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11-35s-31w

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WELL FILE

September 9, 1993

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GEOLOGICAL WELL REPORT

Murfin Drilling Company, Inc.
Louderback No. 1-11
660' FNL & 1980' FEL (NW NE) of
Section 11-T35S-R31W,
Seward County, Kansas
API# 15-175-21331

Elevations:	2681' KB(Datum Used) 2679' DF 2672' GL
Contractor:	Murfin Drilling Company, Inc. Rig No. 21
Spud Date:	August 20, 1993
Drilling Completed:	September 6, 1993
Total Drilling Time:	18 Days
Total Depth:	6521' (Driller) 6513' (Electrical Survey)
Hole Size:	12 1/4" to 1450' 7 7/8" to T.D.
Casing:	8 5/8" set at 1447'
Gas Detector:	Earth Tech, 1450' to T.D.
Electrical Surveys:	Halliburton Logging Services, Liberal, Kansas, Tim Gabel, Engineer, Dual Induction Laterolog from 6507' to 1449' with a gamma ray to 100' (detailed from 6507 to 1449'), a Spectral Density Dual Spaced Neutron Log from 6510' to 1447', a Compensated Sonic Log from 6474' to 1449', and a Microlog from 6509' to 1458'

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Murfin Drilling Company, Inc.
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250 North Water Street
Wichita, Kansas 67202

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Gentlemen:

I have examined samples on the No. 1-11 Louderback from 2344' to a total depth of 6521' in St. Louis (Mississippian) rocks.

A sample log with lithological descriptions, two foot drilling time, gas detector readings and other pertinent data was plotted on a 5"=100' scale from 2500' to T.D.

Samples on this test are being sent to the Kansas Geological Society Sample Cut, 4150 Monroe Street, Wichita, Kansas 67209.

Geological tops corrected to the electrical survey and correlated with the Parlay Oil Company - Perry No. 1 (NE NE of Section 11-T35S-R31W, Seward County, Kansas) a reported Chester Limestone gas well drilled in 1967 about 1320' east are as follows:

Formation	Murfin No. 1-11 Louderback	Parlay No. 1 Perry
(Elevation-Datum)	2681' KB	2672' KB
Base of Stone Corral	1508 +1173	1505 +1167
Wolfcamp	2636 +45	2633 +40
Winfield	2785 -104	2770 -98
Base of Winfield	2821 -140	2817 -145
Council Grove Porosity	3073 -392	3072 -400
Base of Heebner	4434 -1753	4431 -1759
Toronto	4458 -1777	4452 -1780
Lansing	4584 -1903	4574 -1902
Iola	4917 -2236	4898 -2226
Marmaton	5270 -2589	5267 -2575
Cherokee	5444 =2763	5438 -2766
Atoka	5742 -3071	5741 -3069
Morrow	5823 -3142	5820 -3148
Chester (Mississippian)	5979 -3298	5968 -3296
Chester Sand	6218 -3537	6204 -3532
Ste. Genevieve	6310 -3629	6302 -3630
St. Louis	6363 -3682	6362 -3690
T.D. (E. S.)	6513 -3832	6514 -3842
T.D. (Driller)	6521 -3840	6511 -3839

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Zones of interest are discussed below:

Toronto (4458) Samples indicate a light gray to tan, finely crystalline to very finely sucrosic, dolomitic limestone with some very fine size vugs from a four foot zone at 4468'. Yellow fluorescence and light stain with a fair cut were logged. An 88 unit gas detector reading (an increase of 40 units over a 48 unit background) was recorded over this zone. A four foot drilling break of 1 1/2 min/ft (compared to 3 min/ft above) took place at 4468' and samples were circulated at 4490'.

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Drill Stem Test No. 1 over this show yielded only 20' of drilling mud indicating this formation lacks porosity. Electric logs also show no appreciable porosity and no further testing is recommened.

Lansing (4584) Samples indicate a light gray to tan, finely crystalline to chalky, fossiliferous, oolitic limestone at 4597'. Some fine size vugs, yellow fluorescence, stain and fair cut were noted in the good quality samples. This was a one percent show. A 114 unit gas detector reading (an increase of 74 units over a 40 unit background) was recorded at 4598'. A 13' drilling break of 2 min/ft average (compared to 4 1/2 min/ft above) was plotted at 4597'. Four feet at 4597 were drilled at 1 1/2 min/ft. Samples were circulated at 4610'. Electric logs show four feet of 16% density porosity at 4589' with a hint of gas effect. Drill Stem Test No. 2 over this show yielded 180' of gas in pipe and 67' of slightly oil & gas cut mud. This show was significant but too poor to warrant further testing.

Marmaton (5270) Samples show a buff, finely crystalline to chalky to very finely sucrosic limestone with very fine size vugs from a two foot zone at 5320'. Yellow fluorescence with fair cut were seen in the fair quality samples. This was about a one percent show. A 38 unit gas reading (a 20 unit increase over an 18 unit background) was recorded at 5320' and samples were circulated at 5343'. The drilling rate was about 3 1/2 min/ft over this show with only a slight increase for a few feet at 5320'. Drill Stem Test No. 3 over this show yielded only 20' of mud. Electric logs confirm that this zone lacks porosity and no further testing could be recommended.

Cherokee (5444) A very strong 440 unit gas detector reading (an increase of 413 units over a 27 unit background) was recorded from 5660'-5662'. Samples indicate a gray to gray brown, finely crystalline to chalky limestone at 5650'. No porosity was seen in the fair quality samples. Some mineral fluorescence and a trace of a very weak cut were logged. A two foot drilling break of two min/ft (compared to 4 1/2 min/ft above and below) took place at 5660'. Samples were circulated at 4845' but no attempt was made to test this show. Electric logs show three feet of 8% density porosity at 5650'. This zone is too poor to test on its own merit, but may be checked after the more promising formations have been evaluated.

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Morrow (5823) No developed Morrow sands were present. Samples were circulated at 5845' and 5921'.

Chester (5979) Samples show a light gray finely,crystalline to chalky, fossiliferous, oolitic limestone from 5986' to 5934'. Traces of intraoolitic and fine size vuggy porosity were seen. A trace of oolicastic porosity seen may not have been in place. No fluorescence, stain or cut were logged in this part of the Chester. Gas readings of 147 at 5988', 170 at 6013' and 245 at 6029' (background was 40 units) were recorded and samples were circulated ar 6034'. Increases in the drill rate were plotted from 5986-5988', 6008-6009', 6012-6018' and 6029-6034', which were drilled at about 3 1/2 min/ft compared to 5 min/ft above. Drill Stem Test No. 4 over this show yielded 3238' of gas in pipe and 30' of gas cut mud. Electric logs indicate low porosity over this section with two feet of 14% density porosity with gas effect at 5996' being the best. This section was reported to be the pay in the No. 1 Penn. It may be tested thru casing.

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It was noted that samples below 6034 to about 6100' had yellow fluorescence with fair to weak cut, but Drill Stem Test No. 5 over this show yielded only 20' of mud. This section does not warrant further testing.

Chester Sand (6218) Samples indicate a dark brown to tan, very fine grained, calcareous, friable sandstone from a nine foot zone at 6218' on the electric log. Some intergranular porosity, weak fluorescence, saturated stain and good cut were logged. A six foot drilling break of 2 1/2 min/ft average (compared to 5 min/ft above) took place at 6228' . A 170 unit gas detector reading (background was 32 units) was recorded over this zone. Samples were circulated at 6250'. Electric logs show nine feet of 9% average density porosity with gas effect at 6218'. Drill Stem Test No. 6 over this show yielded 1083' of gas in pipe and 70' of gassy slightly oil cut mud. This formstion looks very similar to the Charter Production Company - No. 1 Floyd (Section33-T34S-R31W, Seward County, Kansas) about 1 1/2 miles northwest that was recently completed in this zone. Plans are to thoroughly test this sand thru casing.

Samples also indicate a light gray to brown, finely crystalline, micro-oolitic limestone at 6286'. This formation was also partly arenaceous. Stain and good cut were logged. A trace of sandstone with show possibly from 6218' was noted in this section. A 225 unit gas reading (background was 110 units) was recorded. Sample quality was fair and this was a one percent show. The drilling rate was about 3 1/2 min/ft from 6286-6289' (compared to 4 1/2 min/ft above) . Samples were circulated at 6336', but it was decided this was too poor to warrant testing. Electric logs show about two feet of 5 1/2% density porosity with no gas effect at 6275'. This is too poor to warrant testing on its own merit.

St. Louis (6363) No sample or gas detector show were recorded over this formation.

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Summary and Conclusions

Production casing has been set. Plans are to thoroughly test the Chester Sand at 6218' and possibly other zones.

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Drill Stem Test Field Results

DST No. 1, 4467'-4490', Toronto Limestone, 23' of anchor, 30 minute initial flow period opened with a weak blow very slowly increasing (Two inches in water at end), 60 minute initial shut in period, 60 minute final flow period opened with a weak blow slowly increasing (Five inches in water at the end), 120 minute final shut in period, recovered 20' of drilling mud with no show of gas, oil or water.

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IHP 2144, 30" IFP 41-41, 60" ISIP 217, 60" FFP 41-41, 120" FSIP 845, FHP 2093, BHT 108°F

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Sample chamber recovery was 4000 cc of mud at a pressure of 450 psi. No gas, oil or water present. Chamber capacity is 4000 cc.

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Recovery RW was 1.4 ohms at 80°F with calculated chlorides of 4500 ppm
Sampler " " " " "
Pit chlorides was 4000 ppm

Trilobite Testing Company, Satanta, Kansas, Tom Horacek, Engineer, August 26, 1993. This was a good test mechanically.

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DST No. 2, 4594'-4610', Lansing, 16' of anchor, 30 minute initial flow period opened with a weak blow steadily increasing to strong (off bottom of bucket in seven minutes), open to 2" line then back to bucket with no blow, 60 minute initial shut in period, 60 minute final flow period opened with a weak blow slowly increasing (eight inches in water at end), 120 minute final shut in period, Recovered 180' of gas in pipe and 240' of total fluid (67' of slightly oil & gas cut mud - 5% gas, 2% oil & 93% mud, and 173' of salt water).

IHP 2182, 30" IFP 82-82, 60" ISIP 1209, 60" FFP 122-136, 120" FSIP 1222, FHP 2157, BHT 112o F

Sample chamber recovery was 1.2 cu ft of gas & 3800 cc of salt water at a pressure of 400 psi. No oil or mud present. Chamber capacity is 4000 cc.

Top recovery RW is 0.070 ohms at 73°F with calculated chlorides of 120000ppm
Bottom " 0.071 " " "
Sampler " 0.071 " " "
Pit mud chlorides was 4000 ppm.

Trilobite Testing Company, Satanta, Kansas, Tom Horacek, Engineer, August 27, 1993. This was a good test mechanically.

DST No. 3, 5308'-5343', Marmaton Limestone, 35' of anchor, 30 minute initial flow period opened with a very weak blow that died in six minutes, 60 minute initial shut in period, 60 minute final flow period opened with no blow, 120 minute final shut in period, recovered 10' of drilling mud with no show of gas, oil or water.

IHP 2580, 30" IFP 55-55, 60" ISIP 55, 60" FFP 41-41, 120" FSIP 55, FHP 2542, BHT 118°F

Sample chamber recovery was 4000 cc of mud at a pressure of 10 psi. No gas, oil or water present. Chamber capacity is 4000 cc.

Trilobite Testing Company, Satanta, Kansas, Tom Horacek, Engineer, August

30, 1993. This was a good test mechanically.

DST No. 4, 5987'-6034', Chester Limestone, 47'of anchor, 30 minute initial flow period opened with a weak blow increasing to strong (off bottom of bucket in 1 1/2 minutes), opened to two inch line, no gas at surface, 45 minute initial shut in period, 90 minute final flow period opened with a strong blow (off bottom of bucket in 15 seconds), but no gas at surface, 180 minute final shut in period, Recovered 3238' of gas in pipe and 30' of slightly gas cut mud (2% gas & 98% mud).

IHP 2992, 30" IFP 82-82, 45" ISIP 932, 90" FFP 95-82, 180" FSIP 1587, FHP 2941, BHT 126°F

Sample chamber recovery was 28.4 cu ft of gas and 800 cc of mud.at a pressure of 1250 psi. No oil or water present. Chamber capacity is 4000 cc.

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Trilobite Testing Company, Satanta, Kansas, Tom Horacek, Engineer, September 2, 1993. This was a good test mechanically.

DST No. 5, 6034'-6112', Chester Limestone, 78' of anchor, 30 minute initial flow period opened with a weak blow that died in eight minutes, 45 minute initial shut in period, 60 minute final flow period opened with a weak blow that died in 14 minutes, 90 minute final shut in period, Recovered 20' of drilling mud with no show of gas, oil or water.

IHP 3018, 30" IFP 82-82, 45" ISIP 95, 60" FFP 68-82, 90"FSIP 95, FHP 2941, BHT 128°F

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Sample chamber recovery was 4000 cc of mud at a pressure of 30 psi. No gas, oil or water present. Chamber capacity is 4000 cc.

Trilobite Testing Company, Satanta, Kansas, Tom Horacek, Engineer, September 3, 1993. This was a good test mechanically.

DST No. 6, 6205'-6250', Chester Sand, 45' of anchor, 30 minute initial flow period opened with a weak blow steadily increasing to strong (off bottom of bucket in 28 minutes), 60 minute initial shut in period, 60 minute final flow period opened with a strong blow (off bottom of bucket in one minute), no gas at surface, 120 minute final shut in period, Recovered 1083' of gas in pipe and 70' of gassy, slightly oil cut mud (64% gas, 4% oil & 32% mud).

IHP 3107, 30" IFP 68-68, 60" ISIP 1058, 60" FFP 82-82, 120" FSIP 1360, FHP 3082, BHT 130°F.

Sample chamber recovery was 30 cu ft of gas, a trace of oil and 600 cc of mud at a pressure of 1150 psi. No water present. Chamber capacity is 4000 cc.

Trilobite Testing Company, Satanta, Kansas, Tom Horacek, Engineer, September 5, 1993. This was a good test mechanically.

Bit Record

Bit No.	Size	Make	Type	Depth Out	Feet	Hours
1.	12 1/4"	Smith	FDS	1450'	1450'	17
2.	7 7/8"	HTC	ATJOS6	4490'	3040'	70 3/4
3.	"	"	ATJ22	5343'	853'	42 3/4
4.	"	"	ATJ22S	6521'	1178'	81 3/4

Deviations

358'	1/8°	1289'	1 3/4°	4610'	1/4°
534'	1/4	1415'	1	5343'	1
723'	1 3/4	1450'	1	6034'	1
754'	1 1/4	1952'	3/4	6112'	1
848'	1 3/4	2457'	1/2	6521'	3/4
974'	1/2	3461	1/4		
1131'	1/2	4490'	1/8		

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