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ORIGINAL

SHIELDS OIL PRODUCERS, INC.  
P O Box 709  
Russell, Kansas

GEOLOGICAL REPORT  
Caldwell No. 1  
NW NE NE of Section 4  
Twp. 9 South, Rge. 28 West  
Sheridan County, Kansas

15-179-21092

Nov. 19, 1997

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CONSERVATION

Shields Oil Producers, Inc.  
P O Box 709  
Russell, Kansas 67665

Geological Report: Caldwell No. 1  
NW NE NE of Sec. 4, T 9 S, R 28 W  
Sheridan County, Kansas

Contractor: Shields Drilling Co., Inc.

Drilling Commenced: Nov. 7, 1997

Drilling Completed: Nov. 17, 1997

Casing Record: 8 5/8" surface casing set at 218' with 175 sacks.  
4 1/2" production casing set at 3936' with 125 sx.

Samples: Saved and examined from 3300' to 4040', RTD.  
Zones of interest are described in this report.  
Samples will be sent to the Kansas Sample Bureau  
at 4150 Monroe, Wichita, Kansas.

Drilling Time: Recorded and plotted from 3300' to 4040', RTD.  
A copy of the plotted drilling time/lithology  
log is included with this report.

Drillstem Tests: 6 by Swift Formation Testers.

Electric Logs: Radiation-Guard-Caliper by ELI.

Elevations: Kelly Bushing: 2683'  
Ground Level: 2678  
Measurements From: K. B.

Formations:	Drilling Depths:	E. Log Depths:	Datums: (E. Log)
Anhydrite	2305	2306	+ 377
Elmont Lime	3462	3462	- 779
Howard Lime	3498	3498	- 815
Topeka Lime	3551	3549	- 866
Heebner Shale	3763	3762	-1079
Toronto Lime	3786	3786	-1103
Lansing-Kansas City	3799	3800	-1116
B Zone	3827	3826	-1143
C zone	3738	3738	-1155
Base of Kansas City	4030	4030	-1347
Total Depth	4040	4040	-1357

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Lithology; Zones of Interest & Test Data: (E. Log Depths)

Un-named Lime:

3438-3446: LS- white, dirty gray and buff dense and slight sucrosic with scattered dead oil stain and gilsonite.

Elmont Lime (for correlation purposes):

3462-3468: LS-white, dense to fair pin hole porosity with scattered dead oil stain

3482-3488: LS-white, gray, dense and some sucrosic with spotty dead oil stain and slight porosity.

Howard Lime:

3498-3508: LS-white, some light gray, dense and sucrosic with slight porosity and spotty dead oil stain and gilsonite.

3518-3522: LS-more gray, dense with poor porosity and spotty dead oil stain.

3532-3540: LS-white, light gray, dense to slight crystalline and fossil porosity. Rare light oil stain with slight show of free oil and some dead oil stain. Tested by drillstem test #1.

DRILLSTEM TEST No. 1: 3530 to 3550: Open 45 min. and shut in 60 min. Had to slide tool to bottom. Very weak intermittent blow thru-out.

Recovery: 125' of mud

Flow Pressures: 84 to 101

Bottom Hole Press: 1109

Topeka Lime:

3603-3620: LS-white, buff, gray, fossiliferous with good porosity. Abundant dark tarry stain, asphaltic residue and gilsonite.

3622-3642: LS-white, dense, crystalline, slight fossiliferous with some crystalline dolomite. Scattered dead oil stain, asphaltic residue and gilsonite.

3688-3694: LS-white, dense to fossiliferous with fair scattered dead oil stain, and asphaltic residue. Fair porosity.

3704-3708: LS-white, dense to chalky with some fossil porosity. Scattered dead oil stain, dark heavy oil stain and asphaltic residue. (This zone would be the productive zone on the producer, 1/2 mile north, based on reported perforations. A re-entry by Bowman Oil in 1992).

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Lithology, cont...

3724-3728: LS-white, dense, slight sucrosic with fair porosity. Scattered dark and dead oil stain and asphaltic residue and scattered light stain with very slight show of free oil and faint oil odor. Some heavy tarry stain. Tested by drillstem test #2.

DRILLSTEM TEST No. 2: 3713 to 3730: Open 45 min. and shut in 60 min. Had to slide tool to bottom. Weak intermittant blow thru-out.

Recovery: 65' of mud  
Flow Pressures: 58-67  
Bottom Hole Press: 1151

3742-3748: LS-white, dense and some chalky. Some buff sucrosic and slight fossiliferous with rare dark oil spotty stain, dead oil stain and trace of light oil stain. No free oil or odor.

Toronto Lime:

3786-3794: LS-white, buff, crystalline to fossiliferous with fair porosity. Scattered light oil stain with faint odor. Some dark and dead oil stain. Some white chert. Tested by drillstem test #3.

DRILLSTEM TEST No. 3: 3754 to 3794: 30-60-30-60 with weak blow thru-out 1st. open period and only 13 min. on 2nd. open.

Recovery: 15' of SOCM  
Init. Flow Press: 32-40  
Init. Bottom Hole Pr. 1184  
Final Flow Press: 48-48  
Final Bottom Hole Pr. 1103

Lansing-Kansas City:

3800-3804: LS-white, some buff, oolitic and fossiliferous and slight vuggy A zone with fair scattered stain, show of free oil and odor. Some tarry stain. Tested by drillstem test #4.

DRILLSTEM TEST No. 4: 3793 to 3810: 30-60-30-60 with weak intermittant blow throughout test. Flushed tool.

Recovery: 10' of muddy oil  
Init. Flow Pressure: 33-33  
Init. Bottom Hole Pres. 958  
Final Flow Pressure: 40-40  
Final Bottom Hole Pres. 991

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Lithology, cont...

3826-3834: LS-white, some buff and light gray dense with fair fossil porosity  
B zone and pin hole porosity. Some vuggy porosity. Scattered light oil  
stain and dark oil stain with show of free oil and odor. Zone  
cherty. Tested by drillstem test #5.

3838-3844: LS-white, gray, sucrosic with good pin hole and vuggy porosity. Some  
C zone fossil porosity. Fair oil stain, good saturation, show of free oil  
and odor. Tested by drillstem test #5.

DRILLSTEM TEST No. 5: 3815 to 3850: 30-60-60-60 with good blow throughout test.

Recovery: 210' of gas  
90' of oil  
60' muddy oil

Initial Flow Pressures: 42-59  
Init. Bottom Hole Press. 1218  
Final Flow Pressures: 60-76  
Final Bottom Hole Press. 1151

3862-3868: LS-white, light gray, crystalline and slight fossiliferous with rare  
E zone dark stain and dead oil stain. Tested by drillstem test #6.

3872-3882: LS-white, with abundant white crystalline dolomite with good porosity.  
F zone Crystalline and pin hole porosity. Rare light and dark oil stain  
with very slight show of free oil. Abundant barren porosity, also.  
Tested by drillstem test #6.

3884-3894: LS-white, dense with some crystalline dolomite with pin hole and crys-  
G zone talline porosity. Some white chert. Very rare light oil stain.  
No free oil or odor. Tested by drillstem test #6.

DRILLSTEM TEST No. 6: 3865 to 3900: 30-60-30-60 with fair steady blow thru-out.

Recovery: 310' of salt water  
Initial Flow Pressures: 77-101  
Init. Bottom Hole Press. 1250  
Final Flow Pressures: 141-168  
Final Bottom Hole Press. 1250

3928-3942: LS-white, light gray, crystalline dense to chalky with rare dark  
H zone tarry stain, no free oil or odor. Fair porosity in upper part.

3954-3960: LS-white, light gray, dense to crystalline dolomitic with some  
I zone chert. Only trace of dark stain. Poor porosity. Appears very  
shaley.

3970-3980: LS-dirty gray, dense with shales. Some tarry residue and asphaltic  
J zone residue.

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Lithology, cont...

3994-4006: LS-white, light gray, dense with trace of porosity. Spotty dark K zone stain and asphaltic residue. More white and gray dense lime.

4016-4030: LS-white, light gray, buff, dense with no show of oil noted. L zone

Remarks & Recommendations:

The following table compares the Caldwell #1 with Slawson's #1 Shaw C (an abandoned producing well, 990' North and 330' East):

	Caldwell #1 NW NE NE Sec. 4-9-28	Diff.	Shaw #1-C C SE SE Sec. 33-8-28
Anhydrite	+ 377	+10'	+ 367
Howard Lime	- 815	+ 6'	- 821
Topeka Lime	- 866	+ 6'	- 872
Heebner Shale	-1079	+ 5'	-1084
Toronto Lime	-1103	+ 3'	-1106
Lansing-Kansas City	-1116	+ 3'	-1119
Top of B zone	-1143	+ 9'	-1152
Top of C zone	-1155	+ 9'	-1164
Base of Kansas City	-1347	+10'	-1357

You will note from the foregoing table that the Caldwell #1 ran higher, structurally, on all horizons when compared to the abandoned producing well to the Northeast. The zones that appeared to have some commercial value were tested by drillstem test and test #5 (covering the B and C zones) recovered a fair amount of gas and oil indicating commercial oil production from those zones.

For production, I recommend perforating the C zone from 3839-44. This zone should be perforated and acidized and tested separately. Then, I recommend that the B zone be perforated from 3827-30. This zone should, then, be acidized and tested separately. Both of these zones should be commercially productive.

At some later date, I do recommend that some additional zones be perforated and tested prior to abandonment. They are: The Lansing A zone from 3800-04. The Plattsmouth from 3742-48 and 3724-28. Above the Queen Hill Shale (Bowman zone) from 3704-08 and from 3689-94; and, the lower Howard Lime from 3536-40.

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Respectfully submitted;

*Francis C. Whisler*

Francis C. Whisler  
Certified Petroleum Geologist