



Drilling Report
Moore 22-1
2255'FSL 2310 FWL
SW/4 Section 22 12s-33w
Logan County, Kansas

Ground Elevation: 3091' Kelly Bushing: 3096'

Drilling Contractor: WW Drilling Rig #10 KCC# 33575

1-29-16

MIRU WW Drilling Rig #10, ATS Loaded and Delivered 6 Joints 8 5/8" Surface Casing, Andy's Mud Delivered Chemical Mud from Hays, Honas Tank to Deliver Frac Tank, contact Keith Reavis for gas trailer, ATS hauled fresh water previously.

2-4-16

Spud 12 1/4" surface hole at 12:00 p.m., drill down to **260'**, run and cement **6 joints 8 5/8' with 160 sks common 3%CC 2%gel, cement did circulate**, plug down 4:45 p.m, wait on cement 8 hours.

2-5-16

Drill out from under surface 12:45 a.m., bit is new 7 7/8" Hughes GX-23, 7:45 a.m. depth is 1193' and drilling, current ROP is 133 ft/hr.

2-6-16

12:30 p.m. depth is 3298' and drilling ahead. Current ROP is 60 ft/hr.

2-7-16

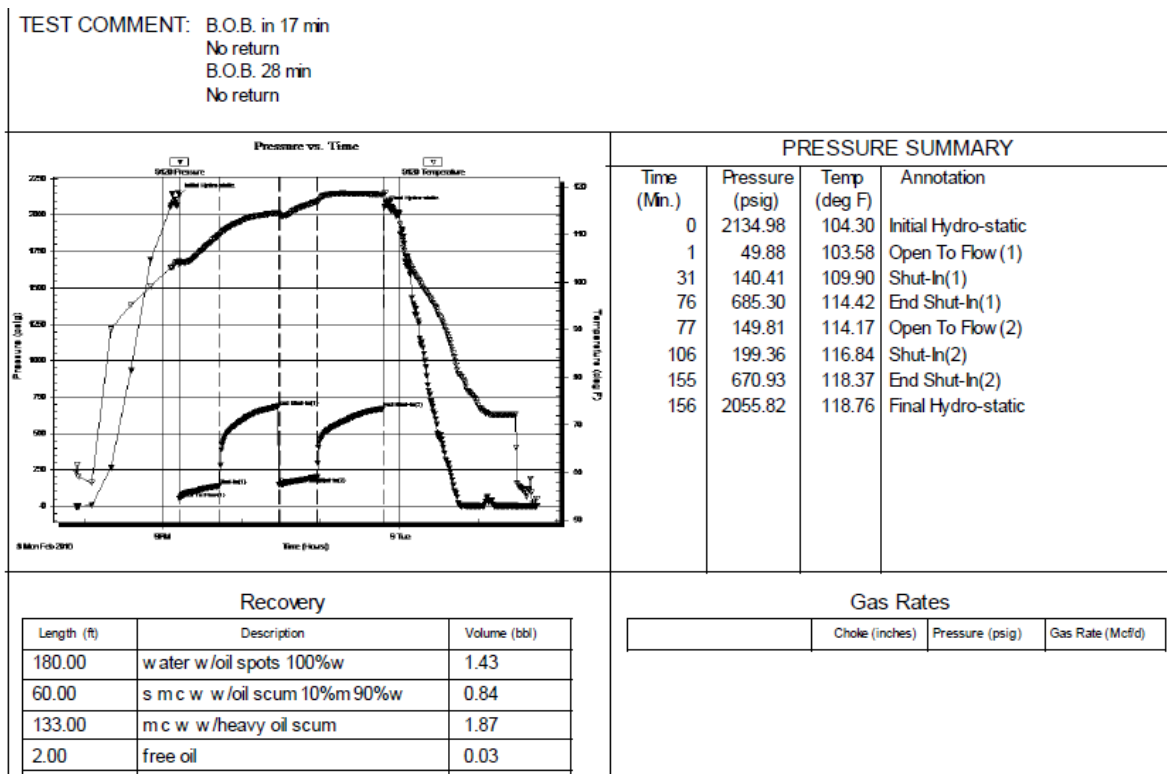
9:00 a.m. depth is 4058' and CFS, 6:00 p.m. depth is 4180, drilling slow, @ 4190' started drilling 8 min/ft, continue to 4201', bit binding up and jumpy, made decision to trip out for bit inspection, bit was in bad shape.

Note: Large amounts of Pyrite in samples in several upper Lansing zones probably caused bit failure.

2-8-16

8:00 a.m., depth is 4222' and CFS "H" zone. Continue drilling, CFS 4270' "J" zone LS, CRM, good vuggy por, show lt brn oil, fast cut, good odor, good cut flour, Background Gas 30 units, Show 47 Units, 17 Unit Kick, continue drilling CFS 4300' "K", LS gry, f-xln, occ OP cht, gd sct vug and pp por, show free oil in por, strong odor, background gas 43 units, show 60 units, 17 unit gas kick. Coming out of hole for DST #1. (Decided to test zones for pressures, plugged twin well possibly dump flooding zones under CIBP)

DST #1 "J" and "K" 4252'-4300

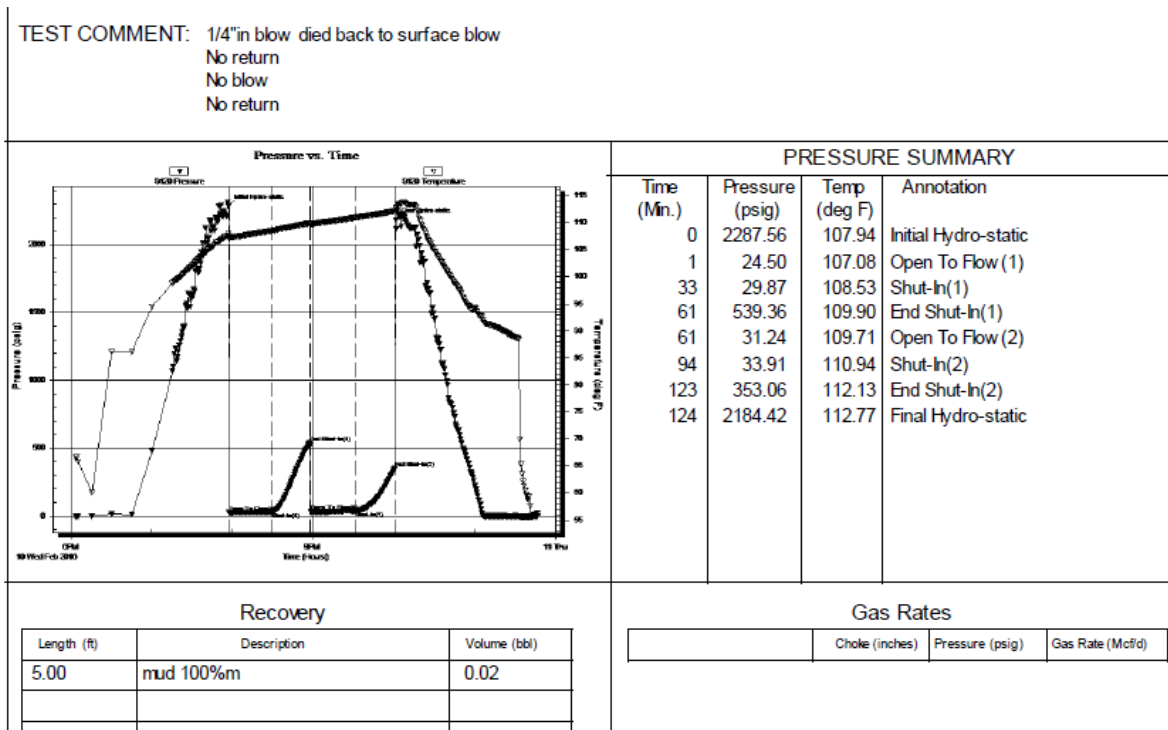


2-9-16

8:00 am, Depth is 4335' and drilling.

2-10-16

CFS 4520', Myrick Station Marmaton Group, LS, tan, m to f-xln por, trc ooc, show free oil in occasional vug por, cut dull yellow flor, odor. CFS 4545' Ft Scott, LS, crm, tn, show free oil in ool por and trace oom, fast strm cut, cut dull yellow flor slt odr will evaluate both on log, Continue drlg, Show Upper Cherokee: LS tn, lt gry, show free oil in rare vug por, fast cut, brt yellow flor with cloud cut, CFS 4632 Johnson Zone, LS tn lt gry, fxln, scattered fair-good vug por, weath, good show med brn oil, fast cut, cut brt yellow flor, instant halo to to streaming cut, odor, Backround Gas 40 units, Show 67 units, 27 unit gas kick, 6:32 p.m. making up tool for DST #2 Cherokee-Johnson 4554'-4632.



2-11-16

6:30 a.m. depth is 4690 and CFS, CFS Morrow Sand: SS, Clr, lt gry clus, show free oil, excellent show med brn oil on brk, fast to streaming cut yellow florescents, good odor, oil droplets floating in sample cup. Backround gas 28 units, Show 52 units, 24 unit kick, Drill down to Miss 4706' and CFS. Trip out of Hole for DST #3

DST #3 4632-4706 Morrow Sandstone 60-30-60-60 IF: Weak Blow Building to 1" FF: Weak Blow Building to 1/2" IF: 22-46# FF 47-63# ISIP 452# and building FSIP 916# and still building. Recovery 70 ft Oil cut mud.

Drill down to RTD 4800' Mississippian.

2-12-16

MIRU Pioneer Wireline and run DIL, DUCP, Micro stack. Run straddle DST 4500-4550' Ft. Scott-Myrick Station, Recovery was 400' of mud cut water. Will enclose trilobite report in final copy. Run in the hole to condition to run 4 ½ pipe.

After careful evaluation of samples and favorable log calculations it was decided to run 4.5" casing to further evaluate the Morrow Sandstone. Although the test was tight bottom hole pressure was well over 900# and still climbing. If the tool was shut in 90 minutes instead of 60 pressure would likely be well over 1000#. Log calculations were favorable showing a 6ft interval of clean sand with 14% uniform effective porosity, excellent micro, and SW calculations better than the Gilkerson #1 offset. It appears there is no oil/water contact. Tight rock above and below the Morrow interval should create adequate seals for an aggressive nitrogen foam frac stimulation. Many conversations have taken place with several industry professionals regarding the sand interval and we believe it is likely the zone will give up commercial fluid with a proper stimulation.

Structurally the well ran slightly low to the Marmaton and then higher from the Pawnee to the Mississippian. The Mississippian ran 2ft high to the Gilkerson #1.

Structural Position Chart								
Moore 22-1, NE NE SW Section 22 12s-33w, Logan County KS								
E-Log Final	Berexco Beagley #1		Berexco Gilkerson #1		Moore 22-1		Position R1	Position R2
Stone Corral	2571	+522	2576	+522	2581	+515	-7	-7
Heebner Shale	4009	-916	4005	-907	4004	-908	8+	-1
Toronto	4032	-939	4028	-930	4027	-931	8+	-1
Lansing	4052	-959	4048	-950	4047	-951	8+	-1
BKC	4360	-1267	4359	-1261	4358	-1264	3+	-3
Marmaton	4399	-1306	4384	-1286	4384	-1288	8+	-2
Pawnee	4494	-1401	4475	-1377	4471	-1375	25+	2+
Cherokee Shale	4581	-1488	4560	-1462	4557	-1461	27+	1+
Mississippian	4714	-1621	4694	-1596	4690	-1594	27+	2+

Logs and final mud log will be sent for viewing on Monday. JP