Source: Catoosa Test Facility)

Tools enable well control, maximize downhole space

Ideally suited for long reach horizontal, multistage stimulated oil wells, D&L Oil Tools' ProTension safe tension tool allows complete well control at all times while setting a tubing string in tension using standard field procedure. ProTension is installed between the tubing hanger and the production tubing. Once the tubing hanger is landed, isolating the annulus, tension can then be pulled into the tubing string and safely locked into place without losing well control—no need to remove the BOPs or overstretch the tubing. The tool allows complete rotation of the tubing when setting downhole tools. The Trilobite Tubing Anchor/Catchers, designed for hydraulically or mechanically set retrievable tubing, have a unique design that uses three double-acting slips to maximize holding power in both tension and compression, while allowing increased annular flow and capillary tube installation outside the anchor. This allows operators to maximize space for gas bypass while running capillary lines, all without compromising the inside diameter of the tubing. *dloiltools.com*

Systems aerate water storage ponds, calculate inventory, monitor flowmeters

Direct Drivehead Inc. will be showcasing its Smart Pumper produced and fracturing water storage pond systems at ATCE. The Smart Pumper produced and fracturing water pond systems aerate the water, calculate inventory, monitor meters flow in and out and water quality, add chemistry as needed, control transfer pumps, and provide other options that reduce HSE risk and improve the operation. Built-in communications let customers know all these data and more while having remote on/off control capabilities in real time. *directdrivehead.com*

Smart Pumper is a universal platform (hybrid technology) that provides high-speed global connectivity with a processor that is used to support a multitude of applications to control and monitor anything through a customizable web-based interface from anywhere in the world. (Source: Direct Drivehead Inc.)

Water treatment microbiocide protects assets

Dow Microbial Control's new AQUCAR 736 water treatment microbiocide provides enhanced topside microbial control and near-wellbore efficacy in the North Sea. This