SYNOPSIS

The Ensign Operating Co. No. 1-22 Price, W/2 SW SE Sec 22, T19S, R20W, Rush County, Kansas was 4450-foot wildcat well to test the Kober Prospect for commercial oil production. The location for the test well for the Kober Prospect was selected by an interpretation of seismic data. The primary objective of this wildcat well was a sandstone in the Pennsylvanian Cherokee B interval. Secondary objectives were sandstones in the Cherokee A and C intervals and the Mississippian Osage.

The Cherokee B interval contained no sandstone. The Cherokee A interval also had no sandstone. The Cherokee C interval contained a sandstone. This sandstone was quartzitic and had no shows of oil. The Mississippian Osage dolomite had an oil show. This oil show was drill-stem tested. The test recovered drilling mud indicating the dolomite had very low permeability. There was also a 144 psi pressure drop between the initial and final shut-in pressures of the test.

The well was structurally low on all horizions to the structural position predicted by the interpretation of the seismic data. The well was approximately flat to a few feet low to a nearby well.

After a review of the lithologic samples examinations, an evaluation of the wireline logs, a drill-stem test, and considerations of other factors the decision was made to plug and abandon the well. The well was plugged and abandoned on May 15, 1993.

GENERAL WELL INFORMATION

Operator: Ensign Operating Co.

Well Name: No. 1-22 Price API 15-165-21 630

Prospect: Kober

Location: W/2 SW SE Sec. 22, T19S, R20W, 2310' FEL, 660' FSL

County: Rush

State: Kansas

Elevation: G.L. 2243' K.B. 2252'

Spudded: May 8, 1993 @ 3:00 P.M..

Completed Drilling: May 14, 1993 @ 7:25 A.M.

Total Depth: Driller 4450' Logger 4449'

Status: Plugged and Abandoned, May 15, 1993

Drill-Stem Tests: Drillstem Test No. 1 4357'-4370' Mississippian, Straddle Test 30-60-30-60

I.O. Weak Surface Blow Dead In 10 Min.
F.O. No Blow

Recovery: 5' Mud.

Sampler: 4000 Ml Mud, Trace Oil @ 10 psi

Hydrostatic Pressures 2237-2159 psi
Flow Pressures 30-30:30-30 psi
Shut-in Pressures 1070-926 psi
Bottom Hole Temperature 108° F

Trilobite Testing Co., Paul Simpson, Testor

Logging Program:

DIL/SP/GR	50' - 4448'
CND/GR/Cal	700' - 4411'
ML/GR/Cal	668' - 4412'

Davis Great Guns Logging Inc., Dan Gottschalk, Engineer.

Sample Program: Ten foot samples from 3700' - 4450'.
Samples were examined and described at well site. Samples were caught on depth intervals by rig crews. Samples were lagged by geologist. All depths reported herin are lagged depths. The quality of the samples was good.

Mud Logging: None

Mud Program: MUD•CO, Inc. Harry Weber, Engineer

Lost Circulation: 40 Bbls @ 3000', Pennsylvanian Lansing formation

Contractor: Duke Drilling Company, Rig No. 1, Gary Pugh, Toolpusher

Bit Record:

No.	Size	Make	Type	Depth Out	Feet	Hours
1	12.25	HTC	RT	669'	669'	5.75
2	7.875	HTC	J1	1850'	1190'	11.75
3	7.875	HTC	ATJ11	4161'	2311'	75.25
4	7.875	Reed	HP51X	4450'	289'	13.00

Total Rotating Hours 105.75. Average 42.08 Ft/Hr

Deviation Record:

3/4° @ 669'
1/2° @ 1850'
1/2° @ 4161'

DAILY DRILLING REPORT

Ensign Operating Co.
No. 1-22 Price
W/2 SW SE Sec. 22, T19S, R20W
Rush County, Kansas

7:00 A.M. Reports

1	May 7, 1993	0' (0')	Rig up rotary tools. Spud @ 3:00 P.M..
2	Sat 8	669' (669')	Set 8 5/8" @ 669', Plug down @ 9:30 A.M. Drill Plug @ 6:55 P.M.
3	Sun 9	1535' (866').	
4	Mon 10	2630' (1095')	
5	Tue 11	3275' (660')	
6	Wed 12	3895' (620')	
7	Thru 13	4160' (265')	
8	Fri 14	4440' (280')	
9	Sat 15	4450' (10')	Logging, DST No. 1, P & A.

FORMATION TOPS

Ensign Operating Co.
No. 1-22 Price
W/2 SW SE Sec 22, T19S, R20W
Rush County, Kansas

	G.L. 2243' K.B. 2252'	Comparison Well NW SW 22-19S-20W K.B. 2288'	Drill Time And Samples	Wire Line Logs
Tertiary		Surface +2278'	Surface +2243'	Surface +2243'
Cretaceous				
Cenomanian				
Greenhorn		NL	94' +2158'	88' +2164'
Granerous		250' +2038'	225' +2027'	222' +2030'
Albian				
Dakota		290' +1998'	261' +1991'	256' +1996'
Kiowa		450' +1838'	476' +1776'	472' +1780'
Cheyenne		600' +1688'	595' +1657'	592' +1660'
Permian				
Glaudalupian				
White Horse		800' +1544'	763' +1531'	760' +1530'
Leonardian				
Nipewalla Gr.				
Blaine				
Cedar Hills		905' +1371'	871' +1366'	870' +1366'
Sumner Gr.				
Stone Corral		1487' +801'	1458' +794'	1450' +802'
Ninnescah		1518' +770'	1489' +763'	1480' +772'
Wellington		1696' +592'	1669' +583'	1660' +592'
Hutchinson		1902' +386'	1868' +384'	1858' +394'
Wolfcampian				
Chase Gr.				
Herington		2392' -104	2358' -106'	2348' -96'
Winfield		2464' -176'	2431' -179'	2430' -178'
Gage Shale		2491' -203'	2554' -202'	2455' -203'
Towanda		2528' -240'	2507' -255'	2497' -245'
Fort Riley		2578' -290'	2545' -293'	2542' -290'
Wreford		2710' -422'	2679' -427'	2678' -426'
Council Grove Gr.		2728' -442'	2693' -441'	2692' -440'
Neva		2904' -616'	2878' -626'	2872' -620'
Red Eagle		2970' -682'	2941' -689'	2935' -683'
Foraker		3006' -804'	2974' -722'	2970' -718'
Admire Gr.		3092' -804'	3052' -800'	3048' -796'

	G.L. 2243' K.B. 2252'	Comparison Well NW SW 22-19S-20W K.B. 2288'	Drill Time And Samples	Wire Line Logs
Pennsylvanian				
Virgilian				
Wabaunsee Gr.		3141' -853'	3107' -855'	3104' -858'
Root Shale		3232' -944'	3199' -947'	3196' -944'
Shawanee Gr.				
Topeka		3460' -1172'	3418' -1166'	3416' -1164'
Douglas Gr.				
Heebner		3788' -1500'	3757' -1505'	3758' -1504'
Toronto		3808' -1520'	3772' -1520'	3772' -1520'
Missourian				
Lansing Gr.		3832' -1544'	3800' -1548'	3798' -1546'
Kansas City Gr.				
Bonner Spgs		3900' -1612'	3870' -1618'	3868' -1618'
Base KC		4122' -1834'	4095' -1842'	4100' -1848'
Demoinesian				
Marmaton Gr.				
Pawnee		4214' -1926'	4189' -1937'	4192' -1940'
Labette		4287' -1999'	4258' -2006'	4260' -2008'
Fort Scott		4300' -2012'	4270' -2018'	4274' -2022'
Cherokee Gr.				
A Interval		4309' -2021'	4278' -2026'	4282' -2030'
B Interval		4330' -2042'	4305' -2053'	4300' -2048'
C Interval		4354' -2066'	4326' -2074'	4324' -2072'
Mississippian				
Osagian		4400' -2112'	4363' -2111'	4360' -2108'
Total Depth		4785' -2497'	4450' -2198'	4449' -2197'

Ensign Operating Co.
No. 1-22 Price
W/2 SW SE Sec. 22, T19S, R20W
Rush County, Kansas

Sample examination commenced at 3670 feet and continued to a total depth at 4450 feet. Samples were caught by crews on depth intervals and lagged by geologist. All depths reported herein are lagged depths. A 10 foot sample interval was used from 3670 feet to 4450 feet.

3670 - 3675 Limestone (90%), grayish tan, tan, wackestone, some mudstone. Shale (10%), gray, black.

3675 - 3687 Limestone (95%), grayish tan, tan, wackestone, some mudstone. Shal;e (5%), gray, black.

3687 - 3696 Limestone (95%), grayish tan, tan, wackestone, packstone, some mudstone. Shale (5%), gray, black.

3696 - 3706 Limestone (95%), grayish tan,, wackestone, packstone, some mudstone. Shale (5%), gray, black.

3706 - 3720 Limestone (95%), grayish tan, wackestone, packstone, some mudstone. Shale (5%), gray, black.

3720 - 3735 Limestone (100%), tan, grayish tan, wackestone, packstone, some mudstone. Shale (trace), gray, black.

3735 - 3750 Limestone (100%), tan, grayish tan, wackestone, packstone, some mudstone. Shale (trace), gray, black.

Heebner 3757' -1505'

3750 - 3761 Limestone (90%), grayish tan, gray, wackestone, mudstone, some gray and black medium grained pellets and fragments in wackestone. Shale (10%), black, gray.

3761 - 3774 Limestone (85%), grayish tan, wackestone, some with gray and black medium grained pellets and fragments, mudstone. Shale (5%), black, gray.

Toronto 3772' -1520'

3774 - 3782 Limestone (85%), grayish tan, buff, tan, wackestone, packstone, trace vuggy and pin point porosity, some wackestone with gray and black medium grained pellets and fragments. Shale (15%), gray, black.

3782 - 3790 Limestone (80%), grayish tan, tan, mudstone, wackestone. Shale (20%), gray, greenish gray, black.

Lansing 3800' -1548'

3790 - 3806 Limestone (90%), tan, buff, grayish tan, wackestone, mudstone. Shale (10%), black, gray, greenish gray. Lost 40 barrels of drilling mud at 3800 feet.

3806 - 3815 Limestone (90%),tan, buff, grayish tan, wacksetone mudstone. Shale (10%), black, gray, greenish gray.

3815 - 3830 Limestone (95%), tan, buff, grayish tan, wackestone, ooolitic packstone with oomoldic porosity, packstone, mudstone. Sale (5%), gray, black.

3830 - 3840 Limestone (100%), tan, buff, packstone, oolitic packstone, wackestone, trace oomoldic and vuggy porosity. Shale (trace), gray, black.

3840 - 3846 Limestone (100%), buff, tan, medium grained oolitic packstone with good oomoldic porosity, packstone, some wackstone. Shale (trace), gray, greenish gray. Sample does not fit drill time, probably caught late - 4:00A.M. sample.

3846 - 3855 Limestone (95%), buff, tan, wackestone, packstone, oolitic packstone with oomoldic porosity. Shale (5%), gray, black, greenish gray.

3855 - 3868 Limestone (90%), buff, tan, wackestone, packstone with some vuggy porosity, oolitic packstone with oomoldic porosity. Shale (10%), gray, black.

Bonner Springs Shale 3870' -1618'

3868 - 3877 Limestone (95%), buff, wackestone, packstone, oolitic packstone with oomoldic porosity. Shale (5%), black, gray.

3877 - 3882 Limestone (90%), tan, buff, wackestone, packstone, oolitic packstone with oomoldic porosity. Shale (10%), gray, black. Chert (trace), tan, white.

3882 - 3886 Limestone (90%), buff, tan, wackestone, packstone. Shale (10%), gray, black. Chert (trace), tan, white.

3886 - 3894 Limestone (95%), buff, tan, wackestone, packstone, mudstone, some oolitic packstone with oomoldic porosity. Shale (5%), black, gray.

3894 - 3899 Limestone (90%), buff, tan, wackestone, packstone, oolitic packstone with oomoldic porosity. Shale (10%), gray, black.

3899 - 3909 Limestone (95%), buff, tan, wackestone, packstone, oolitic packstone with oomoldic porosity. Shale (5%), gray, black.

3909 - 3931 Limestone (95%), buff, tan, oolitic packstone with oomoldic porosity, wackestone, packstone. Shale (5%), gray, black.

3931 - 3943 Limestone, (95%) buff, tan, oolitic packstone with oomoldic porosity, wackestone, packstone. Shale (5%), gray, black.

3943 - 3954 Limestone (90%), buff, tan, oolitic packstone with good oomoldic porosity, packstone, wackestone. Shale (10%), gray, black.

3954 - 3964 Limestone (95%), buff, tan, oolitic packstone with oomoldic porosity, packstone, wackestone. Shale (10%), gray, black.

3964 - 3974 Limestone (80%), buff, tan, wackestone, packstone, some oolitic packstone with oomoldic porosity. Shale (20%), gray, black.

3974 - 3988 Limestone (90%), buff, wackestone, packstone, mudstone, trace oolitic packstone with oomoldic porosity. Shale (10%), gray, black. Chert (trace), tan, light gray.

3988 - 3998 Limestone (80%), buff, tan, wackestone, mudstone, some oolitic packstone with oomoldic porosity. Shale (20%), gray, greenish gray, black. Chert (trace), white, tan.

3998 - 4009 Limestone (90%), buff, tan, wackestone, mudstone. Shale (10%), gray, black.

4009 - 4018 Limestone (95%), buff, tan, wackestone, mudstone. Shale (5%), gray, black, green, greenish gray.

4018 - 4025 Limestone (90%), buff, tan, mudstone, wackestone. Shale (10%), gray, black, greenish gray.

4025 - 4044 Limestone (95%), buff, tan, packstone, oolitic packstone with oomoldic porosity, wackestone. Shale (5%), gray, black, greenish gray, pyritic.

4044 - 4054 Limestone (90%), buff, tan, packstone, oolitic packstone with oomoldic porosity. Shale (10%), gray, black, greenish gray, pyritic.

4054 - 4065 Limestone (85%), buff, tan, mudstone, wackestone, trace buff oolitic packstone with oomoldic porosity. Shale (15%), gray, black, greenish gray, pyritic.

4065 - 4076 Limestone (90%), buff, tan, mudstone, wackestone. Shale (10%), gray, black, greenish gray.

4076 - 4083 Limestone (90%), buff, tan, mudstone, wackestone. Shale (10%), gray, black.

4083 - 4094 Limestone (85%), tan, grayish tan, buff, mudstone, wackstone. Shale (15%), gray, greenish gray, black, pyritic. Chert (trace), gray, tan.

Base Kansas City 4095' -1843'

4094 - 4106 Limestone (95%), buff, light tan, mudstone, some wackestone. Shale (5%), gray, black, pyritic.

4106 - 4116 Limestone (90%), buff, light tan, mudstone, some wackestone. Shale (10%), gray, black, greenish gray, pyritic.

4116 - 4125 Limestone (90%), buff, light tan, mudstone, wackestone, some oolitic packstone with oomoldic porosity. Shale (10%), gray, greenish gray, black, pyritic.

4125 - 4136 Limestone (85%), tan, light grayish tan, wackestone, mudstone, with some oolitic packstone with oomoldic porosity. Shale (15%), gray, black, light greenish gray, pyritic.

4136 - 4143 Limestone (90%), tan, buff, mudstone, some wackestone. Shale (10%), gray, black, green, greenish gray, pyritic.

4143 - 4156 Limestone (80%), tan, buff, mudstone, some wackestone and oolitic packstone. Shale (20%), gray, black, red, red-gray mottled, pyritic. First sample in Terra Rossa interval.

4156 - 4166 Shale (100%), dark reddish maroon, green, maroon-green mottled, gray. Limestone (trace), tan, mudstone. Trip sample.

4166 - 4169 Shale (80%), dark reddish maroon, green, gray, maroon-green mottled. Limestone (20%), tan, mudstone.

4169 - 4184 Shale (75%), dark maroon, gray, green, gray-maroon mottled, ochre, purple. Limestone (25%), grayish tan, mudstone, dolomitic.

Pawnee 4189' -1937'

4184 - 4198 Shale (50%), maroon, gray, maroon-gray mottled. Limestone (50%), light gray, grayish tan, mudstone, dolomitic.

4198 - 4207 Limestone (80%), light gray, grayish tan, mudstone. Shale (20%), dark maroon, gray, gray-maroon mottled.

4207 - 4219 Dolomite (15%), light grayish tan, gray, tan, fine crystalline. Limestone (70%), light grayish tan, mudstone. Shale (15%), dark maroon, ochre, gray.

4219 - 4224 Limestone (90%), light gray, grayish tan, mudstone, dolomitic. Shale (10%), dark maroon, gray.

4224 - 4238 Limestone (65%), light gray, grayish brown, mudstone, some limestone with hematitic stain. Shale (35%), red, gray, green, greenish gray, dark maroon, green-red mottled.

4238 - 4250 Limestone (80%), light gray, grayish brown, mudstone, some limestone with red hematitic stain. Shale (20%), gray, red, red-gray mottled, green, greenish gray.

Labette 4258' -2006'

4250 -4258 Limestone (90%), buff, very light tan, light gray, mudstone. Shale (10%), gray, dark maroon, red, green.

4258 - 4264 Limestone (80%), buff, grayish tan, grayish brown, mudstone. Shale (20%), red, gray, green.

Fort Scott 4270' -2018'

4264 - 4274 Limestone (90%), buff, tan, light grayish tan, mudstone. Shale (10%), gray, dark maroon, maroon-gray mottled, red, green.

Cherokee A 4278' -2026'

4274 - 4288 Limestone (80%), tan, buff, light grayish tan, mudstone. Shale (20%), gray, red, red-gray mottled, green.

4288 - 4293 Limestone (95%), buff, light grayish tan, tan, tan, mudstone. Shale (5%), gray, dark maroon, red, red-gray mottled. Circulated sample.

4293 - 4299 Limestone (75%), buff, light grayish tan, tan, mudstone. Shale (25%), gray, dark maroon, red, green. Circulated sample.

Cherokee B 4305' -2053

4299 - 4308 Limestone (70%), buff, light grayish tan, mudstone. Shale (25%), red, gray, red-gray mottled, green. Sandstone (5%), white, tan, fine grained with some unconsolidated granules and very coarse grains. No oil show.

4308 - 4316 Limestone (60%), buff, grayish tan, mudstone. Shale (35%), red, gray, green. Sandstone (5%), tan, white, fine grained with some unconsolidated granules and very coarse grains, quartzitic. No oil show.

4316 - 4319 Shale (50%), red, gray, dark maroon, ochre. Limestone (40%), buff, tan, grayish tan, mudstone. Sandstone (10%), tan, white, fine grained quartzitic, some unconsolidated granules and very coarse grains. Chert (trace), white, gray.

4319 - 4324 Shale (80%), red, gray, dark maroon, green, ochre. Limestone (20%), tan, light grayish tan, mudstone, some red hematitic stained limestone. Sandstone (trace), tan, l;ight gray, fine grained, quartzitic, some unconsolidated granules and very coarse grains.

Cherokee C 4326' -2074'

4324 - 4334 Shale (60%), red, gray, ochre, green, red-gray mottled. Sandstone (25%), white, tan, fine grained, quartzitic, some unconsolidated granules and coarse grains . No show of oil. Limestone (15%), grayish tan, red, mudstone.

4334 - 4337 Shale (60%), red, gray, red-gray mottled, ochre, some shale has coarse quartz grains embedded in shale. Limesotne (20%), tan, light grayish tan, mudstone. Sandstone (20%), white, fine grained, quartzitic with unconsolidated granules and coarse grains. No show of oil.

4337 - 4347 Shale (75%), red, gray, dark maroon, ochre, green, red-gray mottled. Limestone (20%), tan, light grayish tan, mudstone, some red hematitic stained limestone. Sandstone (5%), light gray, fine grained with some unconsolidated granules and very coarse grains. No show of oil. Chert (trace), orange white.

4347 - 4359 Limestone (50%), tan, buff, mudstone. Shale (45%), red, green, gray, ochre. Sandstone (5%), white, tan, fine grained, quartzitic with some unconsolidated granules and very coarse grains. Chert (5%), white, red.

Mississippian 4363' -2111'

4359 - 4368 Dolomite (80%), light gray, white, fine crystalline, some dolomite has dull brown bitumen stain with dull brown earthy appearance, no fluorescence wet, yellow fluorescence dry, delayed wet cut, fair dry cut, good delayed residual ring, trace-fair pin point and micro vuggy porosity. Shale (15%), red, gray,greenish gray. Chert (5%), white, light gray.

Drillstem Test No. 1 4357'-4370' Mississippian, Straddle Test
30-60-30-60

I.O. Weak Surface Blow Dead In 10 Min.
F.O. No Blow

Recovery: 5' Mud.

Sampler: 4000 Ml Mud, Trace Oil @ 10 psi

Hydrostatic Pressures 2237-2159 psi
Flow Pressures 30-30:30-30 psi
Shut-in Pressures 1070-926 psi
Bottom Hole Temperature 108° F

4368 - 4374 Chert (70%), white, tan, light gray. Dolomite (30%), light gray, white, fine crystalline, some dolomite has dull brown bitumen stain with dull brown earthy appearance, no fluorescence wet, yellow fluorescence dry, delayed wet cut, fair dry cut, good delayed residual ring, trace-fair pin point and micro vuggy porosity. Shale (trace), red, gray,greenish gray.

4374 - 4382 Chert (75%), white, tan, light gray. Dolomite (25%), light gray, white, fine crystalline, some dolomite has dull brown bitumen stain with dull brown earthy appearance, no fluorescence wet, yellow fluorescence dry, delayed wet cut, fair dry cut, good delayed residual ring. trace-fair pin point and micro vuggy porosity. Shale (trace), red, gray,green, ochre.

4382 4398 Chert (50%), white, tan, light gray. Dolomite (50%), white, fine crystalline, trace dolomite has dull brown bitumen stain with dull brown earthy appearance, no fluorescence wet, yellow fluorescence dry, delayed wet cut, fair dry cut, good delayed residual ring. trace-fair pin point and micro vuggy porosity some dolomite has vuggy porosity with no oil show. Shale (trace), red, gray.

4398 - 4423 Chert (60%), white, tan, light gray. Dolomite (50%), white, fine crystalline, trace dolomite has dull brown bitumen stain with dull brown earthy appearance, no fluorescence wet, yellow fluorescence dry, delayed wet cut, fair dry cut, good delayed residual ring. trace-fair pin point and micro vuggy porosity some dolomite has vuggy porosity with no oil show. Shale (trace), red, gray.

4423 - 4437 Dolomite (85%), white, fine crystalline, sucrosic, some dolomite has bright yellow fluorescence, no cut. Chert (15%), white, tan, light gray.

4437 - 4445 Dolomite (90%), white, fine crystalline, sucrosic. Chert (10%), white, tan, light gray, orange, some chert has oolite and fragment ghosts.

4445 - 4450 Dolomite (50%), white, fine crystalline, sucrosic. Limestone (40%), tan, white, wackestone, oolitic packstone, mudstone. Chert (10%), white, light gray, tan,. Shale (trace), red, gray.

Total Depth Driller 4450' -2198'
Total DepthLogger 4449' -2197'

SUMMARY

The Ensign Operating Co. No. 1-22 Price, W/2 SW SE Sec 22, T19S, R20W, Rush County, Kansas was 4450-foot wildcat well to test the Kober Prospect for commercial oil production. The location for the test well for the Kober Prospect was selected by an interpretation of seismic data. The primary objective of this wildcat well was a sandstone in the Pennsylvanian Cherokee B interval. Secondary objectives were sandstones in the Cherokee A and C intervals and the Mississippian Osage.

The Cherokee A and B intervals contained no sandstones. The Cherokee C interval contained a sandstone. This sandstone was quartzitic and had no shows of oil. The Mississippian Osage dolomite had an oil show. This oil show was drill-stem tested. The test recovered drilling mud indicating the dolomite had very low permeability. There was also a 144 psi pressure drop between the initial and final shut-in pressures of the test.

The well was structurally low on all horizions to the structural position predicted by the interpretation of the seismic data. The well was approximately flat to a few feet low to a nearby well.

After a review of the lithologic samples examinations, an evaluation of the wireline logs, a drill-stem test, and considerations of other factors the decision was made to plug and abandon the well. The well was plugged and abandoned on May 15, 1993.