

# HEIT ANTONE C UNIT 2 – Retainer Squeeze (Bradenhead), SX Squeeze, Wellhead, and Packer

API #05-123-10846

Engineer: Alex Caravaggio – 213-880-8119

- 1 Well needs a SUSSEX retainer squeeze from 4885'-4350', FOX HILLS retainer squeeze from 1430'-750' for bradenhead issues, wellhead and a packer.
- 2 Well has gyro survey on 11/29/2012.
- 3 MIRU Slickline. Pull bumper spring and tag bottom. Record tag depth in Open Wells. RD slickline.
- 4 Prepare location for base beam equipped rig. Install perimeter fence as needed.
- 5 Check and record bradenhead pressure. If bradenhead valve is not accessible, re-plumb so that valve is above GL. Blow down bradenhead and re-check pressure the next day. Repeat until pressure stays at 0 psi.
- 6 MIRU WO rig. Spot 25 jts of 2-3/8" 4.7# J-55 tbg.
- 7 Kill well as necessary with water and biocide. Attach a hardline from the bradenhead/surface casing valve to a flowback tank and blow down any Bradenhead pressure. If pressure does not blow down within 1 hour contact engineer, otherwise proceed.
- 8 ND wellhead. NU BOP.
- 9 PU 8-10' pup joint with TIW valve on top and screw into the tbg hanger. Unseat and LD the landing joint.
- 10 MIRU EMI services. EMI 2-3/8" tbg (~253 jts landed at 8007') while TOOH and tally while standing back. Lay down joints that have greater than 35% penetration or wall loss. Replace all joints that fail EMI testing. Document joint numbers and depth of bad tubing and create a Production Equipment Failure report in OpenWells. RDMO EMI services.
- 11 PU and TIH with (5.5", 20#) Bit and Scraper to 8000'. TOOH, SB all 2-3/8" tbg.
- 12 PU and TIH with (5.5", 20#) hydraulically set CIBP. Set CIBP at +/- 7990'.
- 13 Pumping water with biocide, pressure test CIBP and production casing to 2000 psi for 15 minutes. If test fails, contact Engineering.
- 14 TOOH and SB 2-3/8" tubing.
- 15 ND BOP. ND existing tbg head, NU new 5,000 psi flanged tbg head complete with 5,000 psi rated casing valves. NU BOP.
- 16 MIRU wireline and run **CCL-GR-CBL-VDL from +/- 7990' (to confirm existing cement placement) to surface**. Forward to Engineering. In addition to normal handling, of logs/job summaries, email copies of all cement job logs/job summaries and invoices to [DJVendors@anadarko.com](mailto:DJVendors@anadarko.com) within 24 hrs of the completion of the job. Procedure may change based on log results.
- 17 PU and RIH with *one* 1' 3-1/8" perf gun with 3 spf, 0.50" EHD, 120° phasing. Shoot 1' of squeeze holes at ~4885'. POOH. RD WL.
- 18 PU and RIH with (5.5", 20#) CICR on 2-3/8" tbg while hydrotesting to 4000 psi and set at +/- 4855'. Establish circulation through squeeze holes with biocide treated fresh water and circulate a minimum of 200 bbls through squeeze holes. If rate is less than 1 bpm at 1000 psi, contact engineer.
- 19 MIRU cementing services. Establish circulation and pump 20 bbl (5 bbls of water, 10 bbls of sodium silicate, and 5 bbls water) spacer, **Cement with fast set-up time 160 sx (242 cf) 15.8 ppg 1.51 yield. Underdisplace by 1 bbl.** (based on 30' below retainer in 5-1/2" casing and 7.875" hole size + 60% excess from 4885'-4350'. Attempt to cement from 4885'-4350'.
- 20 PUH to 4655' and reverse circulate tubing clean to ensure no cement is left in the tubing. Reverse circulate until no cement in returns. TOOH. SB ALL tbg. LD stinger.
- 21 MIRU WL. PU and RIH with *one* 1' 3-1/8" perf gun with 3 spf, 0.50" EHD, 120° phasing. Shoot 1' of squeeze holes at ~1430'. POOH. RD WL.

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- 22 PU and RIH with (5.5", 20#) CICR on 2-3/8" tbg while hydrotesting to 4000 psi and set at +/- 1400'. Establish circulation through squeeze holes with biocide treated fresh water and circulate a minimum of 200 bbls through squeeze holes. If rate is less than 1 bpm at 1000 psi, contact engineer.
- 23 MIRU cementing services. Establish circulation and pump 20 bbl (5 bbls of water, 10 bbls of sodium silicate, and 5 bbls water) spacer, **GASBLOK cement with fast set-up time 240 sx (279 cf) 15.8 ppg 1.16 yield. Underdisplace by 1 bbl.** (based on 30' below retainer in 5-1/2" casing, 7.875" hole size + 60% excess from 1430'-864' and from 864' to 750' between 8-5/8" 24# surface casing and 5-1/2" 20# production casing). Attempt to cement from 1430'-750'.
- 24 PUH to 1200' and reverse circulate tubing clean to ensure no cement is left in the tubing. Reverse circulate until no cement in returns. TOOH. SB ALL tbg. LD stinger. WOC 24 hours.
- 25 PU and TIH with 4-5/8" bit and appropriate number of 3-1/2" drill collars on 2-3/8" tbg. Time drill cement above CICR (~65'). If rate of penetration is faster than 2 min/ft, SD and WOC 24 hours and repeat. Drill down to the CICR located at +/-1400'. Drill CICR and cement past lower perf at 1430' and pressure test to 500 psi for 5 minutes. Repeat for CICR at 4855' and holes at 4885'.
- 26 TOOH. SB tbg and drill collars, LD bit.
- 27 MIRU wireline and run **CCL-GR-CBL-VDL from +/- 6000' (below the original TOC from first log) to surface.** Forward to Engineering. RDMO wireline services. In addition to normal handling, of logs/job summaries, email copies of all cement job logs/job summaries and invoices to [DJVendors@anadarko.com](mailto:DJVendors@anadarko.com) within 24 hrs of the completion of the job.
- 28 PU and TIH with bit on 2-3/8" tubing. Drillout CIBP at 7990' and chase down to 8120'.
- 29 TOOH. SB tbg. LD bit.
- 30 PU 2-3/8" NC, 2-3/8" XN nipple (be sure to correctly input into OpenWells), ~27 jts of 2-3/8" tbg (to set packer at 7200'), 5-1/2" Arrowset AS-1X packer (10K psi rated above and below), and 2-3/8" 4.7# J-55 tbg to surface while hydrotesting to 5000 psi. Land EOT at +/- 8030' (1 jt above top J Sand perfs).
- 31 Set packer at +/- 7200'. Load backside with packer fluid and test to 500 psi.
- 32 RU rig lubricator. Broach tubing to XN seating nipple. RD rig lubricator. ND BOP.
- 33 Install 7-1/16" flanged 5000 psi tubing head adaptor with studded top, 2-1/16" flanged 5000 psi master valve, flanged 5000 psi 2-3/8" plunger lubricator (side outlets threaded). Make sure all wellhead valves are rated to 5,000 psi. Document wellhead components in an OpenWells wellhead report.
- 34 Install 2-3/8" pup joint above the master valve. Pressure test the tubing head from below the tubing head through the master valve to 5,000 psi using hydrotester. If wellhead does not pressure test, replace wellhead/ wellhead valves as necessary with 5,000 psi rated equipment.
- 35 NU WH. RDMO WO rig. Return well to production team.