

November 30, 1970

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GEOLOGICAL WELL REPORT

/ William Gruenerwald &amp; Associates, Inc.

/ #6 Adams, C NW SE Section

/ 11-T35S-R30W, Adams

Ranch Area, Meade County

Kansas

Contractor: Leben Drilling Co. Rig #1

Spud: November 4, 1970

8 5/8" Surface Casing @ 1429'

5 1/2" Production Casing @ 6274'

Rotary Completion: November 11, 1970

Total Depth: 6275 (Rotary) 6264' (E. Log)

William Gruenerwald &amp; Associates, Inc.

P. O. Box 909

Colorado Springs, Colorado 80901

Gentlemen:

Listed below are the pertinent geological tops, an evaluation of the porosities encountered below the top of the Morrow section. No drill stem tests were taken. The hole was logged electrically before being cased. Electric log data included herein.

I arrived at the location at a depth of 5875' and witnessed the drilling from that point to T.D. 6275'. Samples were examined from 5600 to 6275' T.D.

Enclosed herewith is a copy of the plotted drilling time which also includes lithology, porous zones, geologic tops, and other pertinent data.

ELECTRIC LOG TOPS

ELEVATION	2414 KB	
MEMBER SHALE	4253	(-1839)
TORONTO	4319	(-1905)
LANSING-KANSAS CITY	4416	(-2002)
HODGES ZONE	4938	(-2524)

I. G. WRIGHT DONATION

1995

CHEROKEE	5303	(-2889)
ATOKA	5497	(-3083)
MORROW SHALE	5688	(-3274)

No reservoir rocks observed.

CHESTER MISSISSIPPIAN	5792	(-3378)
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No reservoirs observed.

STE. GENEVIEVE	5994	(-3580)
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ST. LOUIS	6086	(-3672)
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6092-6108	Limestone, white, finely oolitic, good porosity, scattered light stains.
6152-6182	Limestone, white to tan, flaky, oolitic. Oolites coarser than those above. Some fair porosity with only scattered oil staining.
6195-6206	Limestone, tan, oolitic to white, chalky, no visible oil staining.

TOTAL DEPTH:	6275 (rotary)	6264 (E. Log)
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NOTE: The difference of eleven feet in measurement between rotary and electric log is felt to be due to 3 feet difference in measurement and 8 feet of cavings in the hole. This is suggested by correlation of the drilling time and electric log.

#### Conclusions and Recommendations

At the top of the St. Louis, the #6 well is 3 feet higher than your #5. Relative porosities in the St. Louis appear better at the #6 than the #5. On the younger Pennsylvanian markers the #6 appears several feet lower structurally than the #5. However for all practical purposes the two wells are essentially flat.

It was recommended that the hole be cased to test the St. Louis.

Yours very truly,

T. G. Wright

TGW:wlr

BIT RECORD

SMITH	DTJ	1429-2308
SMITH	3JS	2308-4428
HUGHES	J44	4428-5928
SMITH	SS4J	5928-6275 TD

DRILLING PROGRESS

11-4	Spud
11-5	1101
11-6	1429
11-7	2388
11-8	3010
11-9	3638
11-10	4269
11-11	4534
11-12	4914
11-13	5236
11-14	5503
11-15	5804
11-16	5995
11-17	6219
11-18	6275 TD
11-19	6275 TD WOC

*Handwritten notes:*  
- 1429 WOC  
- 2966  
- 3520  
- 4400  
- 4700  
- 5200  
- 5500  
- 5800  
- 5900  
- 6200

# Log Analysis

SCHL

COMPANY

Wm. GRUENERWALD & ASSOC. INC

WELL

ADAMS # 6

FIELD

ADAMS RANCH WEST MEADE

COUNTY

STATE

KANSAS

DEPTH	R <sub>w</sub>	m	MATRIX	R <sub>t</sub>	% POROSITY	% WATER	REMA
<u>CHASE</u>							
2516-26	.04	2.0	DOL	5	17-20	43	
2576-78	"	"	"	4	20-22	42	
2630-40	"	"	"	3→2	28→21	36→60	
40-46	"	"	"	0.8	22-24	86	
<u>COUNCIL GROVE</u>							
2832-39	.035	2.8	Lm	20	22-29	28	
39-43	"	2.0	"	5	8-12	79	
43-49	"	"	"	2.2	14-16	78	
2792-96	"	"	"	20	13-15	28	
3009-14	"	"	"	3.5	19-21	44	
3016-20	"	2.8	"	22	23-25	28	
20-30	"	"	"	22	25-31	26	
<u>KANS. CITY</u>							
4817-21	.04	2.0	Lm	30	5-7	62	
4939-45	"	"	"	14	8-10	58	
45-51	"	"	"	12	6-8	83	
5029-34	"	"	"	10	10-16	40 *	

5045-50

" " "

7

20-25 31

MORROW

5748-54

.035 H SD

8

12-14 47

5760-65

" " "

9

11-14 47

5782-86

" " "

10

13-16 34

MISSISSIPPI

6094-97

.035 2.0 L177

25

4-6 54

97-02

" " "

35

4 79

6102-08

" " "

35 → 20

4 → 6 79

6152-54

" " "

35

9-11 31

54-63

" " "

30 → 22

9 → 10 36 → 38

63-67

" " "

150

4-6 30

67-72

" " "

50

7-8 33

72-75

" " "

90

8-10 31

75-78

" " "

100

5-7 32

78-82

" " "

150

4-6 30

6195-98

" " "

17

5-9 68

6200-06

" " "

5

6-10 100

All interpretations are based on inferences from electrical or other measurements, and we cannot, and do not, guarantee the accuracy of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 7 of our General Terms and Conditions as set out in our current Price Schedule.

DATE  
NOV. 18, 1970

LOCATION  
LIBERAL, KANSAS

ENGINEER  
PATTERSON, D