

Figure 1

PWF/Foam Jobs in Cactus Lake

Courtesy of Nexen and Ryan Rueve (next 3 slides)

- Eight (8) PWF jobs done to April 2003.
- Average sand cut for a PWF job is 25% compared to maximum 5% with pump to surface (PTS) operations in Cactus area. PWF has given some sand cuts as high as 50%.
- PWF operations can produce 4-5m³ sand while a PTS operation will produce 1m³ or less.
- Less workovers due to sand problems on wells with proper cleanup during the initial completions.
- PWF costs are comparable to that of tubing conveyed perforating followed by PTS operations.

Sand Cut Comparison of PTS & PWF

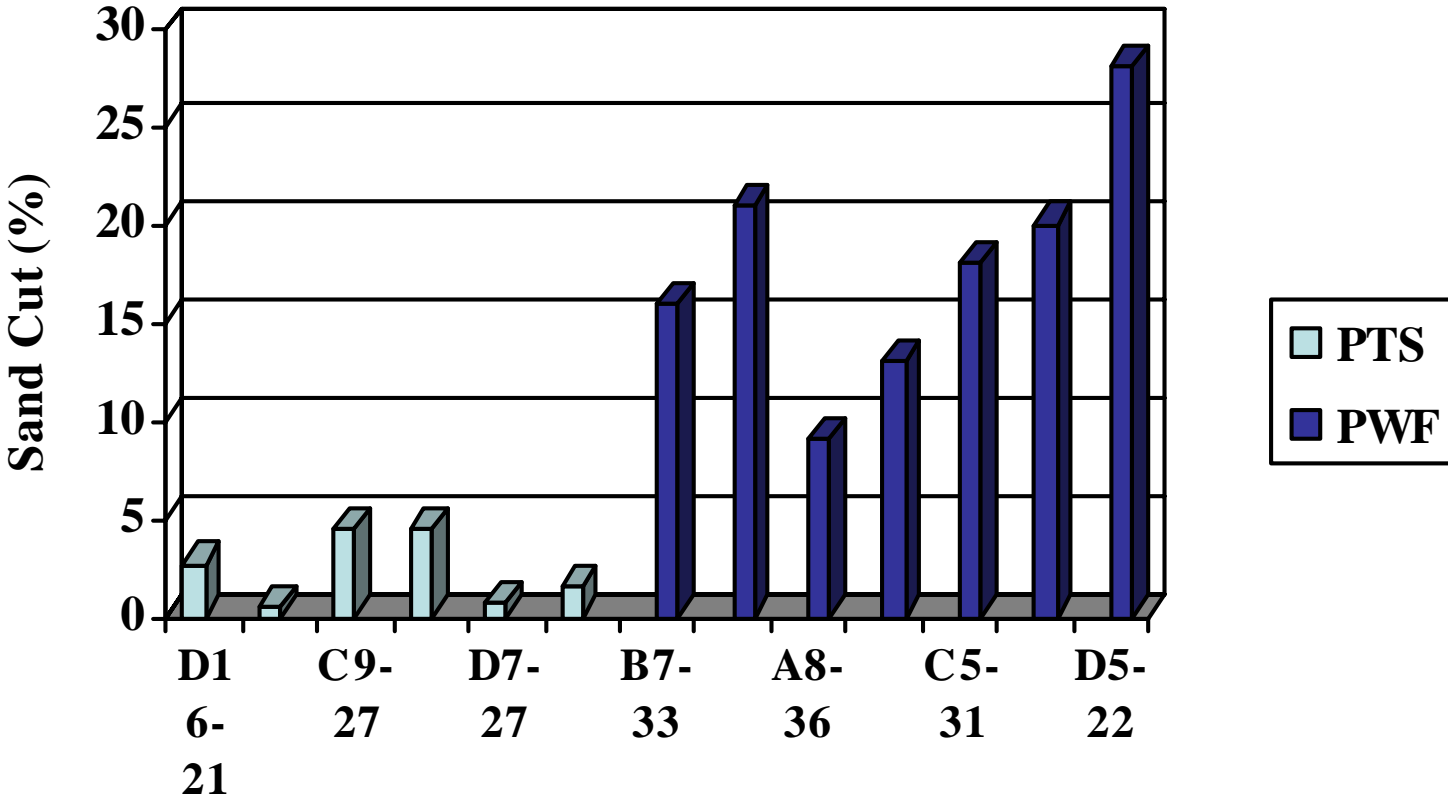


Figure 3

Cost Comparison

PTS (with TCP) vs PWF

- PTS (4 days with Rig)
- Rig (38 hrs) \$13,680
- Consultant \$3,000
- PTS Tool \$2,500
- Pressure/Vac \$1,500
- Total PTS costs \$20,680
- PWF (3 days with Rig)
- Rig (29 hrs) \$10,440
- Consultant \$2,250
- Foam Unit \$8,000
- Pressure/Vac \$2,200
- Total PWF costs \$22,890
- Extra cost to PWF is approx \$2,200. This is saved by less workovers caused by sand in months after the completion.
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- Costs not included above are: perforating, tubing, rods, pump, etc. These items are the same in both scenarios.

Figure 4