GEOLOGICAL REPORT

W. J. COPPINGER--MAHONEY #1 TEAGARDEN

C SW NW Sec. 4, T35S-R34W

SEWARD COUNTY, KANSAS

Douglas W. Marden
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Liberal, Kansas
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OPERATOR:	W. J. Coppinger--Mahoney
FARM & WELL NO:	Teagarden #1
LOCATION:	C SW NW of Section 4, T35S-R34W Seward County, Kansas
CONTRACTOR:	Mahoney Drilling Company
ELEVATIONS:	2917' G.L. 2924' D.F. 2926' K.B. (Datum)
TOTAL DEPTH:	6595' (K.B.) Driller 6597' (K.B.) Schlumberger
SPUD:	11-6-65
COMPLETED:	11-21-65
CASING:	8 5/8" @ 1468' w/700 sacks 4½" @ 6593' w/200 sacks
PRODUCTION:	Chester Sand Oil
WELLSITE PROCEEDURE:	Ten foot wet samples were caught from 4000' to RTD of 6595' (KB) Driller. Samples were examined for lithology, porosity and shows of oil or gas between 4300-4500' and from 5800' to 6595' (KB) Driller's total depth. A sample log showing lithology and drilling time is included in the back of this report.
DRILLING TIME:	One foot drilling time was recorded by Geolograph from surface to RTD of 6595' (KB) Driller. See drilling time sheets from 4300-4500' and from 5800-6595' at back of report.
ELECTRICAL LOGS:	Schlumberger detailed Dual-Induction E. S., Compensated Formation Density log with Gamma Ray, and a Proxemity-Microlog were conducted from 4000' to 6595' (KB) Driller. These logs were used to evaluate potential oil and gas zones with regard to porosity and connate water content.

GEOLOGICAL TOPS, POROSITY DESCRIPTIONS and PERTINENT DATA:

Schlumberger Tops:

Pennsylvanian System:

Virgilian Series:

Shawnee Group:

Heebner Shale: 4298 (-1372)

Upper Toronto Limestone: 4351 (-1425)

4350-4362' Limestone, light gray, white, tan, micro-crystalline, some speckled and mottled gray, very fine to finely crystalline, sub-chalky, traces of vuggy porosity, no shows. Porosity 12%, salt water 63%.

Lower Toronto Limestone: 4387 (-1461)

4389-4402' Limestone, white, buff, some pearl gray, very fine to medium-crystalline, clastic, fossiliferous--scattered vuggy porosity. Porosity 11%, salt water 42%.

Lansing-Kansas City Groups: 4450 (-1524)

4463-4472' & 4482-4490' Limestone, white, buff, very finely crystalline, scattered porosity, no visible porosity in upper interval, some poor scattered porosity in lower interval.

Interval	Porosity	Salt Water
4463-4472'	8-10%	90-100%
4482-4490'	6-14%	74-100%

Morrowan Series: 5872 (-2946)

6164-6168' Sandstone in top 2', very light gray, very fine-grained, calcareous, glauconitic, no visible porosity, no shows, becoming a limestone, gray, cream, fine-coarse crystalline, sandy, no shows. Very poor porosity.

Mississippian System:

Chesterian Series: 6175 (-3249)

6242-6250' Limestone, cream, buff, some tan, fine-medium crystalline, scattered oolites and fossils, no visible porosity, no shows.

Interval	Porosity	Salt Water
6242-6244'	5½%	55%
6244-6250'	9½%	34%

Chesterian Series (Cont'd.)

6262-6271' Limestone, cream, buff, fine to coarse crystalline, some fragmental, slightly sucrosic in part, fossiliferous, inter-granular porosity.

Interval	Porosity	Salt Water
6262-6268'	9½%	38%
6268'-6271	6½%	48%

Lower Chester Sands: 6479 (-3553)

6469-6474' & 6486-6492' Sandstone, brown, fine-grained, well sorted, good even, brown stain, visible inter-granular porosity, calcareous.

Interval	Porosity	Salt Water
6469-6474'	9%	39%
6486-6492'	8½%	51%

6496-6509' Sandstone as from 6486-6492' except very fine-grained. Very calcareous.

Interval	Porosity	Salt Water
6496-6500'	6%	51%
6500-6504'	7%	47%
6504-6509'	11%	48%

6522-6548' Sandstone, fine-grained, brown spotty oil stain, very calcareous. Well sorted, visible inter-granular porosity.

Interval	Porosity	Salt Water
6522-6530'	10½%	28%
6530-6534'	16½%	39%
6534-6538'	15%	25-23%
6538-6540'	10%	36%
6540-6548'	8%	31%

Meramec Series:

Ste. Genevieve Group: 6558 (-3632)

Note: There were no zones of porosity in the limestones of Ste. Genevieve age penetrated in this well.

R.T.D. 6595 (KB) Driller
L.T.D. 6597 (KB) Schlumberger

STRUCTURAL COMPARISON:

	Coppinger--Mahoney Teagarden #1 C SW NW 4-35S-34W	Anadarko Lemert A-1 1250 fr. S&W lines Sec. 4-35S-34W	Coppinger Long #2 C NE SE 5-T35S-34W
Lansing-K. C.	4450 (-1524)	4445 (-1506)	4440 (-1501)
Morrow	5872 (-2946)	5897 (-2958)	5888 (-2949)
Chester	6175 (-3249)	6186 (-3247)	6196 (-3257)
L. Chester Sands	6479 (-3553)	6472 (-3532)	6484 (-3545)
Ste. Genevieve	6558 (-3632)	6550 (-3610)	6525 (-3596)

It may be seen from the above that the Teagarden #1 is lowest structurally of all three wells on top of the Lansing. On the Morrow the Teagarden #1 is essentially flat with the Long #2 (3' higher) and 12' higher than the Lemert A-1.

On top of the Lower Chester Sands, the Teagarden #1 is 21' low to the Lemert A-1 and 8' low to the Long #2. It is felt that the structural position of the Chester sands in the Teagarden #1 should make for a water-free completion.

OIL & GAS POSSIBILITIES:

Mississippian System:

Chester Limestones: 6242-6250' and 6261-6270' These two limestones should be gas productive. They are producing in the Westhoma--Keating #1 in Section 33, T34S-R34W.

Lower Chester Sandstones: The sandstones found in the following intervals should all be oil productive:

6469-6474'
6486-6492'
6522-6548'

CONCLUSIONS AND RECOMMENDATIONS:

It may be seen from the above discussions that the Chester Limestones 6242-6250' and 6261-6270' should be gas productive. The Lower Chester Sands found in the interval from 6469-6548' should be oil productive.

It is recommended that the Chester Sand from 6522-6548' be perforated for oil production.

D. W. Marden

W. J. Coppinger--Mahoney
Teagarden #1
SW NW Sec. 4, T35S-R34W
Seward County, Kansas

DRILLING TIME LOG

From - To:

4100-10	4-5-5-5-4-3-3-4-4-3	Conn. @ 4109'
-20	3-2-3-3-4-5-5-4-3-4	
-30	4-4-4-3-4-3-3-4-3-3	
-40	3-2-3-4-4-4-4-4-4-4	Conn. @ 4140'
-50	2-2-2-1-2-4-4-4-4-4	
-60	4-4-4-4-3-4-3-3-3-5	
-70	4-4-4-2-4-4-5-4-4-5	Conn. @ 4170'
-80	3-5-4-4-4-5-3-4-5-5	
-90	5-4-4-4-4-4-4-5-4-5	
-00	4-5-3-2-2-3-2-2-3-4	
4200-10	2-4-2-3-4-5-4-5-4-5	Conn. @ 4202'
-20	5-4-6-3-4-5-5-4-4-5	
-30	7-2-2-4-5-4-6-6-3-4	
-40	2-3-3-4-4-5-4-3-5-4	Conn. @ 4232
-50	3-3-2-3-2-2-1-2-2-1	
-60	2-2-2-2-2-2-1-2-1-1	
-70	1-1-2-1-1-1-1-1-1-1	Conn. @ 4261'
-80	1-1-2-3-3-2-2-3-2-3	
-90	2-2-2-2-2-2-1-1-1-3	
-00	3-3-2-2-2-2-2-2-2-1	Conn. @ 4293'
4300-10	2-2-1-1-2-1-2-2-2-1	
-20	1-1-1-3-2-3-3-3-3-3	
-30	1-1-1-1-1-1-1-1-1-1	Conn. @ 4321'
-40	1-2-2-3-3-2-1-2-2-2	
-50	2-2-2-2-2-2-2-3-2-2	
-60	3-1-1-2-2-2-2-1-2-1	Conn. @ 4352'
-70	3-2-2-3-2-2-2-2-1-3	
-80	3-2-3-2-3-2-1-2-2-3	
-90	3-1-2-2-2-1-2-2-1-2	Conn. @ 4384'
-00	1-1-1-2-1-2-1-1-2-1	
4400-10	1-2-2-3-2-3-1-3-2-2	
-20	2-2-2-2-3-3-3-2-2-2	Conn. @ 4414'
-30	2-2-2-1-2-2-1-2-1-2	
-40	2-1-1-2-2-1-2-2-2-3	
-50	2-2-1-3-1-2-2-1-2-3	Conn. @ 4444'
-60	3-3-3-2-2-3-2-1-2-3	
-70	2-1-2-2-2-3-3-2-1-2	
-80	3-2-3-2-4-4-3-2-3-1	Conn. @ 4475'
-90	4-2-2-1-1-1-1-2-3-5	
-00	5-5-5-4-5-6-4-5-5-5	

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From -To:		
5800-10	2-2-2-4-2-1-3-1-1-3	
-20	1-1-2-2-1-1-1-2-1-1	Conn. @ 5815'
-30	3-2-2-2-2-4-2-5-3-2	
-40	2-1-4-5-4-5-4-4-5-4	
-50	4-5-4-4-4-4-6-4-4-4	Conn. @ 5845'
-60	3-4-4-4-4-3-4-3-5-4	
-70	4-3-3-3-2-2-3-1-2-2	
-80	3-2-2-3-3-2-2-2-2-3	Conn. @ 5876'
-90	1-1-2-2-2-2-2-2-2-2	
-00	2-2-1-2-2-1-2-2-2-2	
5900-10	2-2-2-2-1-2-2-2-1-2	Conn . @ 5907'
-20	2-2-2-2-2-2-2-2-3-3	
-30	2-2-2-2-3-3-2-2-2-2	
-40	2-2-2-2-2-2-2-2-2-2	Conn. @ 5937'
-50	2-2-1-2-2-2-2-2-2-2	
-60	2-3-3-3-3-2-3-3-3-2	
-70	3-2-2-2-3-2-3-2-2-3	
-80	2-3-2-3-2-3-2-3-2-1	
-90	2-2-1-2-1-1-2-1-1-2	
-00	1-1-2-1-1-1-2-1-1-2	Conn. @ 6000'
6000-10	1-1-2-1-1-1-2-1-1-1	
-20	1-2-2-1-2-1-2-2-2-1	
-30	1-2-1-2-2-1-2-1-1-1	
-40	2-1-1-2-1-2-2-1-1-1	Conn. @ 6031'
-50	1-1-1-1-1-1-1-1-1-1	
-60	1-1-1-1-1-1-1-1-1-1	
-70	2-2-1-3-1-1-1-1-1-1	
-80	1-1-1-1-1-1-1-1-1-1	
-90	1-1-1-1-1-1-1-1-1-1	
-00	1-1-1-1-1-1-1-1-1-1	Conn. @ 6093'
6100-10	1-1-1-1-1-1-1-1-1-1	
-20	1-1-2-2-1-1-2-2-3-1	
-30	2-1-2-2-1-1-2-1-1-2	Conn. @ 6123'
-40	1-1-1-2-1-1-1-1-1-1	
-50	1-1-1-1-1-1-1-1-1-1	
-60	1-1-1-1-1-2-1-3-2-3	Conn. @ 6153'
-70	2-2-2-3-3-2-2-3-2-1	
-80	2-3-3-2-1-1-1-1-1-2	
-90	3-3-2-2-3-2-1-2-2-3	
-00	3-3-2-3-3-3-3-3-2-4	

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From - To:

6200-10	4-3-3-3-3-3-2-4-3-4	
-20	3-3-2-2-1-2-2-2-3-4	Conn. @ 6212'
-30	2-2-2-2-1-1-1-1-2-2	
-40	1-2-3-3-3-2-3-3-3-3	
-50	3-2-2-2-2-2-3-3-3-3	Conn. @ 6243'
-60	3-4-3-3-3-3-2-3-3-2	
-70	2-2-3-2-2-2-2-2-2-3	
-80	2-3-3-1-1-1-1-2-1-2	Conn. @ 6274'
-90	1-1-1-1-1-1-1-1-1-1	
-00	1-1-1-3-3-1-2-2-3-2	
6300-10	2-2-2-3-2-2-3-2-2-2	Conn. @ 6304'
-20	2-3-2-3-3-3-2-3-3-2	
-30	3-3-3-2-3-3-3-3-3-3	
-40	3-2-3-3-3-3-3-3-3-3	Conn. @ 6335'
-50	3-3-3-2-3-2-3-3-2-3	
-60	2-3-2-3-2-2-2-2-3-3	
-70	2-2-3-3-3-2-2-2-2-3	Conn. @ 6367'
-80	3-2-3-2-3-2-2-3-3-3	
-90	2-2-2-3-3-2-2-2-3-2	
-00	2-2-2-2-2-2-2-2-2-2	Conn. @ 6397'
6400-10	2-3-3-3-2-1-2-2-3-4	
-20	4-4-5-4-4-3-4-4-3-5	
-30	6-4-5-6-5-5-5-6-4-5	Conn. @ 6426'
-40	4-5-4-5-4-4-4-4-4-4	
-50	4-3-4-3-4-4-3-4-4-4	
-60	4-3-4-5-3-5-4-4-5-5	Conn. @ 6459'
-70	5-4-4-4-4-4-4-5-3-4	
-80	5-4-4-5-4-6-6-4-5-6	
-90	6-5-5-5-4-5-5-3-7-5	Conn. @ 6489'
-00	4-4-4-4-6-5-3-4-4-3	
6500-10	2-3-4-4-4-5-4-5-6-7	
-20	5-5-7-5-5-6-4-5-3-4	Conn. @ 6520'
-30	4-5-4-6-9-9-4-9-5-5	
-40	4-5-3-4-4-4-5-5-5-5	
-50	4-4-7-7-7-5-6-5-7-	Conn. @ 6550'
-60	5-5-10-12-10-9-5-7-12-13	
-70	12-34-5-4-6-5-7-6-6-8	
-80	8-8-7-8-8-7-7-7-7-7	Conn. @ 6580'
-90	7-7-6-7-7-8-7-8-8-8	
-00	8-8-8-8-8	

R.T.D. 6595'