

FORMATION RECORD CONT'D

<u>DEPTH</u>	<u>FORMATION</u>	<u>DEPTH</u>	<u>FORMATION</u>
9562	Shale	10,927	Lime
10,351	Lime	10,941	Lime & Chert
10,380	Granite Wash	11,080	Lime
10,653	Lime	11,097	Lime & Shale
10,692	Lime & Chert	11,127	Lime
10,717	Lime	11,160	Lime & Chert
10,834	Lime & Chert	11,194	Lime

DEVIATION - TOTCO SURVEYS

<u>DEPTH</u>	<u>DEG OFF</u>	<u>DEPTH</u>	<u>DEG OFF</u>	<u>DEPTH</u>	<u>DEG OFF</u>	<u>DEPTH</u>	<u>DEG OFF</u>
160	1/4	4280	1/2	7680	2	8561	3-1/2
300	1/2	4440	1/2	7705	2-1/2	8595	3-1/4
435	1-1/4	4590	1/4	7725	2-1/2	8627	3-1/4
560	1	4800	1/4	7740	2-1/2	8680	3
737	3/4	5000	1/4	7768	3	8730	2-3/4
905	1/2	5170	1/4	7784	3-1/4	8779	2-3/4
1025	3/4	5310	1/4	7800	2-3/4	8828	2-3/4
1225	1-1/4	5500	1/4	7848	3	8870	2-3/4
1477	1	5600	1/4	7850	3	8919	2-3/4
1663	1-1/4	5720	0	7858	3	8965	3
1847	1/4	5800	1/2	7870	3	9000	2-3/4
1930	1-3/4	5884	3/4	7876	3-1/4	9054	2-1/4
2023	1	5955	0	7880	3-1/4	9083	2-1/4
2130	1-1/4	6039	3/4	7900	3-1/2	9158	2
2210	2-3/4	6130	1/2	7932	3-3/4	9194	2-1/4
2240	2-3/4	6170	1/4	7970	3-3/4	9220	2-1/4
2325	2-1/4	6375	1-1/2	8009	4	9258	2-1/2
2365	2-1/2	6440	1-3/4	8050	4	9286	2-1/2
2406	2-1/8	6535	2-1/2	8077	3-3/4	9310	2-1/2
2450	1-3/4	6603	2-3/4	8118	3-1/2	9346	2-3/4
2625	1-1/2	6640	2-1/2	8128	3-1/2	9380	2-3/4
2725	1-3/4	6700	2	8146	3-1/4	9400	2-3/4
2750	1-3/4	6774	1-3/4	8180	3-1/2	9429	2-3/4
2812	1-1/2	6855	0	8205	3-1/4	9465	2-3/4
2880	1-1/4	6973	1-1/4	8227	3-3/4	9500	2-3/4
2970	1-1/2	7037	1/2	8238	4	9531	2-1/2
3060	1-1/2	7100	1/2	8252	4	9590	0
3125	1-1/4	7171	3/4	8268	4	9628	2-3/4
3215	1	7255	7/8	8285	4-1/4	9685	2-1/4
3250	0	7315	7/8	8292	4	9728	2-1/4
3340	1	7342	3/4	8308	4	9830	1-1/2
3425	3/4	7390	1	8330	4	9930	1-1/2
3485	1/2	7425	3/4	8349	4-1/4	10000	1-1/4
3620	7/8	7465	1-1/2	8370	4	10,055	1
3710	1	7490	1-1/2	8395	4-1/4	10,255	2
3925	1/2	7245	1-3/4	8437	3-3/4	10,440	1-3/4
4085	1/4	7570	1-3/4	8486	3-1/2	10,565	1-3/4
4163	1/4	7625	2-1/4	8536	3-1/2	10,935	2

DRILL STEM TESTS

- No. 1, 3-5-53 - 1-1/2 Hour Johnston DST from 6180-6305' with 5/8" choke at 6156' - Packers at 6172' & 6180' - Bombs at 6161' & 6303' - Tool opened 3:15 PM 3-5-53 - Gas to surface in 45 minutes, too small to measure, decreased to very small show at end of test - Recovered 420' drilling fluid, no show oil - HP 2700# - FP 175# - 15 minute BHP 525#.
- No. 2, 3-14-53 - 2 Hour Halliburton DST from 7150-7261' with 5/8" choke at 7121' - Packers at 7142' and 7150' - Bombs at 7127' and 7259' - Tool opened 11:15 PM 3-13-53 - Gas to surface 1-1/4 hours too small to measure - Recovered 275' fluid, 175' drilling mud, 100' oil and gas cut mud, cut 1% oil, no water - HP 3315# - FP 45-95# - 15 minute BHP 680#.
- No. 3, 3-19-53 - 5 Hour 20 minute Johnston DST from 7450-7575' with 5/8" choke at 7427' - Packers at 7442' and 7450' - Bombs at 7571' and 7573' - Tool opened 5:45 AM 3-19-53 - No water blanket, gas to surface 7 minutes, 24 hour rate 472,500 cu. ft. Mud in 45 minutes, oil in 50 minutes - Flowed 200 bbls 40 gravity clean oil 4-1/2 hours - Bleed down to tank 22 bbls oil and reversed out 30 bbls oil - Total oil recovered 252 bbls - Recovered 295 bbls oil below circulating sub - HP 3575# - Flowing Pressure 650-2325# - 15 Minute BHP 3000#.
- No. 4, 3-21-53 - 6 Hour 50 Minute Halliburton DST from 7575-7635' with 5/8" choke at 7551' - Packers at 7567' and 7575' - Bombs at 7557' and 7633' - Tool opened 1:45 PM 3-21-53 - No water blanket - Gas to surface in 11 minutes, 24 hour 439,200 cu. ft. thruout test - Mud in 1 hour 40 minutes, oil 1 hour 50 minutes - Flowing 133 bbls 40 gravity oil, no water in 5 hours - Reversed out 50 bbls oil - Recovered 286' oil, no water below circulating sub - HP 3535# - FP 315-1700# - 15 Minute BHP 3100#.
- No. 5, 3-24-53 - 1 Hour Halliburton DST from 7635-7711' with 5/8" choke at 7612' - Packers at 6728' and 8635' - Bombs at 7617' and 7709' - Tool opened 12:40 AM 3-24-53 - Weak blow air 30 minutes and dead 30 minutes - Recovered 420' fluid 100' drilling mud and 320' oil and gas cut mud, cut 10% oil - HP 3535# - FP 85-230# - 15 Minute BHP 525#.
- No. 6, 4-2-53 - 1-1/2 Hour Halliburton DST from 7900-8010' with 5/8" choke at 7877' - Packers at 7892' and 7900' - Bombs at 7881 and 8008' - Tool opened 12:45 PM 4-2-53 - Medium blow air to very weak blow at end of test - Recovered 2400' fluid, 75' mud and 2325' sulphur water, no oil or gas - HP 3670# - FP 135-1085# - 15 minute BHP 3055#.
- No. 7, 4-15-53 - 2 Hour Halliburton DST from 8415-8488' with 5/8" choke at 8391' - Packers at 8407' and 8415' - Bombs at 8395' and 8486' - Tool opened 8:30 PM 4-15-53 - Used no blanket - Gool blow air at start of test, decreasing to dead in 1 hour Dead 30 minutes - Gas to surface 20 minutes, too small to measure - No fluid to surface - Recovered 7200' fluid, 200' drilling mud, 7000' sulphur water - HP 4030# - FP 2350# to 3380# - 15 Minute BU 3380#.
- No. 8, 4-25-53 - 1 Hour Howco DST with Hydraulic tool from 8963- 9085' with 5/8" choke at 8941' - Packers at 8956' & 8963' - Bombs at 8944' & 9083' - Weak blow air 10 minutes & deat 50 minutes - Recovered 175' drilling mud, no show oil, no water - HP 4560# - FP 115# - 15 Minute BHP 1960#.

DRILL STEM TESTS CONT'D

No. 9, 5-7-53 - 3 Hour 53 Minute Halliburton DST from 9610-9730' with 5/8" choke at 9587' - Packers at 9602' & 9610' - Bombs at 9591' & 9728' - Tool opened 11:42 AM 5-7-53 - Used no blanket - Gas to surface 8 minutes, 24 hour rate 1,552,300 cu. ft. - Mud to surface in 16 minutes, oil in 21 minutes - Flowed 298.30 bbls 46 gravity oil in 3-1/2 hours - Reversed out and bled off 60.89 bbls oil, no water - HP 4845-4685# - FP 1340-2675# - 15 minute BU 3075#.

No. 10, 5-9-53 - 3 Hour 24 Minute Halliburton DST from 9730-9834' with 5/8" choke at 9706' - Packers at 9722' & 9730' - Bombs at 9711- 9832' - Tool opened 2:51 AM 5-9-53 - Used no blanket - Gas to surface 7 minutes, 24 hour rate 1,282,000 cu. ft. - Mud to surface 19 min., oil 22 min., clean to pits 2 min. - Flowed 205.66 bbls 46 gravity oil, no water 3 hours - Recovery - Reversed out 60.24 bbls clean oil, no water - HP 4720# - FP 900-2315# - 15 Min. BU 3075#.

No. 11, 5-11-53 - 7 Hour 26 Minute Halliburton DST from 9834-9936' with 5/8" choke at 9808' - Packers at 9827' & 9834' - Bombs at 9815' & 9934' - Tool opened 5:59 PM 5-10-53 - Good blow gas - Used no blanket - Gas to surface 7 minutes, 24 hour rate 570,900 cu. ft. - Mud to surface 1 hour 11 minutes, oil to surface 1 hour 21 minutes - Flowed 132.94 bbls 46 gravity oil, no water 6 hours - Recovered approximately 10 bbls oil, circulated to pits - Pipe stuck above packers, unable to get BU - HP 4770# - 4850# - FP 30-1130#.

No. 12, 5-14-53 - 3 Hour Halliburton DST from 9936-10,061' with 5/8" choke at 9911' - Packers at 9927' & 9936' - Bombs at 9916' & 10,059' - Tool opened 9:30 AM 5-13-53 - No blanket - Tool opened with good blow, gas to surface 14 minutes, 24 hour rate 270,000 cu. ft. - No fluid to surface - Recovered 3440' fluid, 465' oil & gas cut mud, cut 50% oil - 2975' clean oil, no water - HP 4810# - FP 145-1245# - 15 minute BU 2240#.

No. 13, 5-17-53 - 2 Hour Halliburton DST from 10,061-10,186' with 5/8" choke at 10,042' - Packers at 10,053' & 10,061' - Bombs at 10,048' & 10,184' - Tool opened 9:45 AM 5-17-53 - No blanket - Good blow at start of test - Gas to surface 8 minutes, 24 hour rate 69,800 cu ft - No fluid to surface - Recovered 1400' fluid, 150' oil & gas cut drilling mud, cut 30% oil - 1200' clean oil and no water - HP 4800-5035# - FP 170-540# - 15 Minute BU 3000#.

No. 14, 5-20-53 - 3 Hour Halliburton DST from 10,186-10,311' with 5/8" choke at 10,161' - Packers at 10,178' & 10,186' - Bombs at 10,167' & 10,309' - Tool opened 1:15 AM 5-20-53 - No blanket - Good blow at start of test - Gas to surface 9 minutes, 24 hour rate 17,100 cuft - No fluid to surface - Recovered 1950' fluid 540' oil & gas cut drilling mud, cut 50% oil, 1410' of 46 gravity clean oil, no water - HP 4815-4860# - FP 195 - 525# - 15 Minute BU 1060#.

No. 15, 5-23-53 - Misrun

No. 16, 5-23-53 - Misrun

No. 17, 5-24-53 - Misrun

DRILL STEM TESTS CONT'D

No. 18, 5-24-53 - 2 Hour Halliburton DST from 10,345-10,444' with 5/8" choke at 10,322' - Packers at 10,337' & 10,345' - Bombs 10,325' & 10,442' - Tool opened 6:20 PM 5-24-53 - Light blow air, decreased to dead 1-1/2 hours - Recovered 150' oil and gas cut drilling mud, cut 10% oil, no water - HP 4920# - FP 60-85# - 15 minute BHP 430#.

No. 19, 5-27-53 - 2 Hour Halliburton DST from 10,445-10,569' with 5/8" choke at 10,419' - Packers at 10,427' & 10,445' - Bombs at 10,424' & 10,567' - Tool opened with fair blow - Gas to surface 39 minutes, 24 hour rate 27,200 cu. ft. - No fluid to surface - Recovered 630' fluid, 120' drilling mud, 510' oil & gas cut drilling mud, cut 50% oil - No free oil or water - HP 4730-4760# - FP 130-270# - 15 minute BU 575#.

No. 20, 6-4-53 - 1 Hour Howco DST from 10,569-10,694' with 5/8" choke at 10,545* Packers at 10,561' & 10,569' - Bombs at 10,550' & 10,692' - Tool opened 5:20 PM 6-4-53 - No blanket - No gas or fluid to surface - Recovered 50' drilling mud - Weak blow 10 minutes, dead 50 minutes - HP 4920# - FP 40# - 15 Minute BU 70#.

No. 21, 6-12-53 - 1 Hour Halliburton Drill Stem Test from 10,694-10,816' with 5/8" choke at 10,668' - Packers at 10,686' and 10,694' - Bombs at 10,675' and 10,814' - Tool opened 8:40 AM 6-12-53 - No water blanket - Weak blow air thruout test - Recovered 270' fluid, 150' drilling mud, 120' oil and gas cut drilling mud, cut 5% oil, no water - Hydrostatic Pressure 5100# - Flowing Pressure 200# 15 Minute BHP 2900#.

No. 22, 6-15-53 - 1-1/2 Hour Halliburton DST from 10,816-10,941' with 5/8" choke at 10,783' - Packers at 10,806' and 10,816' - Bombs at 10,791' and 10,939' - Tool opened 11:15 PM 6-15-53 - Medium blow gas to surface in 40 minutes, too small to measure - Decreased weak blow at end of test - Recovered 420' oil and gas cut drilling mud with trace of oil, no water - HP 5040# - FP 120# - 15 Minute BHP 1020#.

No. 23, 6-19-53 - 1-1/2 Hour Halliburton DST from 10,941-11,066' with 5/8" choke at 10,917' - Packers at 10,933-10,941' - Bombs at 10,921-11,064' - Tool opened 4:20 A M 6-19-53 - Good blow air 10 minutes, decreased to very weak at end of test - Recovered 885' fluid, 225' oil and gas-cut drilling mud, 2% oil and 660' salt water - HP 5300# - FP 250-510# - 15 Minute BHP 2700#.

100

The first part of the paper discusses the importance of the study and the objectives of the research. It also outlines the methodology used in the study and the results obtained. The second part of the paper discusses the implications of the study and the conclusions drawn from the research. The third part of the paper discusses the limitations of the study and the areas for future research.

The study was conducted in a laboratory setting and the results were compared with those obtained in previous studies. The study found that the results were consistent with those obtained in previous studies and that the methodology used in the study was valid. The study also found that the results were consistent with those obtained in previous studies and that the methodology used in the study was valid.

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