



ControlSEAL Resin Sealant

Packer Leak Remediation

Background

A client was encountering problems with a leaking production packer on their well. They were experiencing communication between the tubing/casing annulus and had made several unsuccessful attempts to resolve this issue. The leaking packer was preventing the well from being put on production. There was a ¼-in. hole in the tubing at 7,506 ft (18 ft above the packer). Although not originally planned for, this hole was being used for gas-lift purposes. The annulus would not hold a full column of seawater, leaving about a 1,000-ft void in the annulus.

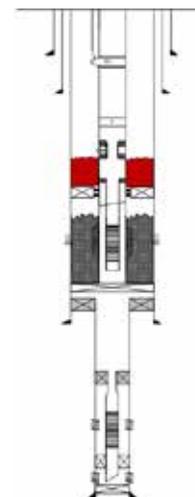
ControlSEAL Resin Sealant Job

A total of 20 gal (approximately 15 ft of fill) of 16½-lb/gal ControlSEAL™ was pumped into the annulus and allowed to freefall to the top of the production packer, essentially locking the tubing in place and sealing the annulus so gas-lift production could resume. There were three issues that had to be dealt with on this job. First, there was a freefall from the tie-in point of the annulus to the seawater line in the

well at about 1,000 ft. The second was approximately 6,500 ft of water in which the ControlSEAL would have to fall through to land on top of the packer. The third obstacle was the ¼-in. hole 18 ft above the packer in the tubing. It was absolutely critical that the ControlSEAL not cover the ¼-in. hole and fall into the tubing. This is the reason that only 20 gal of resin was used. The job began with the pumping of 3 bbl of seawater into the annulus to wet the outside of the tubing and the inside of the casing over the 1,000 ft of void area. The 20 gal of ControlSEAL was then mixed and pumped into the annulus, immediately followed by 5 bbl of seawater. Five hours were given to allow the ControlSEAL to fall to the top of the packer, followed by 24 hours of waiting to allow the resin sealant to harden.

After 24 hours, a positive pressure test of 500 psi (3,480 psi experienced at the top of the ControlSEAL plug) was performed and passed, revealing that the ControlSEAL had set against the top of the packer and sealed the

annulus. Prior to the application, more than 1,100 psi of pressure at the packer seal would create leakoff. The ¼-in. hole was also deemed to be free and clear in this test.



WELL INFORMATION

Production Tubing Size:	2 7/8 in., 6 1/2 lb/ft
Production Casing Size:	7 5/8 in., 33 lb/ft
Production Packer:	7,524 ft
Well Fluid:	Seawater
Well Fluid Weight:	8.45 lb/gal
Estimated Bottomhole Temperature:	165°F
Max Angle:	37° @ 4,924 ft