

## ***APPENDIX C. LS ECM RESULTS AT OBSERVATION STATIONS***

All figures and tables related to the results from LS ECM at observation station locations are presented in this appendix. They are compared to the previous results from the ECM inside the LSM domain area, which were presented detailed in Appendix B.

The results from the two different resolution models are similar at most of the observation stations. For 88 stations considered, the average performance index from LS ECM is better in 14 of them and worse in 11.

The meaning of symbols used in this appendix is similar to the ones in other appendices.

GSE: ground surface elevation;

MAE: mean absolute error;

ME: mean error;

PL: average performance level, which is number in the range from 1.0 (high) to 3.0 (low);

R: Correlation coefficient;

RMSE: root mean square error.

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Station Name	ECM						LS ECM					
	Comp. layer	ME (ft)	MAE (ft)	RMSE (ft)	R	PL	Comp. layer	ME (ft)	MAE (ft)	RMSE (ft)	R	PL
40-GW1	1	0.10	0.73	1.06	0.72	1.0	1	0.22	0.86	1.17	0.65	1.3
40-GW2	2	0.59	1.28	1.71	0.42	2.0	1	0.87	1.37	1.66	0.45	2.0
40-GW3	1	-0.88	1.01	1.15	0.83	1.3	2	-0.58	0.82	0.98	0.79	1.0
40-GW4	2	1.75	1.75	1.97	0.80	1.8	2	-3.86	3.86	3.97	0.76	2.5
40-GW5	1	1.86	1.86	2.01	0.85	1.8	1	-0.74	1.11	1.37	0.77	1.5
40-GW6	1	0.77	1.28	1.68	0.44	2.0	1	0.39	1.32	1.74	0.40	2.0
40-GW7	1	-0.46	0.82	1.16	0.66	1.3	1	-0.44	0.81	1.16	0.66	1.3
46A-GW3	1	-1.48	1.54	1.74	0.76	1.8	1	-1.98	1.99	2.23	0.73	1.8
46A-GW4	1	-0.40	1.11	1.35	0.74	1.5	1	-0.52	1.12	1.36	0.74	1.5
46A-GW10	1	-0.26	0.54	0.73	0.82	1.0	1	-0.25	0.54	0.72	0.82	1.0
46A-GW11	1	-0.91	0.91	1.02	0.93	1.0	1	-1.28	1.28	1.36	0.92	1.8
46A-GW12	1	-1.31	1.52	1.88	0.63	2.0	1	-1.68	1.79	2.10	0.69	2.0
46A-GW13	1	-1.01	1.10	1.23	0.84	1.5	1	-0.95	1.00	1.13	0.86	1.3
46A-GW14	1	-0.82	1.10	1.26	0.61	1.8	1	-0.96	1.21	1.39	0.58	1.8
46A-GW15	1	-0.24	0.55	0.70	0.87	1.0	1	-0.47	0.58	0.79	0.89	1.0
46A-GW18	1	-1.12	1.23	1.43	0.79	1.8	1	-0.97	1.17	1.36	0.78	1.5
46A-GW21	1	-0.89	1.00	1.18	0.75	1.0	1	-1.01	1.10	1.28	0.73	1.8
46A-GW25	1	0.33	0.47	0.61	0.88	1.0	1	0.12	0.49	0.63	0.82	1.0
46A-GW26	1	-0.10	0.54	0.69	0.80	1.0	1	-0.23	0.46	0.60	0.79	1.0
49-GW3	1	0.16	1.01	1.28	0.42	2.0	1	0.12	0.91	1.15	0.40	1.5
49-GW6	1	0.43	1.12	1.38	0.75	1.5	1	0.16	1.10	1.32	0.76	1.5
49-GW7	1	0.42	0.91	1.34	0.56	1.5	1	0.43	0.87	1.29	0.57	1.5
49-GW8	1	1.94	1.94	2.33	0.23	2.3	1	1.78	1.78	2.17	0.26	2.3
49-GW9	1	1.51	1.53	1.80	0.81	1.8	1	1.35	1.38	1.66	0.80	1.8
49-GW10	1	-0.14	0.83	0.98	0.85	1.0	1	-0.32	0.81	0.97	0.87	1.0
49-GW11	1	0.33	0.83	1.16	0.89	1.0	1	0.43	0.97	1.23	0.89	1.0
49-GW12	1	0.78	0.88	1.09	0.91	1.0	1	0.75	0.90	1.13	0.90	1.0
49-GW14	1	-0.05	0.59	0.73	0.87	1.0	1	-0.06	0.63	0.76	0.86	1.0
49-GW15	1	3.31	3.31	3.41	0.51	2.8	1	1.62	1.68	1.88	0.51	2.0
49L-GW1	1	0.26	0.71	0.94	0.77	1.0	1	0.36	0.75	0.94	0.78	1.0
BRM-Lake	1	-0.02	0.42	0.53	0.94	1.0	1	0.15	0.38	0.51	0.94	1.0
BRM-MW1	1	0.31	0.60	0.72	0.77	1.0	1	0.28	0.47	0.59	0.86	1.0
BRM-MW2	1	-0.01	0.35	0.44	0.93	1.0	1	0.15	0.33	0.48	0.92	1.0
BRM-MW3	1	0.57	0.60	0.77	0.90	1.0	1	0.85	0.85	0.99	0.91	1.0
BRM-MW4	1	0.48	0.54	0.73	0.84	1.0	1	0.67	0.67	0.86	0.84	1.0
Corkscrew Swamp	1	-0.61	1.01	1.06	0.87	1.3	1	-0.61	1.01	1.06	0.87	1.3
FP2_GW1	1	0.35	1.15	1.55	0.78	1.5	1	0.50	1.09	1.53	0.80	1.5
FP3_GW1	1	0.31	0.65	0.80	0.83	1.0	1	0.28	0.60	0.73	0.86	1.0
FP4_GW1	1	-0.09	0.53	0.65	0.89	1.0	1	-0.22	0.55	0.70	0.89	1.0
FP5_GW1	1	-0.21	0.57	0.74	0.88	1.0	1	-0.33	0.60	0.76	0.88	1.0
FP6_GW1	1	-0.27	0.77	0.97	0.86	1.0	1	-0.41	0.76	0.94	0.87	1.0
FP7_GW1	1	-0.22	0.83	1.03	0.86	1.0	1	-0.41	0.84	1.03	0.86	1.0
FP8_GW1	1	-0.07	0.70	0.84	0.87	1.0	1	-0.27	0.70	0.85	0.88	1.0
FP9_G	1	-0.19	0.82	1.01	0.85	1.0	1	-0.39	0.83	1.02	0.86	1.0



Station Name	ECM						LS ECM					
	Comp. layer	ME (ft)	MAE (ft)	RMSE (ft)	R	PL	Comp. layer	ME (ft)	MAE (ft)	RMSE (ft)	R	PL
FP10_G	1	-0.21	0.57	0.77	0.87	1.0	1	-0.28	0.55	0.73	0.88	1.0
HF1_G	1	-4.25	4.41	5.96	0.28	3.0	1	-4.28	4.43	5.98	0.27	3.0
HF2_G	1	-0.32	1.08	1.28	0.72	1.5	1	-0.38	1.05	1.25	0.71	1.3
HF3_G	1	2.27	2.32	2.69	0.80	2.5	1	2.24	2.27	2.62	0.80	2.5
HF4_G	1	-1.39	1.80	2.22	0.61	2.0	1	-1.38	1.79	2.21	0.62	2.0
HF7_G	1	-1.40	1.70	2.09	0.57	2.0	1	-1.42	1.70	2.09	0.59	2.0
L-1138	1	-0.56	0.92	1.10	0.80	1.0	1	-0.29	0.78	0.89	0.81	1.0
L-1985	2	-0.59	2.12	2.49	0.72	1.8	2	-0.22	2.46	2.98	0.62	2.3
L-2192	3	1.17	4.16	5.30	0.28	2.8	3	0.78	4.01	5.16	0.32	2.5
L-2204	2	-0.46	0.56	0.73	0.86	1.0	2	-0.70	0.76	0.92	0.87	1.0
L-5649	3	-7.52	7.52	8.17	0.67	2.8	4	-7.45	7.45	8.15	0.63	2.8
L-5664	3	-9.17	9.17	10.12	0.49	3.0	4	-9.11	9.11	10.1	0.50	2.8
L-5667	1	1.26	1.44	1.56	0.92	1.8	1	1.09	1.29	1.39	0.93	1.8
L-5669R	3	-0.25	0.57	0.69	0.77	1.0	3	0.15	0.40	0.55	0.85	1.0
L-5673	3	-8.43	8.47	9.19	0.60	2.8	3	-8.21	8.26	8.98	0.63	2.8
L-5874	3	-3.09	3.53	4.36	0.70	2.8	3	-3.50	3.76	4.65	0.71	2.5
L-730	2	0.37	0.56	0.78	0.77	1.0	2	0.65	0.69	0.92	0.80	1.0
L-739	2	0.57	0.60	0.74	0.96	1.0	2	0.55	0.60	0.74	0.96	1.0
MPW02	1	-0.62	0.62	0.71	0.98	1.0	1	-0.67	0.67	0.78	0.98	1.0
MPW03	1	-0.96	0.96	0.97	0.98	1.0	1	-0.98	0.98	0.99	0.99	1.0
MPW04	1	-0.05	0.54	0.67	0.91	1.0	1	-0.01	0.51	0.65	0.91	1.0
MPW05	1	0.27	0.56	0.61	0.73	1.0	1	0.25	0.53	0.57	0.78	1.0
MPW08	1	0.99	0.99	1.10	0.91	1.0	1	1.06	1.07	1.15	0.92	1.5
MPW25	1	-0.12	0.27	0.31	0.95	1.0	1	-0.27	0.35	0.39	0.95	1.0
MPW27	1	0.69	0.71	1.04	0.80	1.0	1	0.46	0.52	0.81	0.85	1.0
MPW28	1	1.16	1.16	1.23	0.51	1.8	1	0.95	0.95	1.00	0.77	1.0
MPW29	1	-0.09	0.41	0.53	0.84	1.0	1	-0.08	0.31	0.40	0.96	1.0
MPW30	1	0.39	0.59	0.97	0.73	1.0	1	0.10	0.57	0.83	0.77	1.0
MPW31	1	0.38	0.39	0.59	0.94	1.0	1	0.25	0.30	0.48	0.95	1.0
MPW33	1	-0.55	1.18	1.48	0.70	1.8	1	-0.78	1.20	1.51	0.77	1.5
MPW34	1	0.62	0.62	0.63	0.98	1.0	1	0.48	0.48	0.49	0.97	1.0
MPW35	1	-1.10	1.26	1.36	0.84	1.8	1	-1.01	1.06	1.24	0.90	1.5
MPW36	1	0.08	0.61	0.74	0.84	1.0	1	-0.11	0.53	0.66	0.87	1.0
MPW39	1	-1.52	2.20	2.46	0.66	2.3	1	-1.35	2.35	2.52	0.64	2.5
ST1_G	1	-0.26	0.61	0.73	0.87	1.0	1	-0.44	0.73	0.85	0.86	1.0
ST2_G	1	0.34	0.66	0.80	0.86	1.0	1	0.05	0.61	0.73	0.86	1.0
ST3_G	1	-0.20	0.75	0.86	0.81	1.0	1	-0.34	0.80	0.92	0.80	1.0
WF1_G	2	0.68	0.69	0.75	0.95	1.0	2	1.06	1.06	1.12	0.94	1.5
WF2_G	2	1.13	1.29	1.61	0.76	1.8	2	1.31	1.39	1.73	0.77	1.8
WF3_G	1	1.38	1.38	1.59	0.84	1.8	1	1.54	1.55	1.71	0.86	1.8
WF4_G	1	0.91	1.06	1.28	0.81	1.5	1	0.95	1.05	1.27	0.83	1.5
WF5_G	1	0.97	1.11	1.43	0.79	1.5	1	1.03	1.08	1.40	0.81	1.8
WF6_G	1	0.99	1.04	1.32	0.83	1.5	1	0.87	0.91	1.18	0.85	1.0
WF7_G	1	1.14	1.20	1.53	0.79	1.8	1	1.16	1.18	1.49	0.81	1.8
KehlCan	0	1.26	1.67	2.09	0.73	2.5	0	1.33	1.67	2.10	0.73	2.5



Station Name	ECM						LS ECM					
	Comp. layer	ME (ft)	MAE (ft)	RMSE (ft)	R	PL	Comp. layer	ME (ft)	MAE (ft)	RMSE (ft)	R	PL
9358												
KehlCan 9479	0	0.03	0.76	1.08	0.93	1.3	0	0.10	0.72	1.06	0.92	1.3
S-SF-1_HW	0	0.14	0.18	0.23	0.88	1.0	0	0.23	0.28	0.32	0.83	1.0
S-SF-1_Q	0	---	---	---	0.74	2.0	0	---	---	---	0.71	2.0
S-SF-1_TW	0	-0.03	0.30	0.47	0.44	1.5	0	-0.03	0.31	0.48	0.43	1.5
S-NM-2_HW	0	-0.01	0.18	0.23	0.65	1.3	0	0.00	0.19	0.24	0.61	1.3
S-NM-2_Q	0	---	---	---	0.43	3.0	0	---	---	---	0.41	3.0
S-NM-2_TW	0	0.80	1.03	1.16	0.44	2.0	0	0.80	1.04	1.16	0.43	2.3
S-YT-2_HW	0	1.54	1.66	1.88	0.74	2.3	0	1.63	1.74	1.97	0.76	2.5
Mullock Creek 2702	0	2.51	2.51	2.54	0.62	2.8	0	2.48	2.48	2.51	0.62	2.8

Table C1. Statistical parameters and level of performance at monitoring stations in the LS ECM domain area. The green color indicates the highest performance level (1.0, 1.2 and 1.5), yellow for medium (1.8, 2.0, 2.3, 2.5) and orange for low (2.8, 3.0).

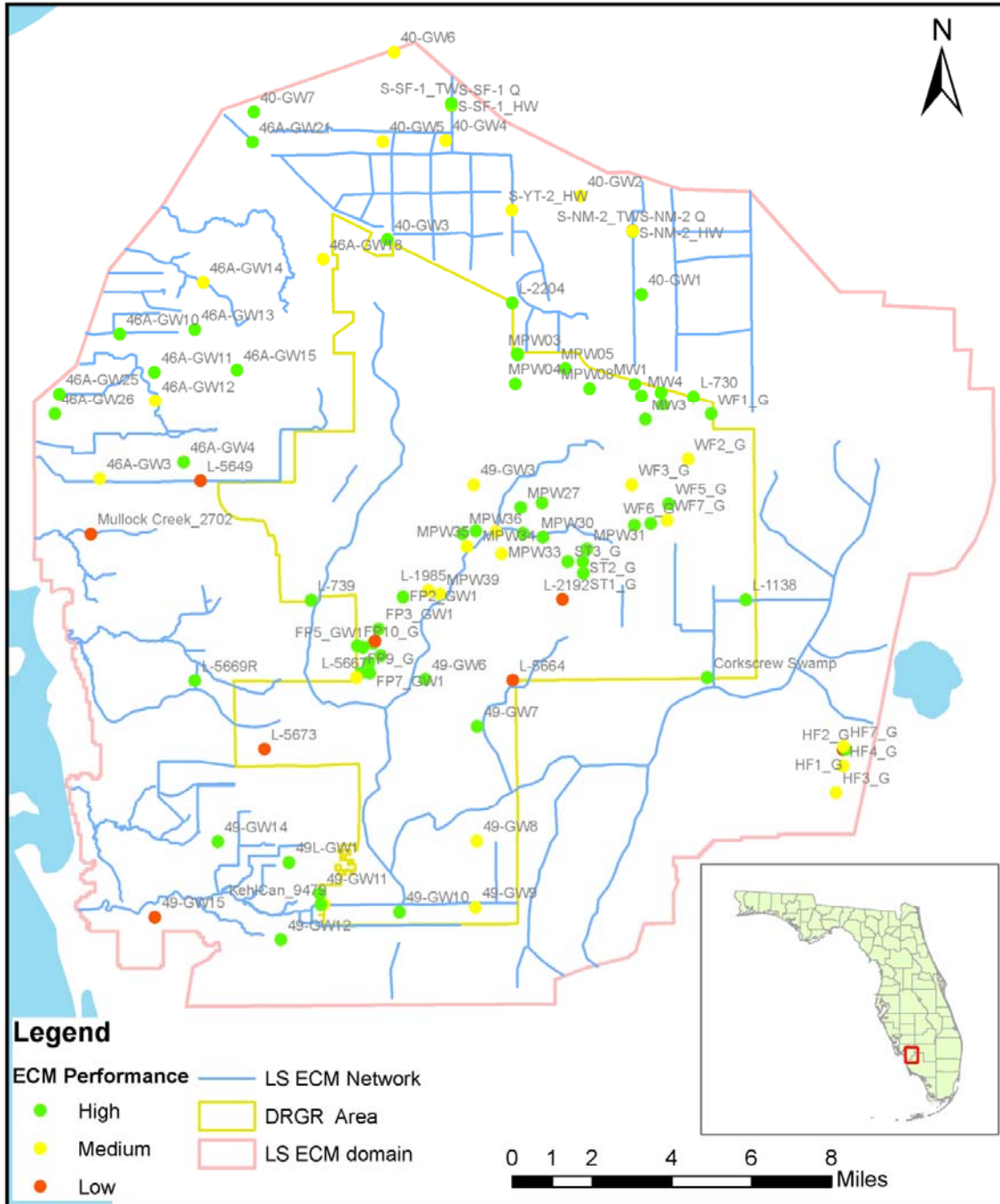


Figure C1. Average performance level of the ECM results at monitoring stations in the LS ECM domain area.



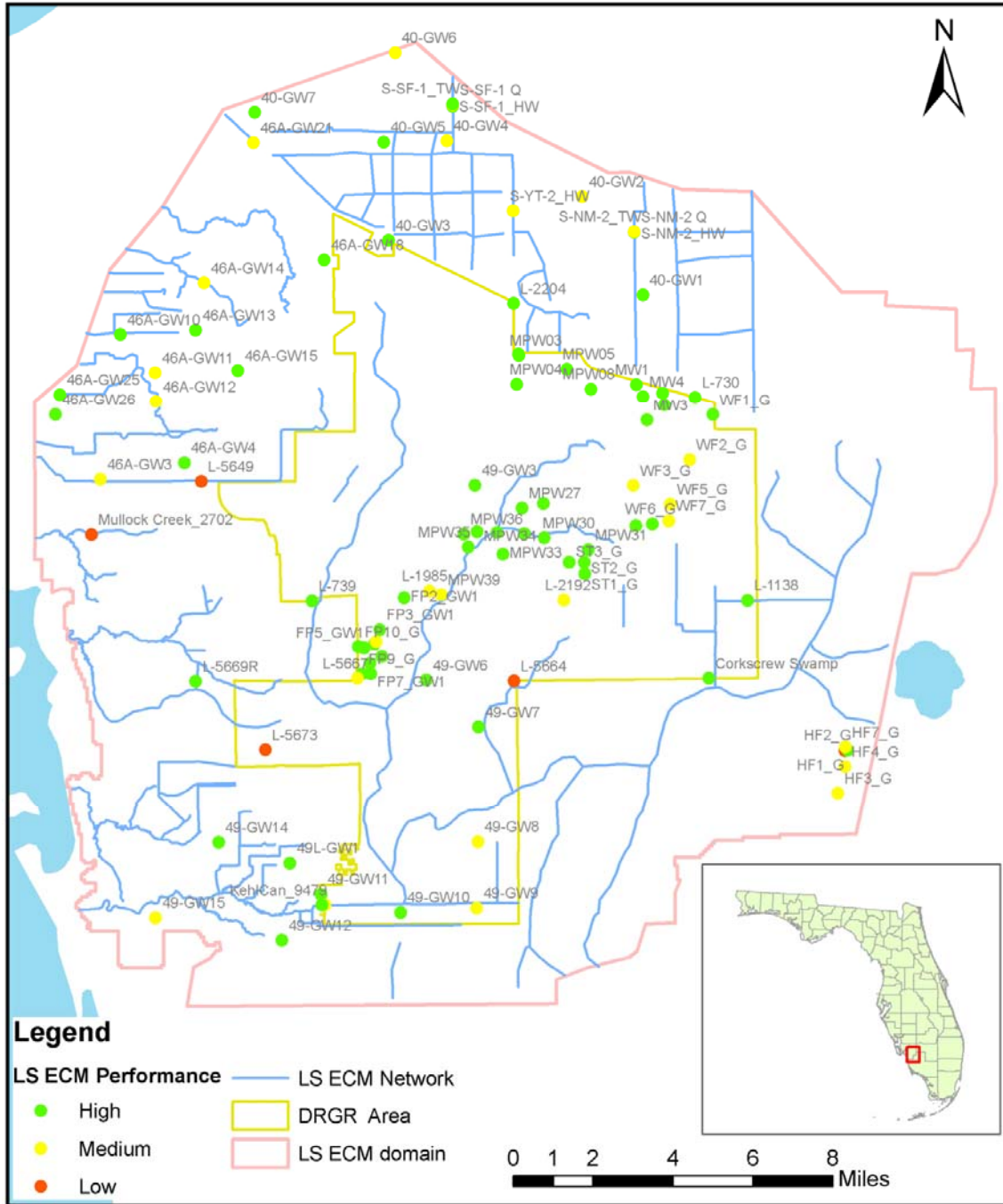
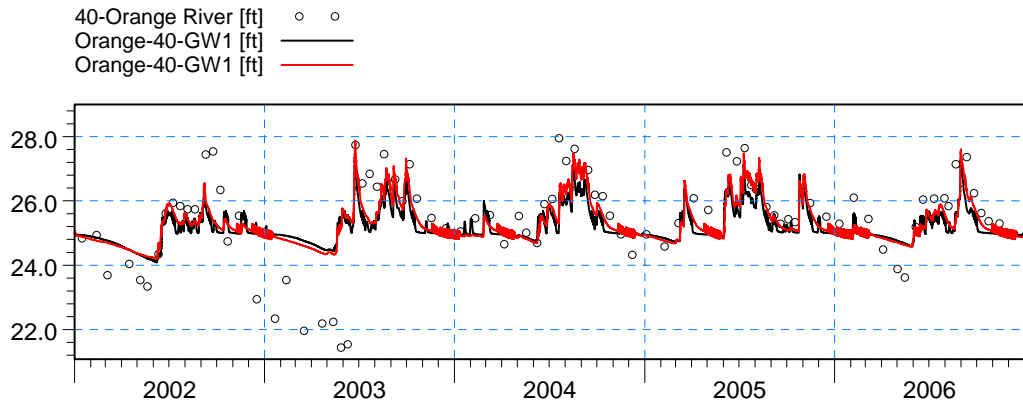
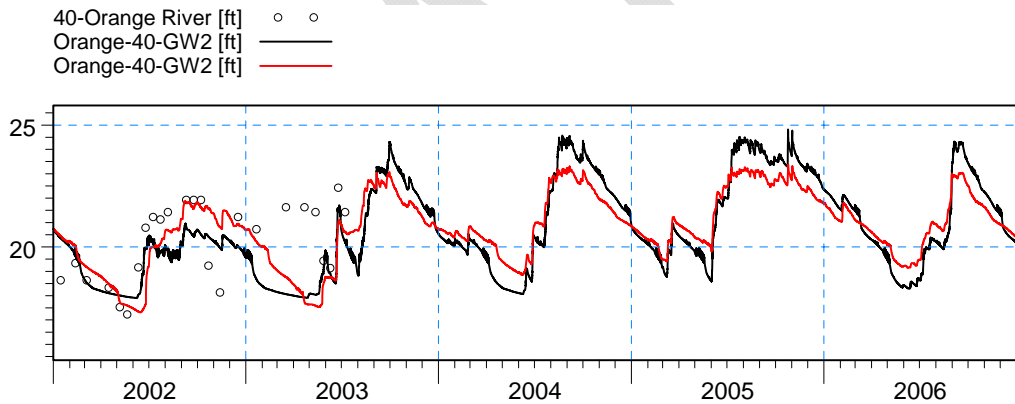


Figure C2. Average performance level of the LS ECM results at monitoring stations.

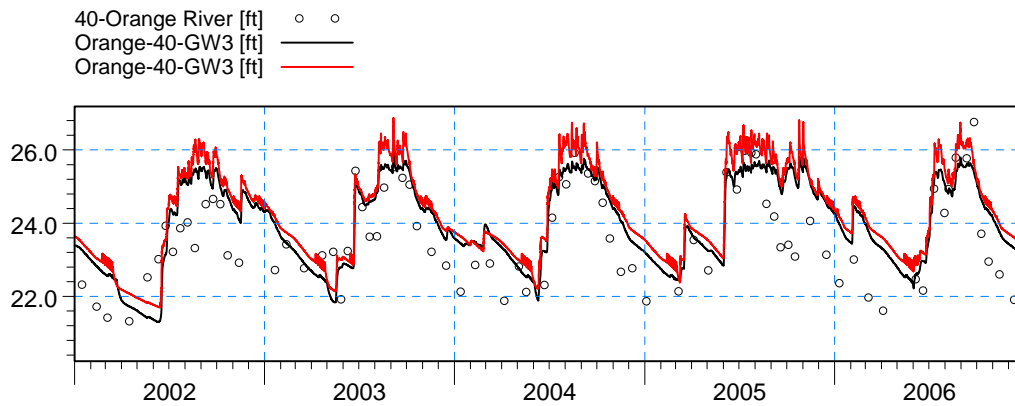


ME=0.215258  
 MAE=0.862872  
 RMSE=1.1701  
 STDres=1.15012  
 R(Correlation)=0.648369  
 R2(Nash\_Sutcliffe)=0.319068

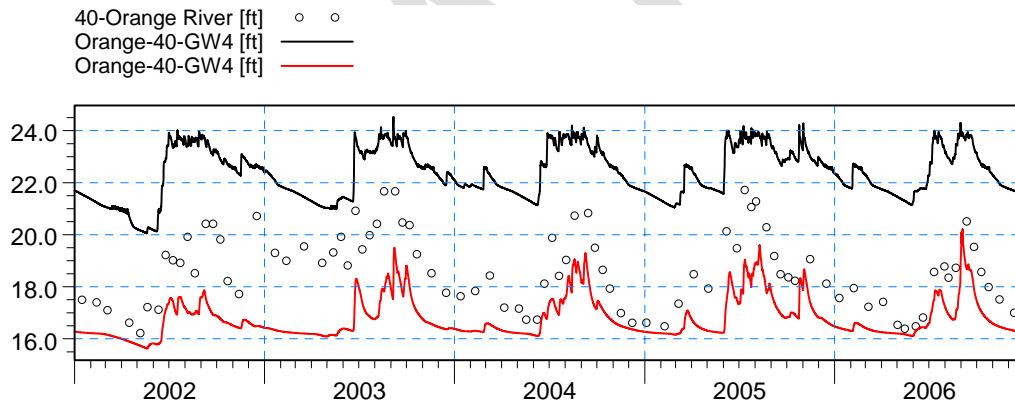


ME=0.868709  
 MAE=1.36943  
 RMSE=1.66372  
 STDres=1.41892  
 R(Correlation)=0.444965  
 R2(Nash\_Sutcliffe)=-0.184595

Figure C3. Groundwater elevation at wells 40-GW1 and 40-GW2. The black line corresponds to LS ECM result, and red line to the ECM result.

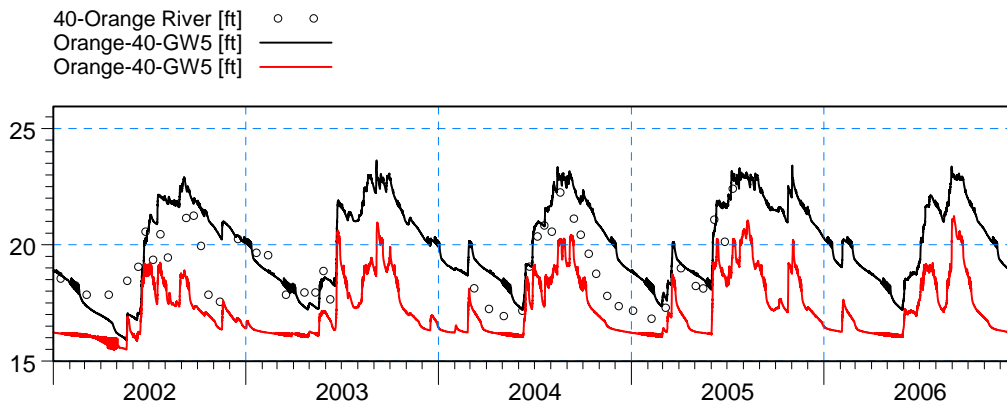


ME=-0.578482  
 MAE=0.817334  
 RMSE=0.983047  
 STDres=0.794821  
 R(Correlation)=0.79182  
 R2(Nash\_Sutcliffe)=0.416489

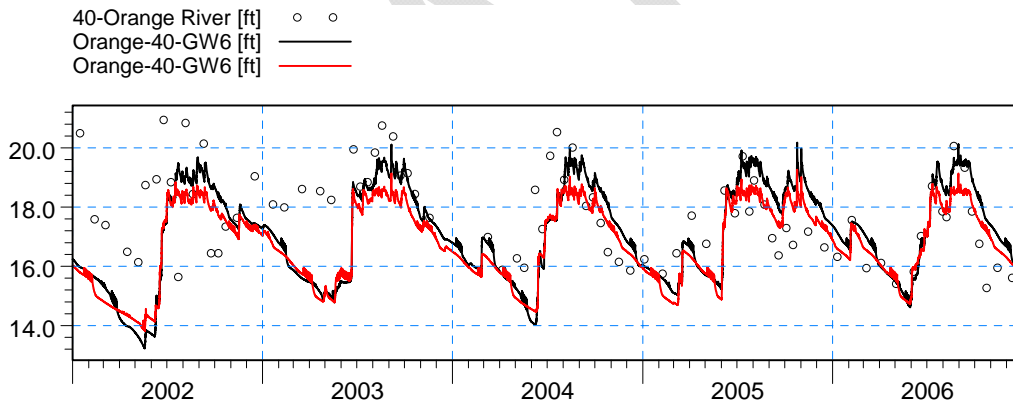


ME=-3.86078  
 MAE=3.86078  
 RMSE=3.97037  
 STDres=0.926404  
 R(Correlation)=0.757352  
 R2(Nash\_Sutcliffe)=-6.91808

Figure C4. Groundwater elevation at wells 40-GW3 and 40-GW4. The black line corresponds to LS ECM result, and red line to the ECM result.

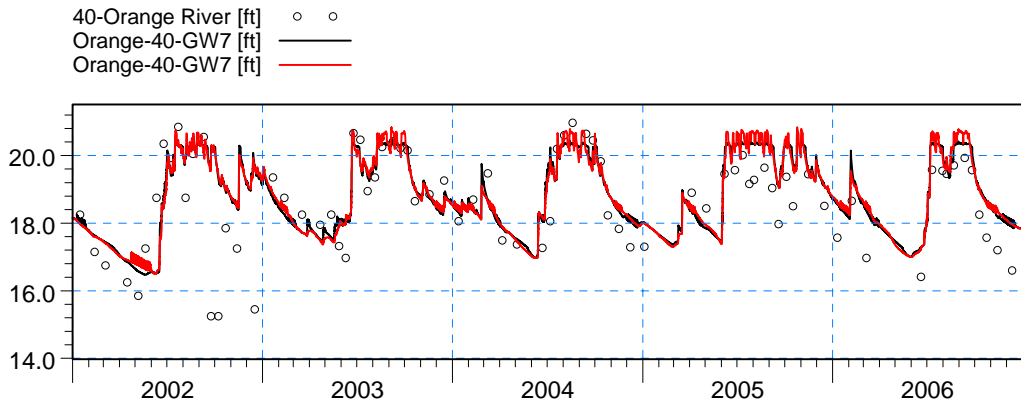


ME=-0.740828  
 MAE=1.11372  
 RMSE=1.37109  
 STDres=1.15372  
 R(Correlation)=0.768068  
 R2(Nash\_Sutcliffe)=0.11923

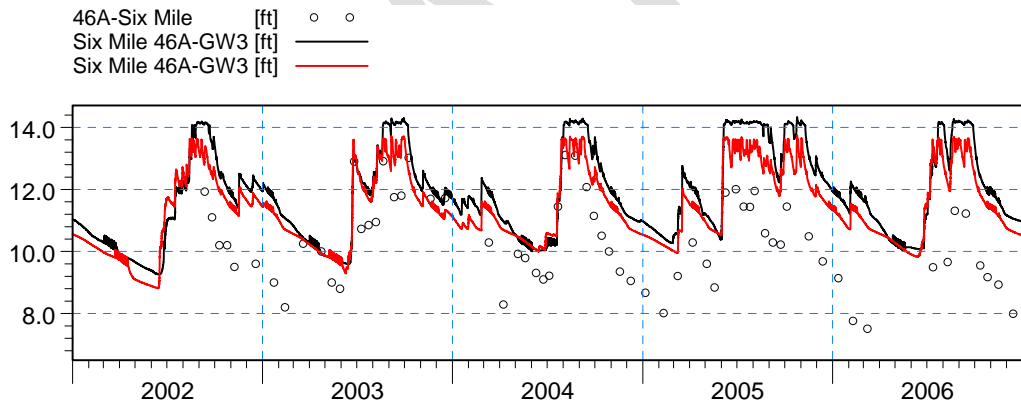


ME=0.392984  
 MAE=1.31909  
 RMSE=1.74118  
 STDres=1.69625  
 R(Correlation)=0.40127  
 R2(Nash\_Sutcliffe)=-0.38201

Figure C5. Groundwater elevation at wells 40-GW5 and 40-GW6. The black line corresponds to LS ECM result, and red line to the ECM result.

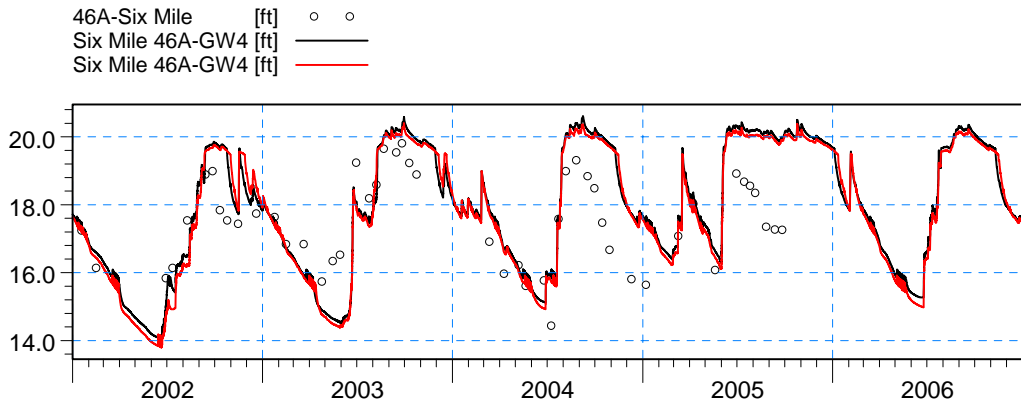


ME=-0.440507  
 MAE=0.80895  
 RMSE=1.15612  
 STDres=1.06891  
 R(Correlation)=0.656994  
 R2(Nash\_Sutcliffe)=0.310736

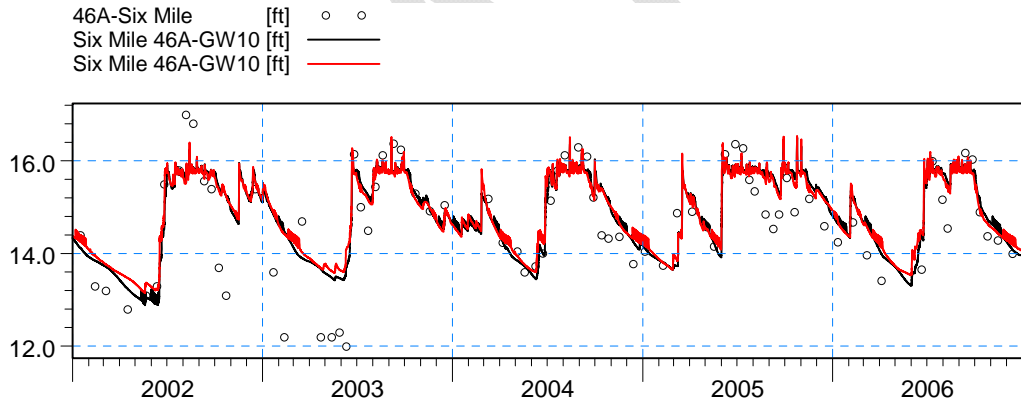


ME=-1.98165  
 MAE=1.9908  
 RMSE=2.23481  
 STDres=1.03317  
 R(Correlation)=0.7254  
 R2(Nash\_Sutcliffe)=-1.54419

Figure C6. Groundwater elevation at wells 40-GW7 and 46A-GW3. The black line corresponds to LS ECM result, and red line to the ECM result.

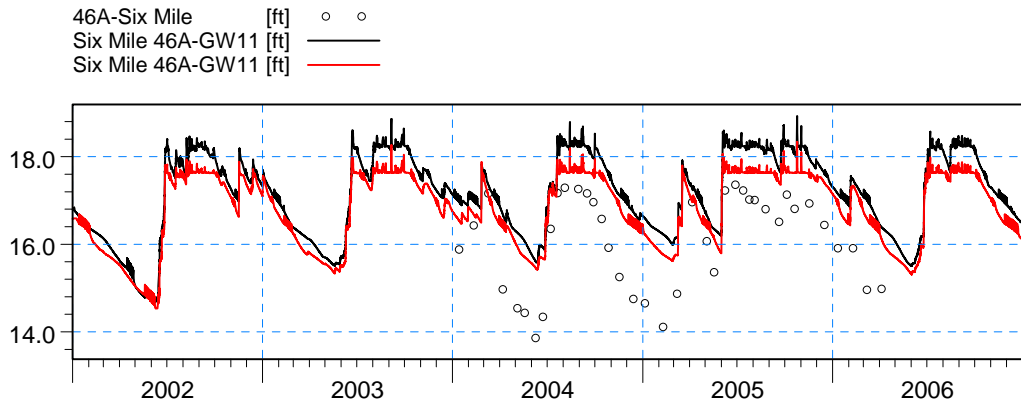


ME=-0.519267  
 MAE=1.11819  
 RMSE=1.361  
 STDres=1.25805  
 R(Correlation)=0.743274  
 R2(Nash\_Sutcliffe)=-0.0913463

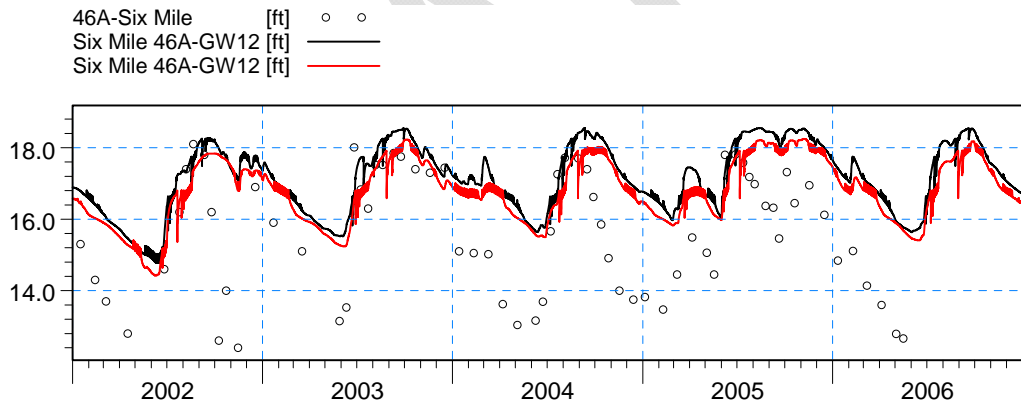


ME=-0.245909  
 MAE=0.536685  
 RMSE=0.719412  
 STDres=0.676078  
 R(Correlation)=0.81567  
 R2(Nash\_Sutcliffe)=0.614801

Figure C7. Groundwater elevation at wells 46A-GW4 and 46A-GW10. The black line corresponds to LS ECM result, and red line to the ECM result.

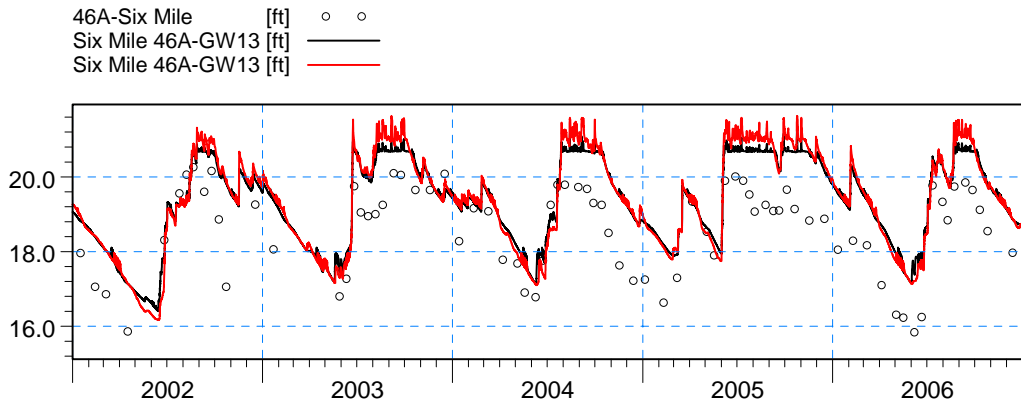


ME=-1.28486  
 MAE=1.28486  
 RMSE=1.35844  
 STDres=0.441026  
 R(Correlation)=0.924647  
 R2(Nash\_Sutcliffe)=-0.605653

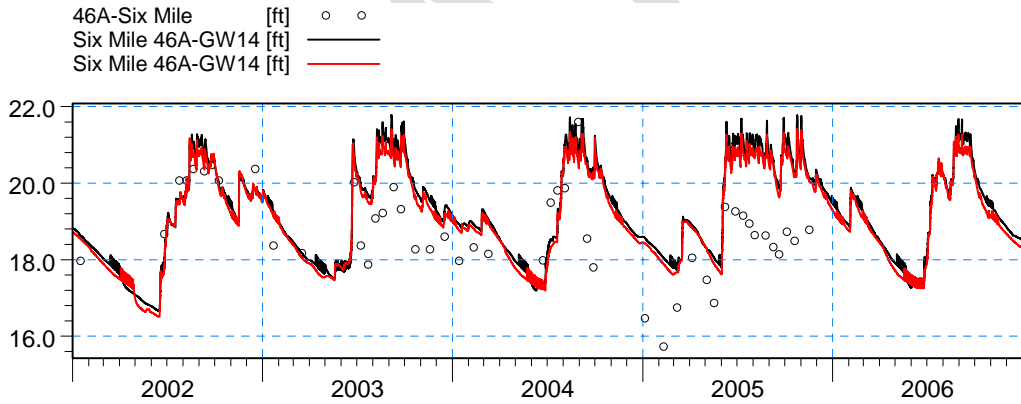


ME=-1.68358  
 MAE=1.78537  
 RMSE=2.10513  
 STDres=1.26378  
 R(Correlation)=0.685096  
 R2(Nash\_Sutcliffe)=-0.533903

Figure C8. Groundwater elevation at wells 46A-GW11 and 46A-GW12. The black line corresponds to LS ECM result, and red line to the ECM result.



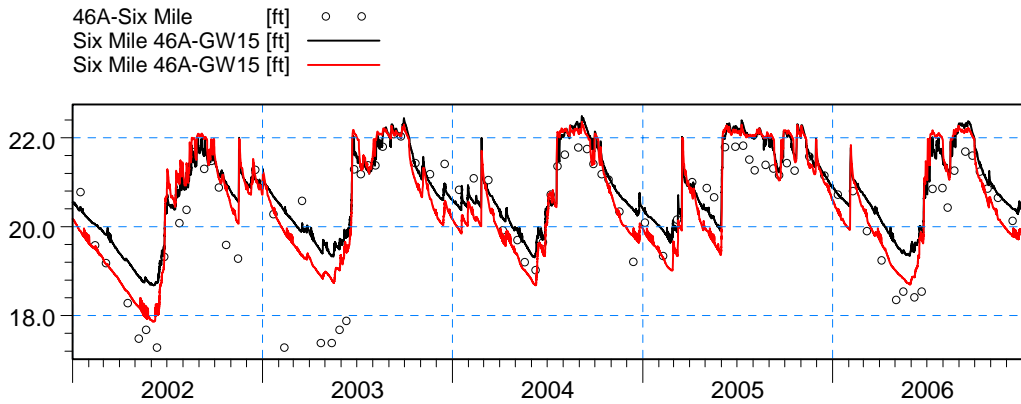
ME=-0.945956  
 MAE=1.00431  
 RMSE=1.13145  
 STDres=0.620771  
 R(Correlation)=0.855919  
 R2(Nash\_Sutcliffe)=0.0877518



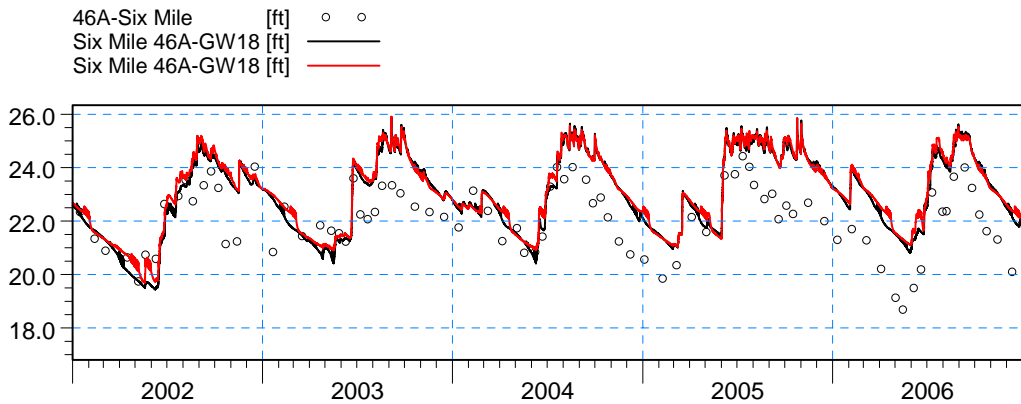
ME=-0.955465  
 MAE=1.20764  
 RMSE=1.38928  
 STDres=1.00856  
 R(Correlation)=0.581027  
 R2(Nash\_Sutcliffe)=-0.530277

Figure C9. Groundwater elevation at wells 46A-GW13 and 46A-GW14. The black line corresponds to LS ECM result, and red line to the ECM result.



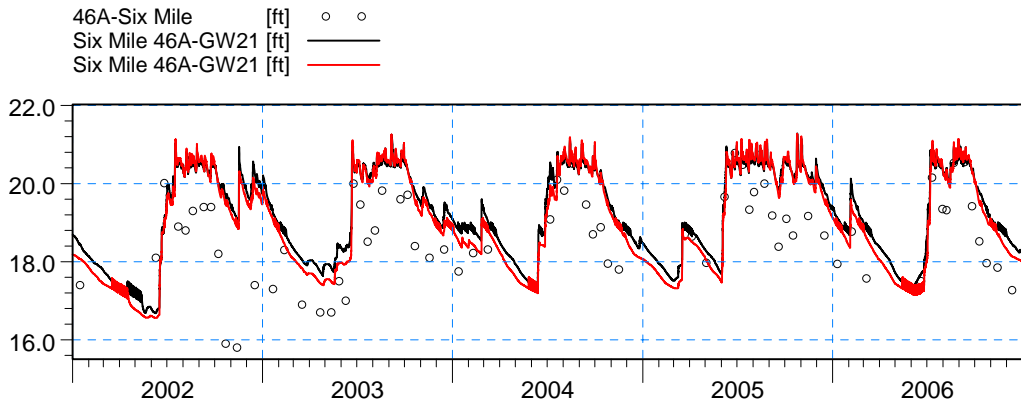


ME=-0.469419  
 MAE=0.577236  
 RMSE=0.78903  
 STDres=0.634204  
 R(Correlation)=0.886484  
 R2(Nash\_Sutcliffe)=0.632615

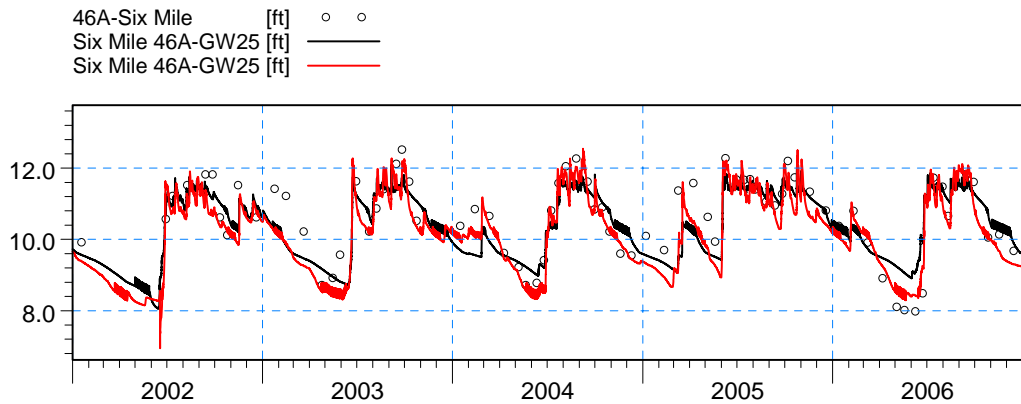


ME=-0.967418  
 MAE=1.17293  
 RMSE=1.35604  
 STDres=0.950241  
 R(Correlation)=0.774985  
 R2(Nash\_Sutcliffe)=-0.145046

Figure C10. Groundwater elevation at wells 46A-GW15 and 46A-GW18. The black line corresponds to LS ECM result, and red line to the ECM result.

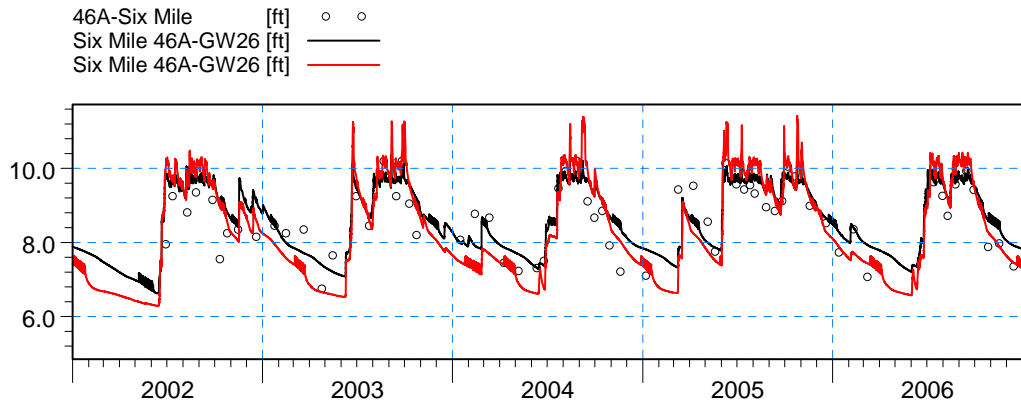


ME=-1.01206  
 MAE=1.10197  
 RMSE=1.2826  
 STDres=0.787898  
 R(Correlation)=0.727294  
 R2(Nash\_Sutcliffe)=-0.287804

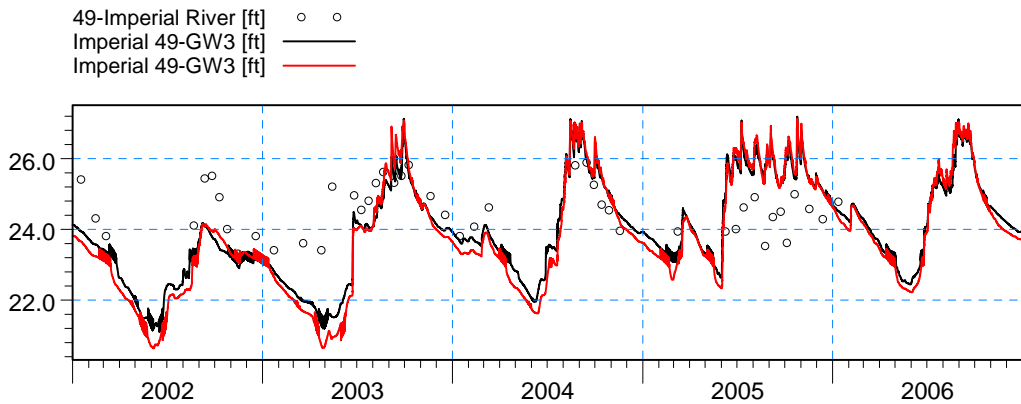


ME=0.123037  
 MAE=0.494223  
 RMSE=0.626604  
 STDres=0.614406  
 R(Correlation)=0.823279  
 R2(Nash\_Sutcliffe)=0.664867

Figure C11. Groundwater elevation at wells 46A-GW21 and 46A-GW25. The black line corresponds to LS ECM result, and red line to the ECM result.

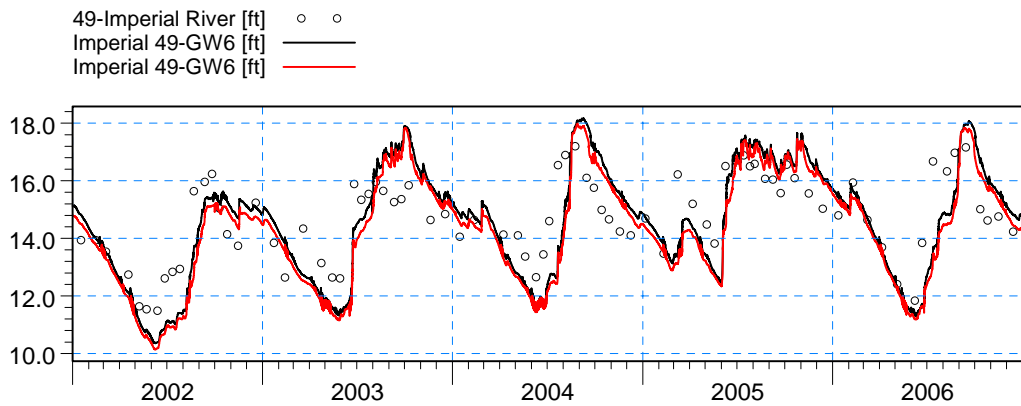


ME=-0.231016  
 MAE=0.459353  
 RMSE=0.597783  
 STDres=0.551341  
 R(Correlation)=0.787018  
 R2(Nash\_Sutcliffe)=0.535556

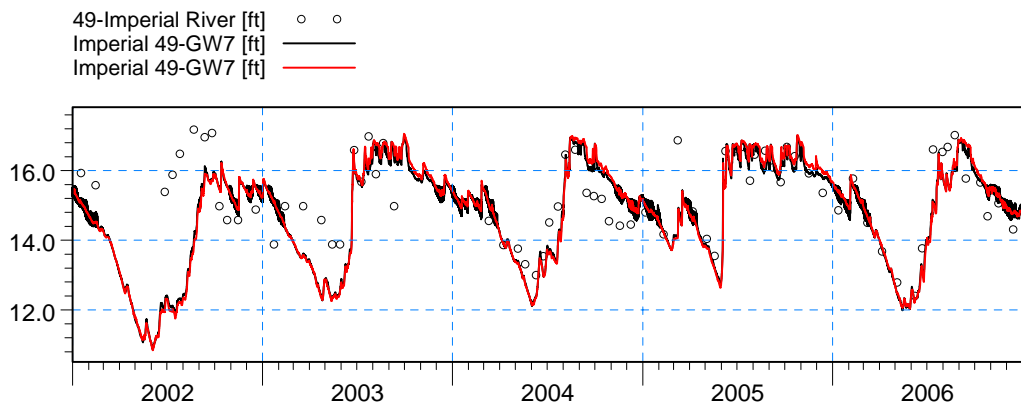


ME=0.120111  
 MAE=0.905135  
 RMSE=1.15059  
 STDres=1.1443  
 R(Correlation)=0.397953  
 R2(Nash\_Sutcliffe)=-1.56442

Figure C12. Groundwater elevation at wells 46A-GW26 and 49-GW3. The black line corresponds to LS ECM result, and red line to the ECM result.

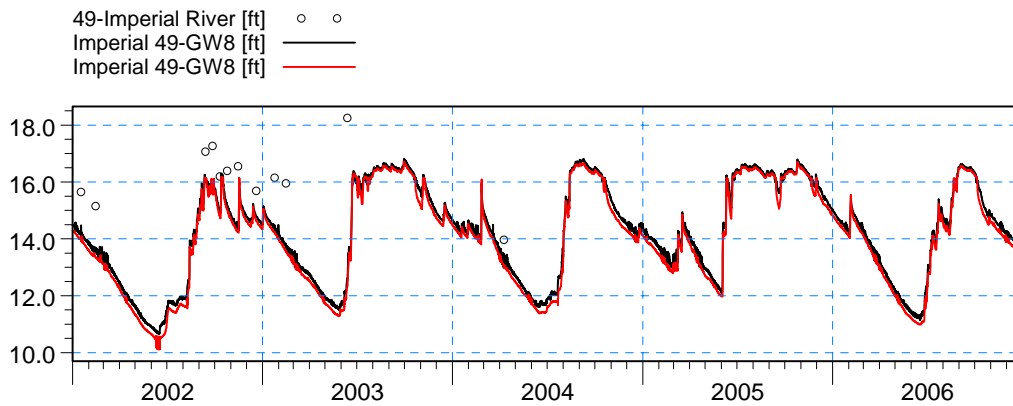


ME=0.15928  
 MAE=1.10072  
 RMSE=1.3201  
 STDres=1.31045  
 R(Correlation)=0.763035  
 R2(Nash\_Sutcliffe)=0.11913

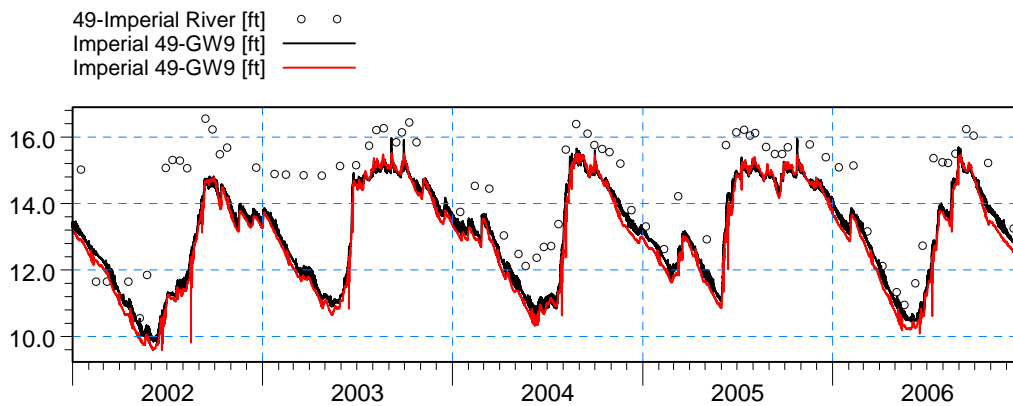


ME=0.427617  
 MAE=0.868823  
 RMSE=1.28836  
 STDres=1.21532  
 R(Correlation)=0.57423  
 R2(Nash\_Sutcliffe)=-0.129474

Figure C13. Groundwater elevation at wells 49-GW6 and 49-GW7. The black line corresponds to LS ECM result, and red line to the ECM result.

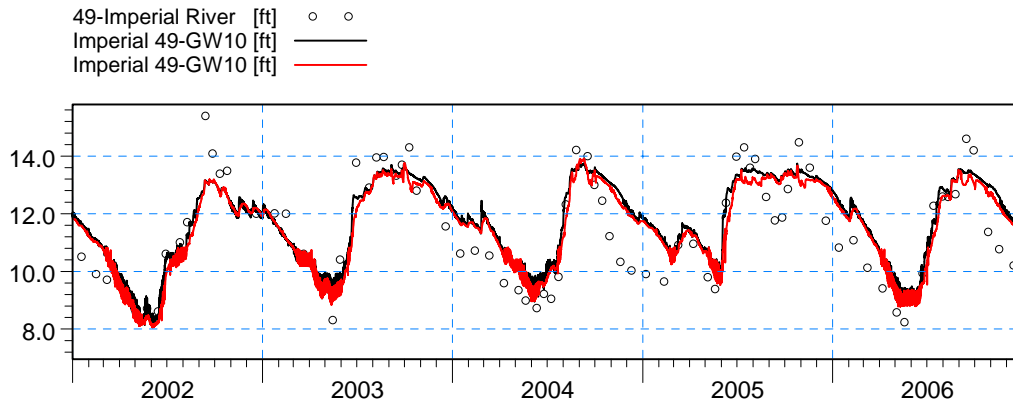


ME=1.78338  
 MAE=1.78338  
 RMSE=2.17374  
 STDres=1.24286  
 R(Correlation)=0.255128  
 R2(Nash\_Sutcliffe)=-3.37353

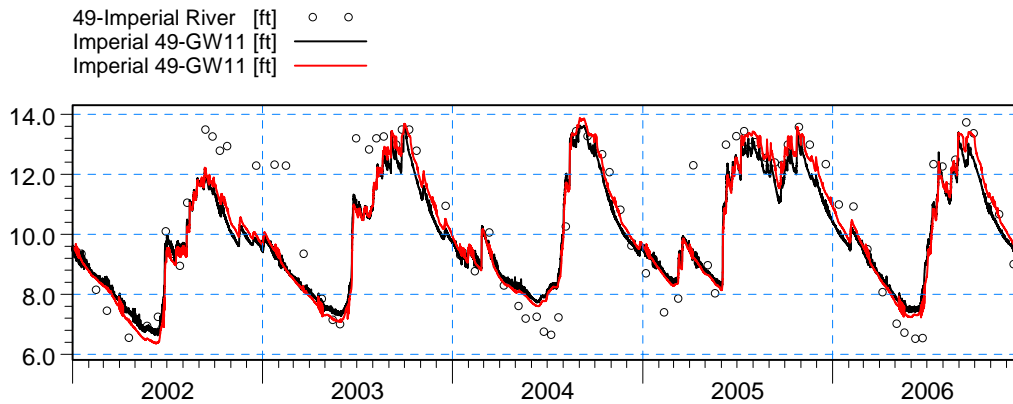


ME=1.34753  
 MAE=1.38006  
 RMSE=1.6551  
 STDres=0.961001  
 R(Correlation)=0.804927  
 R2(Nash\_Sutcliffe)=-0.128044

Figure C14. Groundwater elevation at wells 49-GW8 and 49-GW9. The black line corresponds to LS ECM result, and red line to the ECM result.

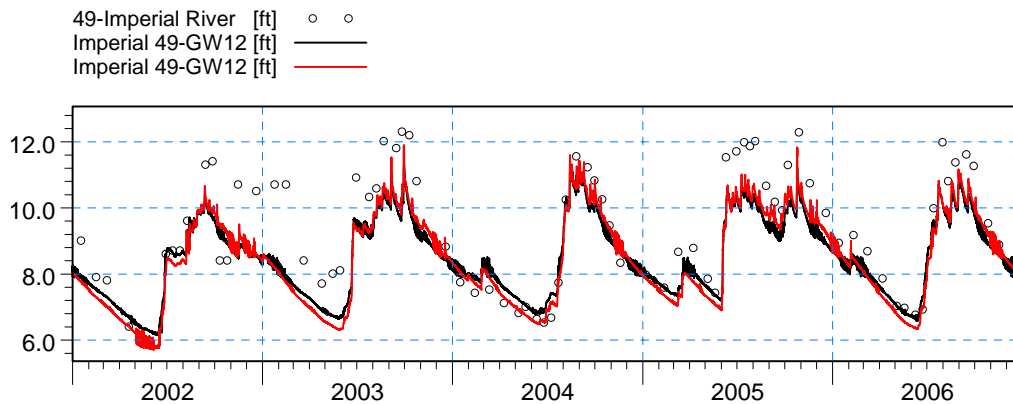


ME=-0.31815  
 MAE=0.809775  
 RMSE=0.974881  
 STDres=0.921506  
 R(Correlation)=0.865945  
 R2(Nash\_Sutcliffe)=0.713697

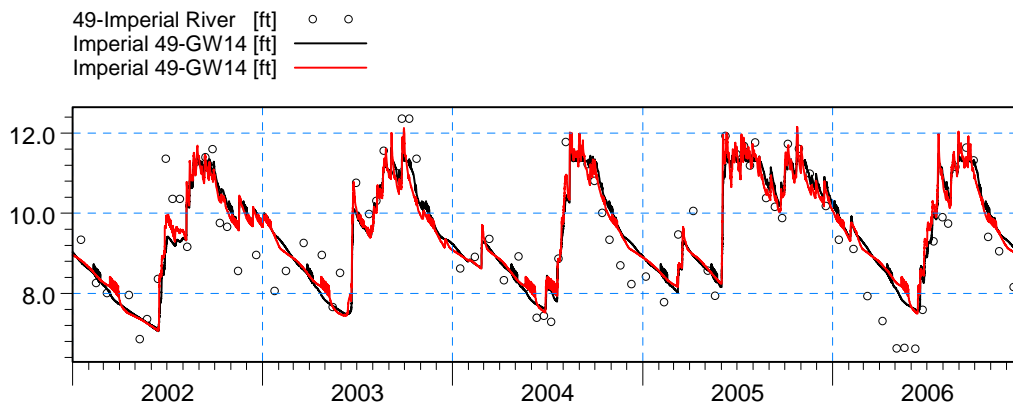


ME=0.432702  
 MAE=0.972423  
 RMSE=1.23268  
 STDres=1.15424  
 R(Correlation)=0.891636  
 R2(Nash\_Sutcliffe)=0.739532

Figure C15. Groundwater elevation at wells 49-GW10 and 49-GW11. The black line corresponds to LS ECM result, and red line to the ECM result.

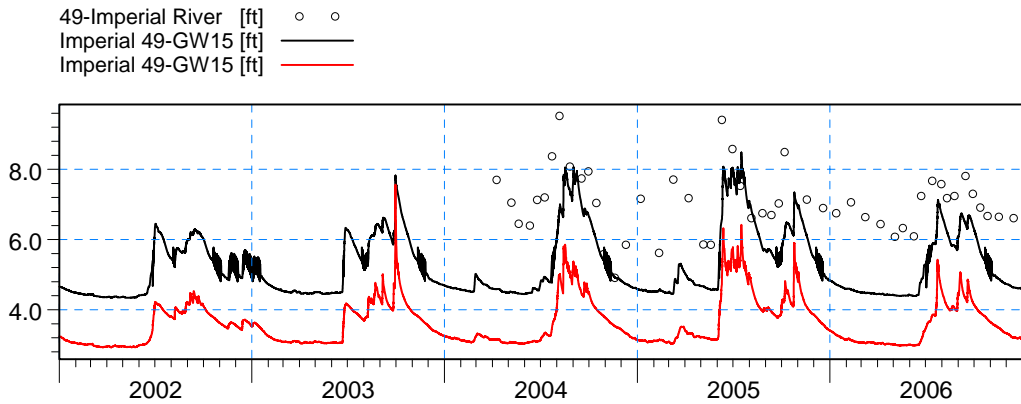


ME=0.747318  
 MAE=0.903635  
 RMSE=1.12611  
 STDres=0.842403  
 R(Correlation)=0.902075  
 R2(Nash\_Sutcliffe)=0.56743



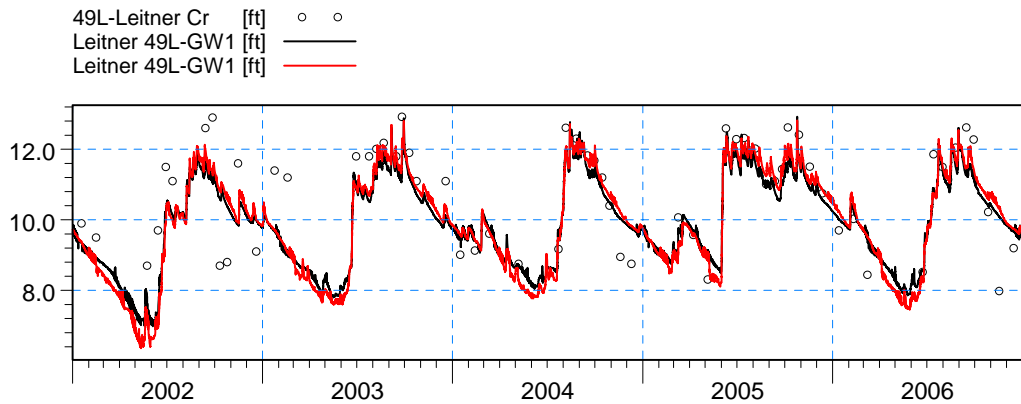
ME=-0.0559433  
 MAE=0.630118  
 RMSE=0.761988  
 STDres=0.759931  
 R(Correlation)=0.861423  
 R2(Nash\_Sutcliffe)=0.740639

Figure C16. Groundwater elevation at wells 49-GW12 and 49-GW14. The black line corresponds to LS ECM result, and red line to the ECM result.



ME=1.62143  
 MAE=1.68179  
 RMSE=1.87651  
 STDres=0.944593  
 R(Correlation)=0.508067  
 R2(Nash\_Sutcliffe)=-3.33736

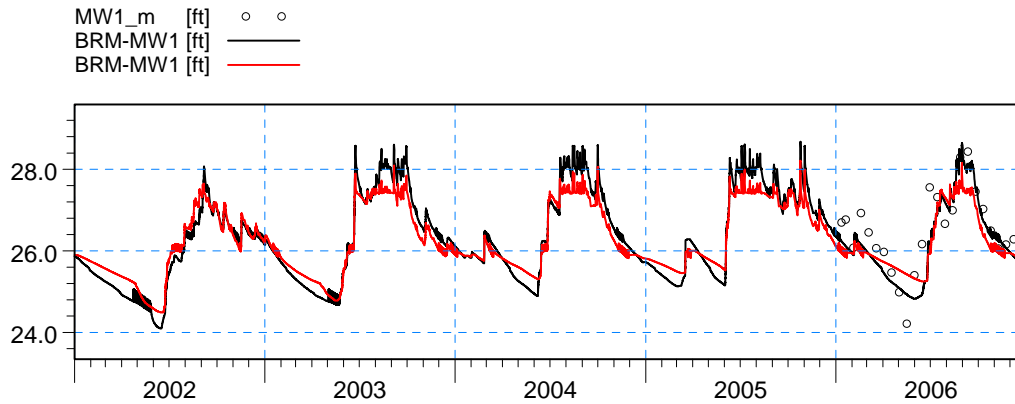
Note: differences at 49-GW15 station  
 are likely caused by topography  
 differences between model grid cells.  
 In ECM, GSE = 7.6 ft.  
 In LS ECM, GSE = 10.3 ft.



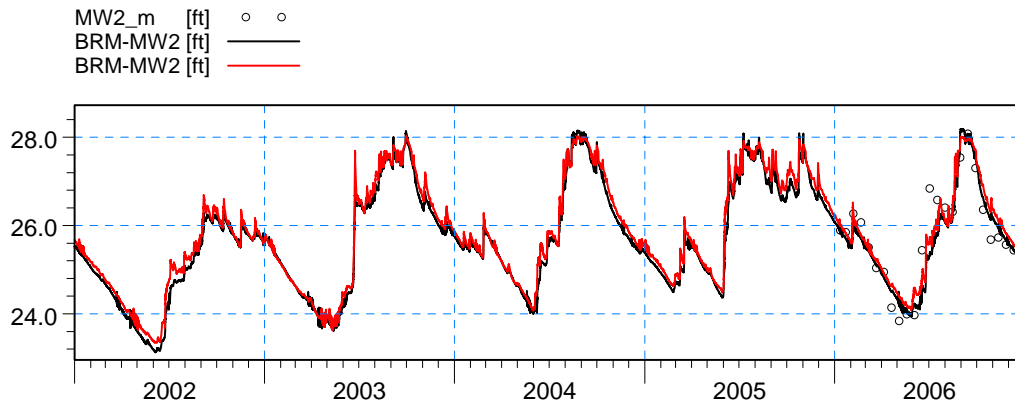
ME=0.356357  
 MAE=0.752029  
 RMSE=0.938772  
 STDres=0.868505  
 R(Correlation)=0.781539  
 R2(Nash\_Sutcliffe)=0.54215

Figure C17. Groundwater elevation at wells 49-GW15 and 49L-GW1. The black line corresponds to LS ECM result, and red line to the ECM result.



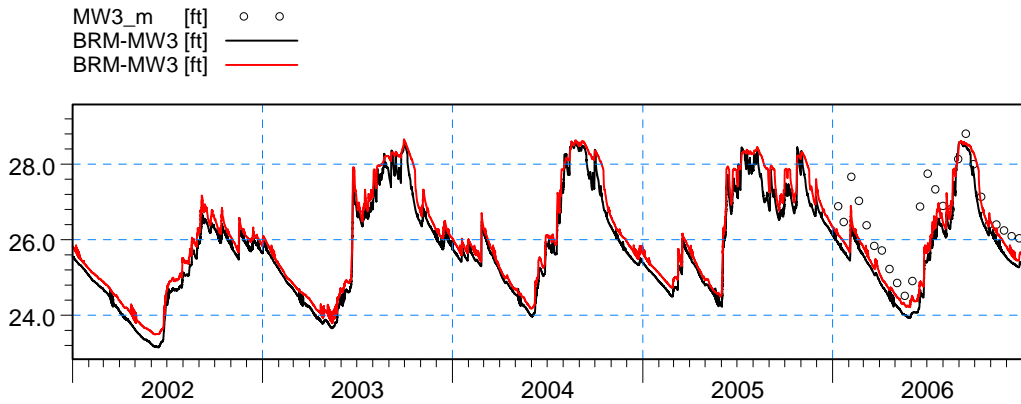


ME=0.286486  
 MAE=0.471358  
 RMSE=0.593058  
 STDres=0.519272  
 R(Correlation)=0.860859  
 R2(Nash\_Sutcliffe)=0.65244

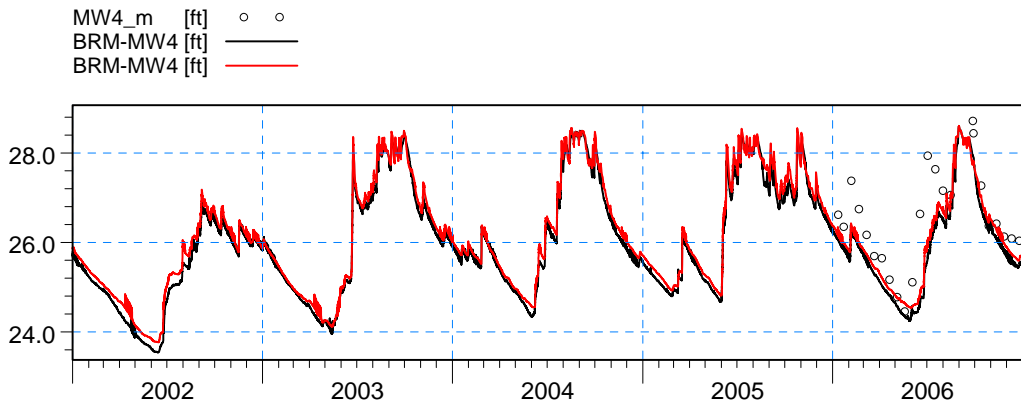


ME=0.146097  
 MAE=0.330765  
 RMSE=0.476677  
 STDres=0.453736  
 R(Correlation)=0.921008  
 R2(Nash\_Sutcliffe)=0.832417

Figure C18. Groundwater elevation at wells BRM-MW1 and BRM-MW2. The black line corresponds to LS ECM result, and red line to the ECM result.

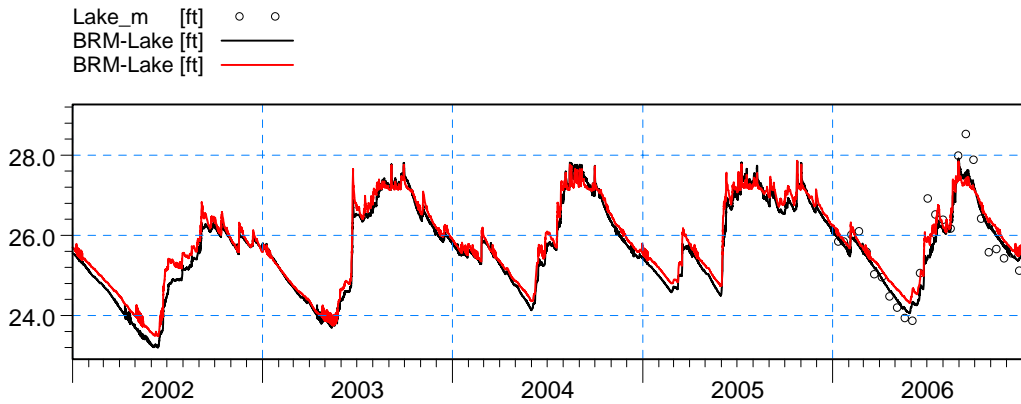


ME=0.849808  
 MAE=0.850054  
 RMSE=0.98661  
 STDres=0.501224  
 R(Correlation)=0.907169  
 R2(Nash\_Sutcliffe)=0.246118

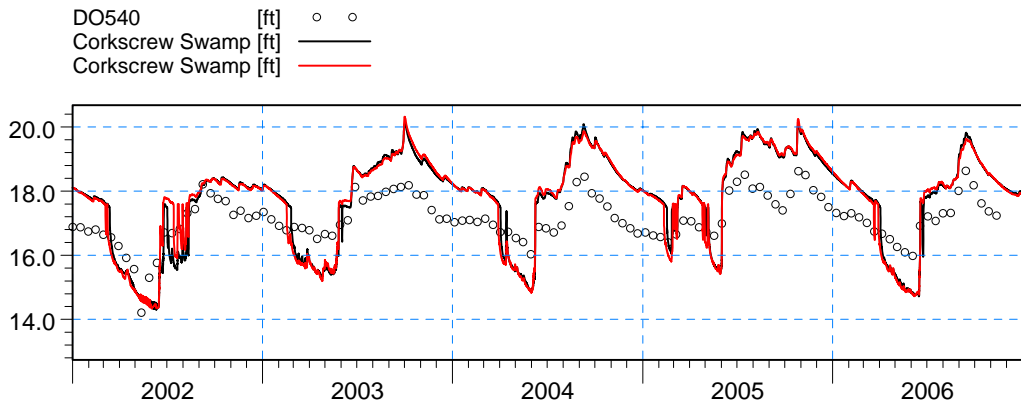


ME=0.668535  
 MAE=0.673313  
 RMSE=0.861776  
 STDres=0.5438  
 R(Correlation)=0.840096  
 R2(Nash\_Sutcliffe)=0.261052

Figure C19. Groundwater elevation at wells BRM-MW3 and BRM-MW4. The black line corresponds to LS ECM result, and red line to the ECM result.

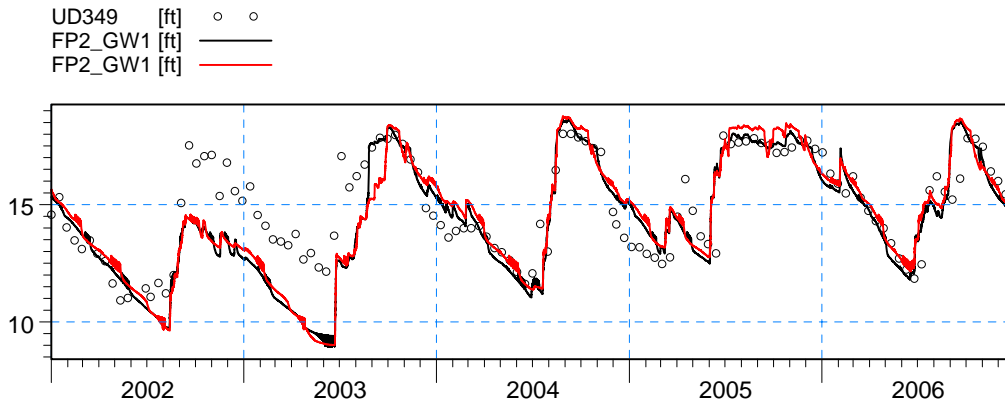


ME=0.145463  
 MAE=0.37675  
 RMSE=0.507723  
 STDres=0.486439  
 R(Correlation)=0.936208  
 R2(Nash\_Sutcliffe)=0.829632

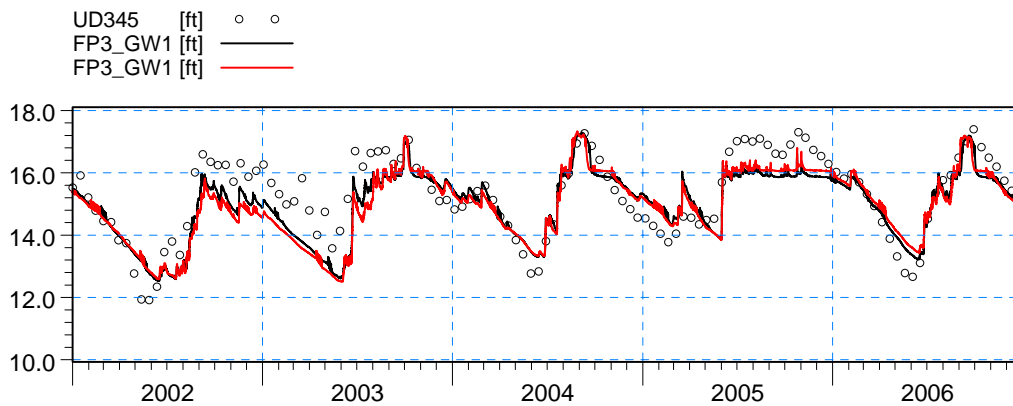


ME=-0.606972  
 MAE=1.00665  
 RMSE=1.05951  
 STDres=0.868422  
 R(Correlation)=0.866191  
 R2(Nash\_Sutcliffe)=-1.24556

Figure C20. Groundwater elevation at wells BRM-Lake and Corkscrew Swamp. The black line corresponds to LS ECM result, and red line to the ECM result.

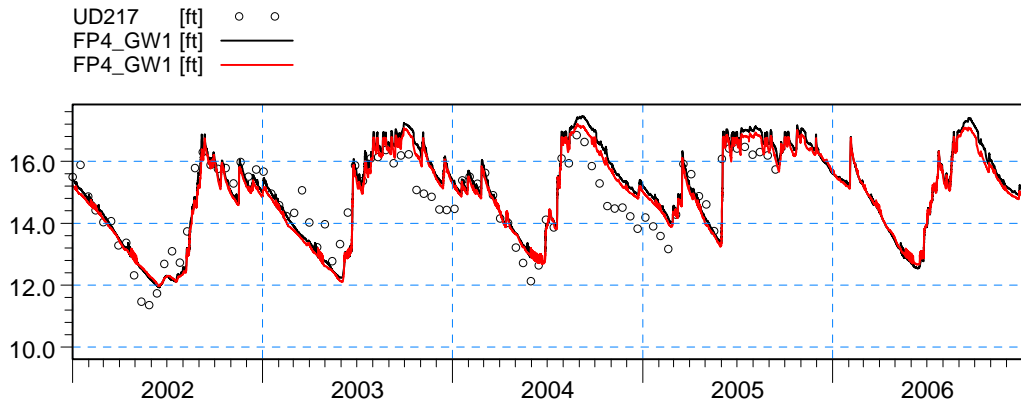


ME=0.50223  
 MAE=1.08661  
 RMSE=1.52592  
 STDres=1.4409  
 R(Correlation)=0.804403  
 R2(Nash\_Sutcliffe)=0.455097

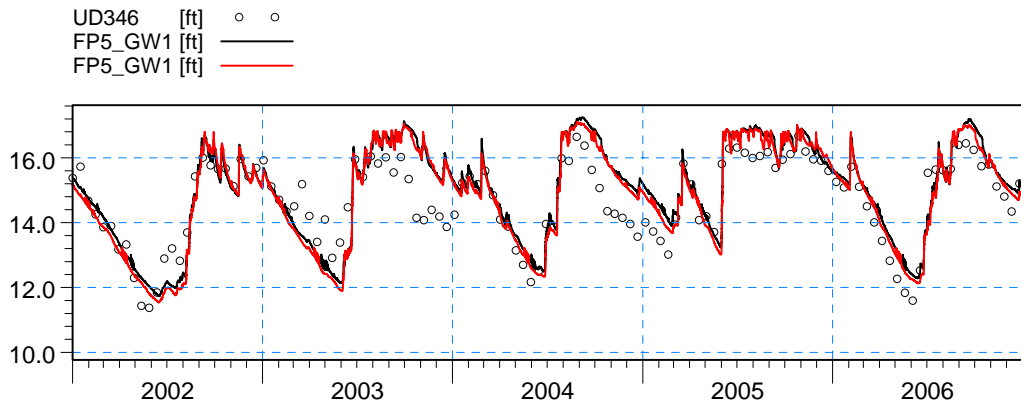


ME=0.27823  
 MAE=0.600786  
 RMSE=0.725598  
 STDres=0.670135  
 R(Correlation)=0.859798  
 R2(Nash\_Sutcliffe)=0.691124

Figure C21. Groundwater elevation at wells FP2\_GW1 and FP3\_GW1. The black line corresponds to LS ECM result, and red line to the ECM result.

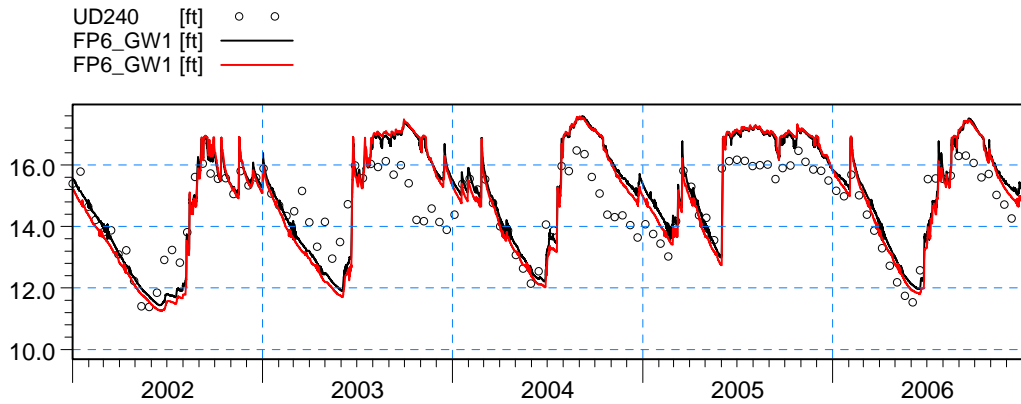


ME=-0.220112  
 MAE=0.554392  
 RMSE=0.698617  
 STDres=0.663036  
 R(Correlation)=0.891076  
 R2(Nash\_Sutcliffe)=0.719073

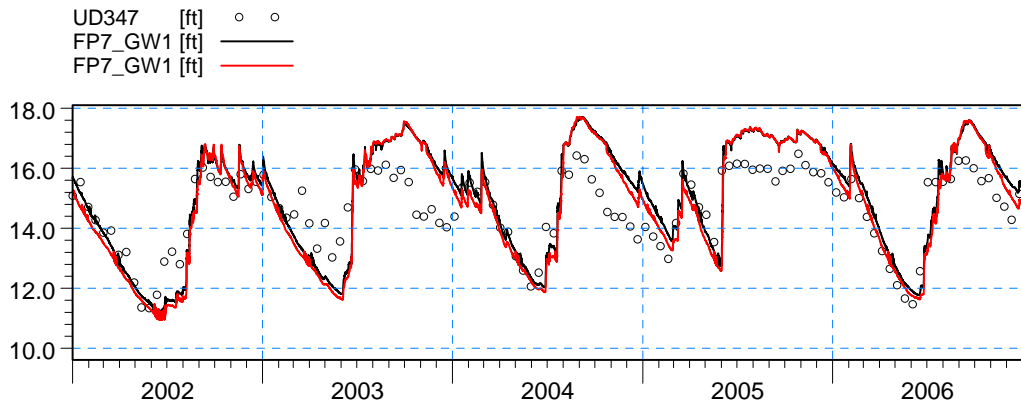


ME=-0.329464  
 MAE=0.596321  
 RMSE=0.764666  
 STDres=0.690049  
 R(Correlation)=0.881118  
 R2(Nash\_Sutcliffe)=0.654618

Figure C22. Groundwater elevation at wells FP4\_GW1 and FP5\_GW1. The black line corresponds to LS ECM result, and red line to the ECM result.

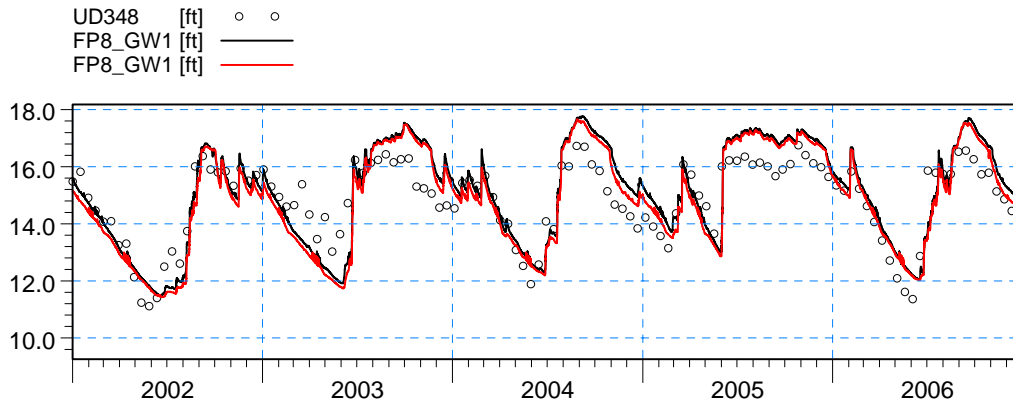


ME=-0.412527  
 MAE=0.756393  
 RMSE=0.941894  
 STDres=0.84675  
 R(Correlation)=0.87017  
 R2(Nash\_Sutcliffe)=0.46586

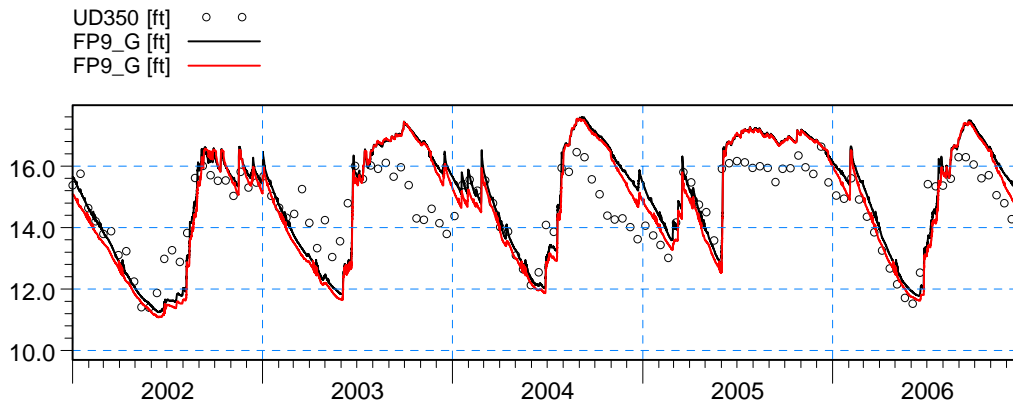


ME=-0.410671  
 MAE=0.838382  
 RMSE=1.02652  
 STDres=0.940798  
 R(Correlation)=0.863737  
 R2(Nash\_Sutcliffe)=0.36804

Figure C23. Groundwater elevation at wells FP6\_GW1 and FP7\_GW1. The black line corresponds to LS ECM result, and red line to the ECM result.

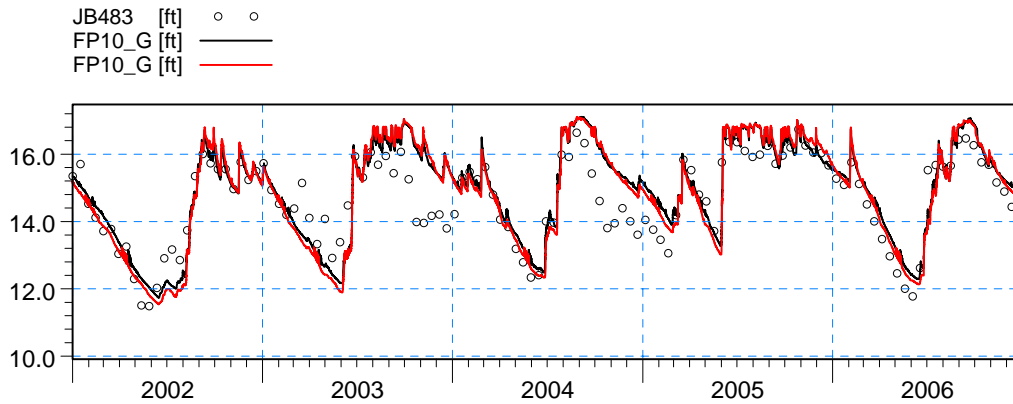


ME=-0.272483  
 MAE=0.702247  
 RMSE=0.854308  
 STDres=0.809688  
 R(Correlation)=0.883307  
 R2(Nash\_Sutcliffe)=0.625276

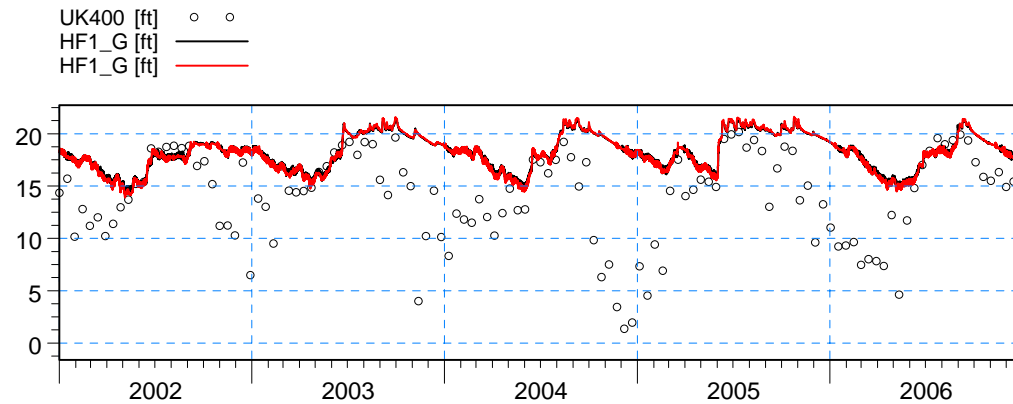


ME=-0.393952  
 MAE=0.825674  
 RMSE=1.01907  
 STDres=0.939844  
 R(Correlation)=0.85594  
 R2(Nash\_Sutcliffe)=0.363127

Figure C24. Groundwater elevation at wells FP8\_GW1 and FP9\_G. The black line corresponds to LS ECM result, and red line to the ECM result.



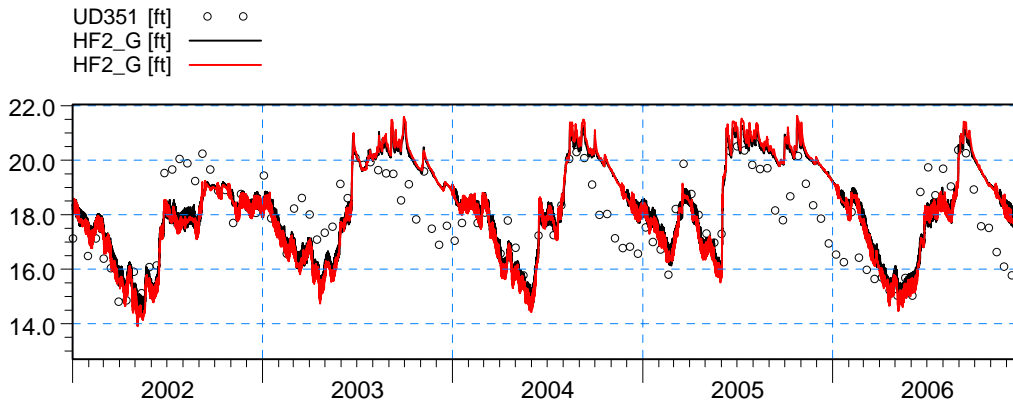
ME=-0.283452  
 MAE=0.546869  
 RMSE=0.729223  
 STDres=0.671879  
 R(Correlation)=0.877626  
 R2(Nash\_Sutcliffe)=0.678147



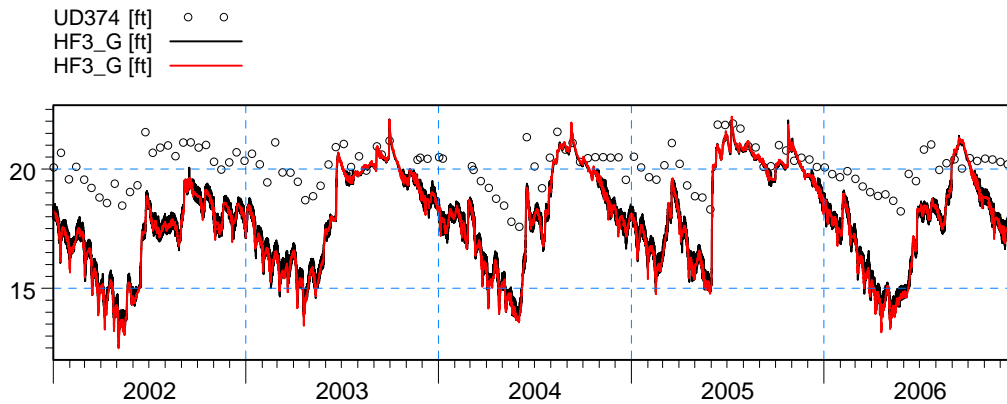
ME=-4.28368  
 MAE=4.43244  
 RMSE=5.98319  
 STDres=4.17716  
 R(Correlation)=0.27164  
 R2(Nash\_Sutcliffe)=-0.926593

Figure C25. Groundwater elevation at wells FP10\_G and HF1\_G. The black line corresponds to LS ECM result, and red line to the ECM result.



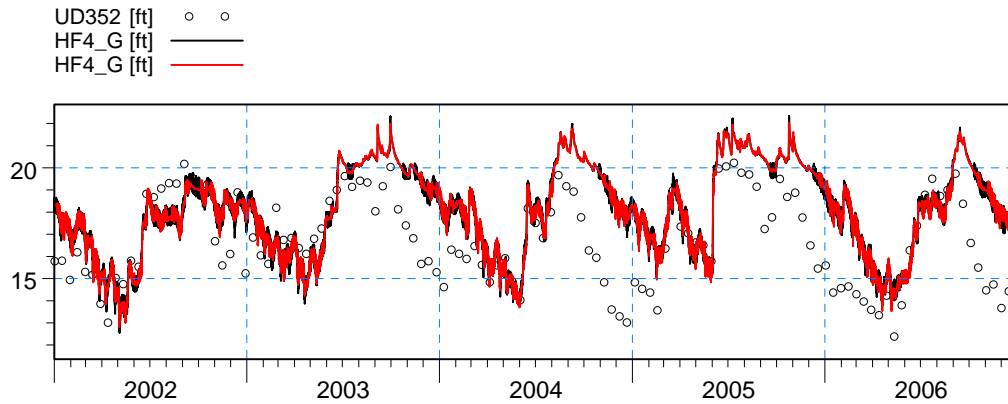


ME=-0.377051  
 MAE=1.04649  
 RMSE=1.24513  
 STDres=1.18667  
 R(Correlation)=0.714211  
 R2(Nash\_Sutcliffe)=0.306722

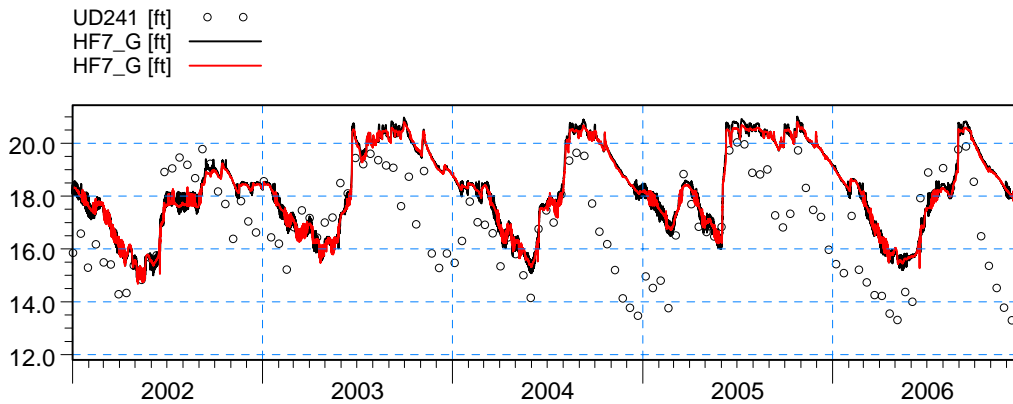


ME=2.23605  
 MAE=2.26786  
 RMSE=2.62156  
 STDres=1.36846  
 R(Correlation)=0.799221  
 R2(Nash\_Sutcliffe)=-8.43752

Figure C26. Groundwater elevation at wells HF2\_G and HF3\_G. The black line corresponds to LS ECM result, and red line to the ECM result.

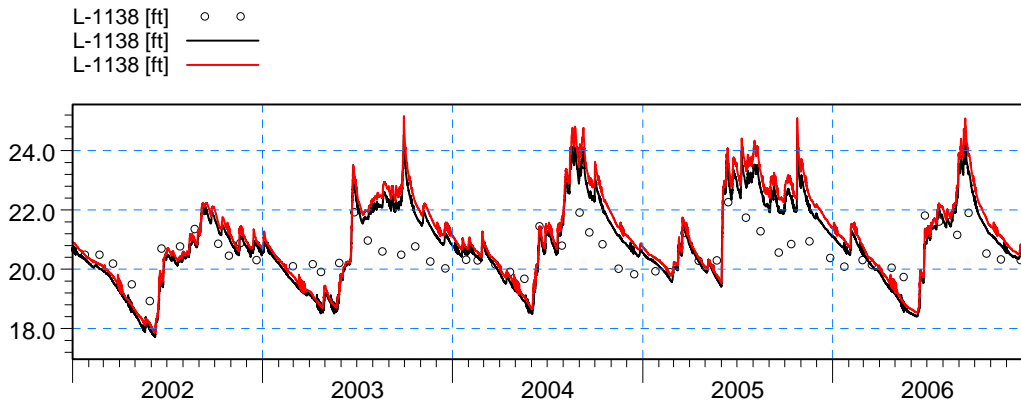


ME=-1.38327  
 MAE=1.79062  
 RMSE=2.20599  
 STDres=1.71842  
 R(Correlation)=0.622821  
 R2(Nash\_Sutcliffe)=-0.210921

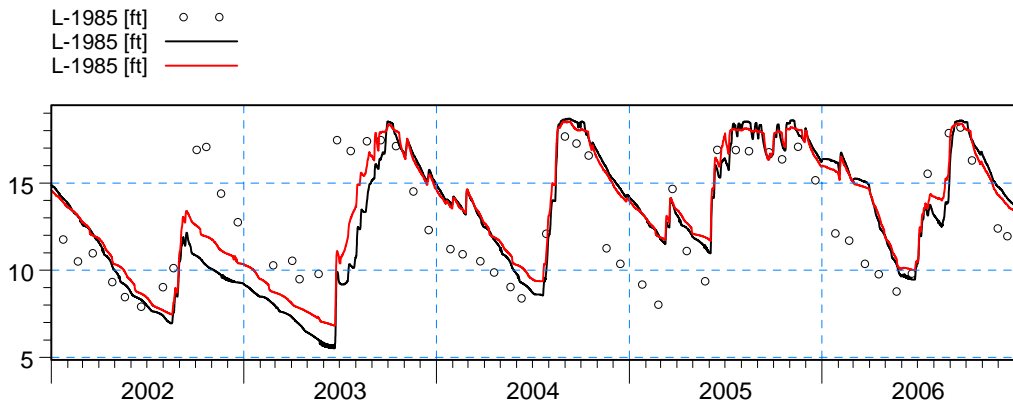


ME=-1.42468  
 MAE=1.69665  
 RMSE=2.08527  
 STDres=1.52271  
 R(Correlation)=0.594652  
 R2(Nash\_Sutcliffe)=-0.33131

Figure C27. Groundwater elevation at wells HF4\_G and HF7\_G. The black line corresponds to LS ECM result, and red line to the ECM result.

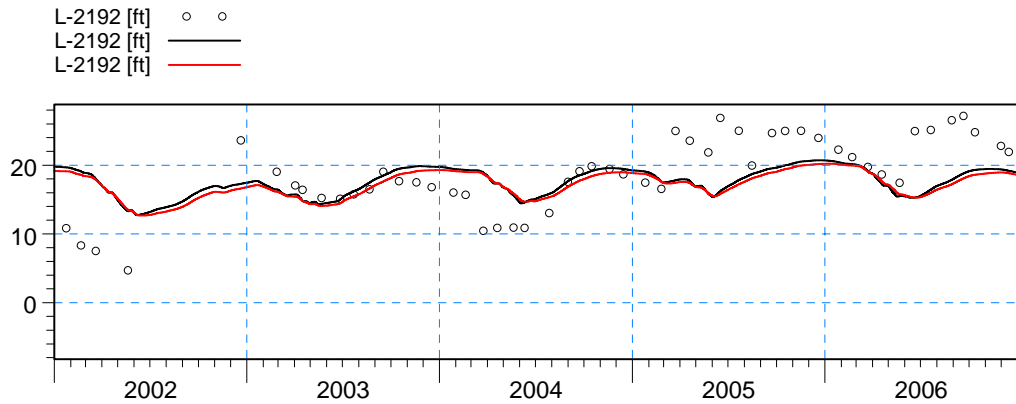


ME=-0.290586  
 MAE=0.77523  
 RMSE=0.891337  
 STDres=0.84264  
 R(Correlation)=0.805711  
 R2(Nash\_Sutcliffe)=-0.766072

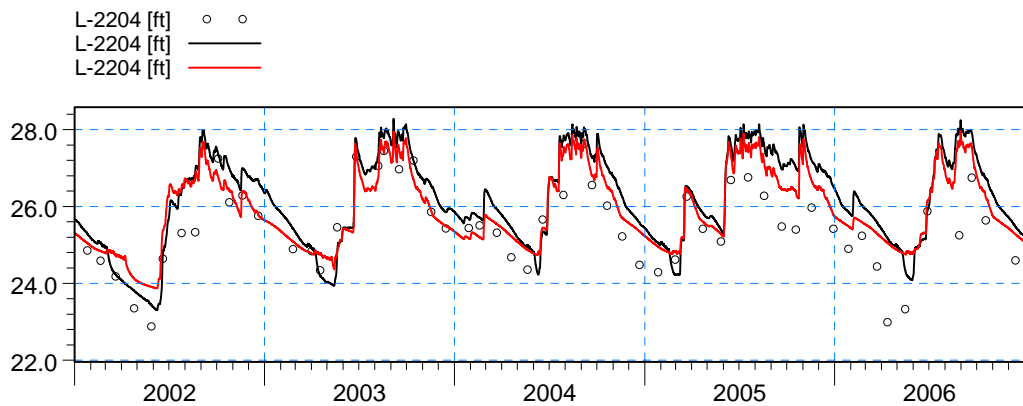


ME=-0.215227  
 MAE=2.46106  
 RMSE=2.97852  
 STDres=2.97073  
 R(Correlation)=0.620126  
 R2(Nash\_Sutcliffe)=0.195474

Figure C28. Groundwater elevation at wells L-1138 and L-1985. The black line corresponds to LS ECM result, and red line to the ECM result.

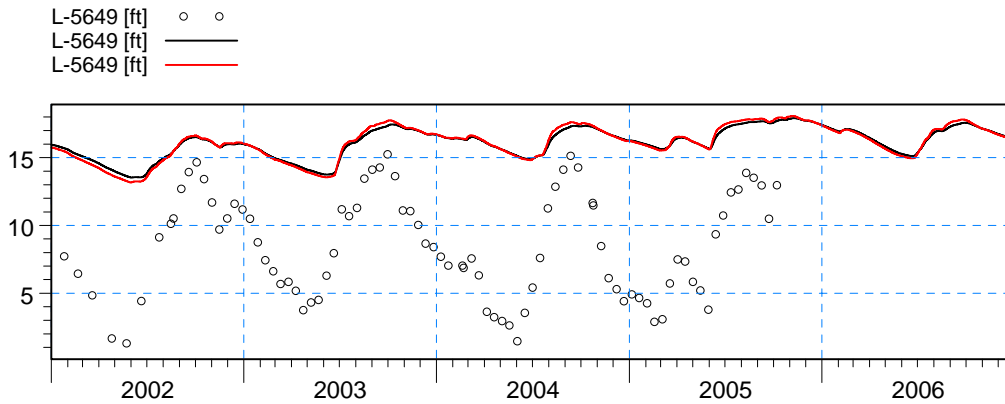


ME=0.778973  
 MAE=4.01338  
 RMSE=5.15608  
 STDres=5.09689  
 R(Correlation)=0.315689  
 R2(Nash\_Sutcliffe)=0.0779353

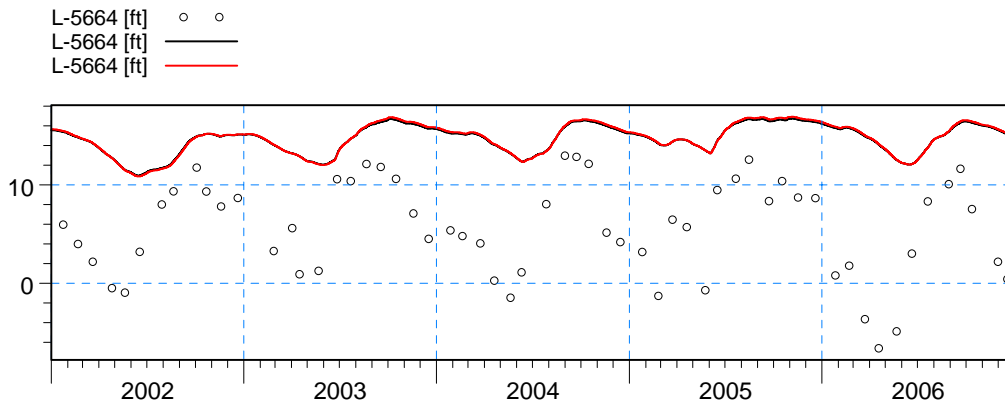


ME=-0.703268  
 MAE=0.756949  
 RMSE=0.922013  
 STDres=0.596257  
 R(Correlation)=0.867378  
 R2(Nash\_Sutcliffe)=0.286258

Figure C29. Groundwater elevation at wells L-2192 and L-2204. The black line corresponds to LS ECM result, and red line to the ECM result.

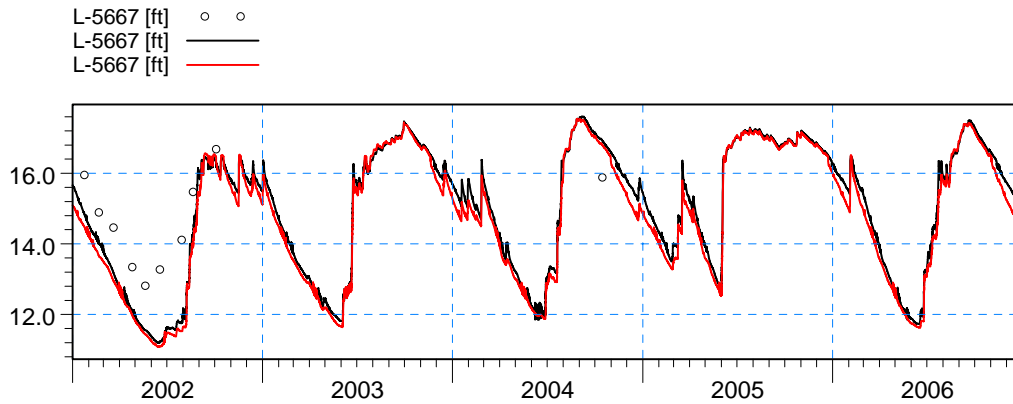


ME=-7.45185  
 MAE=7.45185  
 RMSE=8.14725  
 STDres=3.29356  
 R(Correlation)=0.631775  
 R2(Nash\_Sutcliffe)=-3.54896

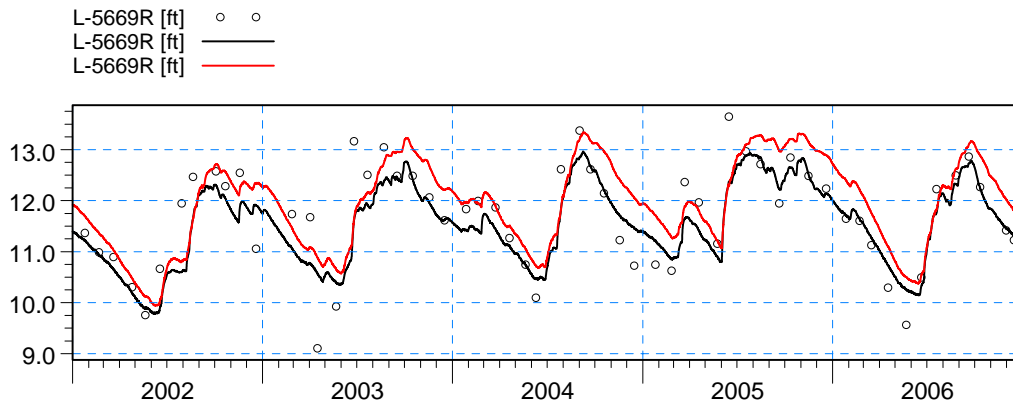


ME=-9.11431  
 MAE=9.11431  
 RMSE=10.068  
 STDres=4.27723  
 R(Correlation)=0.50387  
 R2(Nash\_Sutcliffe)=-3.34129

Figure C30. Groundwater elevation at wells L-5649 and L-5664. The black line corresponds to LS ECM result, and red line to the ECM result.

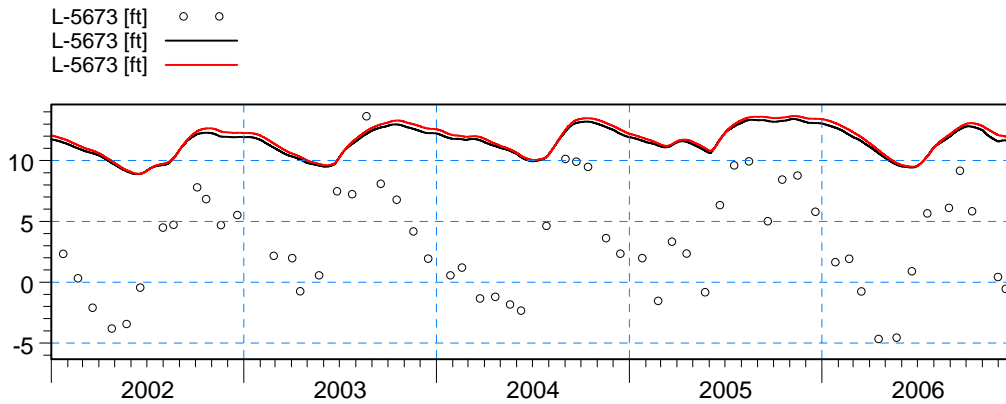


ME=1.08568  
 MAE=1.29351  
 RMSE=1.39415  
 STDres=0.874607  
 R(Correlation)=0.927497  
 R2(Nash\_Sutcliffe)=-0.264188

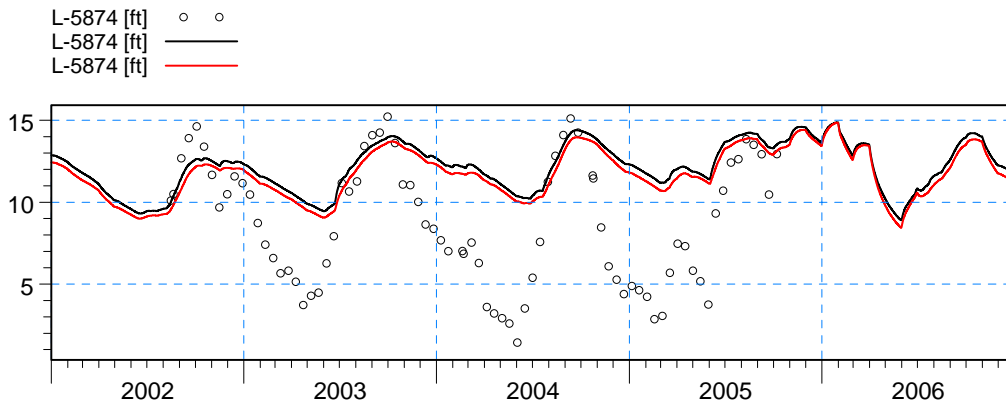


ME=0.15033  
 MAE=0.399392  
 RMSE=0.549613  
 STDres=0.528654  
 R(Correlation)=0.852318  
 R2(Nash\_Sutcliffe)=0.699264

Figure C31. Groundwater elevation at wells L-5667 and L-5669R. The black line corresponds to LS ECM result, and red line to the ECM result.

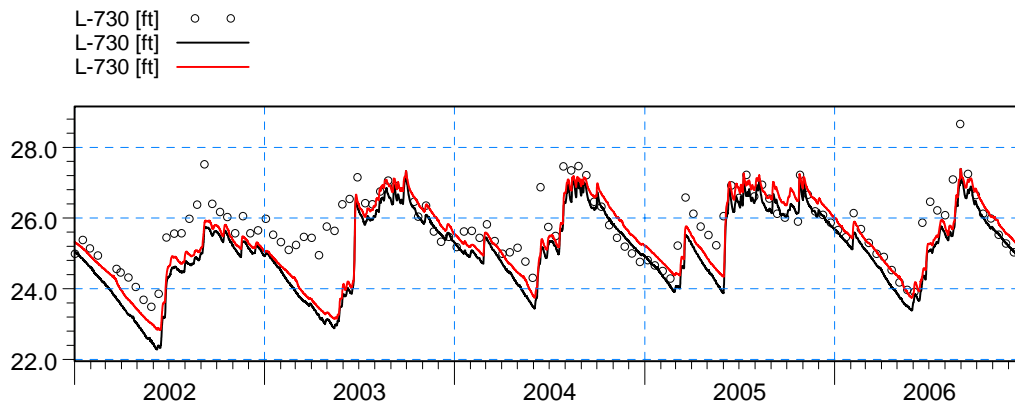


ME=-8.21043  
 MAE=8.25917  
 RMSE=8.97698  
 STDres=3.62974  
 R(Correlation)=0.631532  
 R2(Nash\_Sutcliffe)=-3.44054

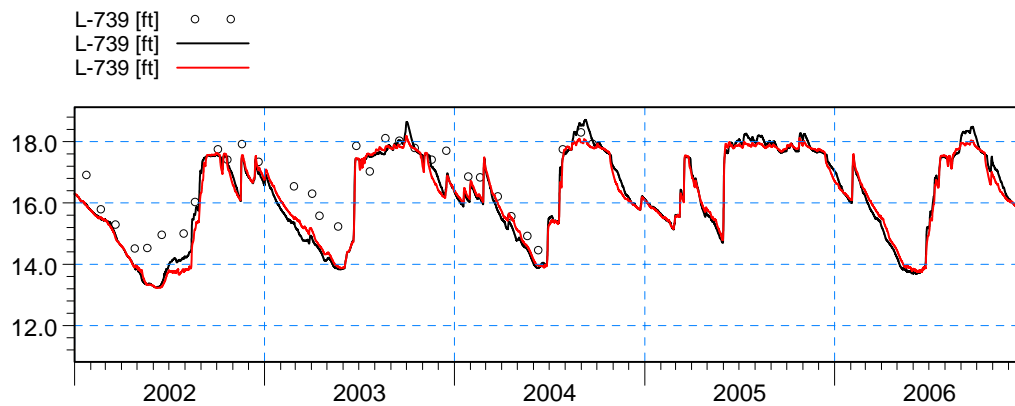


ME=-3.50002  
 MAE=3.76479  
 RMSE=4.64814  
 STDres=3.0586  
 R(Correlation)=0.71358  
 R2(Nash\_Sutcliffe)=-0.484398

Figure C32. Groundwater elevation at wells L-5673 and L-5874. The black line corresponds to LS ECM result, and red line to the ECM result.



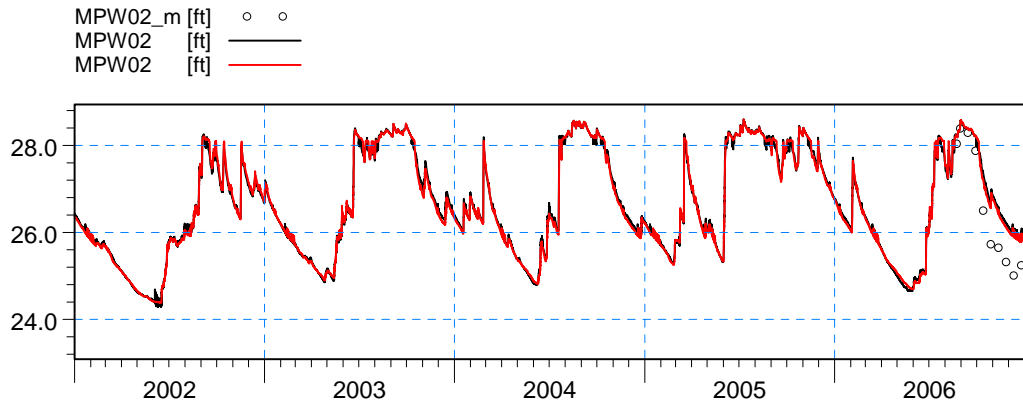
ME=0.653599  
 MAE=0.686917  
 RMSE=0.922452  
 STDres=0.650943  
 R(Correlation)=0.796161  
 R2(Nash\_Sutcliffe)=0.0242095



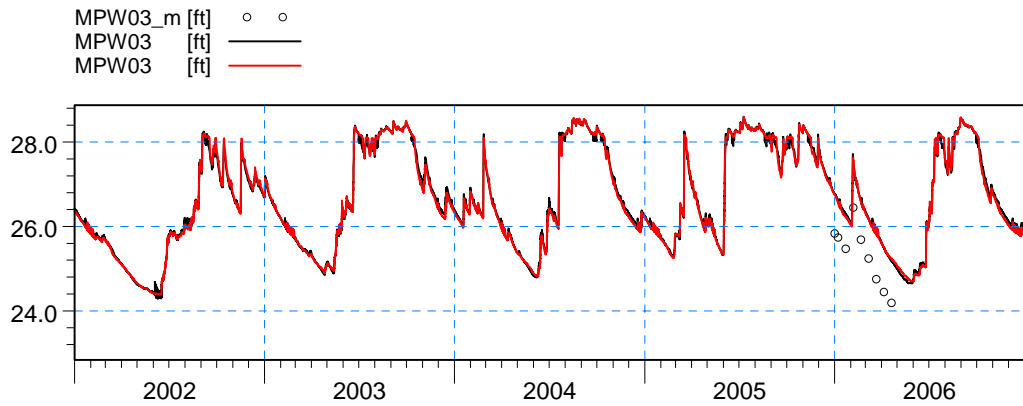
ME=0.548706  
 MAE=0.600805  
 RMSE=0.744771  
 STDres=0.503592  
 R(Correlation)=0.958899  
 R2(Nash\_Sutcliffe)=0.630479

Figure C33. Groundwater elevation at wells L-730 and L-739. The black line corresponds to LS ECM result, and red line to the ECM result.



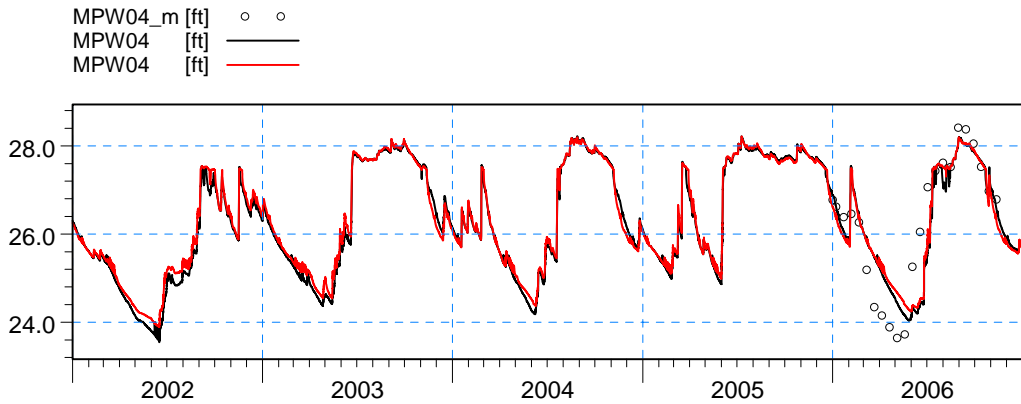


ME=-0.668428  
 MAE=0.672992  
 RMSE=0.776394  
 STDres=0.394958  
 R(Correlation)=0.978988  
 R2(Nash\_Sutcliffe)=0.634725

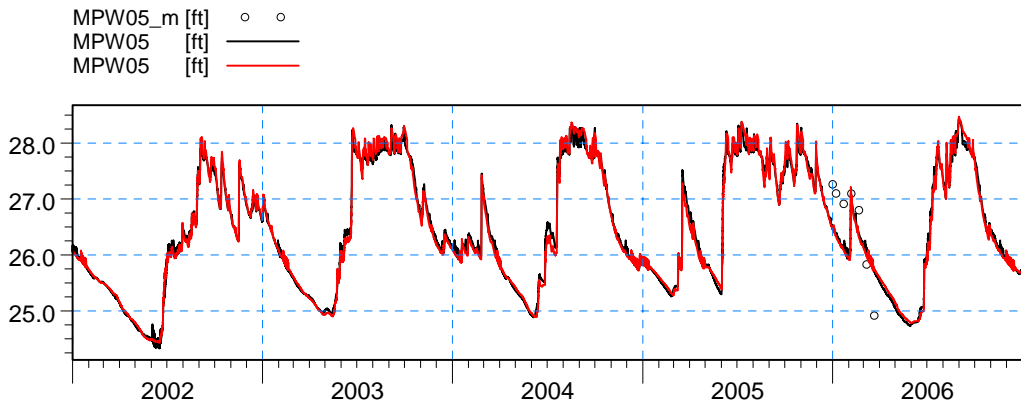


ME=-0.980798  
 MAE=0.980798  
 RMSE=0.985699  
 STDres=0.0981716  
 R(Correlation)=0.988933  
 R2(Nash\_Sutcliffe)=-1.53278

Figure C34. Groundwater elevation at wells MPW02 and MPW03. The black line corresponds to LS ECM result, and red line to the ECM result.

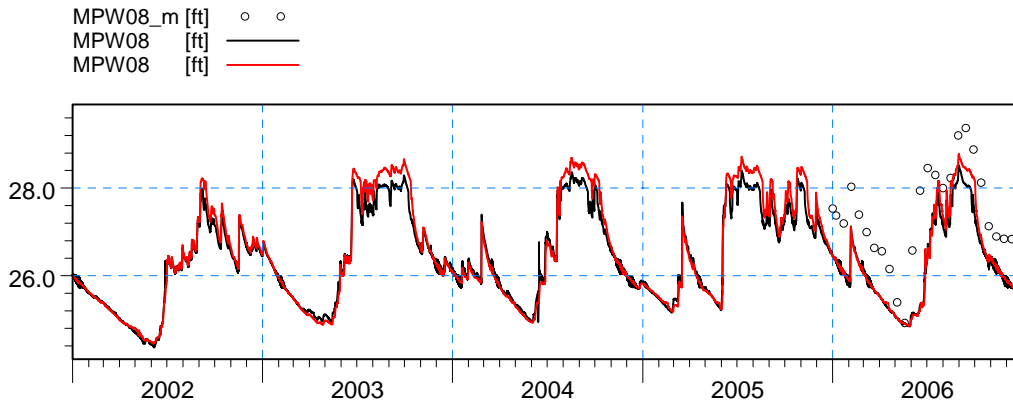


ME=-0.0141754  
 MAE=0.506182  
 RMSE=0.650089  
 STDres=0.649935  
 R(Correlation)=0.910588  
 R2(Nash\_Sutcliffe)=0.823336

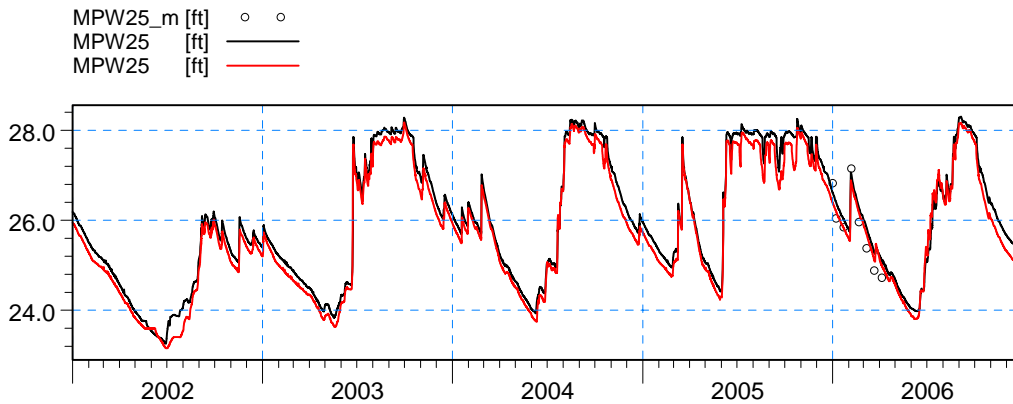


ME=0.245159  
 MAE=0.527312  
 RMSE=0.574793  
 STDres=0.519889  
 R(Correlation)=0.780856  
 R2(Nash\_Sutcliffe)=0.376076

Figure C35. Groundwater elevation at wells MPW04 and MPW05. The black line corresponds to LS ECM result, and red line to the ECM result.

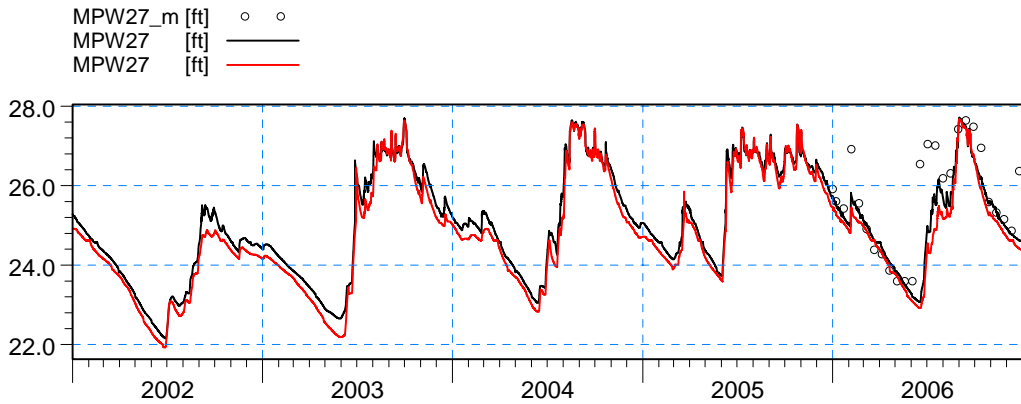


ME=1.06324  
 MAE=1.0663  
 RMSE=1.14865  
 STDres=0.434638  
 R(Correlation)=0.921404  
 R2(Nash\_Sutcliffe)=-0.0781867

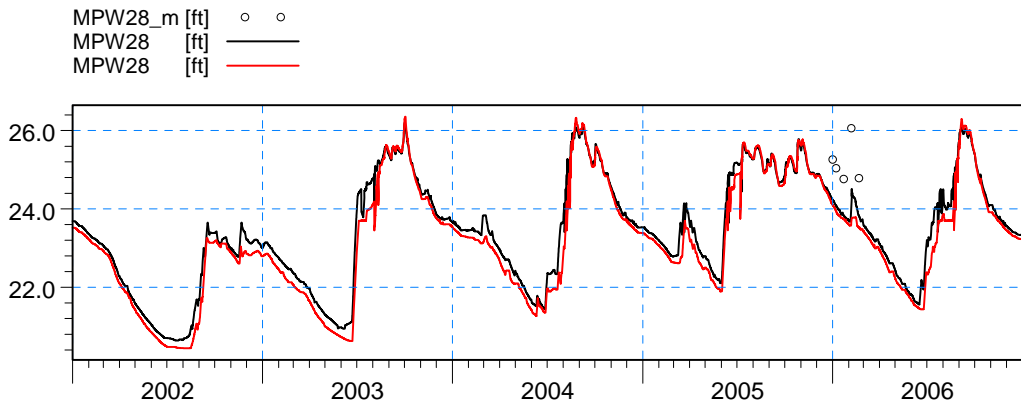


ME=-0.267954  
 MAE=0.353416  
 RMSE=0.385798  
 STDres=0.277563  
 R(Correlation)=0.951355  
 R2(Nash\_Sutcliffe)=0.736048

Figure C36. Groundwater elevation at wells MPW08 and MPW25. The black line corresponds to LS ECM result, and red line to the ECM result.

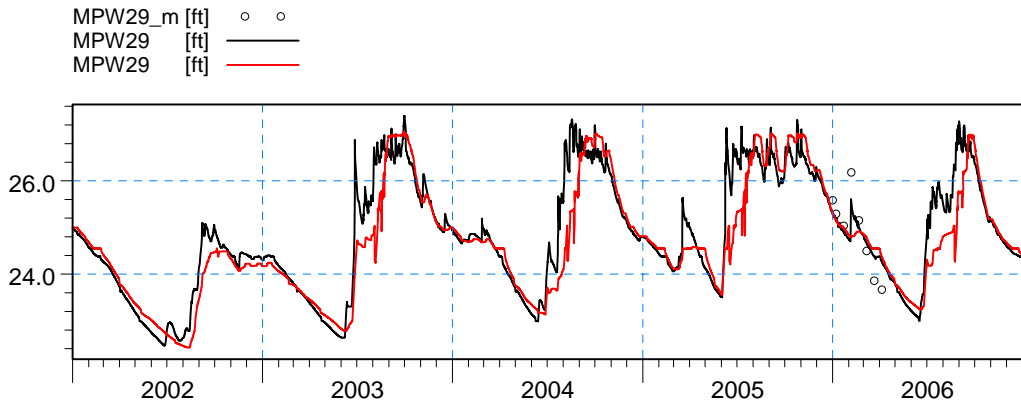


ME=0.462521  
 MAE=0.517404  
 RMSE=0.809541  
 STDres=0.664403  
 R(Correlation)=0.854764  
 R2(Nash\_Sutcliffe)=0.600076

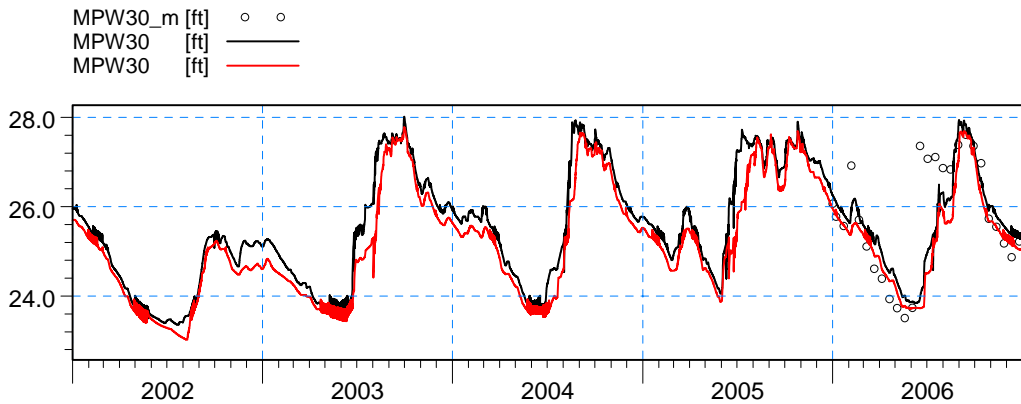


ME=0.948265  
 MAE=0.948265  
 RMSE=0.997715  
 STDres=0.310207  
 R(Correlation)=0.767206  
 R2(Nash\_Sutcliffe)=-3.95778

Figure C37. Groundwater elevation at wells MPW27 and MPW28. The black line corresponds to LS ECM result, and red line to the ECM result.

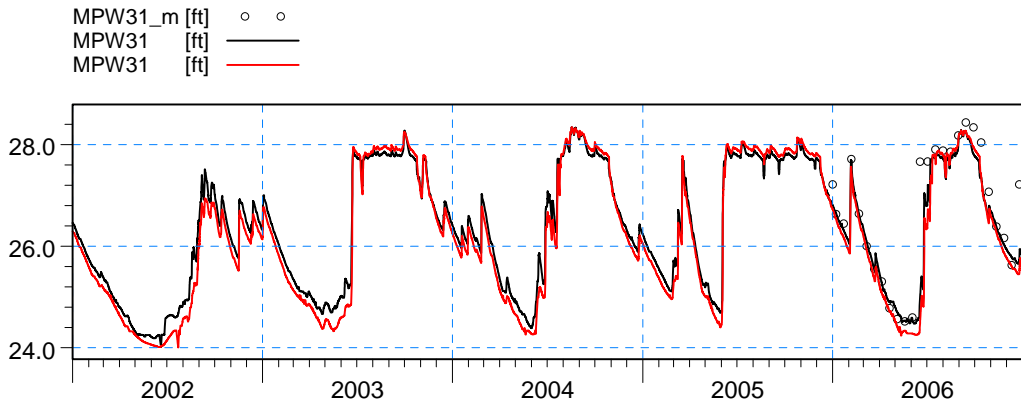


ME=-0.0837851  
 MAE=0.306204  
 RMSE=0.404929  
 STDres=0.396166  
 R(Correlation)=0.961765  
 R2(Nash\_Sutcliffe)=0.703925

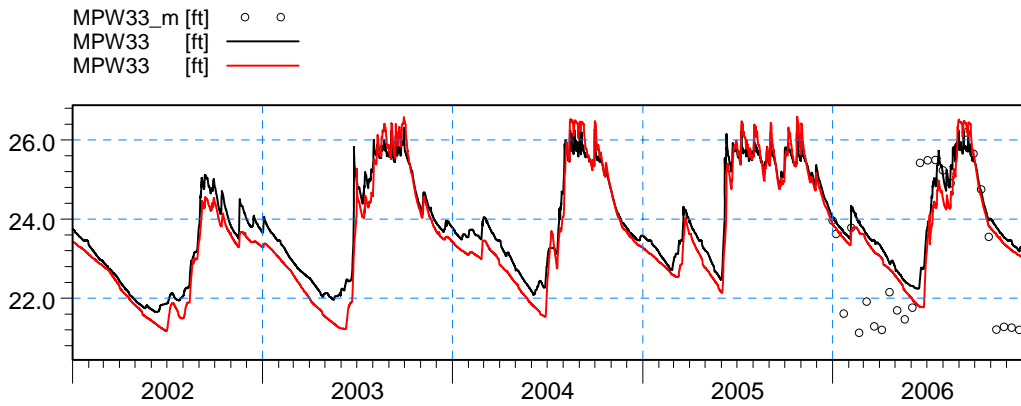


ME=0.100017  
 MAE=0.568356  
 RMSE=0.832724  
 STDres=0.826696  
 R(Correlation)=0.770217  
 R2(Nash\_Sutcliffe)=0.586053

Figure C38. Groundwater elevation at wells MPW29 and MPW30. The black line corresponds to LS ECM result, and red line to the ECM result.

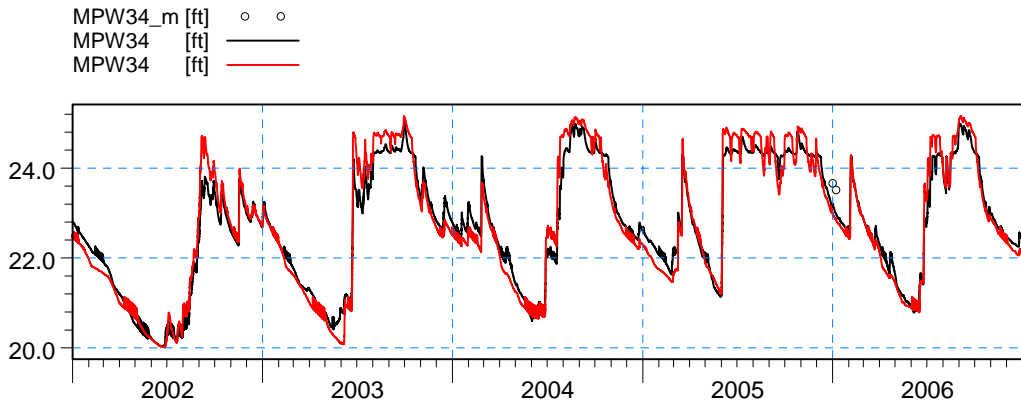


ME=0.252363  
 MAE=0.30479  
 RMSE=0.475714  
 STDres=0.403258  
 R(Correlation)=0.948259  
 R2(Nash\_Sutcliffe)=0.857437

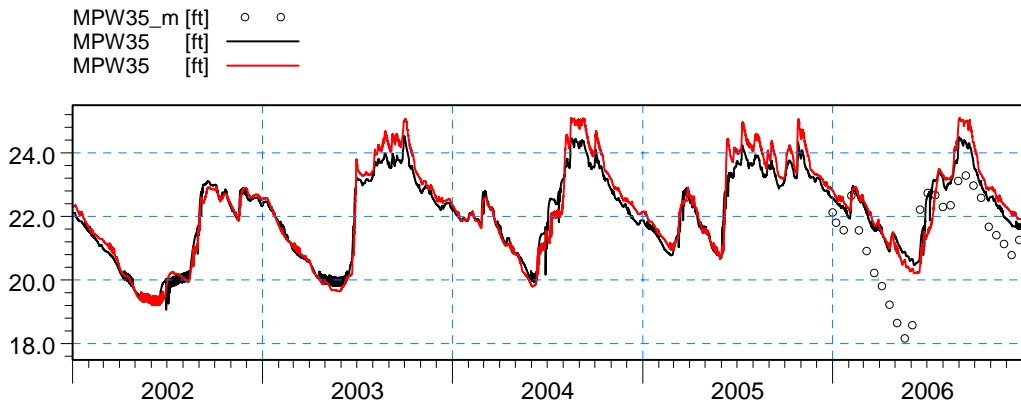


ME=-0.786936  
 MAE=1.20063  
 RMSE=1.50747  
 STDres=1.28576  
 R(Correlation)=0.767788  
 R2(Nash\_Sutcliffe)=0.37259

Figure C39. Groundwater elevation at wells MPW31 and MPW33. The black line corresponds to LS ECM result, and red line to the ECM result.

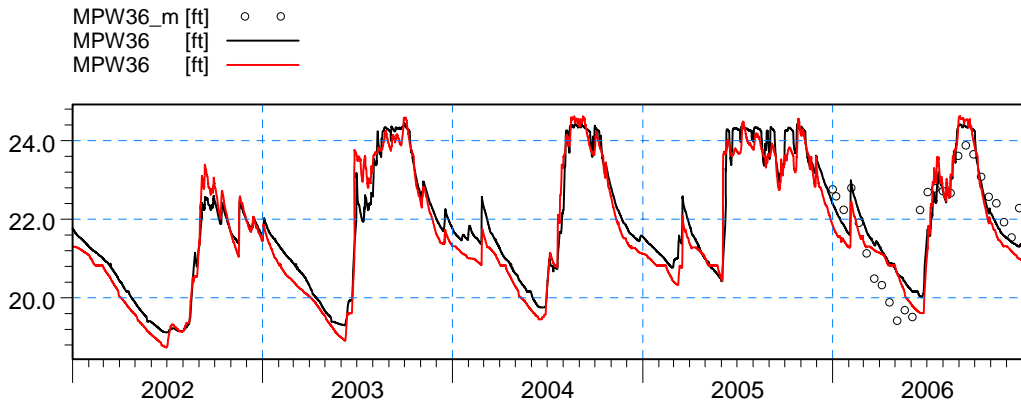


ME=0.484512  
 MAE=0.484512  
 RMSE=0.486411  
 STDres=0.0429319  
 R(Correlation)=0.968054  
 R2(Nash\_Sutcliffe)=-10.135

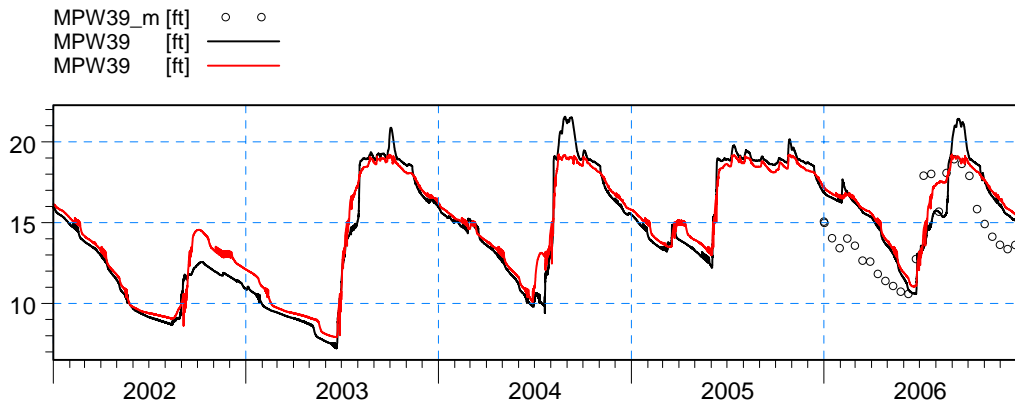


ME=-1.00822  
 MAE=1.05751  
 RMSE=1.24186  
 STDres=0.725048  
 R(Correlation)=0.900097  
 R2(Nash\_Sutcliffe)=0.28692

Figure C40. Groundwater elevation at wells MPW34 and MPW35. The black line corresponds to LS ECM result, and red line to the ECM result.



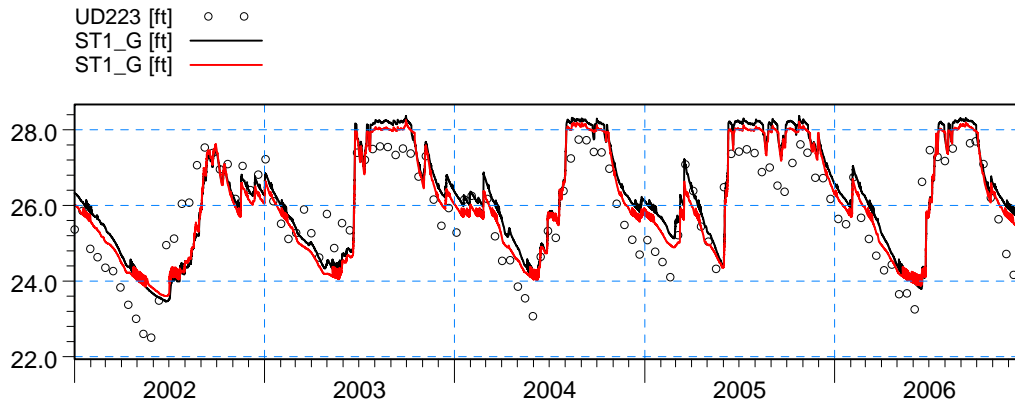
ME=-0.108337  
 MAE=0.528172  
 RMSE=0.658465  
 STDres=0.649492  
 R(Correlation)=0.873067  
 R2(Nash\_Sutcliffe)=0.755623



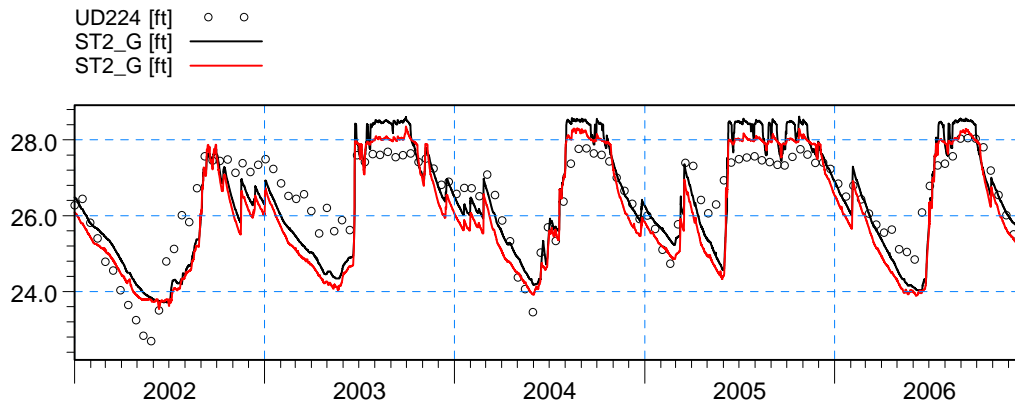
ME=-1.35057  
 MAE=2.34856  
 RMSE=2.51442  
 STDres=2.12092  
 R(Correlation)=0.6394  
 R2(Nash\_Sutcliffe)=-0.0135076

Figure C41. Groundwater elevation at wells MPW36 and MPW39. The black line corresponds to LS ECM result, and red line to the ECM result.



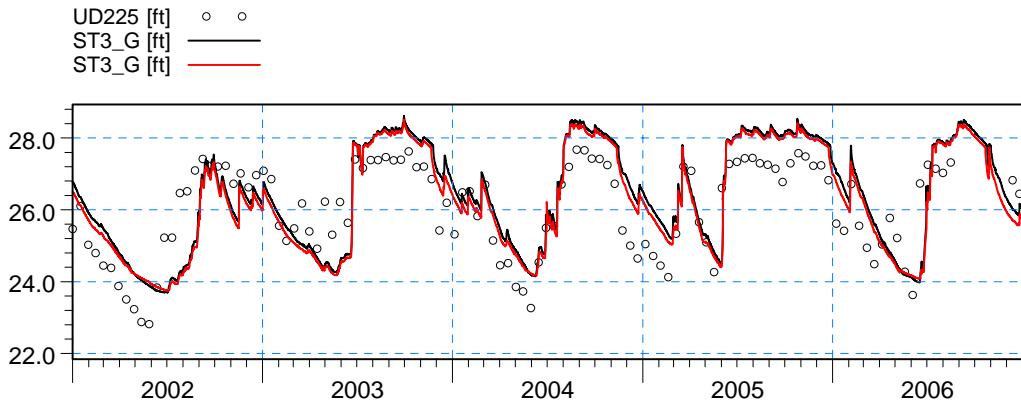


ME=-0.435901  
 MAE=0.725199  
 RMSE=0.846669  
 STDres=0.725837  
 R(Correlation)=0.856511  
 R2(Nash\_Sutcliffe)=0.612885

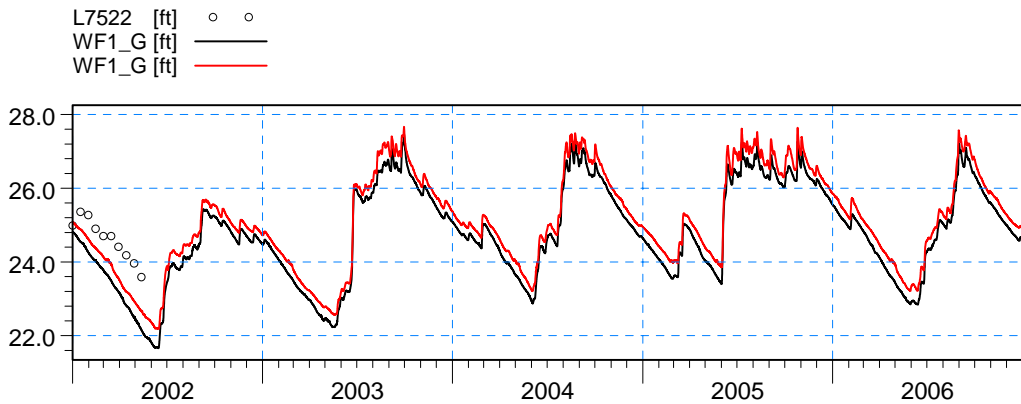


ME=0.0534259  
 MAE=0.607322  
 RMSE=0.729568  
 STDres=0.727609  
 R(Correlation)=0.858897  
 R2(Nash\_Sutcliffe)=0.639309

Figure C42. Groundwater elevation at wells ST1\_G and ST2\_G. The black line corresponds to LS ECM result, and red line to the ECM result.

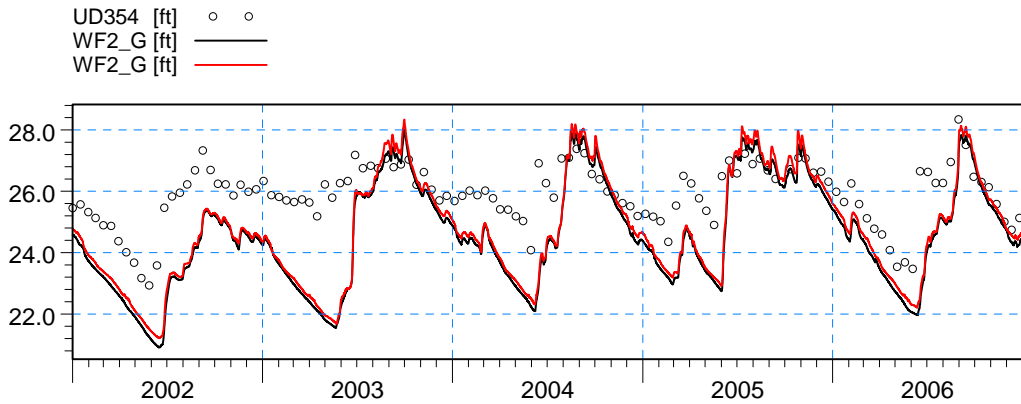


ME=-0.343846  
 MAE=0.798748  
 RMSE=0.916499  
 STDres=0.849553  
 R(Correlation)=0.803928  
 R2(Nash\_Sutcliffe)=0.488001

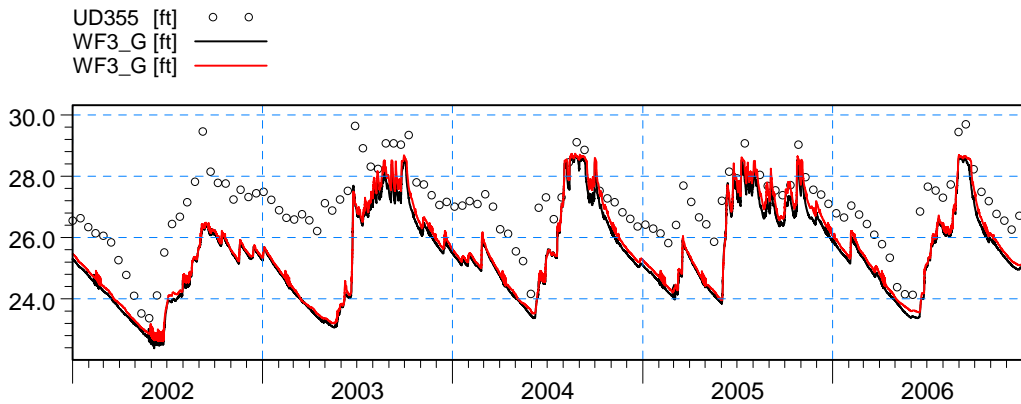


ME=1.05959  
 MAE=1.05959  
 RMSE=1.11813  
 STDres=0.357057  
 R(Correlation)=0.941571  
 R2(Nash\_Sutcliffe)=-3.97131

Figure C43. Groundwater elevation at wells ST3\_G and WF1\_G. The black line corresponds to LS ECM result, and red line to the ECM result.

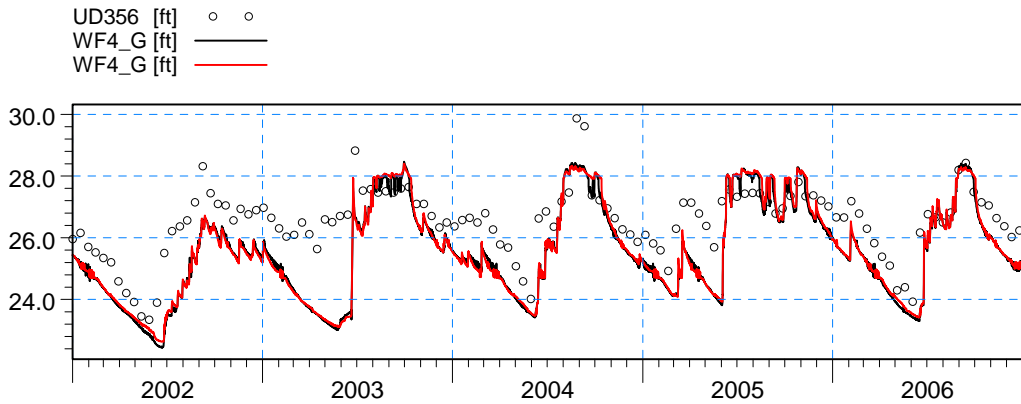


ME=1.31365  
 MAE=1.39004  
 RMSE=1.7284  
 STDres=1.12324  
 R(Correlation)=0.767344  
 R2(Nash\_Sutcliffe)=-2.05325

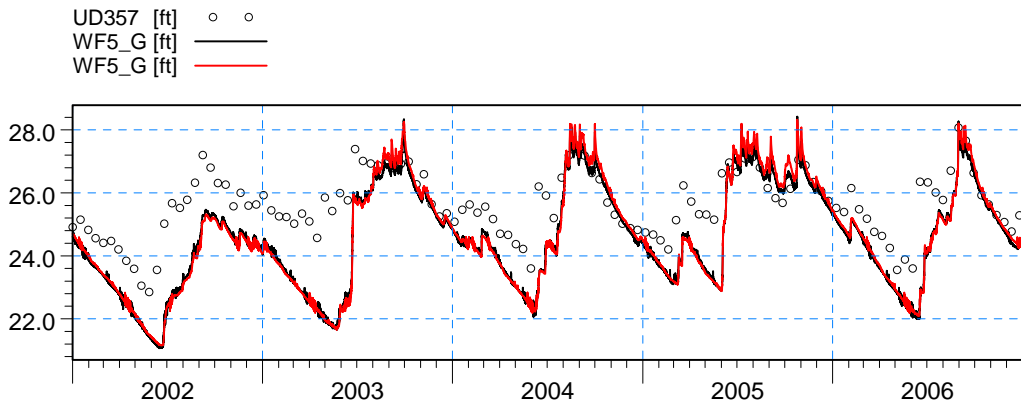


ME=1.54338  
 MAE=1.54524  
 RMSE=1.71127  
 STDres=0.739207  
 R(Correlation)=0.856086  
 R2(Nash\_Sutcliffe)=-0.860367

Figure C44. Groundwater elevation at wells WF2\_G and WF3\_G. The black line corresponds to LS ECM result, and red line to the ECM result.

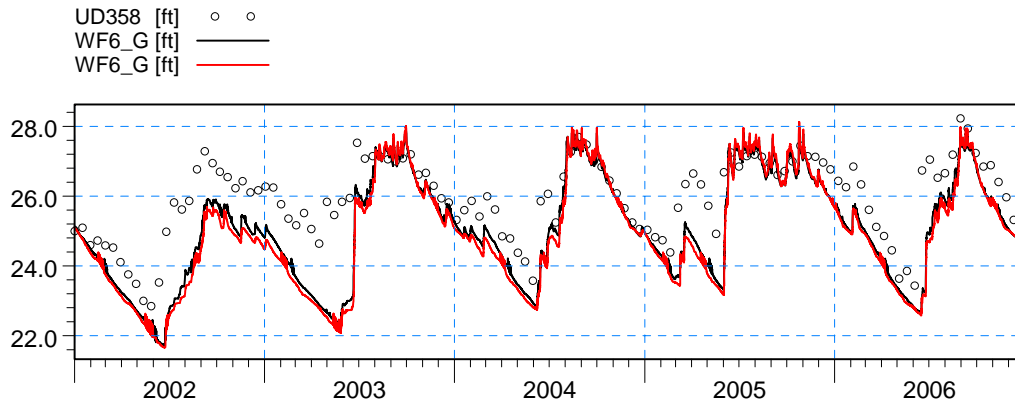


ME=0.946728  
 MAE=1.04964  
 RMSE=1.27143  
 STDres=0.848671  
 R(Correlation)=0.8258  
 R2(Nash\_Sutcliffe)=-0.284437

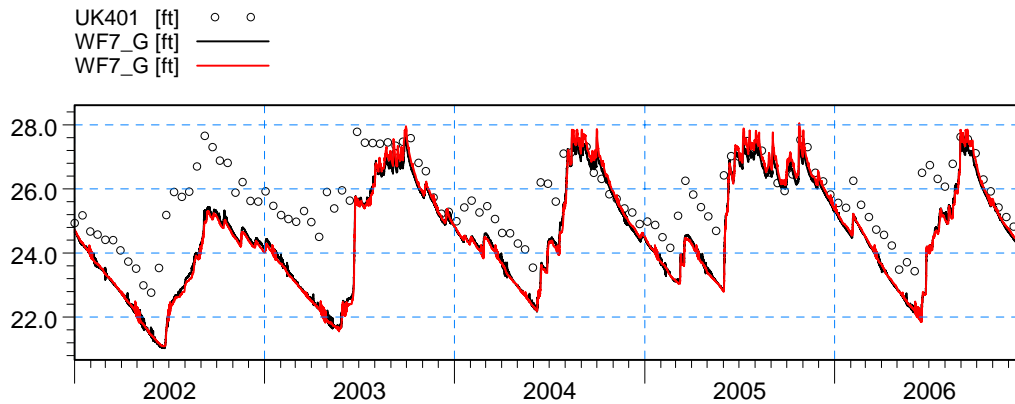


ME=1.02553  
 MAE=1.08209  
 RMSE=1.403  
 STDres=0.957437  
 R(Correlation)=0.809416  
 R2(Nash\_Sutcliffe)=-0.821041

Figure C45. Groundwater elevation at wells WF4\_G and WF5\_G. The black line corresponds to LS ECM result, and red line to the ECM result.

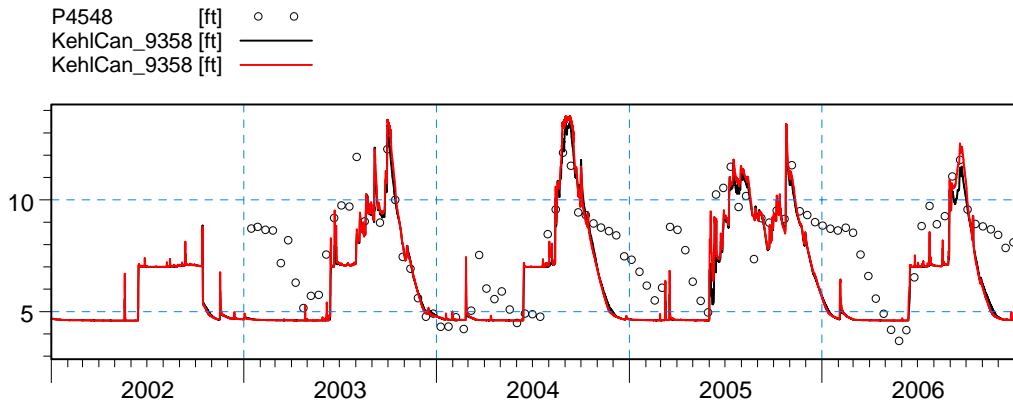


ME=0.872846  
 MAE=0.913201  
 RMSE=1.17882  
 STDres=0.792316  
 R(Correlation)=0.846484  
 R2(Nash\_Sutcliffe)=-0.0597566

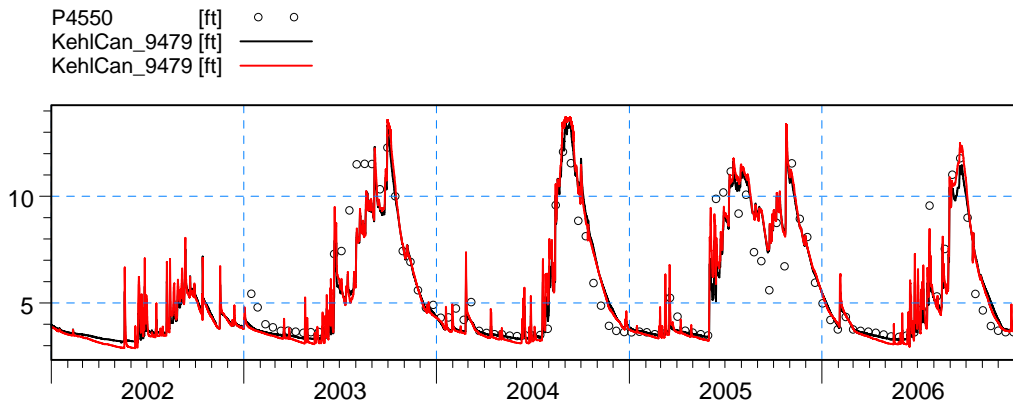


ME=1.16267  
 MAE=1.18116  
 RMSE=1.48744  
 STDres=0.927724  
 R(Correlation)=0.810341  
 R2(Nash\_Sutcliffe)=-0.602172

Figure C46. Groundwater elevation at wells WF6\_G and WF7\_G. The black line corresponds to LS ECM result, and red line to the ECM result.

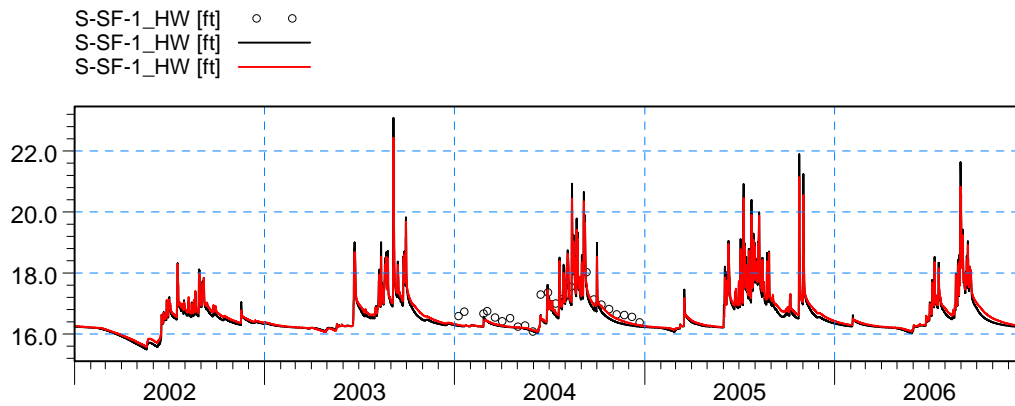


ME=1.33183  
 MAE=1.66753  
 RMSE=2.10264  
 STDres=1.62706  
 R(Correlation)=0.727239  
 R2(Nash\_Sutcliffe)=-0.0250685

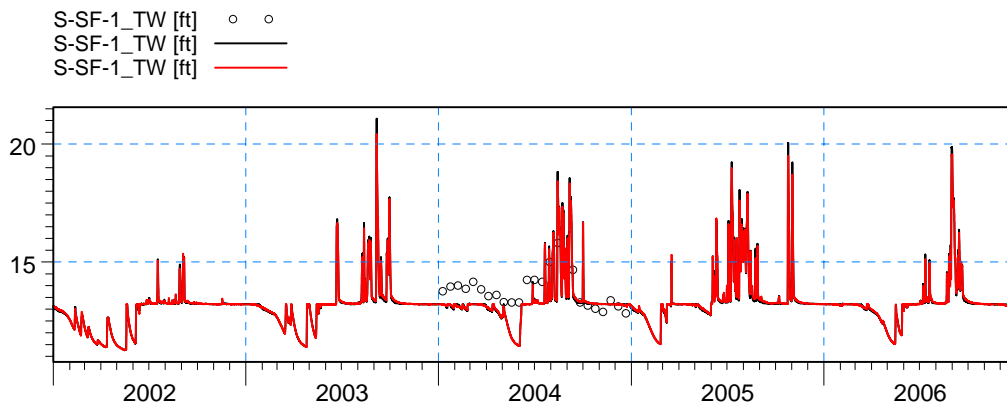


ME=0.100662  
 MAE=0.715742  
 RMSE=1.06258  
 STDres=1.05781  
 R(Correlation)=0.923102  
 R2(Nash\_Sutcliffe)=0.846087

Figure C47. Stage at surface stations KehlCan\_9358 and KehlCan\_9479. The black line corresponds to LS ECM result, and red line to the ECM result.

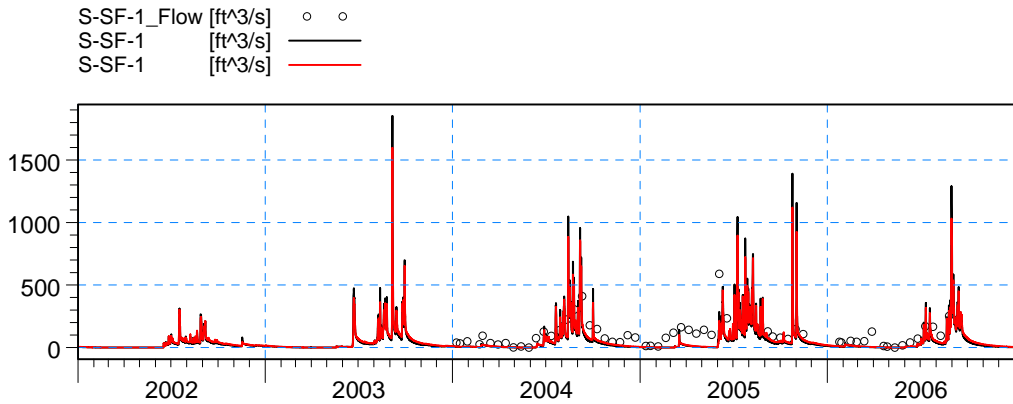


ME=0.232335  
 MAE=0.276605  
 RMSE=0.321776  
 STDres=0.222621  
 R(Correlation)=0.824989  
 R2(Nash\_Sutcliffe)=-0.224969

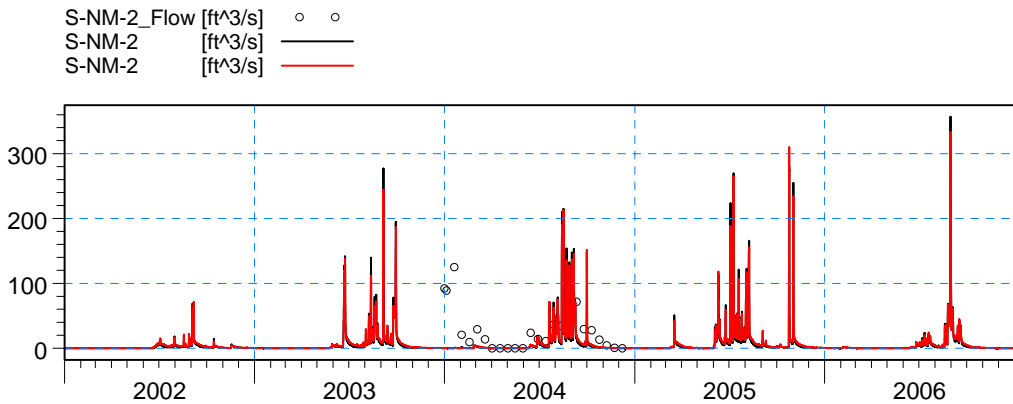


ME=-0.028889  
 MAE=0.305331  
 RMSE=0.479278  
 STDres=0.478407  
 R(Correlation)=0.432064  
 R2(Nash\_Sutcliffe)=-0.26904

Figure C48. Stage at surface stations S-SF-1\_HW and S-SF-1\_TW. The black line corresponds to LS ECM result, and red line to the ECM result.



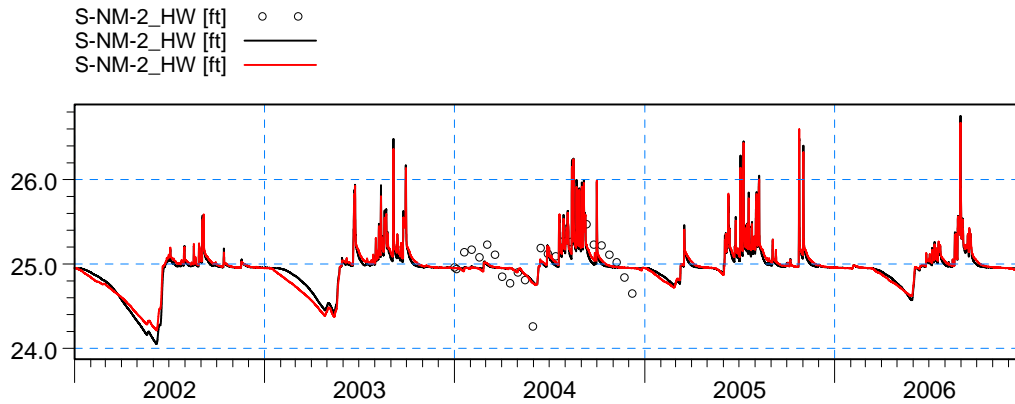
ME=68.4511  
 MAE=78.8351  
 RMSE=107.212  
 STDres=82.5152  
 R(Correlation)=0.705758  
 R2(Nash\_Sutcliffe)=-0.0686276



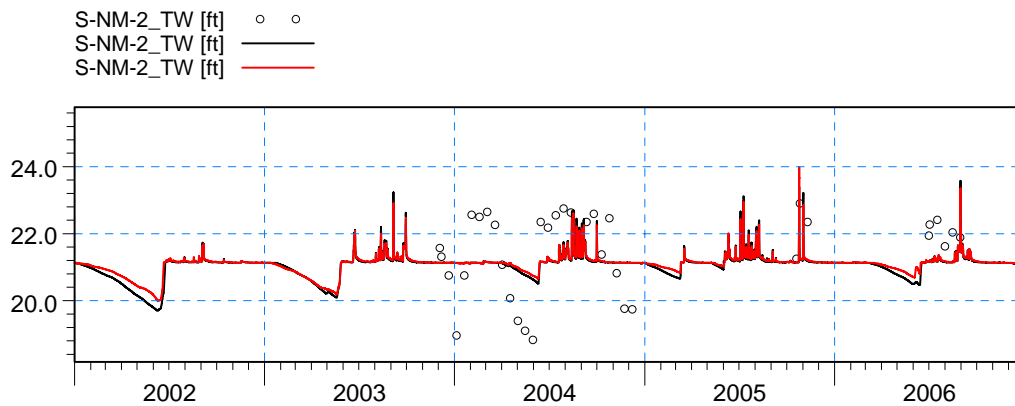
ME=17.2387  
 MAE=21.5971  
 RMSE=36.6679  
 STDres=32.363  
 R(Correlation)=0.414189  
 R2(Nash\_Sutcliffe)=-0.282121

Figure C49. Flow at surface stations S-SF-1 Q and S-NM-2 Q. The black line corresponds to LS ECM result, and red line to the ECM result.



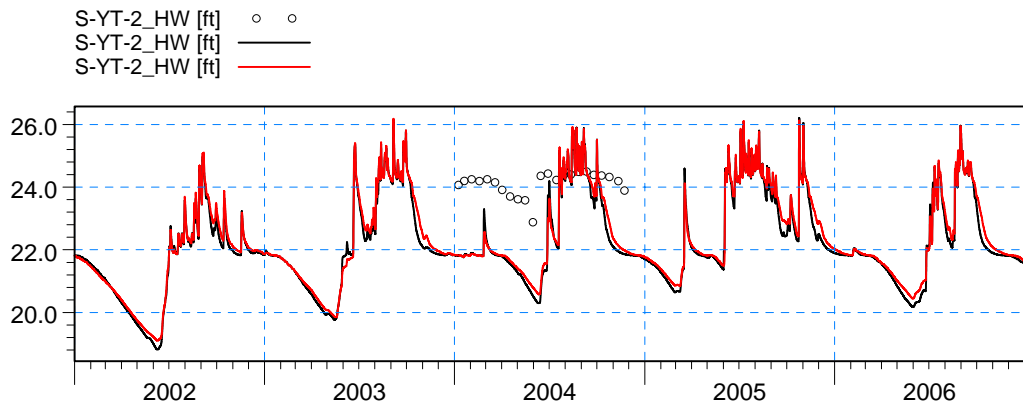


ME=-0.000162317  
 MAE=0.18776  
 RMSE=0.241697  
 STDres=0.241697  
 R(Correlation)=0.606554  
 R2(Nash\_Sutcliffe)=0.362795

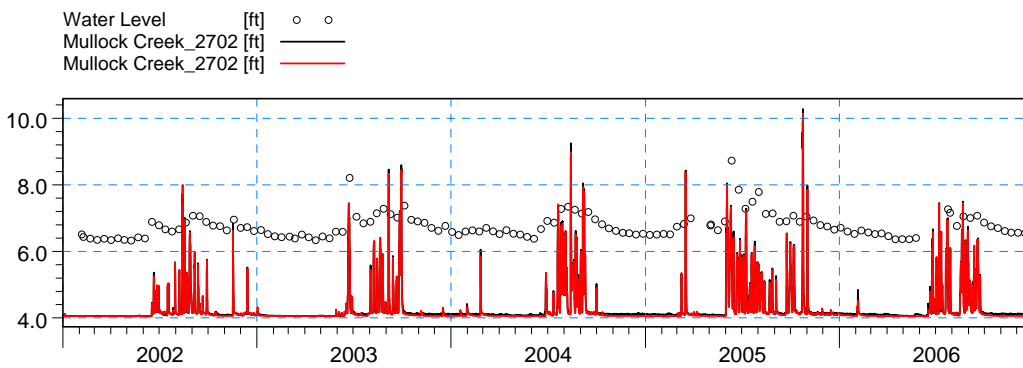


ME=0.804087  
 MAE=1.03932  
 RMSE=1.15916  
 STDres=0.834926  
 R(Correlation)=0.434092  
 R2(Nash\_Sutcliffe)=-0.574237

Figure C50. Stage at surface stations S-NM-2\_HW and S-NM-2\_TW. The black line corresponds to LS ECM result, and red line to the ECM result.



ME=1.63052  
 MAE=1.73938  
 RMSE=1.96508  
 STDres=1.09678  
 R(Correlation)=0.757756  
 R2(Nash\_Sutcliffe)=-21.2045



ME=2.47858  
 MAE=2.4837  
 RMSE=2.51273  
 STDres=0.412822  
 R(Correlation)=0.621358  
 R2(Nash\_Sutcliffe)=-50.603

Figure C51. Stage at surface stations S-YT-2\_HW and Mullock Creek\_2702. The black line corresponds to LS ECM result, and red line to the ECM result.