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Date: JUN 1 1989

FROM CONFIDENTIAL

GEOLOGICAL REPORT

FRONTIER OIL COMPANY

NO. 3 SEUSER

SW SE SW Sec. 19-18S-17W

RUSH COUNTY, KANSAS

JUN 19 1989

KANSAS GEOLOGICAL SURVEY
WICHITA BRANCH

DATE COMMENCED: March 25, 1988

DATE OF RTD: April 3, 1988

GEOLOGIST: Richard D. Parker

MAY 11 1988

KANSAS GEOLOGICAL SURVEY
WICHITA BRANCH

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RECEIVED
STATE CORPORATION COMMISSION

MAY 16 1988

CONSERVATION DIVISION
Wichita, Kansas

19-18-17W

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Frontier Oil Company
1720 KSB&T Building
Wichita, Kansas 67202

Frontier Oil Company
No. 3 Seuser
SW SE SW Sec. 19-18-17W
Rush County, Kansas

Dear Sir:

The following is a Geological Report, with a Time Log attached, on the above captioned well.

Drilling was supervised from 2900' to 3748', rotary total depth. Samples were examined from 2900' to rotary total depth.

All formation tops, zones of porosity and staining are based on rotary bushing measurements. Any corrections in measurements during the drilling of the well have been incorporated into this report.

Elevation (American Elevations)	1984 DF -- 1987 KB	
Anhydrite	1097	+ 890
Topeka	3057	-1070
Heebner	3302	-1315
Toronto	3321	-1334
Lansing-Kansas City	3358	-1371
Base of Kansas City	3610	-1623
Cherty Conglomerate	3692	-1705
Arbuckle	3739	-1752
RTD	3748	-1761
4½" Pipe at	3743	-1756

Structurally, on top of the Topeka the No. 3 Seuser ran flat with the No. 1 Seuser, an Arbuckle producer, one location north. On top of the Lansing-Kansas City the No.3 Seuser ran flat with the No. 2 Seuser. On top of the Arbuckle the No. 3 Seuser ran 6' lower than the No.2 Seuser

ZONES OF INTEREST

TOPEKA (Top 3057)
3057 to 3062

Light tan to grey fine crystalline to fossiliferous lime with no show of oil.

3240 to 3266

Tan sucrosic to fine crystalline lime with good pinpoint porosity. No show of oil.

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3286 to 3294

Tan sucrosic to fine crystalline lime with good pinpoint porosity. No show of oil.

TORONTO (Top 3321)
3321 to 3330

White chalky to dense cherty lime with no show of oil.

LANSING-KANSAS CITY (Top 3558)
3358 to 3364

Tan fine crystalline to dense lime with no show of oil.

3379 to 3384

Tan well developed oolitic lime with no show of free oil of tarry black stain, very faint odor

3502 to 3516

Light tan fossiliferous oolitic oolitic lime with no show of oil.

3556 to 3566

White oolitic to oolitic lime with no show of oil.

ARBUCKLE (Top 3739)
3739 to 3743

White fine crystalline to chert dolomite with a fair odor, scattered show of free oil, spotted stain.

DRILL STEM TEST NO. 1 (TRILOBITE TESTING)
3662 to 3743

30-30-30-30 1st op - wk blo for 20"
2nd op - no blo Flushed tool - no help. Recovered 10' mud.
IF & FF 41-54 ISIP 353 FSIP 176

3743 to 3748

Did not see samples.

DRILL STEM TEST NO.2 (TRILOBITE TESTING)
3662 to 3748

60-30-60-30. 1st op - strong blo
2nd op - strong blo. Recovered 992' fluid consisting of 124' GIP, 186' CGO, 310' HOCM, 186' frothy O, 310' SOCSW. IF 103-321 FF 363-425 ISIP 1174 FSIP 1174.

4½" new 10½" casing was set at 3743', 4' in the Arbuckle and 5' off bottom with 150 sx common cement, 10% salt and 5% gilsonite added. Zero point is 5' AGL and the shoe joint is 38-63' long.

Sincerely,

Richard D. Parker
Richard D. Parker by DDD

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DRILLING INFORMATION ON THE SEUSER NO. 3

Drilling Contractor: Red Tiger Drilling Co.	Drillers: Stegman Lyle Dana
Tool Pusher: Kenneth Lyle	
Spud Date: March 25, 1988	Date of RTD: April 3, 1988
Surface Pipe: 8 5/8" @ 1105'/400 sx	Casing: 4 1/2"/3743'/150 sx

TOTAL FOOTAGE DRILLED PER DAY

Under Surface At 11:45 PM On March 27, 1988

652	Feet	At	7:00 AM	On	3-28-88
025	"	"	"	"	3-29-88
584	"	"	"	"	3-30-88
040	"	"	"	"	3-31-88
475	"	"	"	"	4-01-88
741	"	"	"	"	4-02-88
748	"	"	7:27 AM	"	4-03-88

MUD RECORD

Surface	50 sx gel, 11 sx hulls, 3 sx lime
369	34 sx gel, 2 sx caustic, 2 sx lignite, 1 sk soda ash (Pre-mix)
887	101 sx gel, 6 sx caustic, 6 sx lignite, 3 sx soda ash
550	25 sx gel, 3 sx caustic, 3 sx lignite
567	25 sx gel, 2 sx lignite, 2 sx caustic, 2 sx lignite, 1/2 sk drispac
715	10 sx gel, 1 sk caustic, 1 sk lignite

BIT RECORD

<u>bits</u>	<u>Type</u>	<u>Footage</u>
1	CP-537-CM	1113 to 3748

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DRILLERS TIME LOG

Frontier Oil Company
#3 Seuser

SW SE SW
19-18-17W
Rush County

Elev.: 1984 DF
1987 KB

DEPTH	MINUTES	REMARKS
2900 to 2910	3-3-3-2-3-3-3-2-3-2	
2920	2-3-3-2-2-2-3-2-2-2	
2930	2-2-2-2-1-3-4-3-3-3	
2940	3-3-2-2-2-3-3-2-2-2	
2950	2-3-3-2-2-3-3-2-2-2	
2960	2-3-2-3-2-3-3-2-1-2	
2970	3-3-2-2-1-1-2-2-3-2	
2980	3-3-2-2-2-2-2-2-2-2	
2990	2-2-2-4-4-3-3-2-4-4	
3000	3-3-3-1-1-3-3-2-3-2	
3000 to 3010	4-5-2-4-3-3-5-4-3-4	
3020	4-4-3-4-4-3-5-3-4-4	
3030	3-5-3-3-3-3-5-4-4-4	
3040	4-5-3-4-3-4-6-3-4-4	
3050	5-4-2-2-2-2-2-2-3-2	
3060	2-1-2-1-1-2-1-4-2-3	
3070	3-2-3-3-3-3-4-3-2-3	
3080	2-3-2-3-2-3-4-2-3-3	
3090	2-2-3-4-3-3-3-2-1-2	
3100	2-2-1-3-3-3-3-4-3-3	
3100 to 3110	4-4-3-2-2-2-3-2-2-2	
3120	2-4-3-2-4-4-3-1-2-3	
3130	3-2-3-1-1-1-2-2-4-4	
3140	3-3-3-4-4-4-4-2-3-5	
3150	3-4-4-4-3-3-3-3-3-3	
3160	3-4-3-4-3-4-4-3-4-3	
3170	3-4-3-2-2-2-3-3-3-4	
3180	2-3-4-3-3-3-3-2-4-3	
3190	3-3-2-4-3-4-4-3-3-4	
3200	4-6-5-4-4-4-4-4-3-4	
3200 to 3210	4-4-2-3-2-3-3-3-4-2	
3220	3-3-2-2-1-1-1-1-1-2	
3230	4-3-2-2-2-1-1-2-1-1	
3240	1-2-1-2-1-2-5-3-4-4	
3250	3-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -2-1-1-1	
3260	2-1-1-1-1-1-1-1-1-1	
3270	1-1-1-1-1-2-3-2-2-2	
3280	2-2-1-1-2-2-2-1-1-3	
3290	2-3-2-2-1-3-1-2-1-1	
3300	1-2-1-3-3-4-3-4-4-4	

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3300 to	3310	6-6-4-4-3-2-4-4-5-6
	3320	6-4-4-4-5-6-6-4-5-5
	3330	7-5-4-4-5-5-3-2-3-3
	3340	4-5-5-5-5-4-6-4-3-3
	3350	3-3-3-2-3-2-4-2-2-2
	3360	4-2-3-3-2-3-3-3-4-2
	3370	1-2-2-3-3-3-3-4-4-4
	3380	4-5-4-4-4-4-4-4-4-3
	3390	2-1-1-2-3-4-5-4-4-4
	3400	6-7-3-1-2-4-5-4-4-4
3400 to	3410	5-5-4-5-5-4-5-4-4-4
	3420	5-4-4-3-3-4-4-3-5-3
	3430	4-4-4-2-1-4-5-3-3-4
	3440	3-5-5-3-4-3-5-4-4-5
	3450	4-5-4-4-5-4-4-1-2-1
	3460	1-1-1-1-1-1-1-1-1-1
	3470	1-1-1-2-2-1-2-1-3-5
	3480	5-5-4-4-4-5-4-5-4-4
	3490	3-5-5-4-4-4-4-5-5-6
	3500	7-6-5-6-6-7-7-7-6-5
3500 to	3510	5-6-5-3-2-2-4-3-3-3
	3520	2-5-4-3-2-3-6-4-6-6
	3530	5-5-5-4-5-6-5-5-4-4
	3540	5-4-3-5-4-5-6-5-3-2
	3550	2-2-5-6-5-4-4-4-3-3
	3560	4-4-4-4-3-2-4-2-2-2
	3570	2-3-4-4-4-3-5-5-4-4
	3580	5-6-5-2-2-4-4-4-4-5
	3590	4-5-5-5-4-5-5-5-5-5
	3600	5-5-5-4-4-5-5-5-6-5
3600 to	3610	4-4-3-5-5-5-6-3-4-4
	3620	4-5-5-4-7-6-7-7-6-6
	3630	7-8-5-5-3-4-6-4-4-5
	3640	6-7-3-4-5-4-4-3-2-3
	3650	3-4-4-5-5-6-5-5-4-5
	3660	5-5-5-5-5-6-7-6-5-7
	3670	7-7-7-8-5-5-5-4-5-5
	3680	4-5-5-5-6-8-9-9-10-7
	3690	8-7-7-6-6-6-9-7-6-6
	3700	7-8-6-5-5-5-6-3-4-5
3700 to	3710	3-3-3-3-4-5-7-5-4-4
	3720	2-4-3-3-3-3-4-3-3-4
	3730	3-4-4-3-4-5-3-3-3-4
	3740	3-2-2-2-4-3-3-3-2-1
	3750	1-1-3-3-3-5-4-2-x-x

DST#1 (3662-3743)

DST#2 (3662-3748)