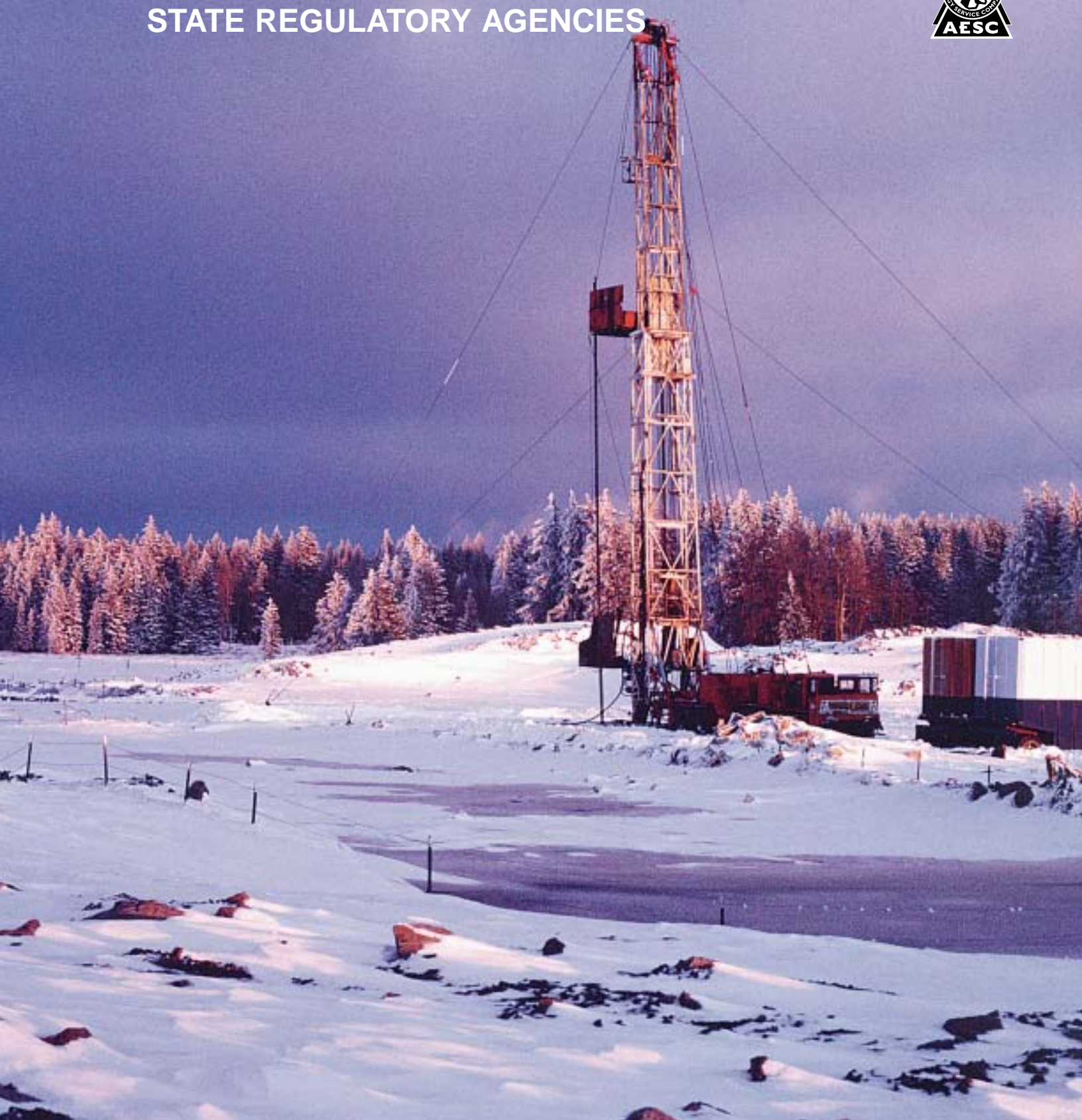


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# Well Servicing <sup>TM</sup>

MIXED BAG OF FORECASTS  
OIL AND GAS "ETOOLS"  
STATE REGULATORY AGENCIES



# Technology

## in the service sector

### Improved chain design from Rexnord is put to the test by Pool Well Services Co

An improved chain designed specifically for the rigors of workover rig applications has performed without wear more than four times longer than the chain it replaced in a field test at Pool Well Services Co, in El Reno, Oklahoma. On the previous chain, wear could be detected in as little as six months of severe service, but the Rexnord Link-Belt® RC 160 FR® (Fatigue-Resistant Workover) Series chain that replaced the previous chain in March, 1998, is still working 50 to 60 hours a week. The Link-Belt chain showed no visible wear when it was last inspected, which was after almost two years on the job.

In 1998, Pool Well Services Co needed to replace the chain on a Franks 500 Series workover rig. Powered by a 500 HP engine, the chain on the rig pulls lengths of well tubing by driving the winch drums that carry multiple lines running over the rig's 102-foot mast. Although shock loading is minimal, speeds are fast and tensile forces are high as the rig pulls up to 250,000 lbs. The rig works 50 to 60 hours most weeks and has done so for the past five years, thus being a good rig on which to run a representative operational test.

Looking for a way to extend chain life, Pool installed a specifically-redesigned Link-Belt chain that was just being introduced at the time the rig was scheduled to be rebuilt. The Link-Belt FR Workover WO R160 chain, made by Rexnord Corporation, features case carburized pins that have a higher surface hardness for greater wear resistance. This durable armor casing assures a uniform



*Pool Well Services' workover rig is experiencing longer life on roller chain used to drive the drums and other functions. Here, the 500 HP rig pulls tubing from an oil well near Oklahoma City.*



*Closeup shows drum drive. Multiple-strand chains are inside guards.*

case depth for longer chain life and more uptime. In addition, the chain uses an exclusive heat-treated shepherd crook cotter that is designed specifically to stay firmly in place and resist fatigue failure, even under condi-

tions of severe vibration, impact or shock. A wide-waisted link plate design provides better stress distribution to eliminate link fatigue failures. Each bushing contains a lubrication reservoir that supplies oil to the live bearing area of the chain joint and ensures maximum lubrication inside the joint. The workover rig chain also incorporates all the features of standard Link-Belt Fatigue Resistant (FR) chain, including cold working of pitch holes to resist sidebar fatigue, shot-peening for extended roller life, pre-stressed bearing surfaces for uniform loading, and precise heat-treat control for optimum uniformity and reliability. The chain is available as a standard in up to quadruple strand configuration, with other oilfield chains offered up to ten-strand.

According to Pool, the chain is used in four or five places on the rig including the drop box, the hydromatic, the drum drive and the sand line.

The chain was first put into service in March, 1998. A visual inspection was made in January, 1999; a physical inspection took place in June, 1999; and another inspection was performed after almost two years of service. All inspections resulted in no signs of visible wear.

The Rexnord Link-Belt chain has led to increased uptime and cost savings due to longer operating life, even in the toughest workover rig applications.

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