



DrillSafe

AUSTRALIA'S DRILLING INDUSTRY HEALTH SAFETY AND ENVIRONMENT FORUM

Riser Connection Incident

A Wroth

Perth March, 2014



What occurred

Well killed, tree removed and riser installed off critical path.

BOP installed on riser, BOP and riser pressure tested against tubing hanger plug to 3000psi/10 min

De-completed well, ran “anchor packer”, took casing condition log, milled a window and commenced drilling.

Several days later, drilling ahead in 8 ½” hole

Toolpusher and Completion Supervisor taking some space out measurements around the wellhead and noticed that a number of the nuts on the 10K 13 5/8” API flange were loose

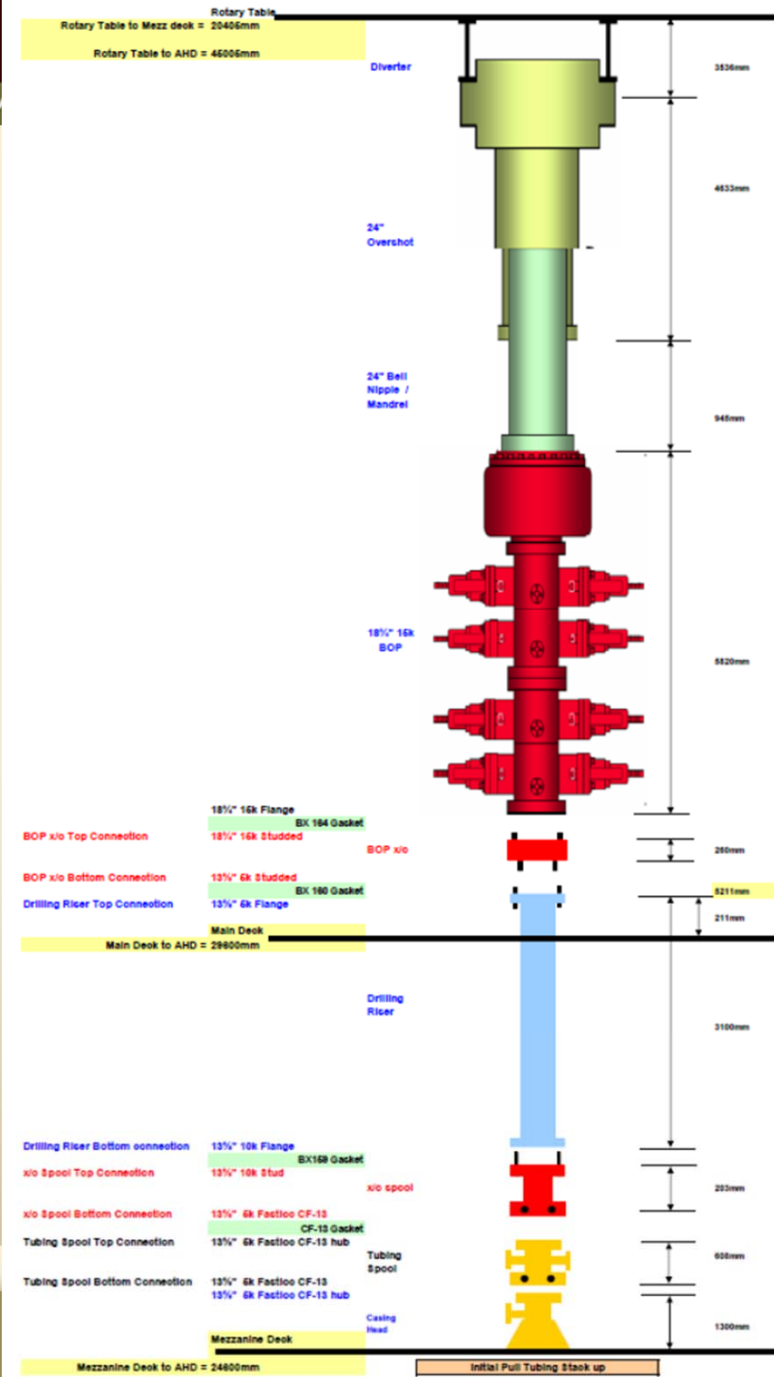
Stopped drilling, circulated while torquing up - 12 of the 20 bolts were free to turn, the remainder were tighter, but not torqued up.

POOH to window to pressure test



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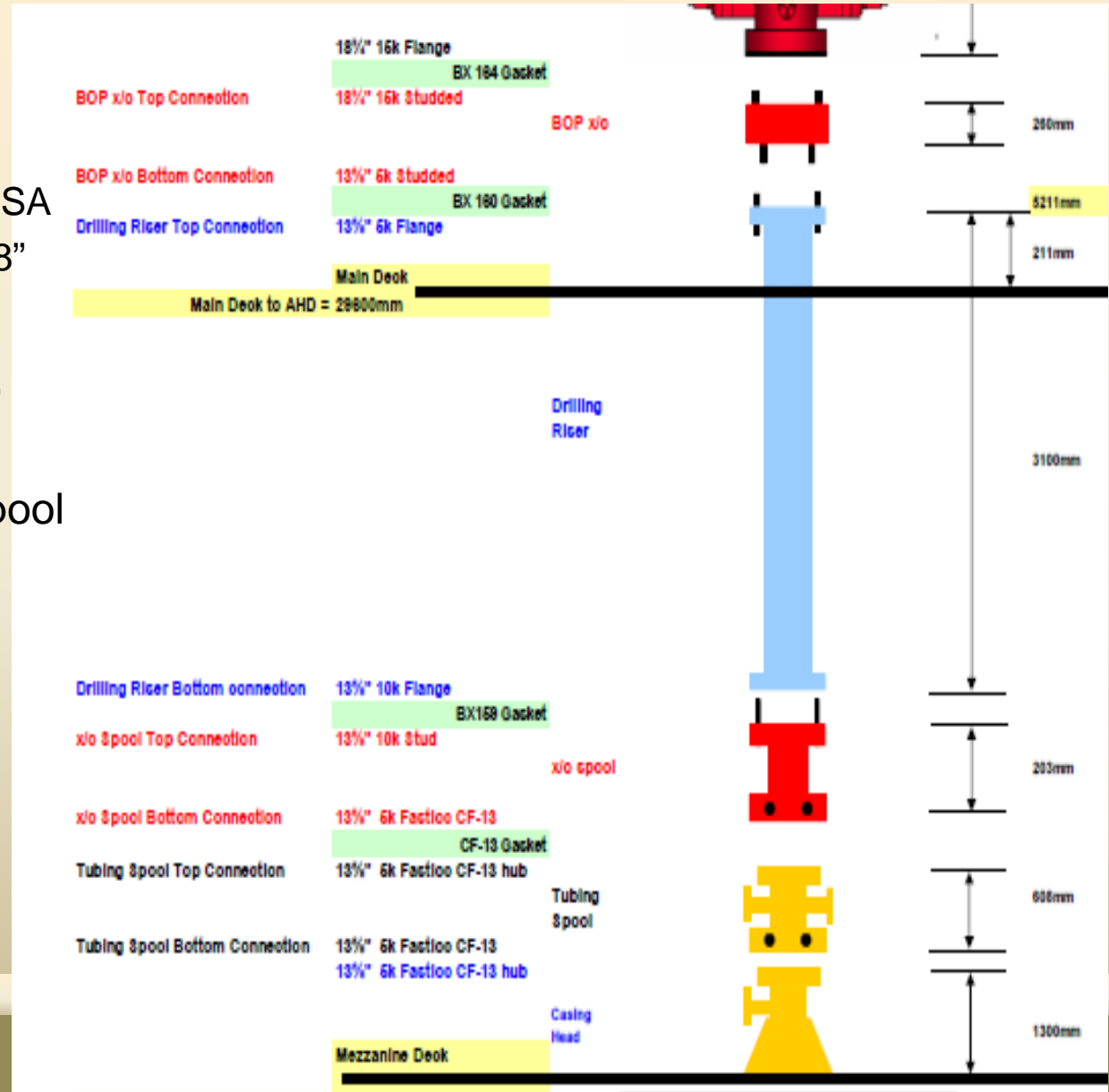
Equipment Involved

BOP – 18 3/4" Schaeffer

Riser assembly comprised

- 13 5/8" 5k x 18 3/4" 15k DSA
- 13 5/8" 5k flange x 13 5/8" 10k flange 3.1m long HP riser
- Cameron CF13 x 13 5/8" 10k flange XO

5k 13 5/8" Cameron tubing spool





Investigation Findings

- Riser assembly “flogged up” in workshop prior to mob
- Riser installed on wellhead after tree removal by completions team prior to operations starting on well
- The HP riser and fast lock adapter flange connection status was not covered on the well handover sheet
- OIM did not sign off on well handover sheet
- Programme specified “Ensure drilling riser stud bolts are retightened once the BOP has been installed and Cameron Fastlock Connector bolts have been torqued to 814 N.m (600 ft.lb).”



Investigation Findings

- ◆ **Instructions to Drillers stated**
 1. “set BOP down and nipple up bolted flange on pre-installed Fastlock adapter/drilling riser”
 2. Slack off BOP. Tighten bolts on bolted flange.
- ◆ **No flange bolt torque figures stated in programme or SIDS**
- ◆ **Senior Drilling Supervisor received “verbal confirmation” from completions team that the riser work had been completed (not specific)**
- ◆ **BOP installed on riser and BOP-Riser flange made up correctly**
- ◆ **Toolpusher shift change prior to pressure test – comment made – “it is all made up”**



Investigation Findings

- ◆ **Drilling Contractor has flange make up Work Instructions, but they were not applied**
- ◆ **No reports or other form of auditable confirmation of any work on the riser was available**
- ◆ **Everyone assumed that the bolts had been torqued up in workshop**
- ◆ **Need to reconfirm torques after installation of 90T BOP not recognised**
- ◆ **Communication of actions relating to BOP and riser makeup were inadequate**
- ◆ **Ownership for make up of riser not taken by anyone**
- ◆ **Doubt as to whether all parties had read the well programme – despite copies being available to all parties**



- ◆ **Riser flange bolt status to be included on well handover sheets**
- ◆ **Riser flange bolt status to be included on well barrier verification sheets**
- ◆ **Drilling Contractor's Work Instructions to be updated to require torques for each connection below a newly installed BOP to be checked**
- ◆ **Future SIDS (of this type) to include a specific step stating each flange to be made up and required torques**
- ◆ **Drillers to sign off on each step of the SIDS**
- ◆ **Responsibility for well/system integrity not clearly taken by anyone.**