

**Simulation of Potential Infill Wells,
Schaben Field, Ness County, Kansas**

Kansas Geologic Survey
Open File Report 97-25

Paul Gerlach and Saibal Bhattacharya

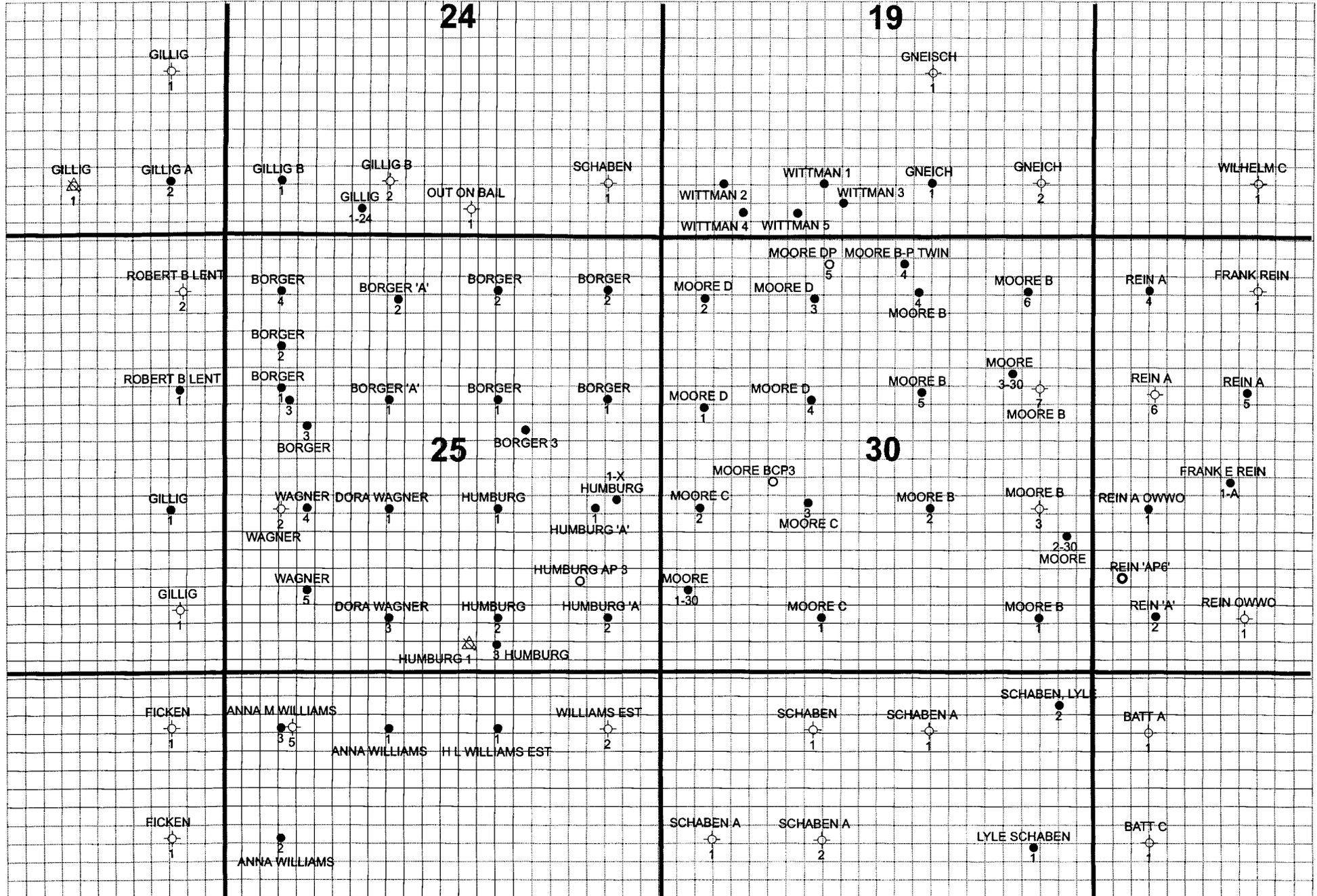
INTRODUCTION

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 potential infill wells, recompletions and completion methods that are proposed as part of the Budget Period 2 demonstration project. The additional infill wells to be evaluated were selected based on the results of the reservoir description and field simulation, and in consultation with Ritchie Exploration Inc. The analysis of completion methods was performed to determine if there was a relationship between recovery efficiency and completion method.

All output displays were generated from the BOAST 3 simulation and widely available low-cost plotting and mapping packages (primarily Microsoft Excel version 5.0). The simulated performance of each proposed well is shown below.

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.

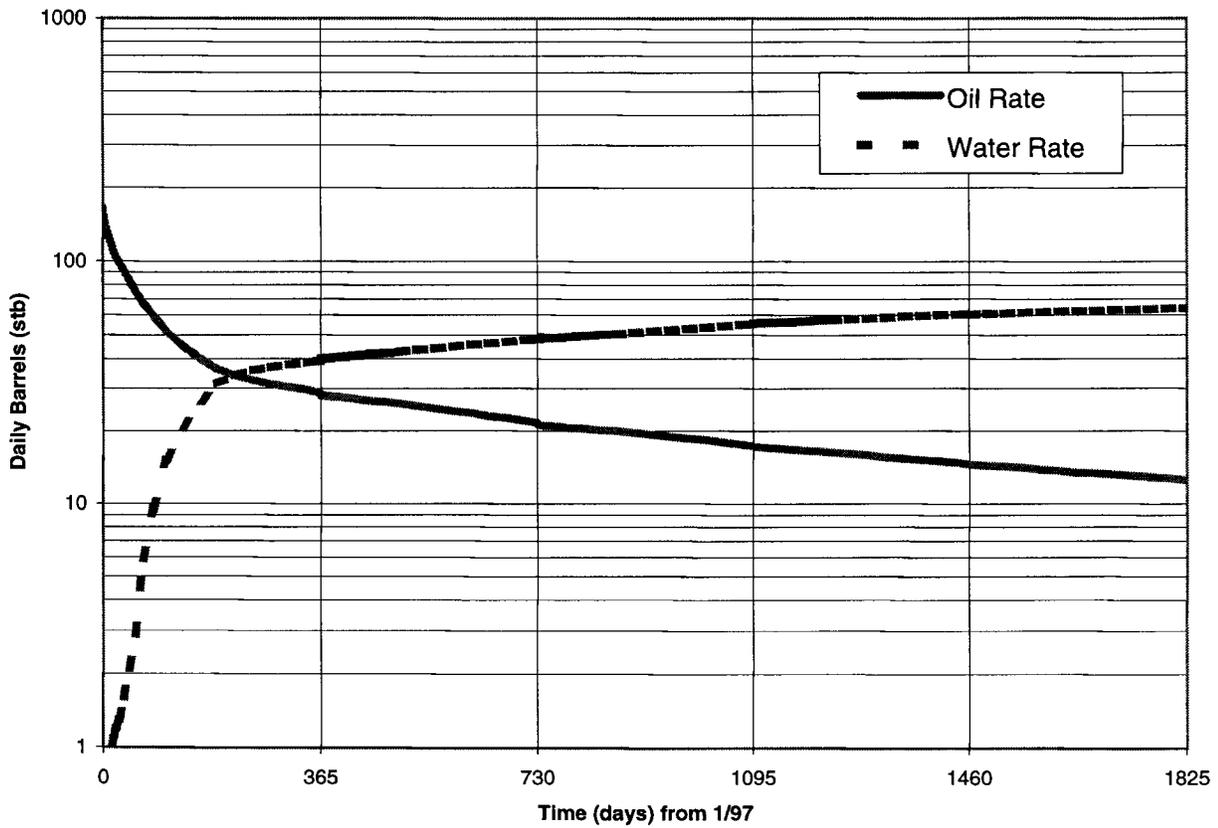


Well Name Rein AP6
 KGS Location 29-S1
 Grid Location 62 32 1
 Start Date Jan-97

Time (days)	Oil Rate (stb/day)	Gas Rate (mcf/day)	Water Rate (stb/day)	Cum.			Grid Cell Saturations		
				Oil (Mstb)	Gas (mcf)	Water (Mstb)	So	Sg	Sw
0.1	164.3	8	0.6	0	0	0	0.506	0.005	0.489
365	28.7	1	39.2	17.3	1.0	9.3	0.365	0.014	0.621
730	21.7	1	47.7	26.3	1.0	25.3	0.351	0.019	0.630
1095	17.4	1	55.1	33.3	2.0	44.2	0.340	0.022	0.638
1460	14.6	1	60.4	39.1	2.0	65.4	0.331	0.025	0.644
1825	12.5	1	63.9	44.0	2.0	88.1	0.325	0.028	0.647

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Rein AP6
 29-S1

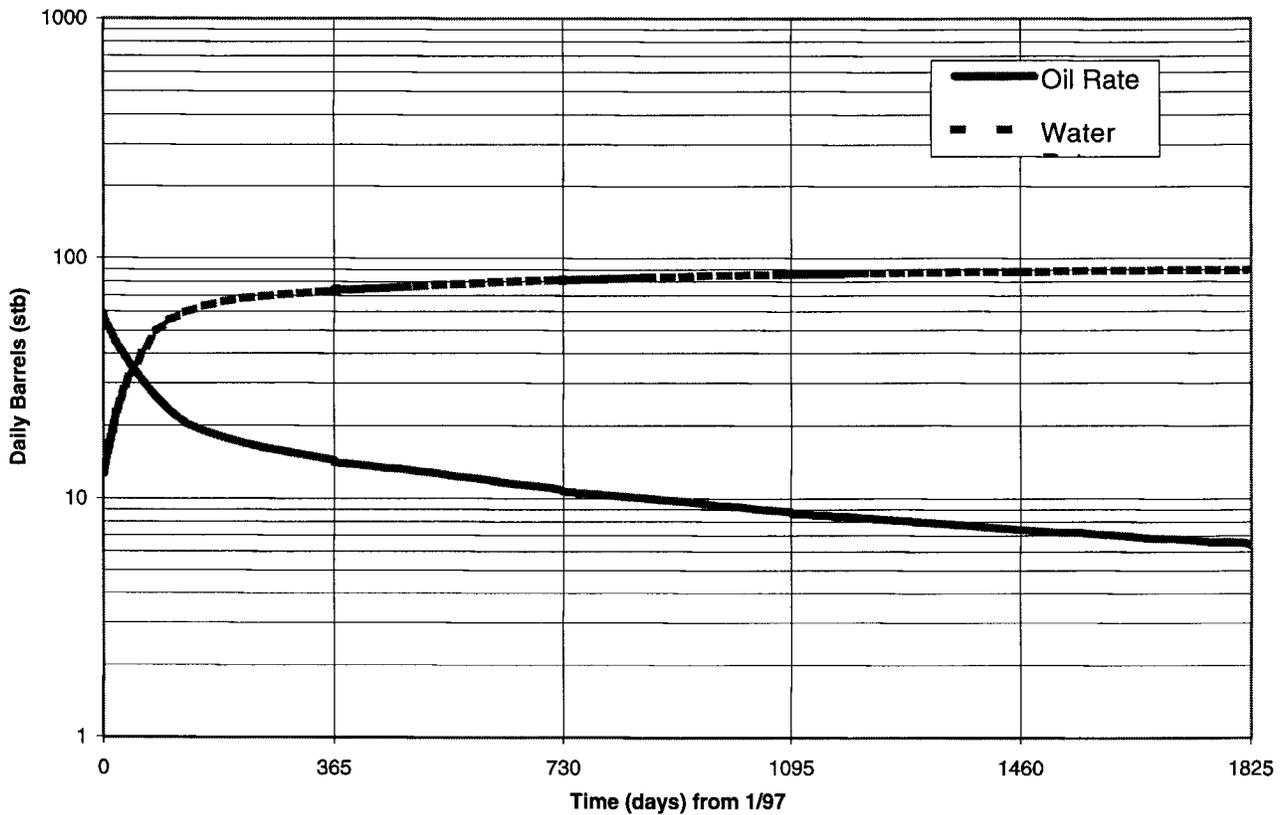


Well Name Moore DP
 KGS Location 30-S2
 Grid Location 46 15 1
 Start Date Jan-97

Time (days)	Oil Rate (stb/day)	Gas Rate (mcf/day)	Water Rate (stb/day)	Cum.	Cum.	Cum.	Grid Cell Saturations		
				Oil (Mstb)	Gas (mcf)	Water (Mstb)	So	Sg	Sw
0.1	58.9	3	13	0.0	0.0	0.0	0.418	0.005	0.577
365	14.4	1	72.9	7.9	0.0	21.6	0.331	0.009	0.659
730	10.8	1	81	12.4	1.0	49.9	0.321	0.012	0.667
1095	8.8	0	85.4	15.9	1.0	80.4	0.315	0.014	0.671
1460	7.4	0	88	18.8	1.0	112.1	0.310	0.016	0.674
1825	6.4	0	89.5	21.4	1.0	144.5	0.308	0.018	0.675

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Moore DP
 30-S2

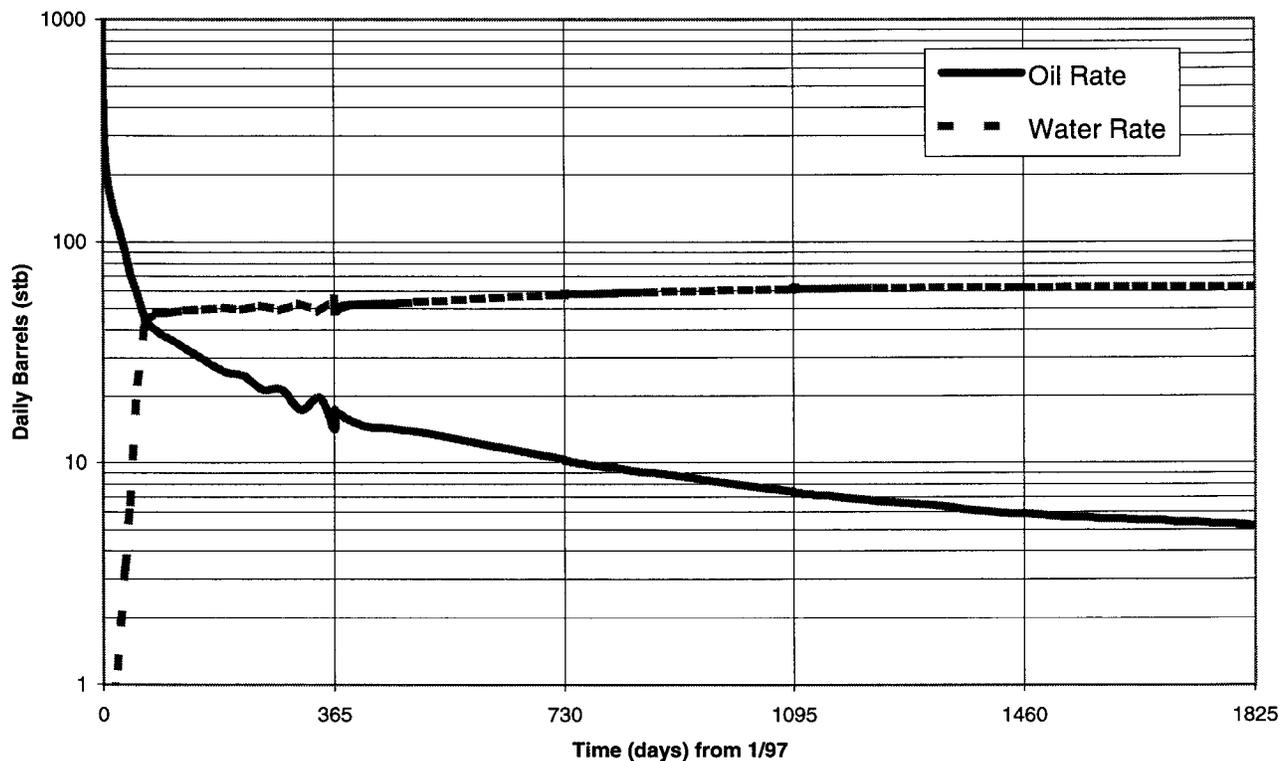


Well Name Moore 1-30
 KGS Location 30-41
 Grid Location 38 33 1
 Start Date Jan-97

Time (days)	Oil Rate (stb/day)	Gas Rate (mcf/day)	Water Rate (stb/day)	Cum.	Cum.	Cum.	Grid Cell Saturations		
				Oil (Mstb)	Gas (mcf)	Water (Mstb)	So	Sg	Sw
0.1	1156.3	58	0.5	0.1	0.0	0.0	0.533	0.070	0.397
365	14.1	1	55.2	15.0	1.0	15.8	0.303	0.115	0.583
730	10.3	1	57.4	19.7	1.0	35.7	0.285	0.125	0.590
1095	7.4	0	60.9	22.8	1.0	57.4	0.275	0.133	0.591
1460	5.9	0	62.3	25.2	1.0	80.0	0.270	0.138	0.592
1825	5.2	0	62.5	27.2	1.0	102.8	0.268	0.141	0.592

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**Moore 1-30
 30-41**

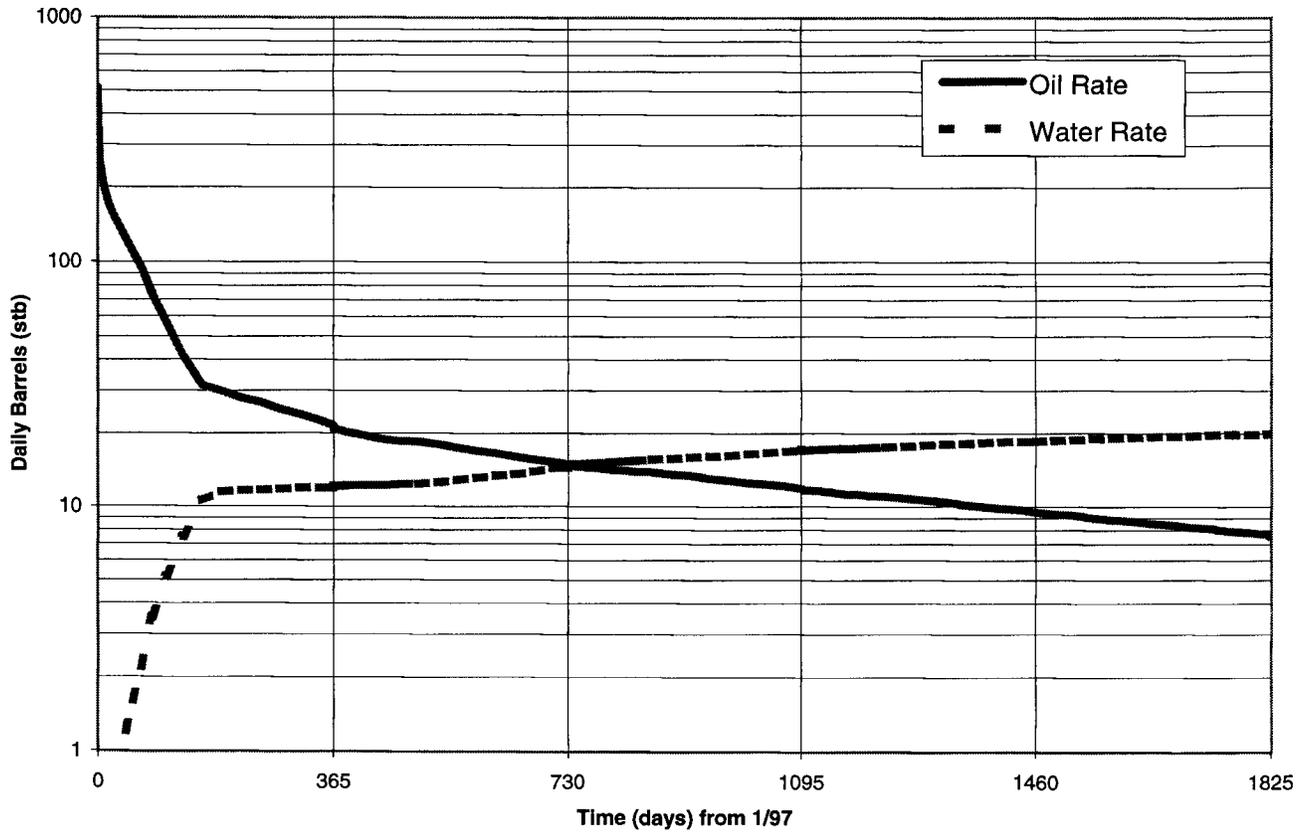


Well Name Moore 2-30
 KGS Location 30-34
 Grid Location 59 30 1
 Start Date Jan-97

Time (days)	Oil Rate (stb/day)	Gas Rate (mcf/day)	Water Rate (stb/day)	Cum.	Cum.	Cum.	Grid Cell Saturations		
				Oil (Mstb)	Gas (mcf)	Water (Mstb)	So	Sg	Sw
0.1	510.2	26	0.5	0.1	0	0	0.475	0.129	0.396
365	21.5	1	11.9	19.7	1	3.1	0.301	0.152	0.546
730	14.9	1	14.4	26	1	7.9	0.289	0.160	0.551
1095	11.8	1	16.9	30.9	2	13.7	0.281	0.167	0.553
1460	9.5	0	18.6	34.7	2	20.2	0.275	0.172	0.554
1825	7.5	0	19.9	37.8	2	27.3	0.270	0.176	0.555

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Moore 2-30
30-34

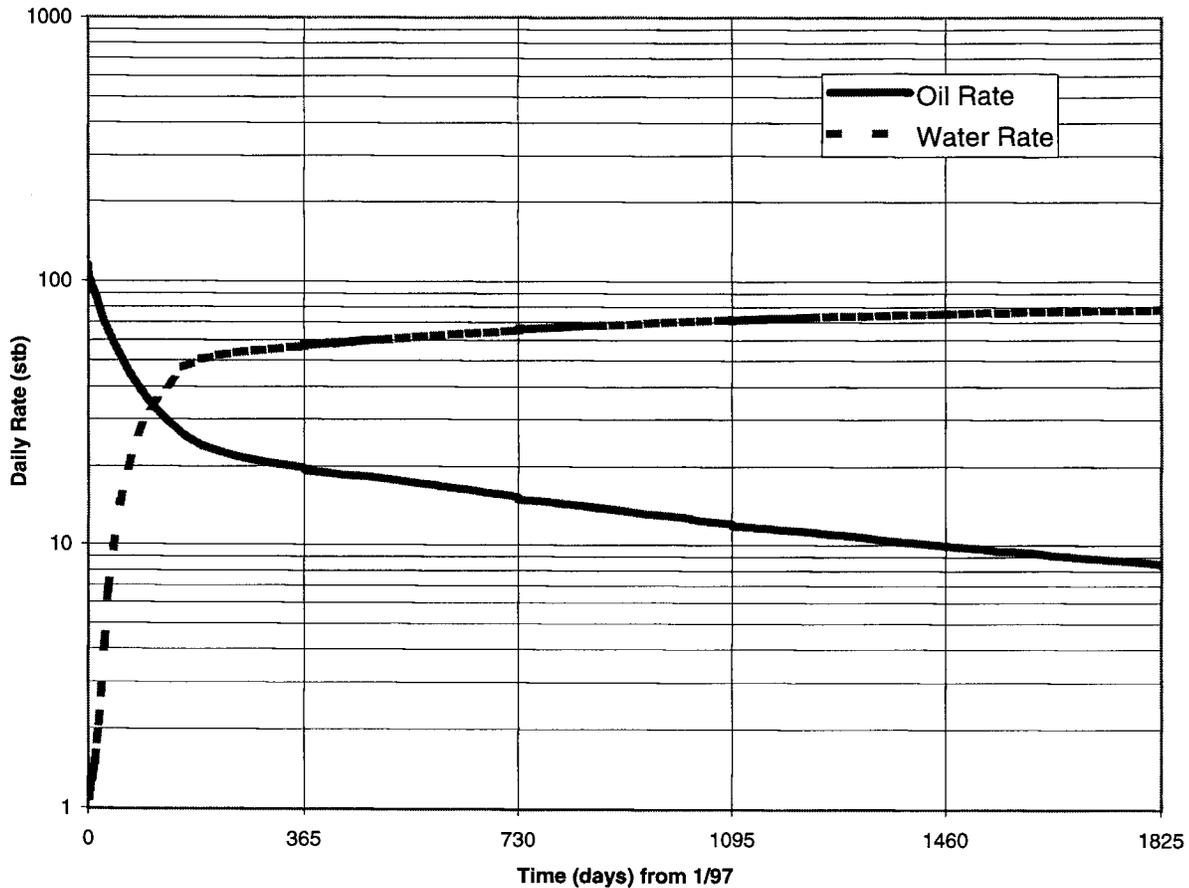


Well Name Humburg AP3
 KGS Location 25-S1
 Grid Location 32 32 1
 Start Date Jan-97

Time (days)	Oil Rate (stb/day)	Gas Rate (mcf/day)	Water Rate (stb/day)	Cum.	Cum.	Cum.	Grid Cell Saturations		
				Oil (Mstb)	Gas (mcf)	Water (Mstb)	So	Sg	Sw
0.1	114.5	6	1.1	0.0	0.0	0.0	0.482	0.005	0.513
365	19.6	1	56.6	11.8	1.0	15.2	0.347	0.012	0.641
730	15.2	1	65.1	18.1	1.0	37.6	0.334	0.016	0.651
1095	12	1	71.2	23.0	1.0	62.6	0.324	0.018	0.657
1460	9.9	0	75.2	26.9	1.0	89.4	0.318	0.021	0.661
1825	8.4	0	78.1	30.2	2.0	117.5	0.314	0.023	0.664

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Humburg AP3
25-S1

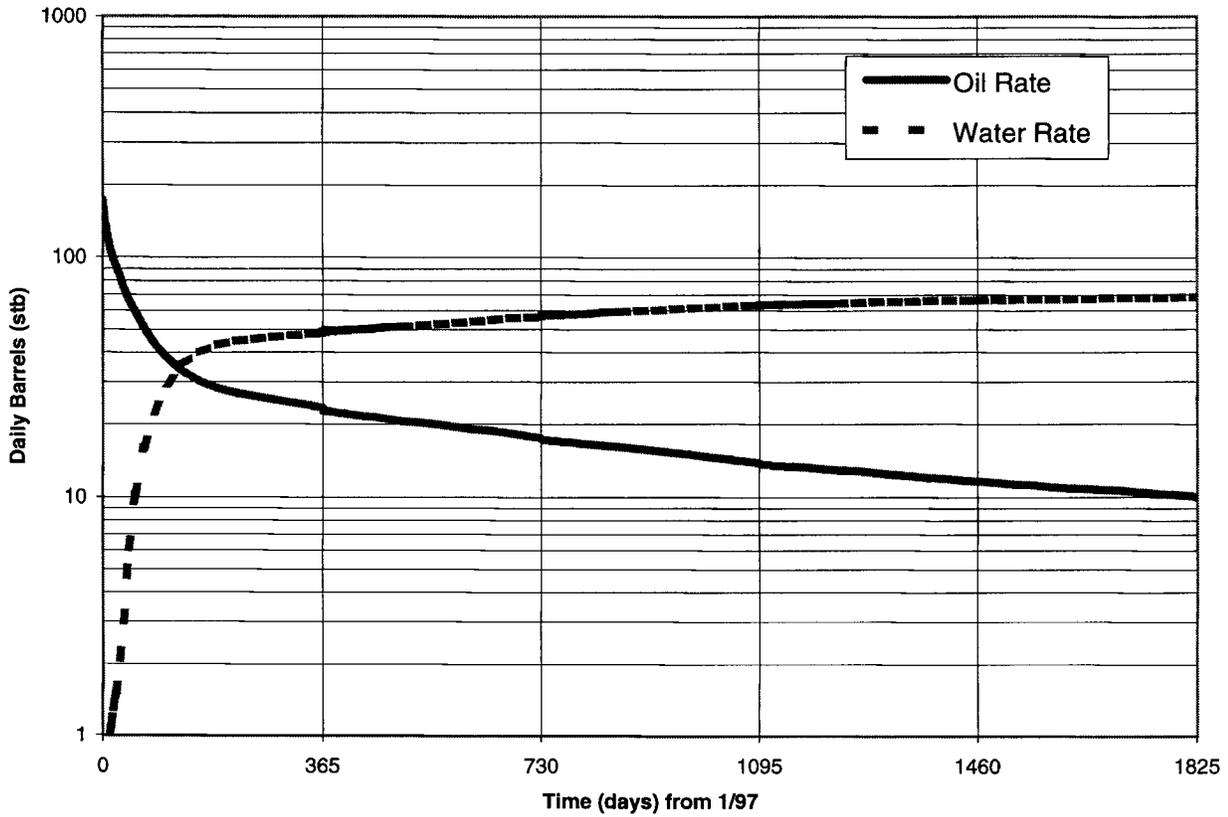


Well Name Moore BCP7
 KGS Location 30-S1
 Grid Location 44 27 1
 Start Date Jan-97

Time (days)	Oil Rate (stb/day)	Gas Rate (mcf/day)	Water Rate (stb/day)	Cum.	Cum.	Cum.	Grid Cell Saturations		
				Oil (Mstb)	Gas (mcf)	Water (Mstb)	So	Sg	Sw
0.1	173.1	9	0.6	0.0	0.0	0.0	0.510	0.005	0.485
365	23.3	1	48.2	13.9	1.0	12.9	0.354	0.015	0.631
730	17.5	1	56.4	21.2	1.0	32.1	0.340	0.020	0.640
1095	13.8	1	62.9	26.8	1.0	54.0	0.329	0.024	0.647
1460	11.6	1	66.3	31.4	2.0	77.7	0.323	0.027	0.650
1825	10	1	68.1	35.3	2.0	102.3	0.318	0.030	0.652

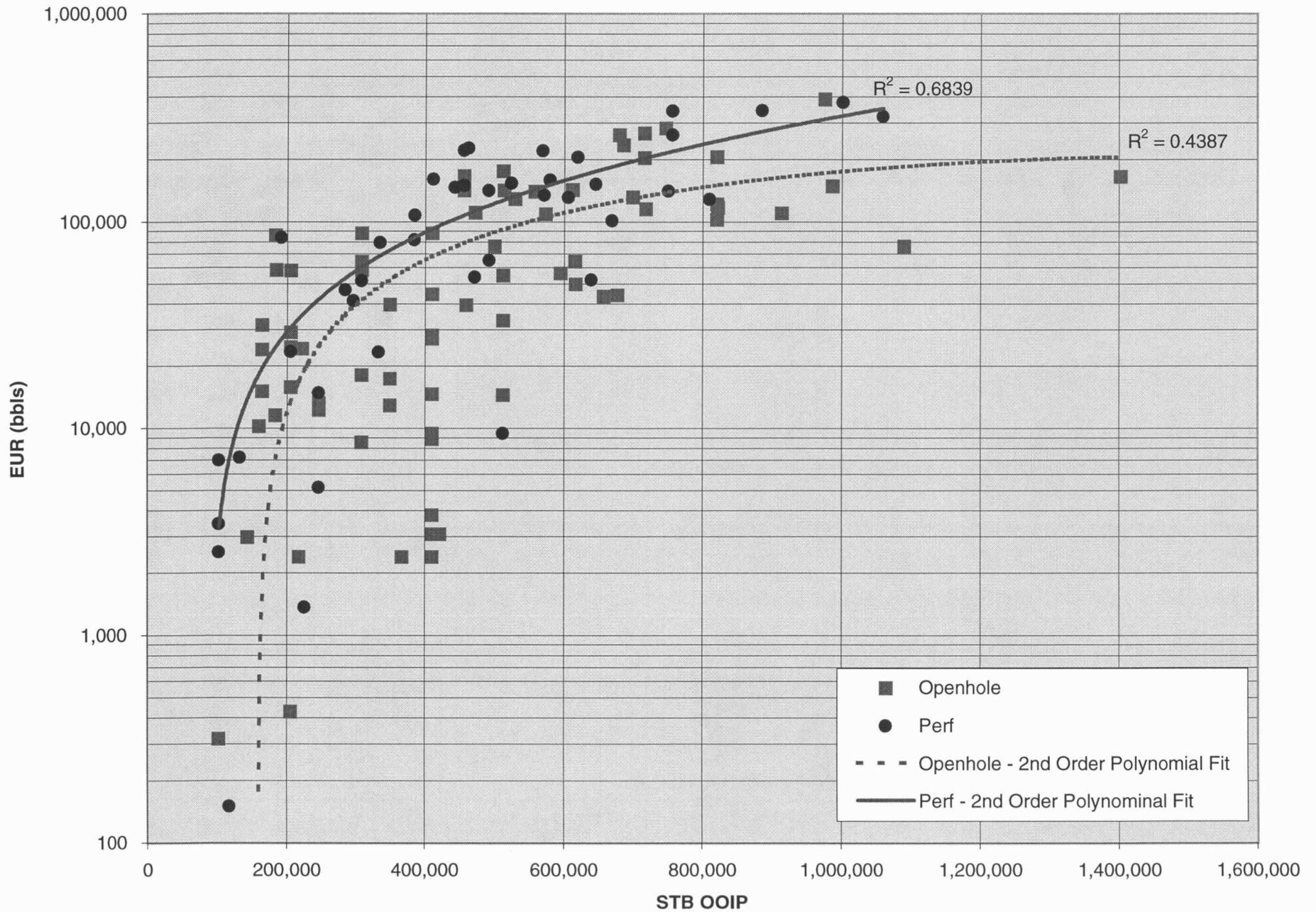
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**Moore BCP7
 30-S1**



Schaben Field

Recovery Efficiency by Completion Method



Pay Height vs EUR (bbls)

Schaben Field

