

Lost Circulation Solution Saves Time and USD 3.3 Million for Chevron

CemNET advanced fiber cement eliminates losses and need for remedial work in San Joaquin Valley

CHALLENGE

Circulate cement to surface despite depleted zones, natural fractures, and unconsolidated sandstone.

SOLUTION

Use CemNET* advanced fiber technology to control losses.

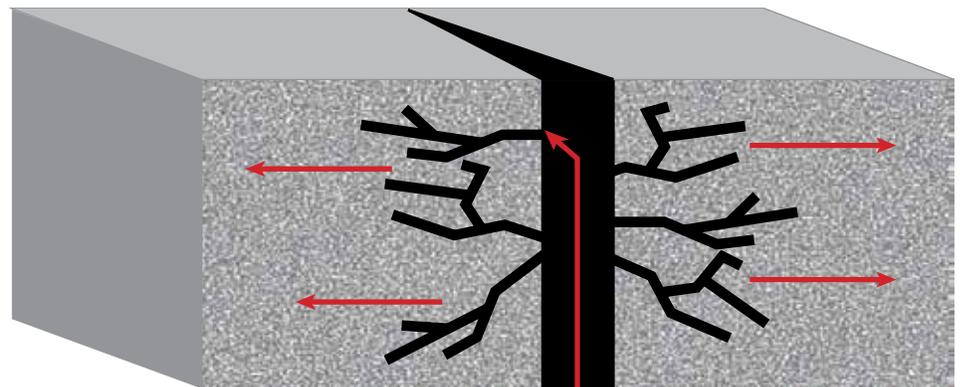
RESULTS

Met top-of-cement requirements faster and more cost-effectively while eliminating remedial work.

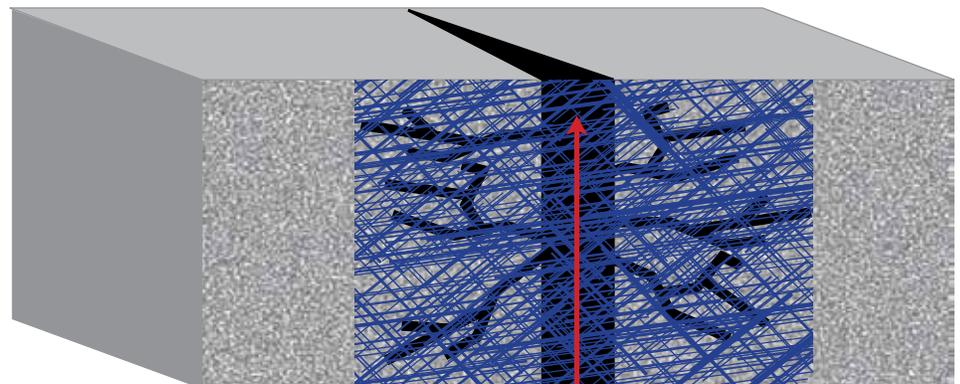
Chevron needed to reduce lost circulation during cementing operations

While drilling in a field near Bakersfield, California, in the San Joaquin Valley, Chevron experienced problems circulating cement to the surface. Depleted zones, natural fractures, and unconsolidated sandstone in the reservoir led to severe circulation losses that were negatively impacting operational efficiency and costs. In addition, Chevron encountered oil and gas migration problems that required remedial treatments.

Chevron had been using foam cement to combat these problems. This method typically circulated cement to the surface and prevented unwanted flow, but it was complicated and costly. After learning that another operator had used CemNET fiber cement from Schlumberger in a nearby field with great success, Chevron decided to apply the technology in its wells.



Losses



Circulation

CemNET fiber cement forms a fibrous network across natural fractures, fissures, vugs, or highly porous zones. This helps prevent lost circulation during cementing operations.

CemNET fibers enabled more effective, more affordable cementing

CemNET fiber technology incorporates special inert fibers that seal off areas prone to fluid loss. Teams first pumped Losseal W/O* fibers in a spacer fluid—curing losses while the filter cake was being removed. Then Chevron added CemNET fibers to a low-rheology cement slurry. This filled lost circulation areas during cement placement. The low-rheology formulation reduced friction pressure, which decreased the bottomhole pressure exerted on the formation.

CemNET fiber cement helped Chevron eliminate fallback and topouts while circulating cement to the surface. It also enabled the operator eliminate the high costs and special tools associated with foam cement jobs.

Additional Schlumberger innovations enhanced cementing operations

In addition to CemNET technology, Chevron also applied EasyBLOK* solid gas migration control cement system, DeepCEM* deepwater cementing solution, and MUDPUSH* II spacer. The EasyBLOK system prevented gas and oil migration while the cement was hydrating. The DeepCEM solution lowered the rheology of the cement blend without extending the thickening time. And, the MUDPUSH II spacer fluid ensured effective mud removal and zonal isolation.

Chevron improved operations and saved USD 3.3 million

CemNET fiber technology enabled Chevron to overcome lost circulation problems, reach required top of cement and avoid the time and costs of remedial cement treatments. This generated approximately USD 3.3 million in value. Now Chevron uses this technique to improve the effectiveness and efficiency of cement jobs in other locations.

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