Simulation of Primary and Alternate Locations for Five Infill Wells,

Schaben Field, Ness County, Kansas

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INTRODUCTION

Simulation studies for Schaben Field were previously carried out as part of a Class 2 reservoir study funded by the US Department of Energy (DE-FC22-93BC14987). The results of the full field simulation using BOAST 3 and complete reservoir description are reported elsewhere (Carr and others, 1997). This report evaluates the primary and alternate locations of five potential infill wells selected by Ritchie Exploration.

Locations were provided by Ritchie Exploration. Figure 1 is a map of well locations and simulator grid cells. Its important to note that the simulator requires each well location to be located in the center of a grid cell. Consequently, the well locations in the simulator are not exact. An error of as much as 110 feet in the north-south and/or east-west direction may exist.

Wellname Type	**Location Description**	**Simulation Grid Cell Col**	**Row**
#7 Rein AP			
Primary:	1340 FSL & 400 FWL Sec 29 19S 21W	62	31
Alternate:	1720 FSL & 400 FWL	62	29
#4 Moore CP			
Primary:	1370FNL & 2240 FSL Sec 30 19S 21W	43	27
Alternate:	1720 FWL & 2240 FSL	45	27
#7 Moore DP			
Primary:	1340 FNL & 1340 FWL Sec 30 19S 21W	43	19
Alternate:	1720 FNL & 1720 FWL	44	21
#8 Moore DP			
Primary:	400 FWL & 1340 FNL Sec 30 19S 21W	38	19
Alternate	400 FWL & 1720 FNL	38	21
#4 Borger AP			
Primary:	1300 FNL & 2240 FWL Sec 25 19S 22W	23	17
Alternate:	920 FNL & 2240 FWL	23	19

For the purposes of this simulation the production start date was assumed to be January 1, 1997. Each well is assumed to have the entire payzone open and a working fluid level of 500 feet. The simulator was asked to predict the performance of each well location for 2920 days (8 years). The results obtained from this simulation study are based on production history match at each well. Because the proposed locations are in close proximity to each other, the primary and alternate locations were simulated in two runs. The simulated performance of each proposed well is shown below.

Wellname Type	8 Year Cumulative Oil and Water Production		Figure #
#7 Rein AP	CumO Mstb	CumW Mstb	2
Primary:	76.4	394.4	
Alternate:	53.5	464.4	
#4 Moore CP	CumO Mstb	CumW Mstb	3
Primary:	62.1	419.7	
Alternate:	61.4	415.7	
#7 Moore DP	CumO Mstb	CumW Mstb	4
Primary:	29.8	663.7	
Alternate:	20.9	714.5	
#8 Moore DP	CumO Mstb	CumW Mstb	5
Primary:	26.2	696.5	
Alternate:	26.9	699	
#4 Borger AP	CumO Mstb	CumW Mstb	6
Primary:	20.2	713.6	
Alternate:	36.2	705.5	

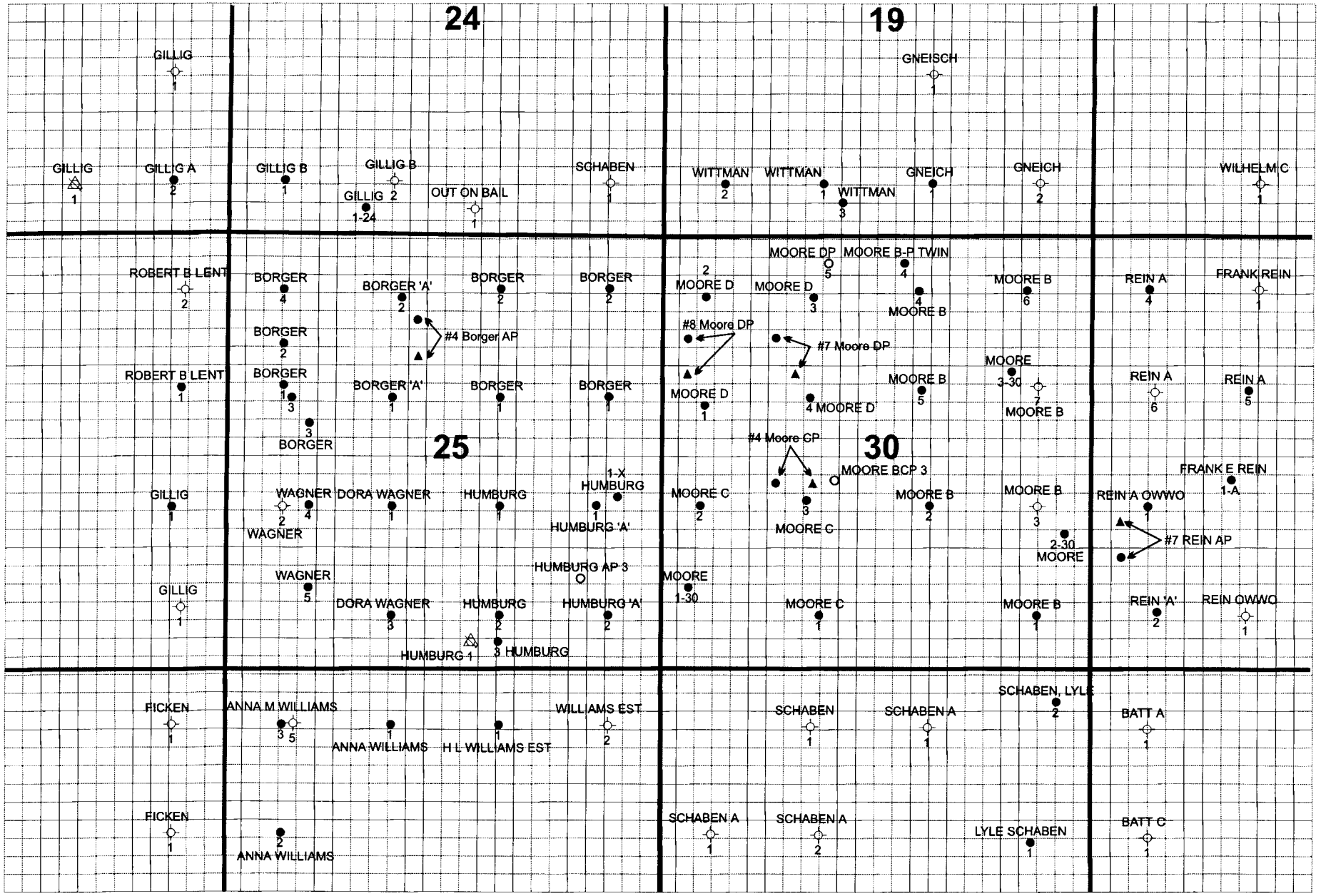
REFERENCES CITED

Carr, T. R., Saibal Bhattacharya, Evan Franseen, Paul Gerlach, Willard Guy, Dana Adkins-Heljeson, W. Lynn Watney, John Hopkins Scott Beaty, Rodney Reynolds, Shapour Vossoughi, and G. Paul Willhite, Improved Oil Recovery in Mississippian Carbonate Reservoirs of Kansas -- Near Term -- Class 2, USDOE Project Evaluation Report (DE-FC22-93BC14987); Kansas Geologic Survey Open-File Report 97-25, 235p.

Boast 3 Simulation
Schaben Field

Well Locations and Grid Cells

Grid Cell Dimensions
220 ft X 220 ft



▲ **Alternate Location**

● **Primary Location**

Upper Left Cell is Row 1 / Column 1

Lower Right Cell is Row 49 / Column 72

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Figure 1

Figure 2

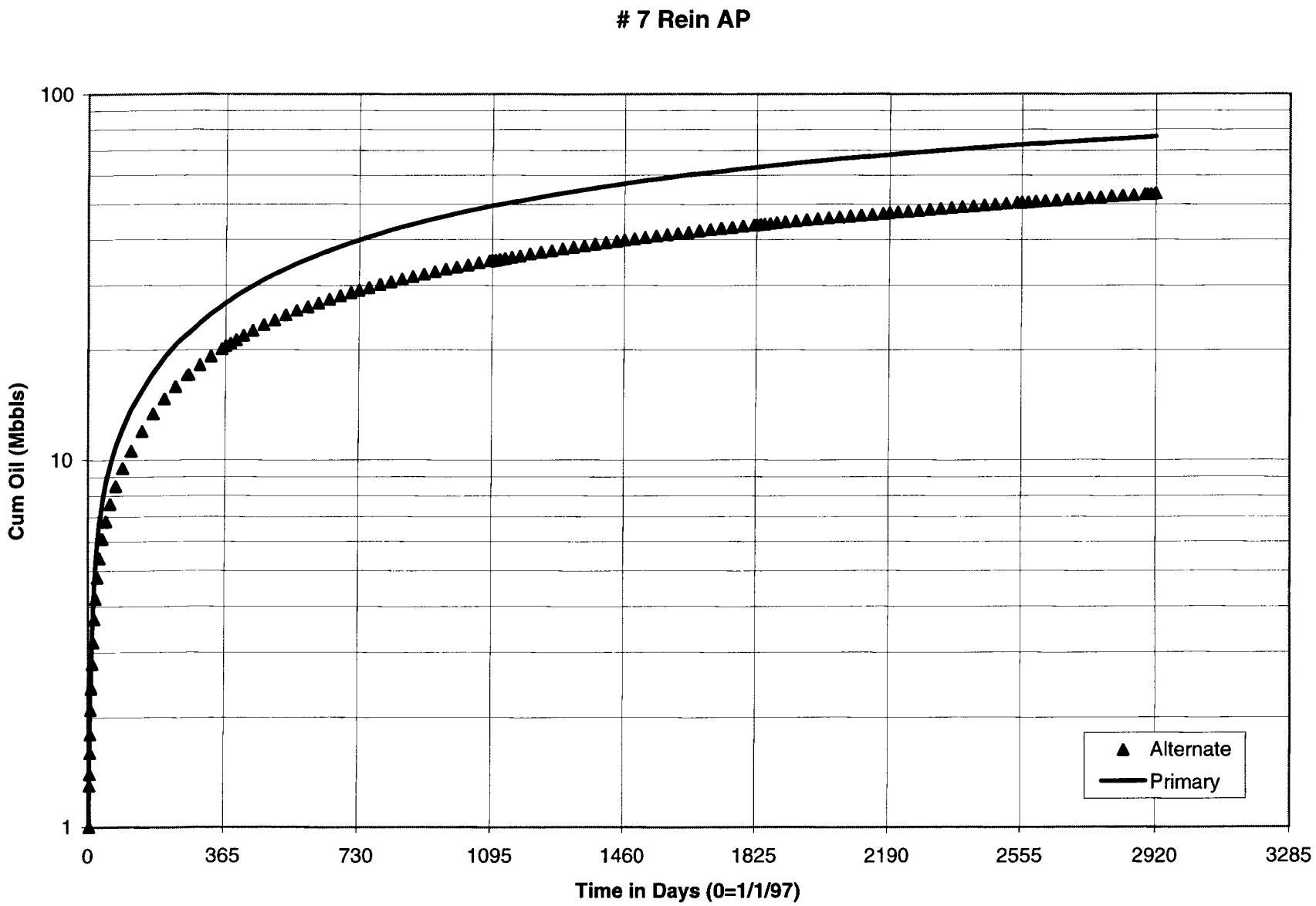

7 Rein AP
100
10
1
Cum Oil (Mbbls)
0
365
730
1095
1460
1825
2190
2555
2920
3285
Time in Days (0=1/1/97)
Alternate
Primary

Figure 3

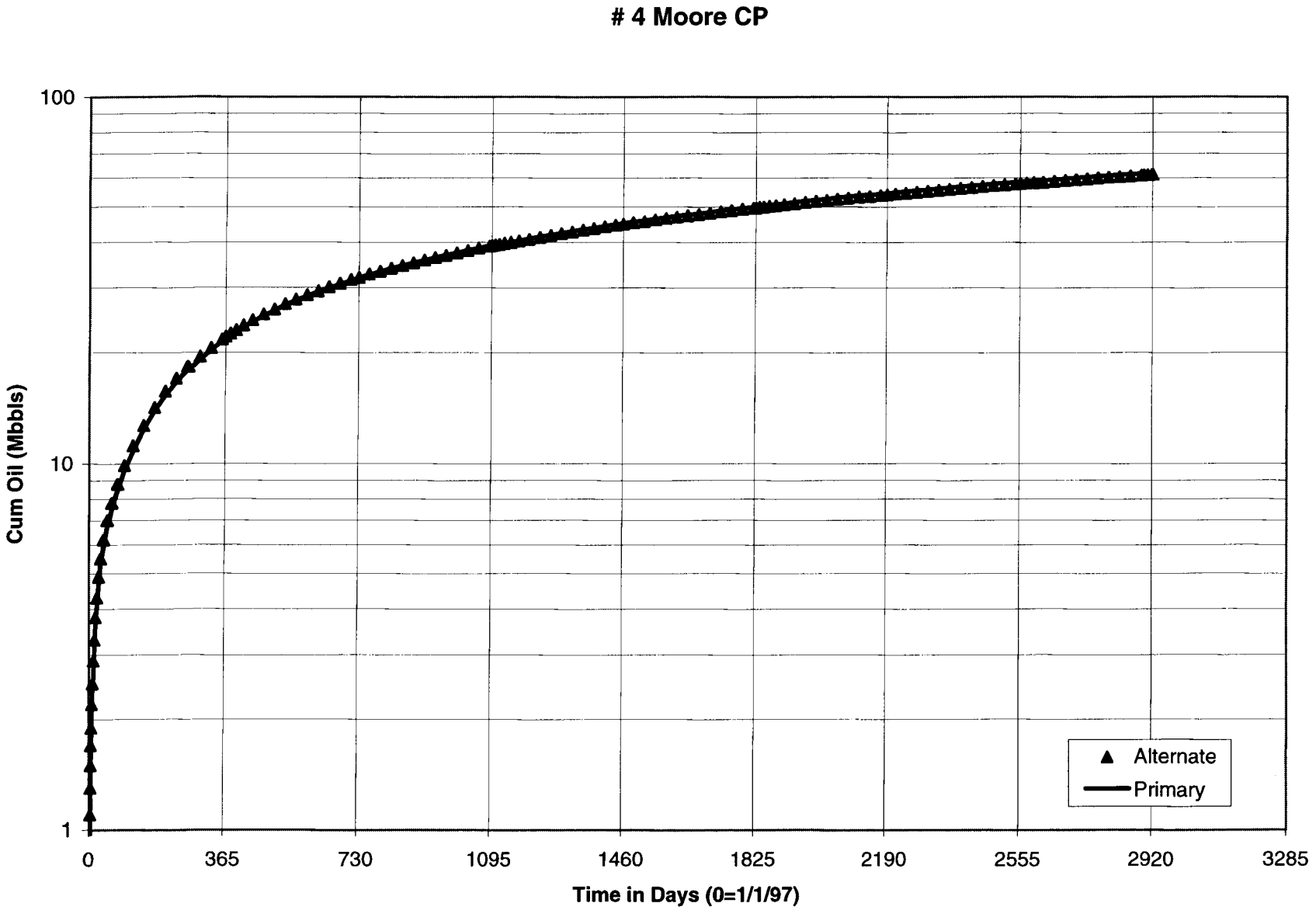

4 Moore CP
100
10
1
Cum Oil (Mbbls)
0
365
730
1095
1460
1825
2190
2555
2920
3285
Time in Days (0=1/1/97)
Alternate
Primary

Figure 4

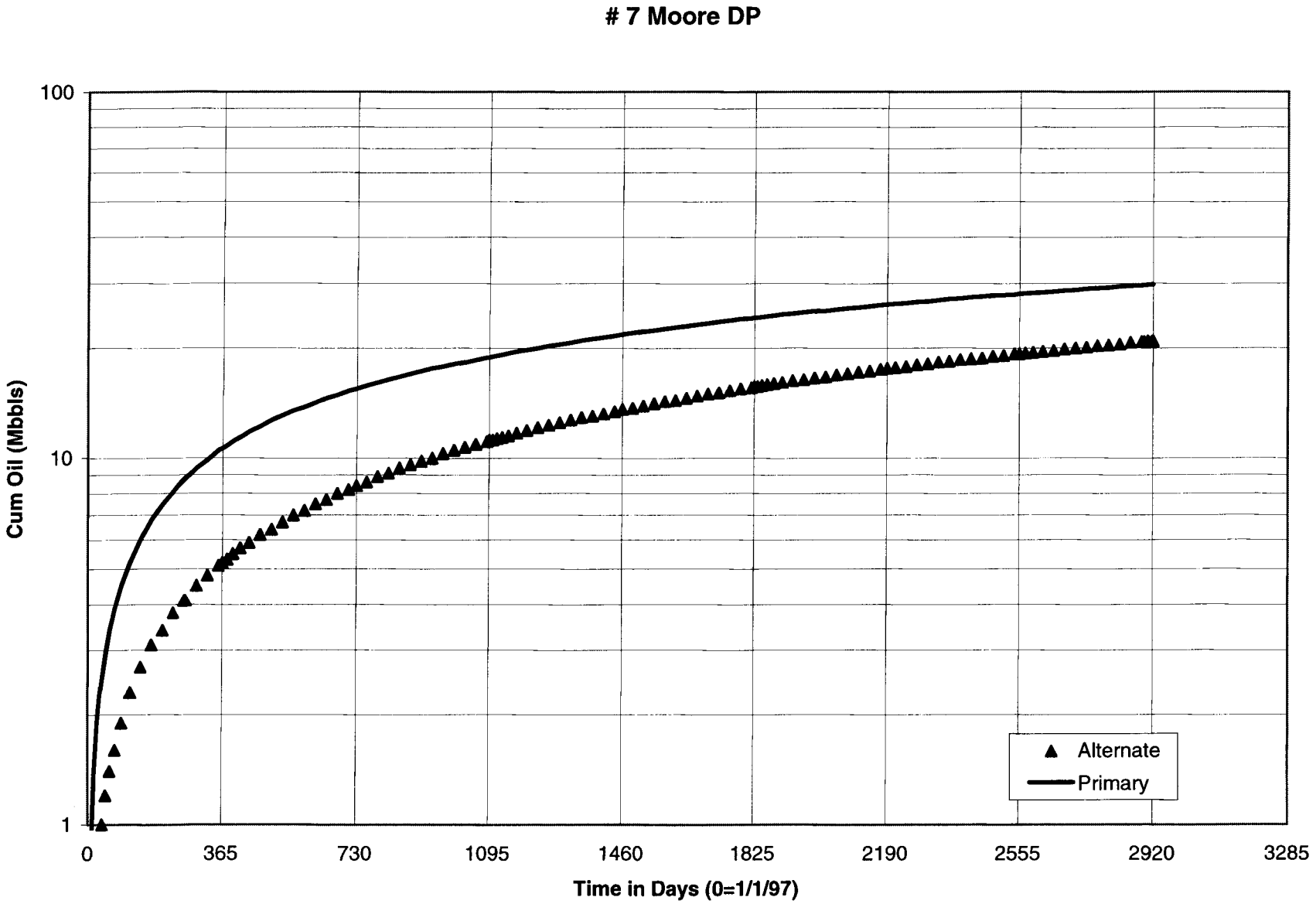

7 Moore DP
100
10
1
Cum Oil (Mbbls)
0
365
730
1095
1460
1825
2190
2555
2920
3285
Time in Days (0=1/1/97)
Alternate
Primary

Figure 5

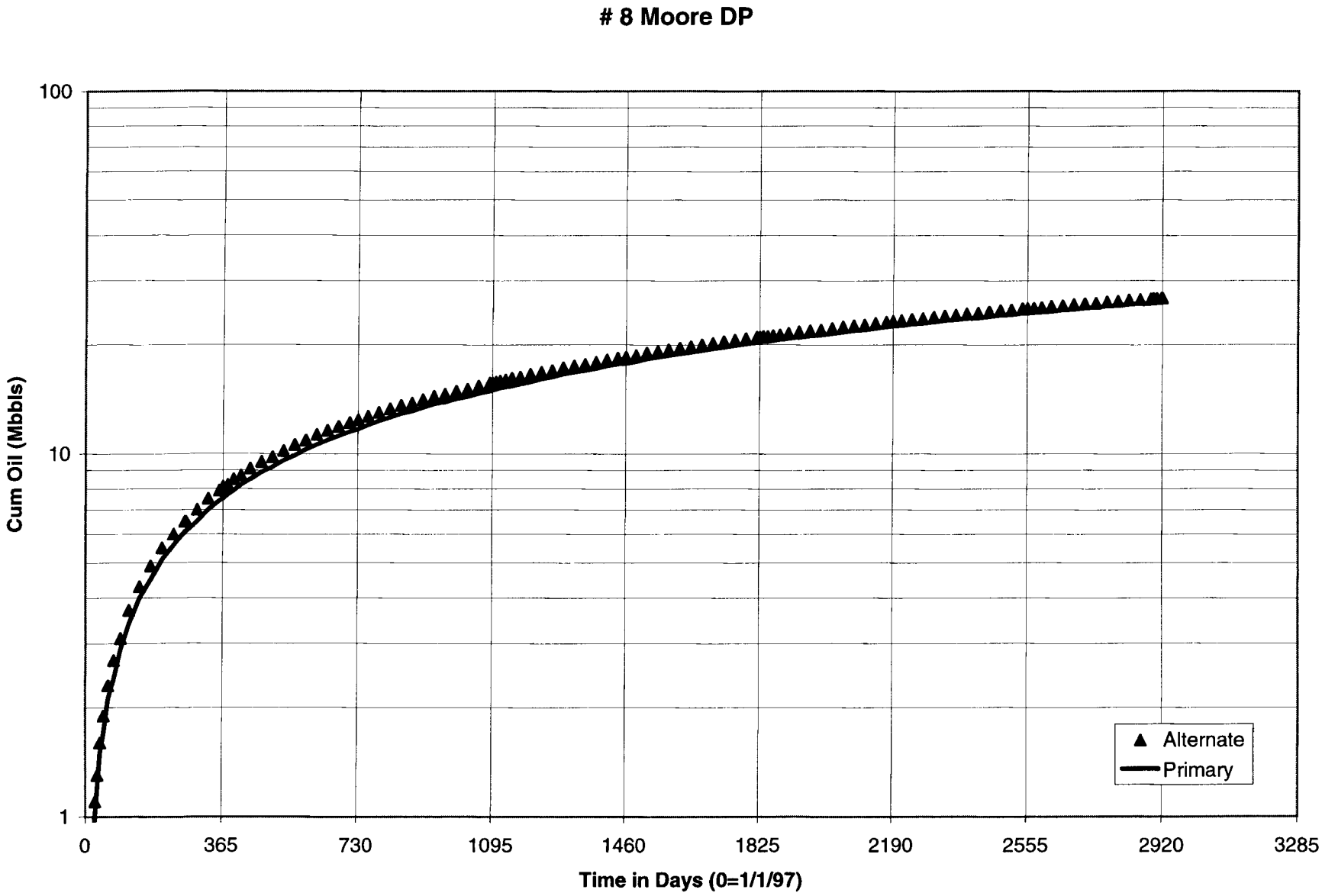
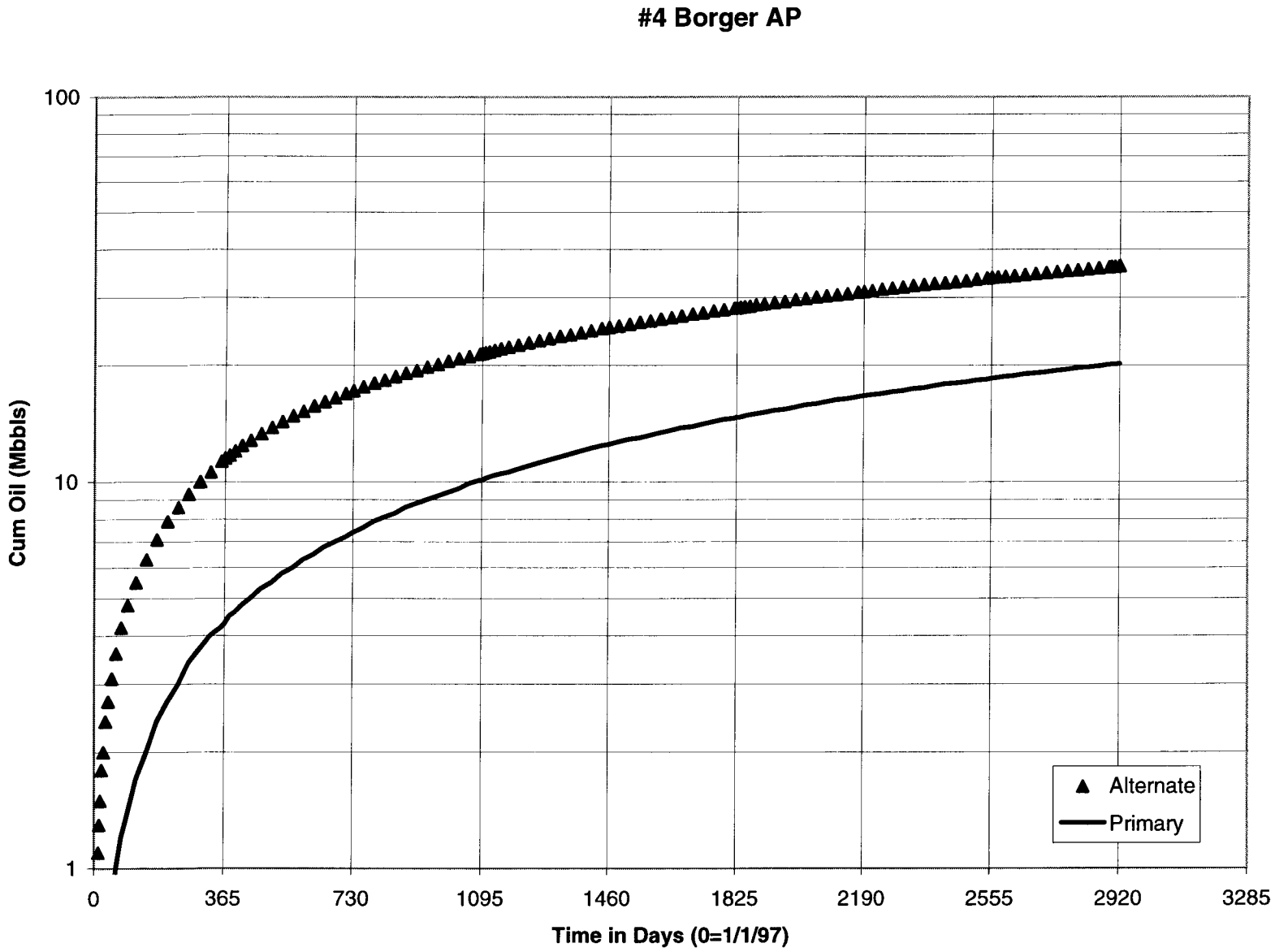

8 Moore DP
100
10
1
Cum Oil (Mbbls)
0
365
730
1095
1460
1825
2190
2555
2920
3285
Time in Days (0=1/1/97)
Alternate
Primary

Figure 6


#4 Borger AP
100
10
1
Cum Oil (Mbbls)
0
365
730
1095
1460
1825
2190
2555
2920
3285
Time in Days (0=1/1/97)
Alternate
Primary