

Job execution / Case study

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Acid resistance cements

■ Latex cement (Portland based cement)

- Gas migration control
- Low fluid loss
- Bottomhole circulation temperatures of 60 to 400 °F

■ Calcium aluminate phosphate cement

- CO₂ resistant at high concentrations
- Thermally stable
- Right angle set
- No shrinkage
- High strength development

Equipment Requirements

■ Latex cement

- Batch mixer (For liquids and cement slurry)
- Online injection pump for liquid retarder

■ Calcium aluminate phosphate cement

- Dedicated bulk plant and equipment (Hoses and implements)
- Bath mixer and pumps (Neutralized)
- Plastic tanks or with plastic linings or polyurethane

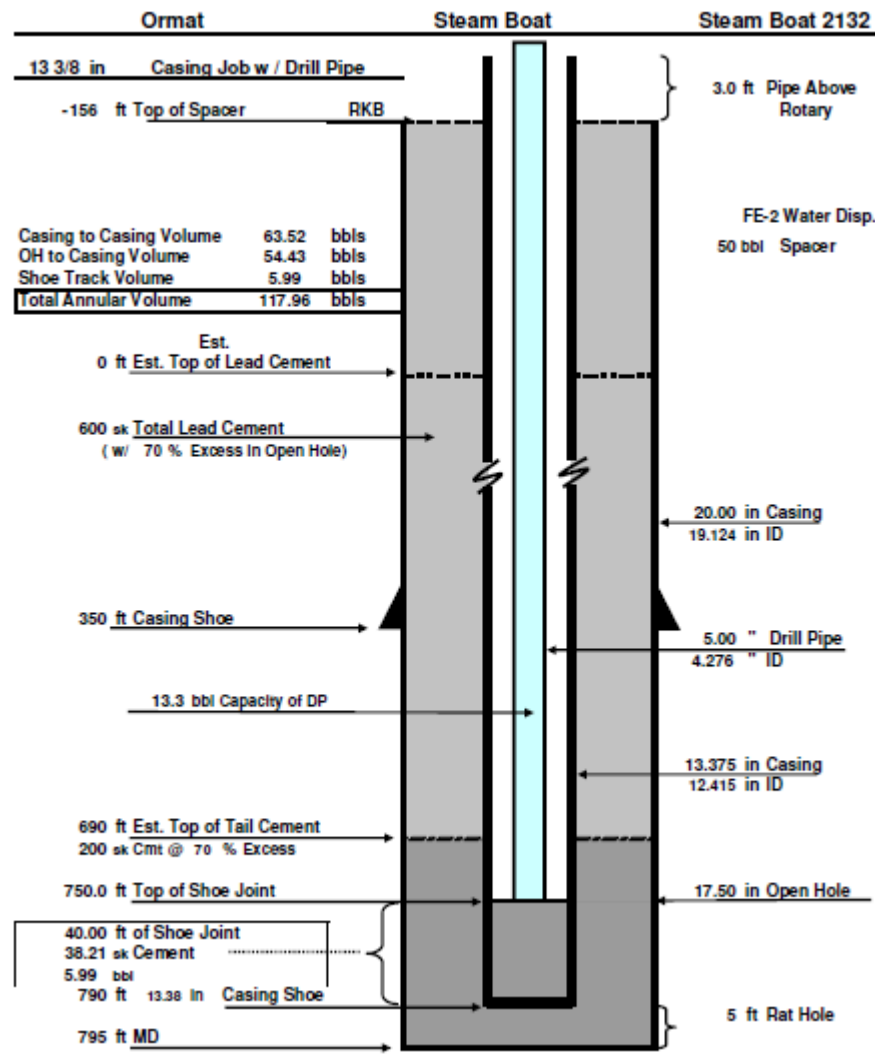
Case Study

Job Objective

- Provide zonal isolation to 13 3/8" casing inside 17 1/2" hole at 795' depth with conventional cementing method.

Calcium Aluminate Phosphate Cement

- 13.0 lb./gal lead cement
- 15.3 lb./gal tail cement
- 70% excess on open hole



Conclusions

Job Execution

- On site consistency testing to ensure appropriate thickening time
- Rig up to ensure slurry density consistency
- Use of organic acid water for spacers and blending
- Slow rates after spacers return to surface
- Over displace to ensure no cement on drill pipe

Results

- Good cement returned to surface at desired density
- Need of top Job after waiting on cement

Lessons Learned

Job Execution

- Rate could be decreased more according thickening time results
- Density was controlled as designed

Top Job

- No organic acid retarded used for top cement Job
- Rig hands were warned about the fast setting cement



SPE/GRC WORKSHOP

21–22 March 2017
San Diego, California, USA
Courtyard Marriot Mission Valley

Questions?

High-Temperature and Corrosion in Drilling and Production –
Exploring Geothermal and Oil and Gas Synergies

