

JAMES C. MUSGROVE

Petroleum Geologist  
2021 Forest  
P.O. Box 1162  
Great Bend, KS 67530

RELEASED  
MAR 28 2001  
FROM CONFIDENTIAL

Office (316) 792-7716

Res. Claflin (316) 587-3444

CONFIDENTIAL

PETRO-X Oil & Gas Company  
Pollock #4  
NW-SE-NE; Section 7-27s-12w  
Pratt County, Kansas  
Page No. 1  
API 15-151-22168-00-06

KCC  
DEC 03 1998  
CONFIDENTIAL

5 1/2" Production Casing Set

- Contractor:** Allen Drilling Co. (Rig #1)
- Commenced:** August 15, 1998
- Completed:** August 23, 1998
- Elevation:** 1900' K.B.; 1898' D.F.; 1890' G. L.
- Casing Program:** Surface; 8 5/8" @ 371'  
Production; 5 1/2" @ 4335'
- Samples:** Samples saved and examined 1900' to the Rotary Total Depth.
- Drilling Time:** One (1) foot drilling time recorded and kept 1900' to the Rotary Total Depth.
- Measurements:** All depths measured from the Kelly Bushing.
- Formation Testing:** None.
- Electric Log:** By Log Tech; Dual Induction Log, Dual Compensated Porosity Log.

RECEIVED  
KANSAS CORPORATION COMMISSION

DEC 04 1998

CONSERVATION DIVISION  
WICHITA, KS

7-27-12w

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	669	+1231
Base Anhydrite	688	+1212
Chase Group	1931	-31
Council Grove	2275	-375
Red Eagle	2545	-645
Admire	2666	-766
Indian Cave	2699	-799
Wabaunsee	2744	-844
Langdon Shale	2768	-868
1 <sup>st</sup> Langdon Sand	Not developed	-
2 <sup>nd</sup> Langdon Sand	Not developed	-
3 <sup>rd</sup> Langdon Sand	2809	-909
Stotler	2866	-966
Tarkio	2929	-1029
Howard	3082	-1182
Severy	3141	-1241
Topeka	3181	-1281
Heebner	3514	-1614
Toronto	3527	-1627
Douglas	3550	-1650
Douglas Sand	3597	-1697
Brown Lime	3692	-1792
Lansing	3709	-1809
Base Kansas City	4049	-2149
Marmaton	4063	-2163

CONFIDENTIAL

	CONSERVATION DIVISION WICHITA, KS	
Mississippian	4146	2046
Viola	4181	-2281
Simpson Shale	2442	-2324
Simpson Dolomite	4244	-2344
Simpson Sand	4257	-2357
Arbuckle	4331	-2431
Rotary Total Depth	4335	-2435
Log Total Depth	4337	-2437

KCC  
DEC 03 1998  
CONFIDENTIAL

(All tops and zones are corrected to Electric Log measurements.)

**SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.**

**CHASE SECTION**

1931-1970' Limestone; gray, sucrosic, dolomitic, scattered porosity, no shows.

**WINFIELD SECTION**

1990-2030' Limestone; gray to tan, fossiliferous, fair porosity, no shows.

**TOWANDA SECTION**

2056-2089' Limestone; gray, finely dolomitic, scattered pin point intercrystalline porosity, no shows.

**FLORENCE SECTION**

2148-2188' Limestone; gray to white, highly fossiliferous, abundant fossil fragment, plus white to gray fossiliferous chert.

**COTTONWOOD SECTION**

2430-2448' Limestone; tan, highly fossiliferous, fair to good porosity, few granular, no shows.

**NEVA SECTION**

2494-2500' Limestone; tan to brown, slightly fossiliferous, increasingly chalky, no shows.

**RED EAGLE SECTION**

2545-2570' Limestone; gray to tan, fossiliferous, oolitic, fair to good porosity, granular in part, trace white to gray chert. Questionable dull yellow fluorescence.

**INDIAN CAVE SECTION**

2699-2708' Sand; gray to grayish green, very fine grained, sub-angular to sub-rounded, shaley, micaceous, fair sorting, friable in part, no stain, no cuts, no show of fluorescence, no gas kick.

**WABAUNSEE SECTION**

2742-2750' Limestone; tan, fossiliferous, chalky, scattered porosity, no shows.

**LANGDON SECTION**

1<sup>ST</sup> Sand Shaley, not developed.

MAR 28 2001

DEC 04 1998

ORIGINAL

KCC

DEC 03 1998

CONFIDENTIAL

FROM CONFIDENTIAL  
CONFIDENTIAL  
CONSERVATION DIVISION  
WICHITA, KS

2<sup>nd</sup> Sand Trace highly shaley micaceous, sand, poorly developed.  
2790-2796'

3<sup>rd</sup> Sand Sand; gray, very fine grained, micaceous, glauconitic, poor  
2809-2814' visible porosity.

#### BERN SECTION

3010-3023' Limestone; gray to cream, fossiliferous, chalky, trace brown chert,  
no shows.

#### HOWARD SECTION

3083-3100' Limestone; gray, medium crystalline, chalky, poor visible porosity,  
questionable stain, no cut, no fluorescence (16 units gas kick).

3100-3108' Limestone; gray to tan, fossiliferous, chalky, scattered porosity, no  
fluorescence, no cut (26 units gas kick).

3110-3130' Limestone; as above, trace brown chert (16 units gas kick).

#### TOPEKA SECTION

3180-3190' Limestone; gray to white, fossiliferous, chalky, poorly developed,  
no shows.

3196-3210' Limestone; as above, chalky, no shows.

3232-3244' Limestone; gray, medium to coarse crystalline, fossiliferous,  
chalky in part.

3254-3270' Limestone; as above, questionable dull gray stain, plus white to  
gray chert.

3324-3338' Limestone; gray, finely crystalline, fossiliferous, good porosity, no  
shows.

3381-3400' Limestone; tan, slightly granular, few cherty, plus gray to tan chert.

3419-3428' Limestone; tan, sucrosic, few dolomitic, fair porosity (12 units gas  
kick).

3441-3460' Limestone; as above, fair porosity, no shows (15 units gas kick).

3475-3500' Limestone; gray to white to tan, fine to medium crystalline,  
granular, good porosity, no shows.

#### TORONTO SECTION

3527-3550' Limestone; gray to tan, fossiliferous, few dolomitic, good porosity,  
trace white to gray chert.

#### DOUGLAS SECTION

3598-3634' Sand; white to gray, fine to medium grained, sub-angular to sub-  
rounded, fair to good sorting, friable, good intergranular porosity,  
micaceous, slightly glauconitic, no fluorescence, no cut, no stain,  
no gas kick.

3718-3730' Limestone; tan, fossiliferous, scattered porosity, questionable  
stain, no show of free oil or odor in fresh samples.

RELEASED

RECEIVED

KANSAS CORPORATION COMMISSION

ORIGINAL

MAR 28 2001

DEC 04 1998

KCC

DEC 03 1998

CONSERVATION DIVISION  
WICHITA, KS

CONFIDENTIAL

CONFIDENTIAL

- 3739-3752' Limestone; gray to white to tan, fossiliferous, chalky in part, scattered porosity, trace stain, trace of free oil and questionable odor in fresh samples.
- 3766-3771' Limestone; white to tan, chalky, fossiliferous in part, no shows.
- 3780-3796' Limestone; white to gray, finely crystalline, scattered intercrystalline porosity, spotty stain, trace white to gray chert, questionable odor in fresh samples.
- 3803-3810' Limestone; tan, fine to medium crystalline, poor visible porosity, no shows.
- 3844-3858' Limestone; as above, plus white chert.
- 3871-3877' Limestone; white, oolitic, scattered dull to black stain, no show of free oil and questionable odor in fresh samples.
- 3902-3912' Limestone; gray to white, fossiliferous, finely crystalline, fair intercrystalline to vuggy type porosity, black to dull gray stain, trace of free oil and faint odor in fresh samples.
- 3914-3928' Limestone; as above, poor stain, poor fluorescence, poor cut, faint odor.
- 3952-3968' Limestone; tan to brown, very finely crystalline, few fossiliferous, scattered intercrystalline to pin point porosity, fair stain and saturation, show of free oil and faint odor in fresh samples.
- 3966-4004' Limestone; tan to gray, cherty (dense).

#### MARMATON SECTION

- 4062-4074' Limestone; tan to gray, finely crystalline, cherty, few granular, no shows.
- 4096-4104' Chert; white to gray, opaque, boney, spotty brown to black stain, no show of free oil or odor in fresh samples.
- 4104-4121' Chert; white to gray, few tripolitic, fair stain and saturation, no show of free oil, spotty yellow fluorescence, fair cut, trace white boney chert.

#### MISSISSIPPIAN SECTION

- 4146-4169' Chert; white to gray, boney, opaque, few semi-tripolitic, scattered porosity, trace poor black (gilsonitic) stain, trace brown stain, no cut.

#### VIOLA SECTION

- 4181-4190' Chert; white to gray, tripolitic, few weathered, fair pin point to vuggy porosity, good stain and saturation, poor show of free oil and good odor (sweet).
- 4190-4224' Chert; as above, white to opaque, scattered porosity, trace of free oil and good odor as above.

PETRO-X Oil & Gas Company  
Pollock #4  
NW-SE-NE; Section 7-27s-12w  
Pratt County, Kansas  
Page No. 5

APS 15-15-22KB 00-00

RELEASED  
MAR 28 2001

RECEIVED  
KANSAS CORPORATION COMMISSION

DEC 04 1998

CONSERVATION DIVISION  
WICHITA, KS

ORIGINAL

KCC  
DEC 03 1998  
CONFIDENTIAL

CONFIDENTIAL

**SIMPSON SECTION**

- 4245-4254' Dolomite; brown, finely crystalline, few sucrosic, sandy in part, golden brown stain, trace of free oil and no odor in fresh samples.
- 4257-4262' Sand; clear, very fine grained, questionable, slightly dolomitic, golden brown stain, show of free oil, friable, fair fluorescence and fair yellow cut.
- 4262-4274' Sand; clear, fine grained, quartzitic, sub-angular to sub-rounded, fair sorting, few friable, fair golden brown to light brown stain, weak show of free oil and faint odor in fresh samples.
- 4274-4290' Sand; white, very fine grain, sub-angular, poor visible porosity, no shows.

**ARBUCKLE SECTION**

- 4231-4237' Dolomite; tan to white to gray, finely crystalline, few sucrosic, poor visible porosity, trace spotty brown stain, weak show of free oil and good odor, fair bright yellow fluorescence.

**Rotary Total Depth 4335 (-2435)**

**Log Total Depth 4337 (-2437)**

**Recommendations:**

On the basis of the favorable structural position and log calculations, it was recommended by all parties involved to set and cement 5 1/2" production casing at 4335' (Rotary measurement) and the following zones be tested in the Pollock #4:

- |                 |                              |
|-----------------|------------------------------|
| 1) Arbuckle     | open hole completion methods |
| 2) Simpson Sand | 4258-4262' perforate         |
| 3) Viola        | 4182-4190' perforate         |
| 4) Lansing 'K'  | 3952-3956' perforate         |
| 5) Lansing 'J'  | 3916-3922' perforate         |
| 6) Lansing 'H'  | 3872-3878' perforate         |
| 7) Lansing 'C'  | 3742-3750' perforate         |

Respectfully submitted;



James C. Musgrove  
Petroleum Geologist