

# Cement Pulsation

IMPROVE ZONAL ISOLATION WITH SURFACE PRESSURE PULSES



Cement Pulsation

Cement pulsation is the application of low-intensity pressure pulses to the annulus after a primary cement job to break the gel strength development in the cement slurry. Gel strength of the cement causes a lowering of the hydrostatic pressure transmitted through the annulus. By breaking the gel strength, the hydrostatic pressure on the formation is maintained until the cement has built sufficient strength to prevent the influx of reservoir fluids through the cement matrix.

## FEATURES AND BENEFITS

- Provides a simple, cost-effective solution to control fluid migration
- Eliminates remedial squeeze jobs
- Prevents annular casing pressure
- Provides real-time indication of the cement-curing process
- Improves cement logs
- Has no adverse effect on the cement properties

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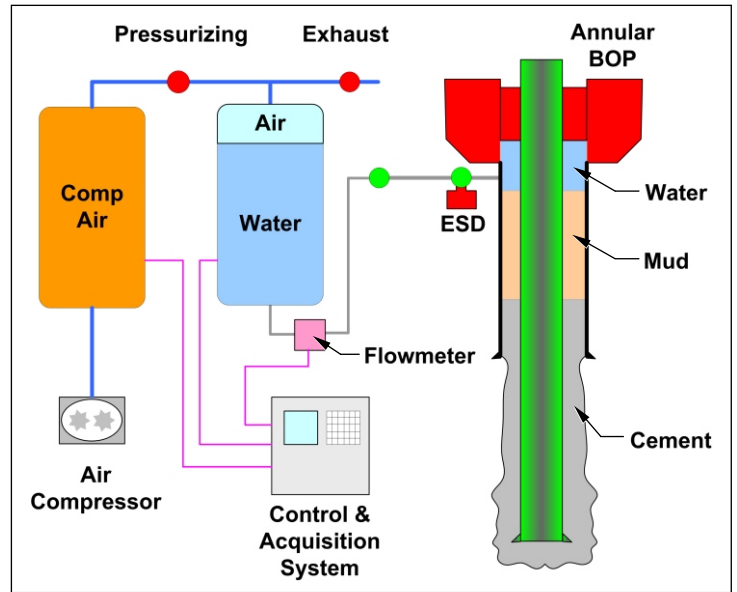


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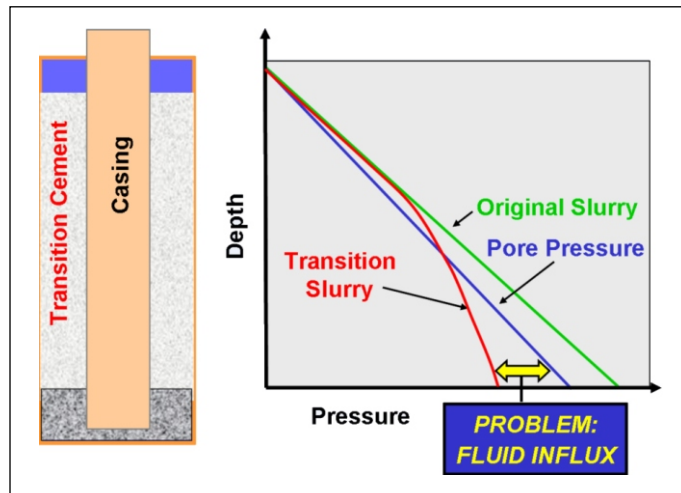
## FIELD OPERATION

The patented cement pulsation process starts immediately after cement pumping stops and the annular BOP is closed. Low-pressure pulses, typically in the range of 80 to 200 psi, are applied to the casing annulus at a time interval of 30 to 60 seconds. Pulsing continues until the compressible volume levels off, or until the laboratory thickening time indicates the cement has reached 70 Bc — usually in 4 to 6 hours.

*This cement pulsation technology was developed with the assistance of Gas Research Institute.*



Cement Pulsation Schematic



Hydrostatic Head Reduction During Setting Process

## Equipment Specifications

Dimensions	9'L x 6'W x 8'H
Weight	5,300 lbs
Process Control	
Tanks	2 (ASME) 200 gallon 200 psi working pressure
Sensors	Water level Annulus pressure Air tank pressure Discharge flow

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