



RECEIVED

DEC 2 1985

COLO. OIL & GAS CONS. COMM.

GEOLOGICAL WELLSITE REPORT

TO

EDWIN L. & BERRY R. COX

FOR THE

E. L. & B.R. COX TOW CREEK STATE #1-36
884' FNL, 306' FWL
~~SEC 31 T5N R88W~~
ROUTT COUNTY, COLORADO

36-6N-87

Called Jim Anderson at Denver 5/1/86
offer 892-0954
They are still awaiting
completion based on frac of well in
adjoining area. He will submit
Form 4 with status and casing run
to date.
Bell

Geologic Setting

The Tow Creek State #1-36 test is located on the southerly crest of the Tow Creek anticline, a major north/south trending asymmetrical Laramide anticline. Recent seismic work shows the Tow Creek feature to be a thrust-cored anticline with gentle west dip and steep thrust east dip.

Fractured Cretaceous Niobrara production was discovered on the Tow Creek Anticline during the 1920's by the Texas Co. using primarily cable tools, Texaco developed the Tow Creek field mostly in Sec 7 & 18 T6N, R86W. This field has produced in excess of 3 million barrels of oil. Geological studies indicate that specific zones or benches of the Niobrara are brittle and stresses exerted during Laramide compression results in fracture systems that are charged by petroliferous Niobrara facies resulting in oil wet fractured reservoirs where extensional forces were generated in locations near significant changes in the rate of dips.

Objective

The exploratory objective for the Tow Creek 1-36 is the aforementioned flexure fractured Niobrara reservoir. Commercial quantities of oil were encountered in the Kingwood Oil Company State No. A-1 Sec. 31, T6N, R86W in 1967. Seismic data indicated that a flexure fractured target existed in NE NE NE of Sec. 36, T8N, R87W.

Drilling Procedures

Topographic constraints resulted in the Tow Creek State 1-36 being located 884' FNL & 308' FWL in Sec. 31, T6N, 86W with a intermediate casing hole target approximately 200 FNL & 300 FEL Sec. 36 T6N, R87W. The 1-36 test was directionally drilled to a logger depth of 4615 at which point intermediate 7" casing was set. To insure that the water sensitive, under-pressured reservoir not be damaged, the Niobrara section was air drilled to a Logger T.D. of 6069'.

TopEL & BR Cox
Tow Creek 1-36Kingwood Oil
State No. A-1K.B. +7903
G.L. +7891.5

Est. 7830

	MD	TVD	TVDSS	Diff.	MD	TVD	TVDSS
1 Base Iles	918	917	+6985	+ 92	937	937	+6893
2 Morapos 1	1270	1264	+6639	+102	1294	1293	+6537
3 Morapos 2	1550	1543	+6360	+118	1590	1588	+6242
4 Mancos	2299	2291	+5612	+184	2406	2402	+5428
5 Mancos	2607	2393	+5310	+249	2775	2769	+5061
6 Mancos	3078	3048	+4855	+285	3270	3260	+4570
7 Mancos	3974	3891	+4012	+371	4208	4189	+3641
8 Bench 1	4800	4683	+3220	+411	5050	5021	+2809
9 Bench 2	5140	5005	+2898		NP		
10 Bench 3	5550	5315	+2588		NP		
11 Carlisle	5995	5711	+2192		NP		
12 TD	6064						

Increased structural relief between the Tow Creek 1-36 test and the Kingwood supported by dipmeter results indicate that the crest of the feature lies west of the present bottom hole location.

Logs

Run #1. Oct. 14, 1985. T.D. 4171
DIL & HDT.

Run #2. Oct. 19, 1985. T.D. 4628.
BHC, HDT

Run #3. Oct. 29, 1985. T.D. 6064
Temp, DIL, HDT, LSS

Shows: Mud Drilled Hole

No shows of merit were noted in the mud drilled hole. It is, however, possible that shows may have occurred, but numerous Lost Circulation Zones, basically perpetual partial returns, and the addition of oil cut drilling fluid could have masked some shows. This is, however, not likely.

Shows: Air Drilled Hole

It is to be noted that the entire Niobrara section was drilled and dusted to T.D. No free oil of significant or commercial value was encountered. Logging tools were, however, oil coated and when the well bore was mudded up, 1 + or - barrel of oil was recovered.

Gas shows, however, were numerous and virtually all connections and/or trips resulted in flares of orange flame. Estimates based on hole volume and time for free gas to reach the surface varied from 20 MCFPD to 70 MCFPD ratio.

Gas Show

<u>Depth</u>	<u>Peak</u>	<u>Background</u>
4774	70	50
4779	70	60
4784	65	60
4811	150	150
4850	orange flare connection	150
5210	190	160
5241	270	160
5698-5702	202	160
5739	280	160
5742	200	170
5753	260	170
5756	720	170
5778	204	180
5811	204	192
5814	320	204

The gradual increase in background and the fact that the background gases appeared to stabilize indicate that numerous fractures permeable to gas only were encountered by the borehole

Temperature Survey Gas Shows

<u>Depth</u>	<u>Amount of Cooling (deg.)</u>
4710	1
4840	10
5112	1/2
5140	1/2
5325-5340	1-1/2
5690-5790	1 over interval numerous entry points

Conclusion

Gas shows, and the number of them, would suggest that the Tow Creek 1-36 borehole is on the periphery of a fractured reservoir, but in a zone where vertical displacement of fracture planes is so small as to only allow for transmission of gas.

Dipmeter results below the third bench suggest that a thrust fault was cut. Movement of rock by the thrusts have probably caused the commercial oil productive flexure fractured accumulation to exist west of the present bottom hole location.

Dennis W. Belnap
1300 Main, Suite 1840
Houston, TX 77002
(713) 658-8080