

APPENDIX G

Detailed Modeling Output – Model Calibration

Table G1. Calibrated steady-state model for current conditions (RC33_2).

INPUT

Material	Layer	Hydraulic Conductivity	
		(m/d)	(m/s)
CVD	1	0.00864	1.0E-07
PP Sediments	1	0.000078	9.0E-10
PP Sed Window	1	0.0216	2.5E-07
ID	1	0.026	3.0E-07
Tailings	1	0.0017	2.0E-08
Colluvium - S.	2,3,4	0.864	1.0E-05
Colluvium - N.	2,3,4	0.864	1.0E-05
U/S Alluvium	2,3,4	12.96	1.5E-04
D/S Alluvium	2,3,4	25.92	3.0E-04
Alluvium CVD	2,3,4	43.2	5.0E-04
Alluvium PW2	2,3	432	5.0E-03
Basal Till	5	0.026	3.0E-07
Slope Till	2,3,4,5	0.26	3.0E-06
Bedrock	6	0.017	2.0E-07

Other Parameters	m/d	m/s
Drain Conductance (m/d)	51.84	6.0E-04
RCDC River Conductance L5 (m/d)	5.184	6.0E-05
RCDC River Conductance L2 (m/d)	5.184	6.0E-05
PP Spillway Cond. L2,L4,L5 (m/d)	-	-
Intermediate Pond WL (m)	1046.516	7-Sep-05
Polishing Pond WL (m)	1027.395	7-Sep-05
Upstream Constant Head (m)	1036.4	
Downstream Constant Head (m)	1010.8	

Colluvium large expansion. Polishing pond contracted

OUTPUT

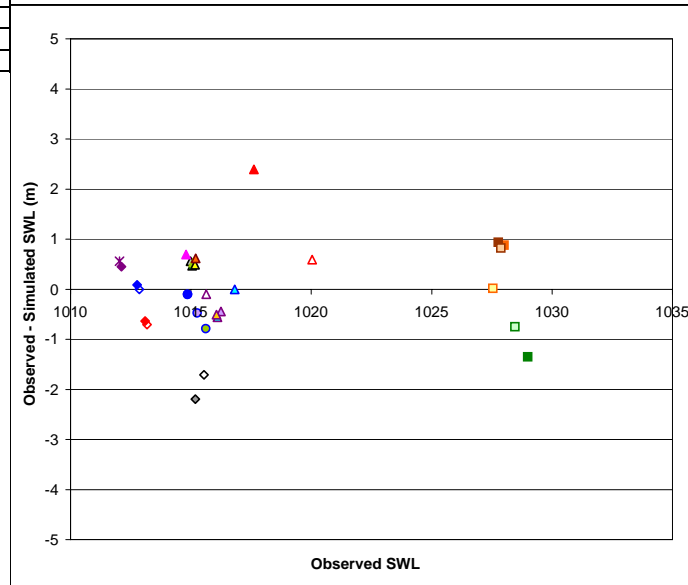
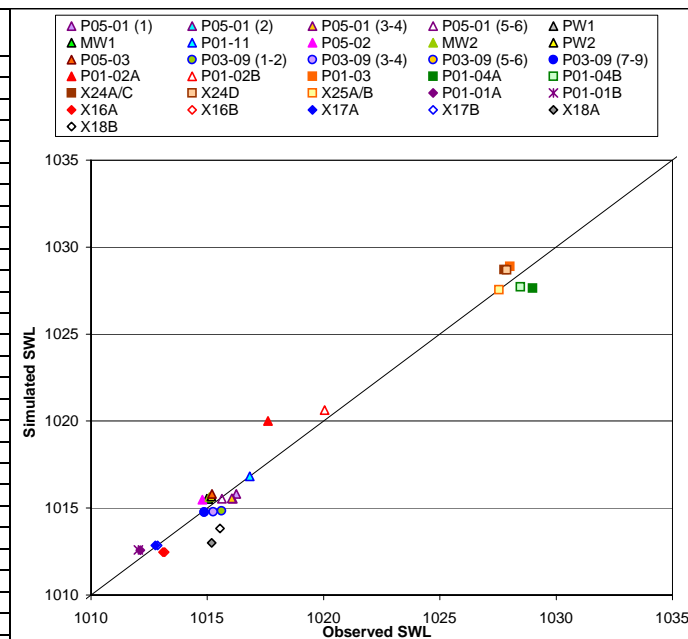
Well ID	Layer	Observed (mas)	Simulated (mas)	Sim-Obs (m)
P01-01A	3	1012.12	1012.57	0.45
P01-01B	6	1012.04	1012.60	0.56
P01-02A	2	1017.61	1020.00	2.39
P01-02B	5	1020.04	1020.63	0.59
P01-03 (North)	2	1028.02	1028.89	0.88
P01-04A (South)	4	1028.99	1027.64	-1.35
P01-04B (South)	5	1028.46	1027.71	-0.75
P01-11	3	1016.82	1016.82	0.00
X16A	2	1013.10	1012.46	-0.64
X16B	4	1013.17	1012.46	-0.71
X17A	2	1012.77	1012.85	0.08
X17B	4	1012.86	1012.86	0.00
X18A	3	1015.19	1013.00	-2.19
X18B	6	1015.54	1013.83	-1.71
X24A/C (North)	2	1027.77	1028.70	0.94
X24D (North)	5	1027.87	1028.69	0.82
X25A/B (South)	2	1027.54	1027.56	0.02
P03-09-01-02	5	1015.62	1014.83	-0.79
P03-09-03-04	4	1015.26	1014.78	-0.48
P03-09-05-06	3	1015.09	1014.77	-0.32
P03-09-07-09	2	1014.87	1014.77	-0.10
P05-01-01	6	1016.25	1015.81	-0.44
P05-01-02	4	1016.10	1015.54	-0.56
P05-01-03-04	3	1016.06	1015.55	-0.51
P05-01-05-06	2	1015.63	1015.53	-0.10
PW1	2,4	1014.98	1015.54	0.56
MW1	2,4	1015.05	1015.51	0.47
P05-02	2	1014.79	1015.49	0.69
MW2	2,3	1015.09	1015.63	0.54
PW2	2,3	1015.17	1015.66	0.49
P05-03	2	1015.20	1015.81	0.62

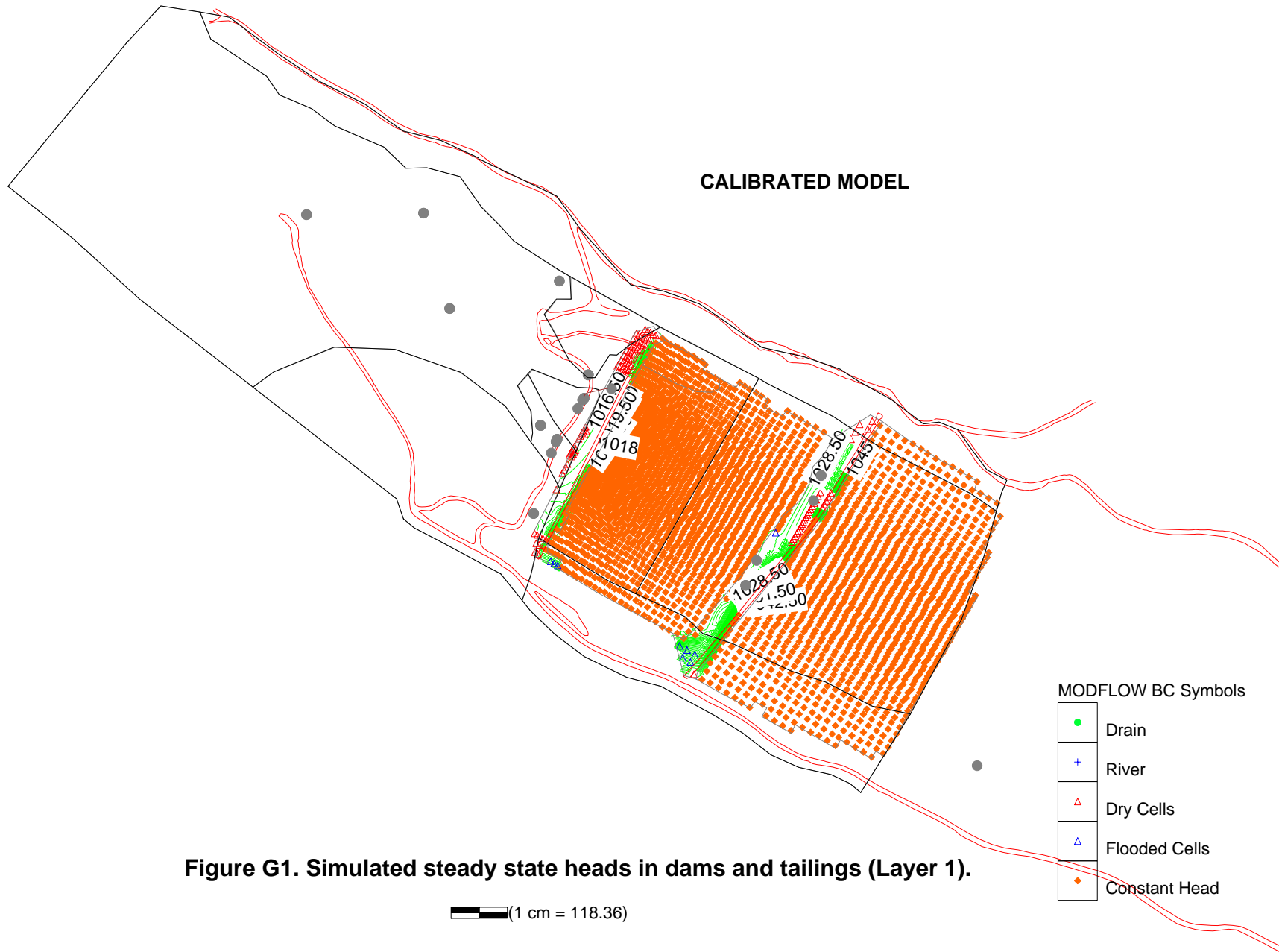
Average head provided **RMS 0.89**

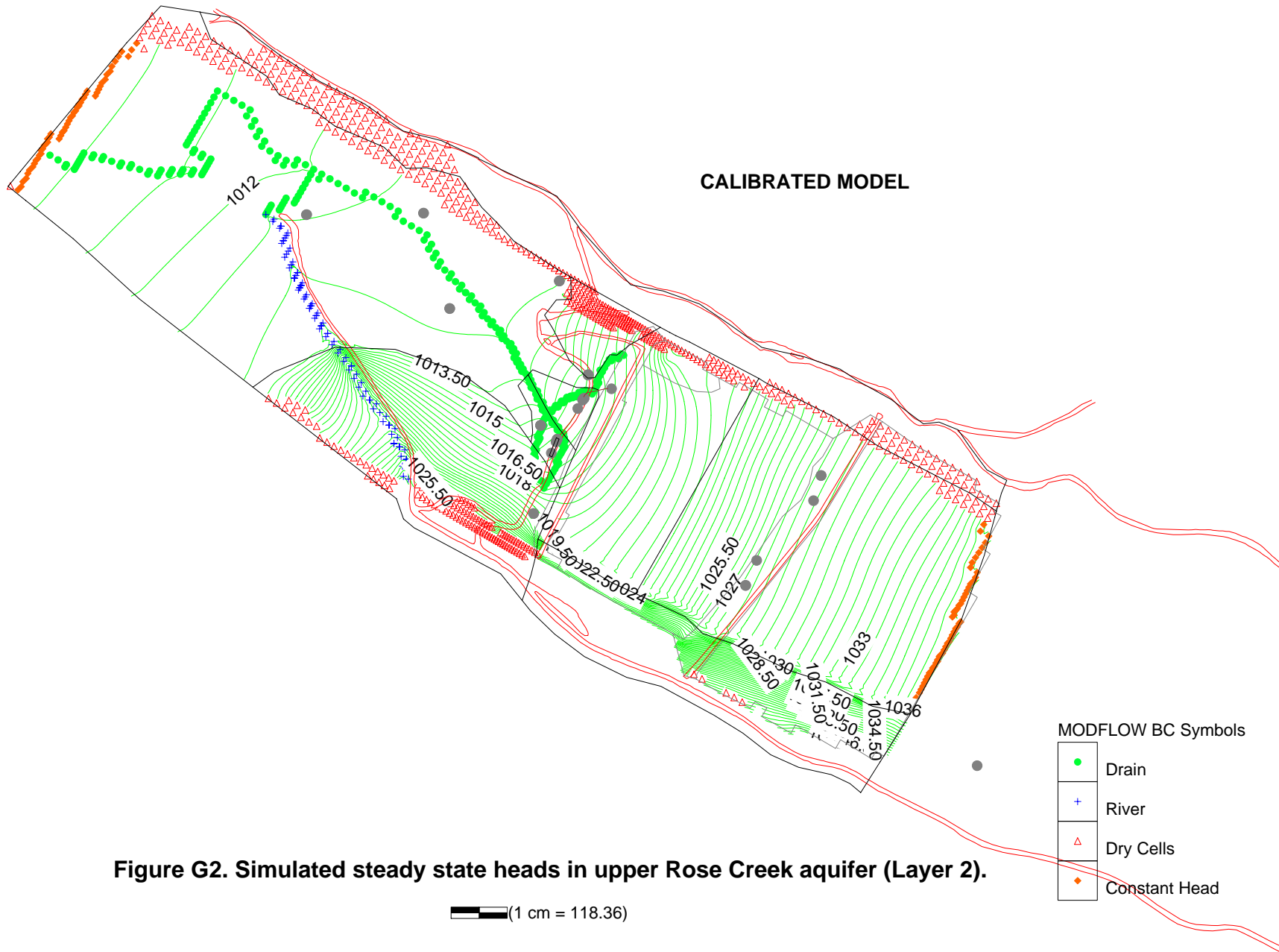
FLUXES	SIMULATED		TARGET
	Net m ³ /d	Net L/s	L/s
INTERMEDIATE POND			
arc	215.0	2.5	
polygon	585.8	6.8	
Total	801	9	24 - 30
POLISHING POND			
arc	22.4	0.3	
polygon	1207.9	14.0	
Total	1230	14	7 - 9.4
PP Spillway	0	0.0	-
X11	-710	-8.2	
X13	-2655	-30.7	25 - 31
CVS1	-3358	-38.9	41 - 51
Rest of RC	-904	-10.5	139 - 175
RCDC RIV	3342	38.7	40 - 200
U/S CH	2463	28.5	37 - 46
D/S CH	-918	-10.6	42 - 53

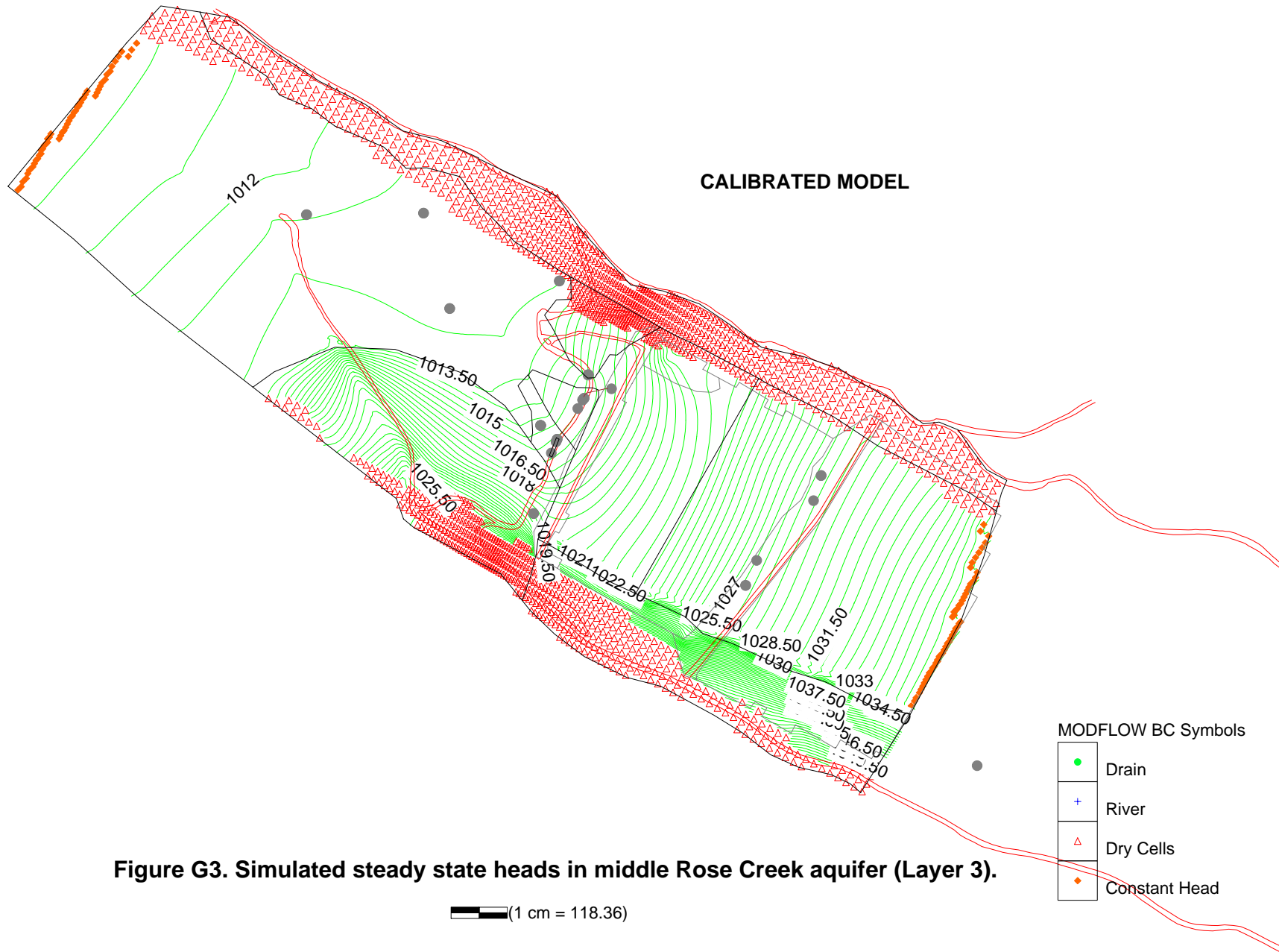
Negative or red numbers indicate flow out of model (i.e. into boundary condition)

Water Balance Error (%) 0.0
Iterations Converged









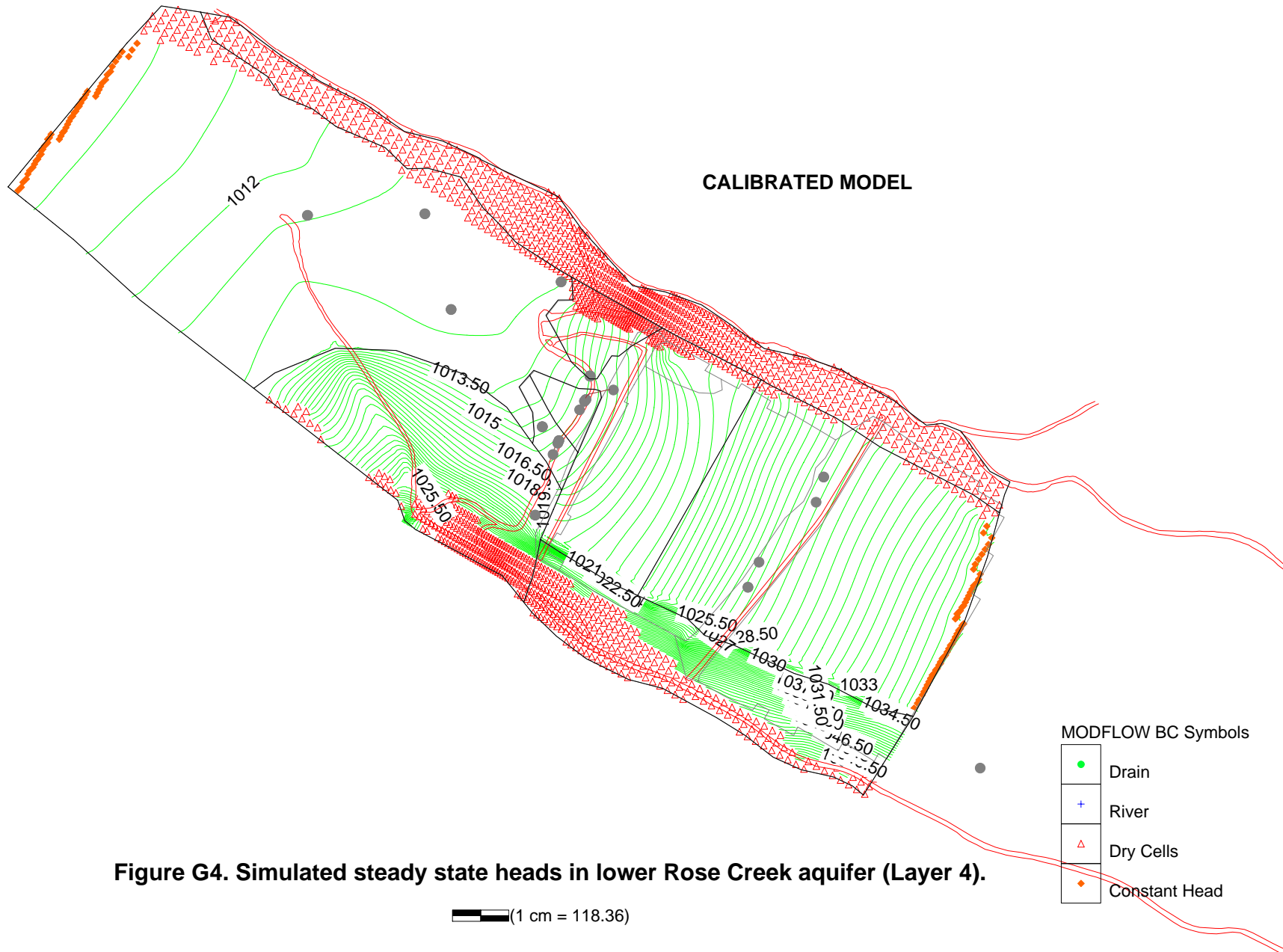


Figure G4. Simulated steady state heads in lower Rose Creek aquifer (Layer 4).

1 cm = 118.36

- MODFLOW BC Symbols**
- Drain
 - + River
 - △ Dry Cells
 - ◆ Constant Head

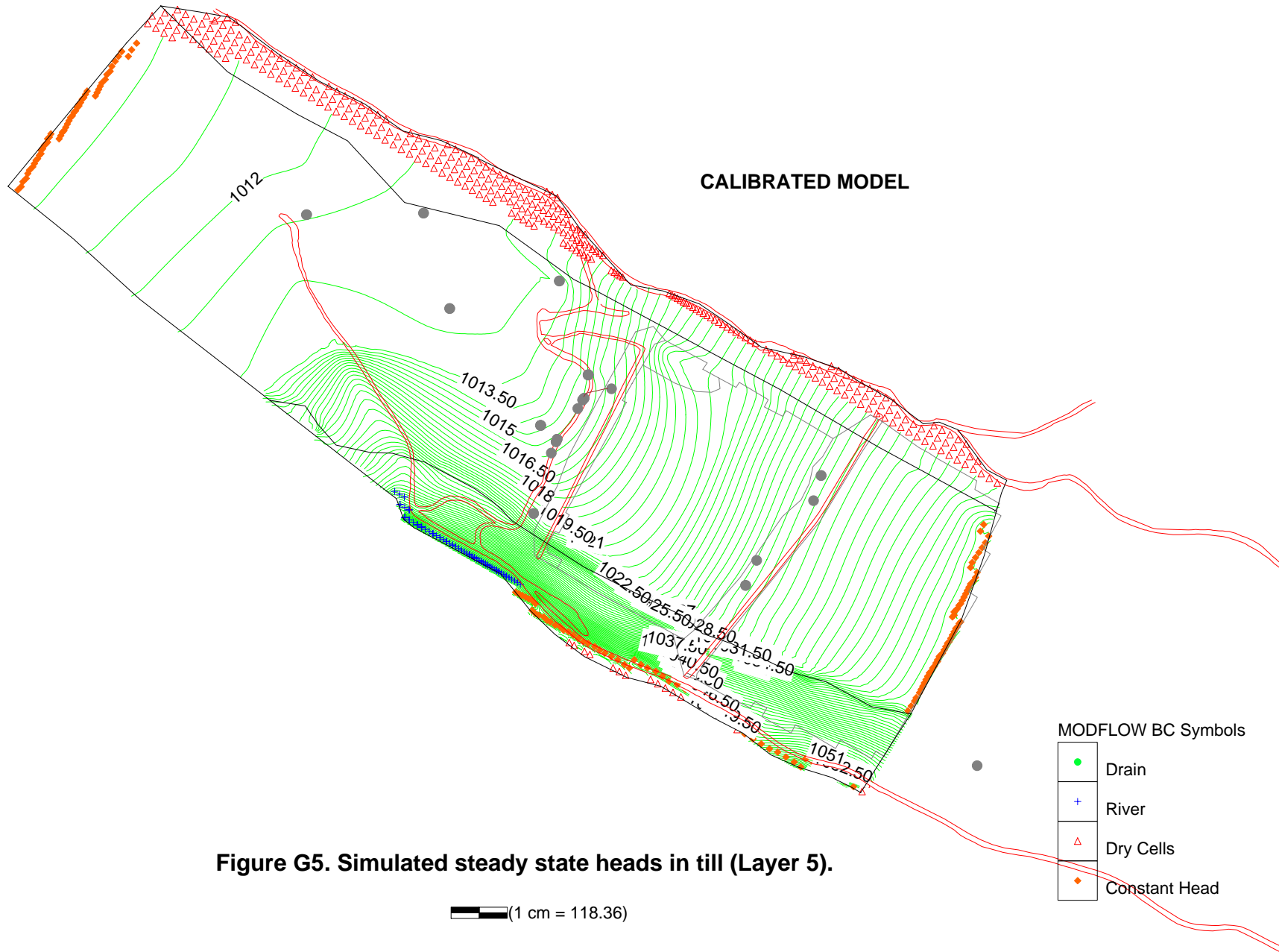
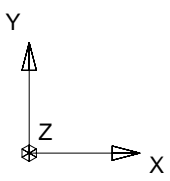


Figure G5. Simulated steady state heads in till (Layer 5).

1 cm = 118.36

- MODFLOW BC Symbols**
- Drain
 - + River
 - △ Dry Cells
 - ◆ Constant Head



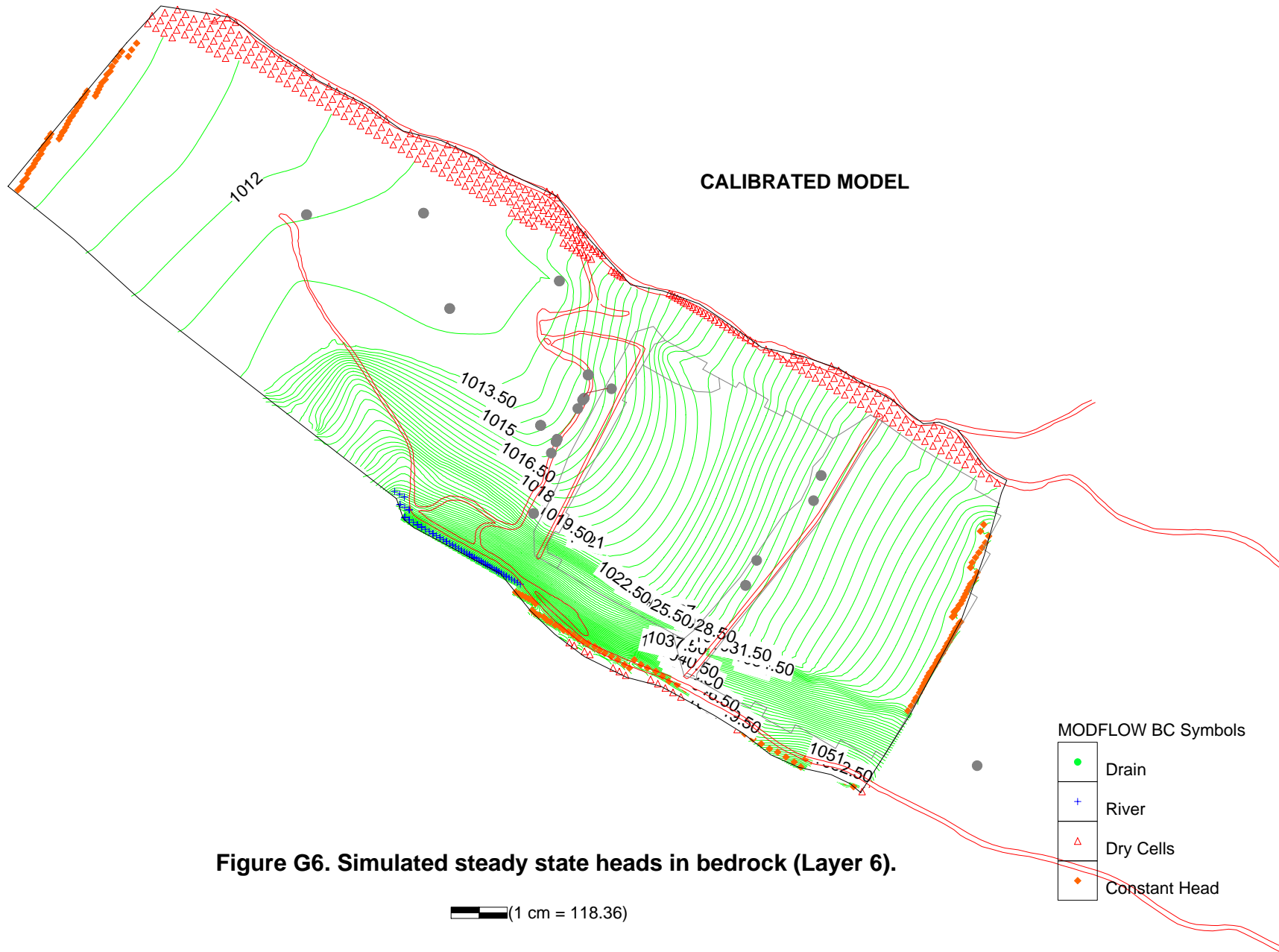


Figure G6. Simulated steady state heads in bedrock (Layer 6).

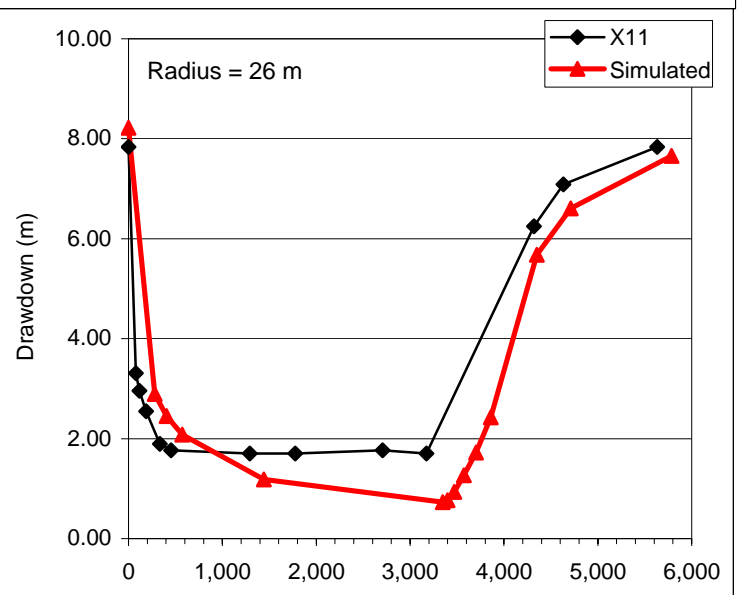
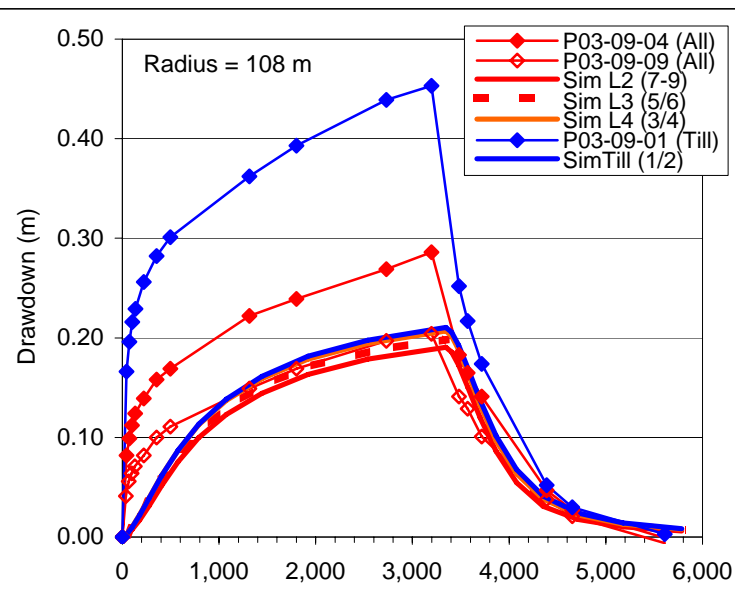
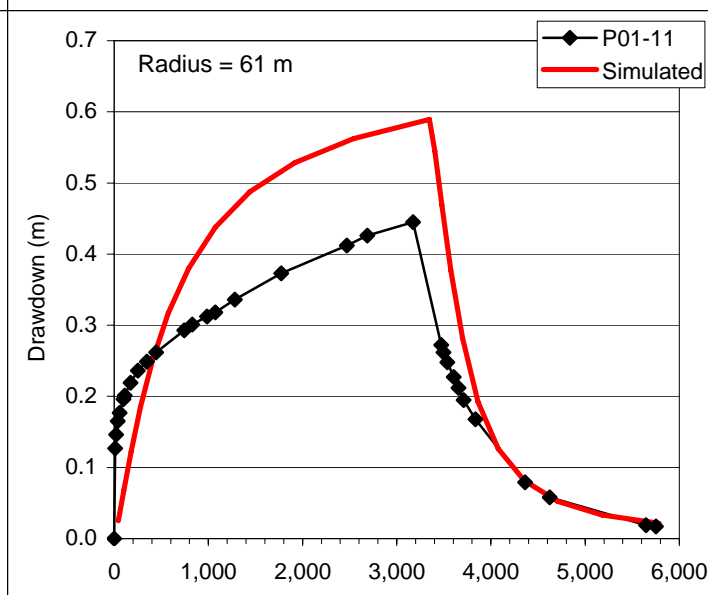
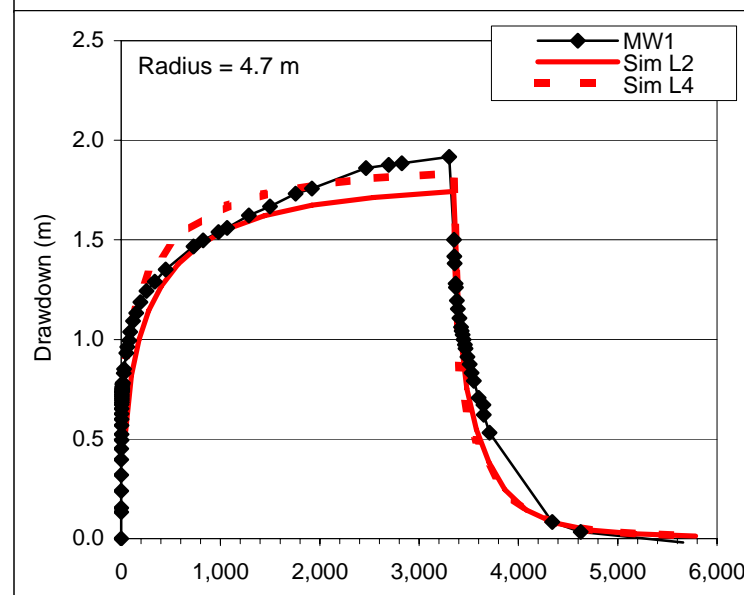
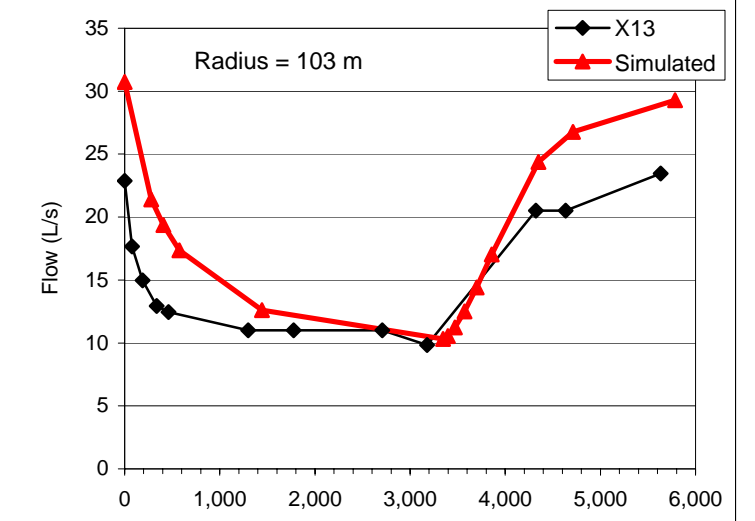
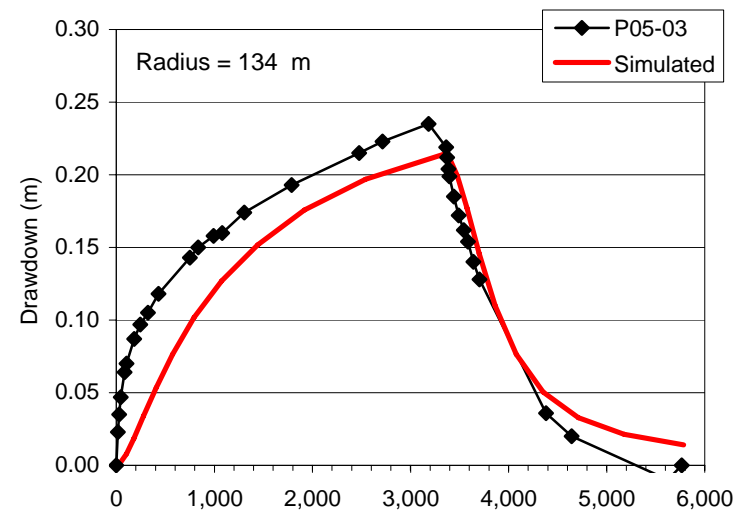
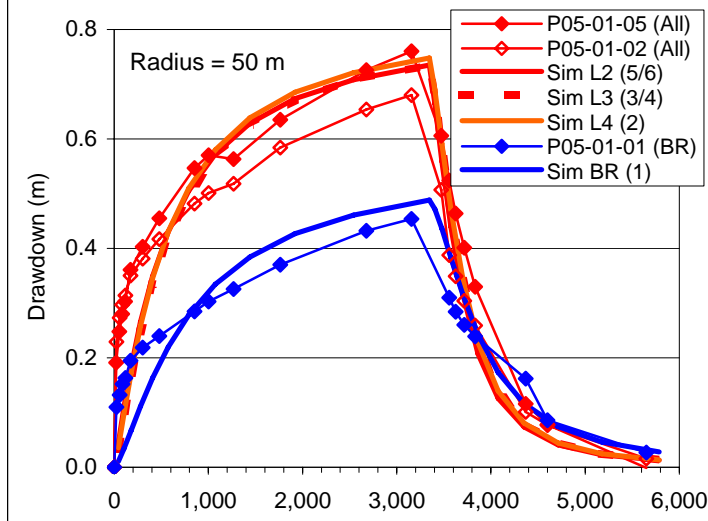
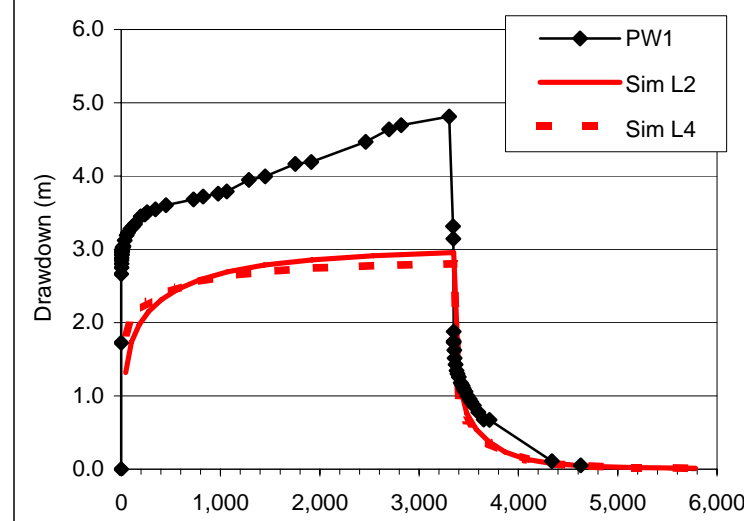
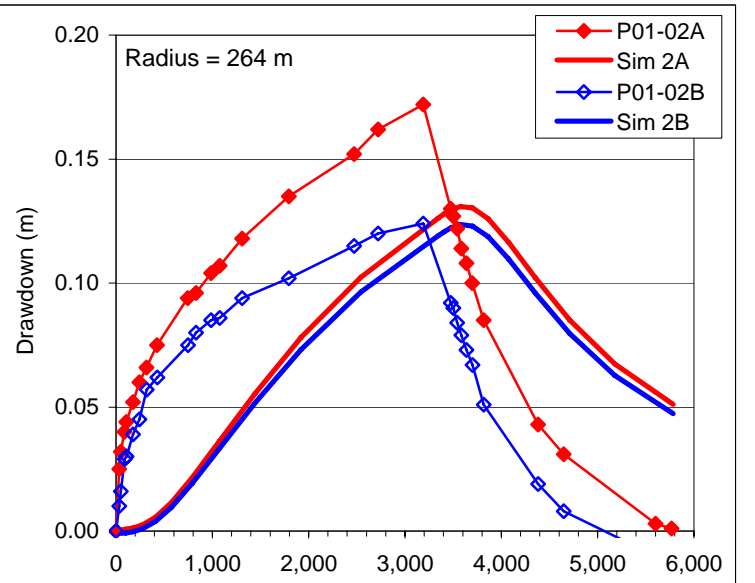
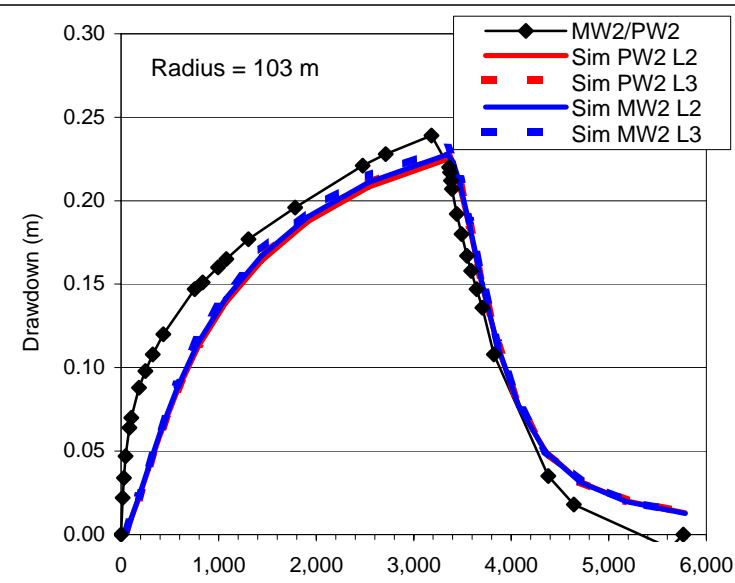
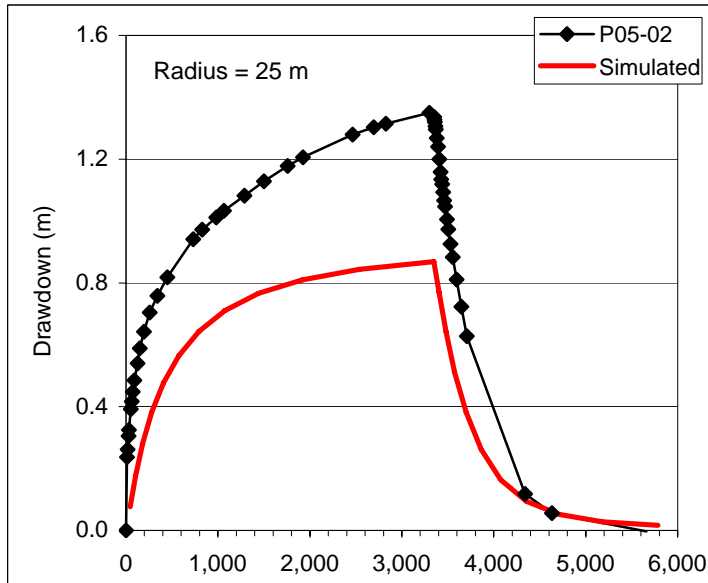
1 cm = 118.36

MODFLOW BC Symbols

- Drain
- + River
- △ Dry Cells
- ◆ Constant Head

Figure G7. Simulated drawdown and recovery versus time for the 52-hr pump test in PW-1.

Material	Layer	K (m/d)	K (m/s)	Sy/Ss
CVD	1	0.00864	1.0E-07	0.1 / -
PP Seds	1	0.000078	9.0E-10	- / 0.0001
PP Window	1	0.026	3.0E-07	- / 0.0001
ID	1	0.026	3.0E-07	0.1 / -
Tailings	1	0.0017	2.0E-08	- / 0.0001
Coil N	2, 3, 4	0.864	1.0E-05	0.001/0.001
Coil S	2, 3, 4	0.864	1.0E-05	0.0001/0.0001
U/S All.	2, 3, 4	12.96	1.5E-04	0.001/0.001
D/S All.	2, 3, 4	25.92	3.0E-04	0.001/0.001
All. (CVD-N)	2, 3, 4	43.2	5.0E-04	0.1/0.001
All. (CVD-S)	2, 3, 4	43.2	5.0E-04	0.0001/0.0001
All. PW2	2, 3	432	5.0E-03	0.0001/0.0001
Basal Till	5	0.026	3.0E-07	0.01 / 1e-6
Slope Till	2, 3, 4, 5	0.26	3.0E-06	0.05 / 1e-6
Bedrock	6	0.017	2.0E-07	0.001 / 1e-6
Drain Conductance (m/d)		51.84		PW1 (33/67C)
River Conductance (m/d)		5.184		498 GPM



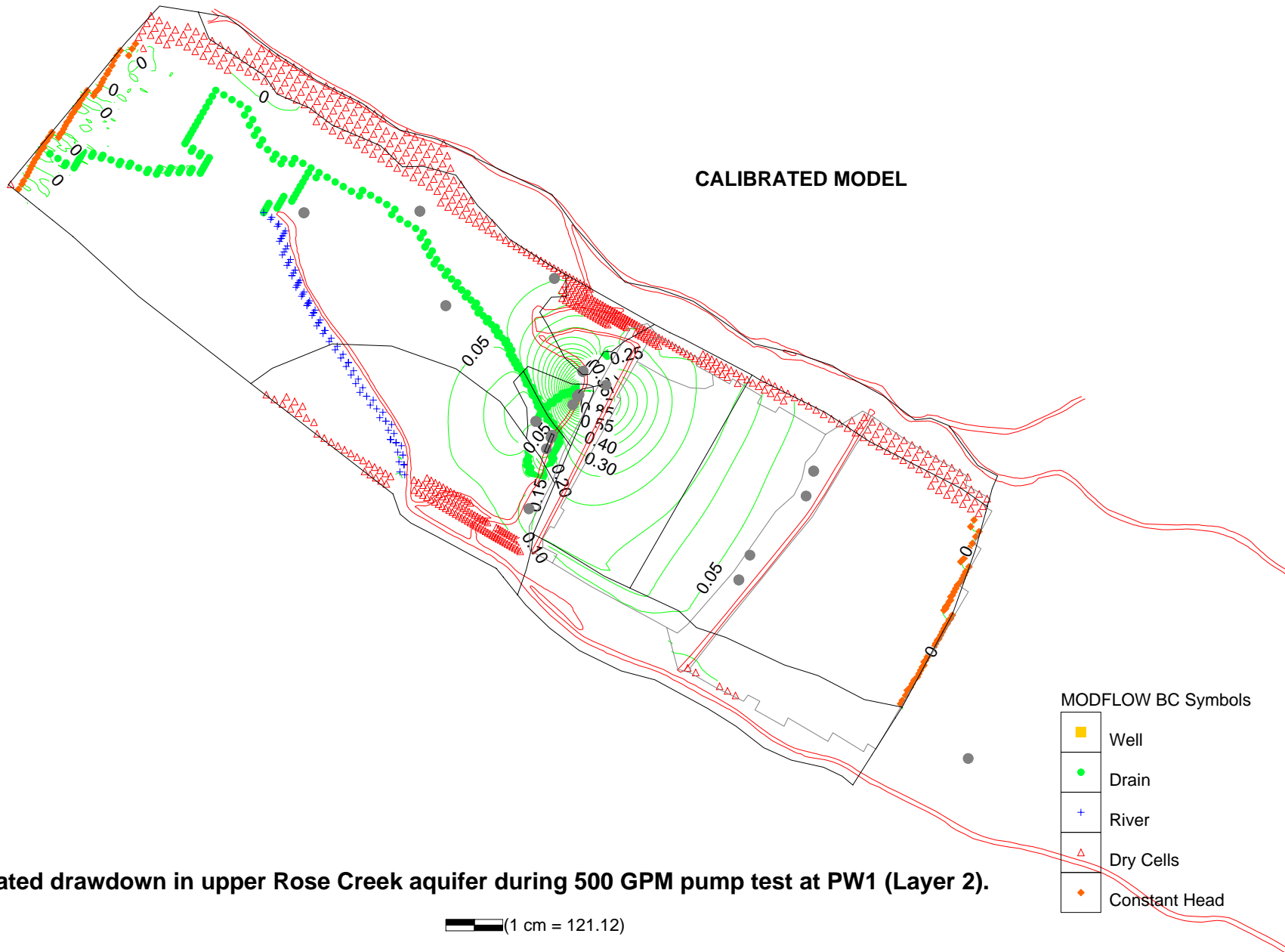


Figure G8. Simulated drawdown in upper Rose Creek aquifer during 500 GPM pump test at PW1 (Layer 2).

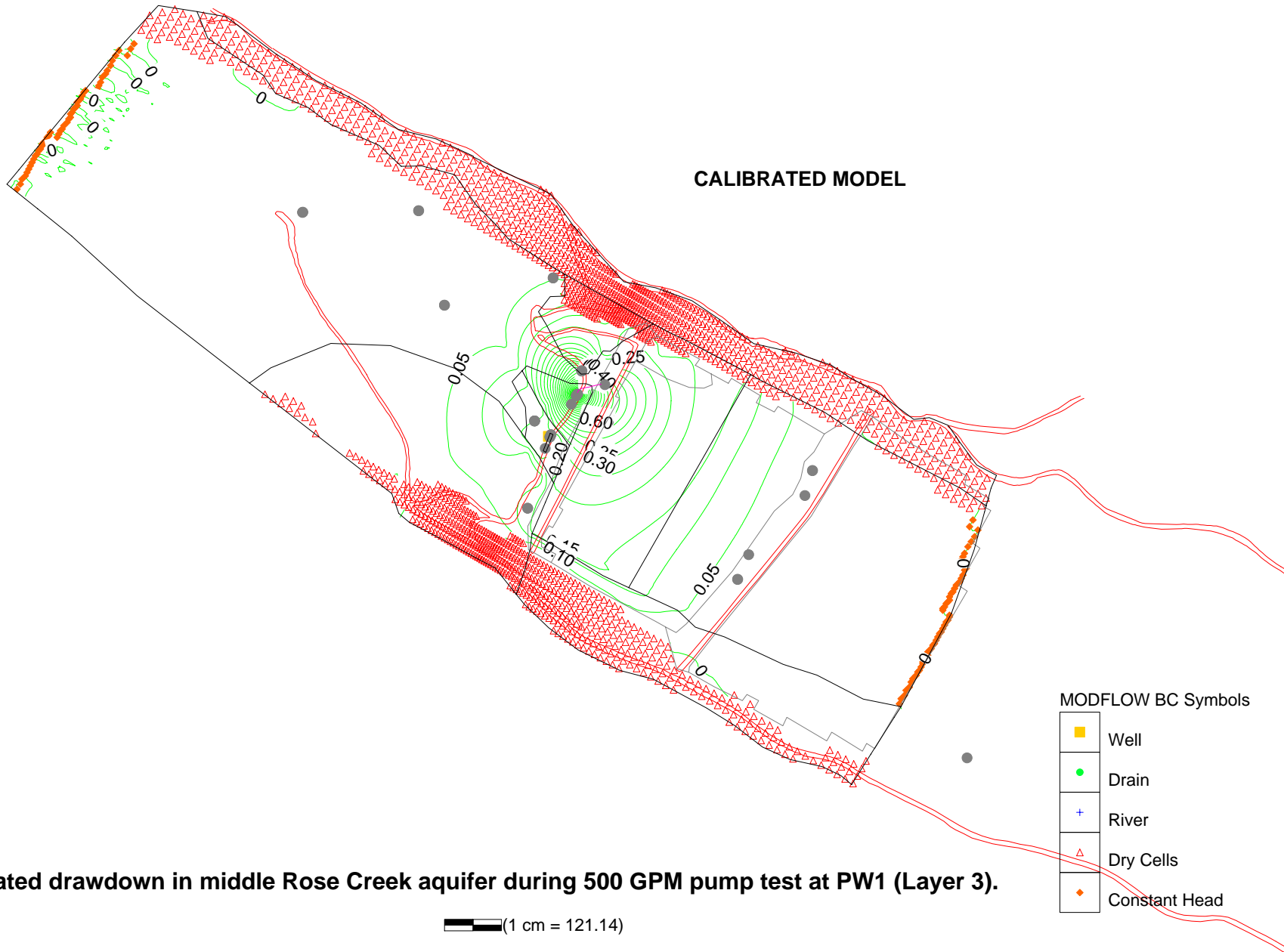


Figure G9. Simulated drawdown in middle Rose Creek aquifer during 500 GPM pump test at PW1 (Layer 3).

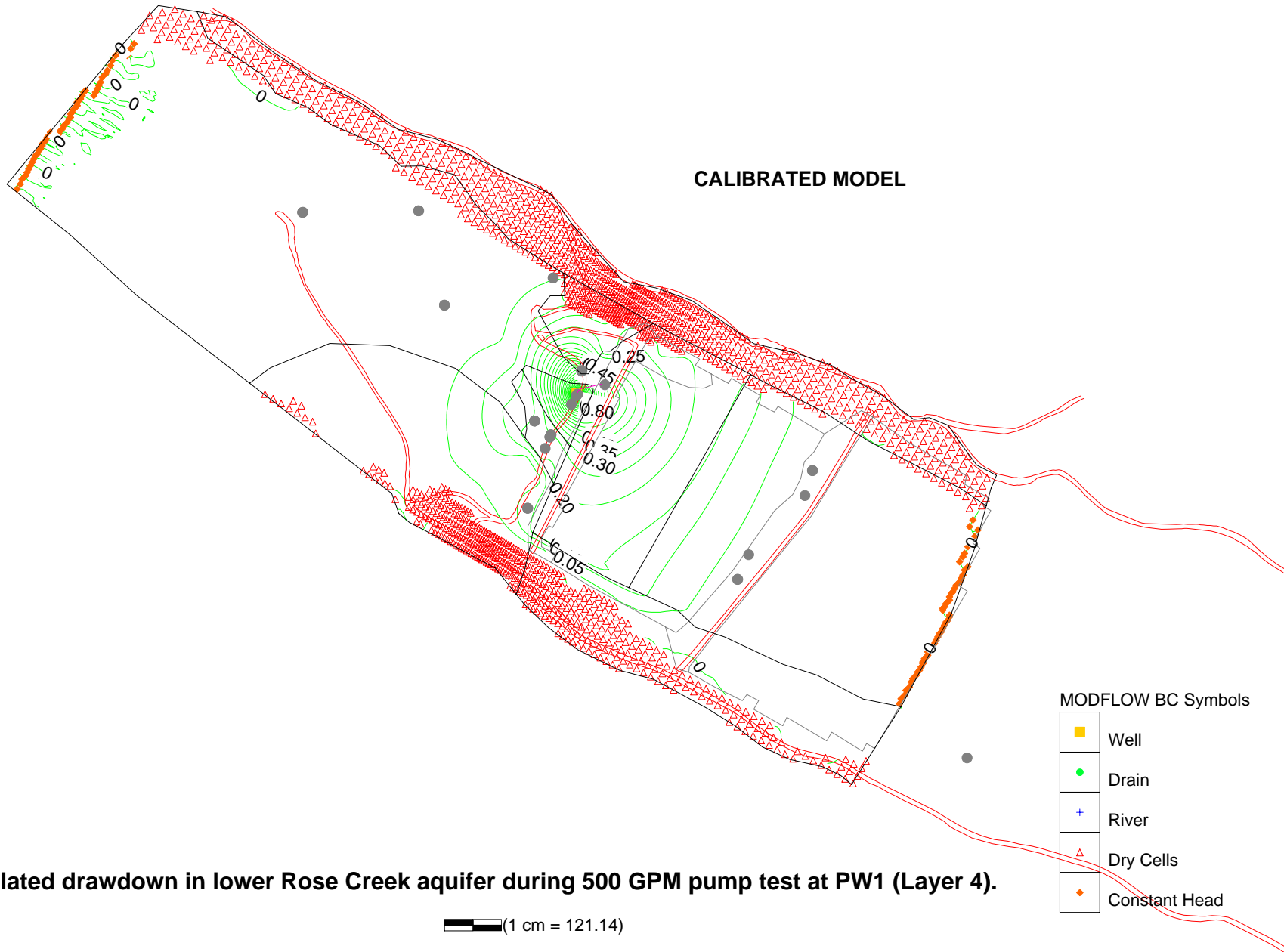
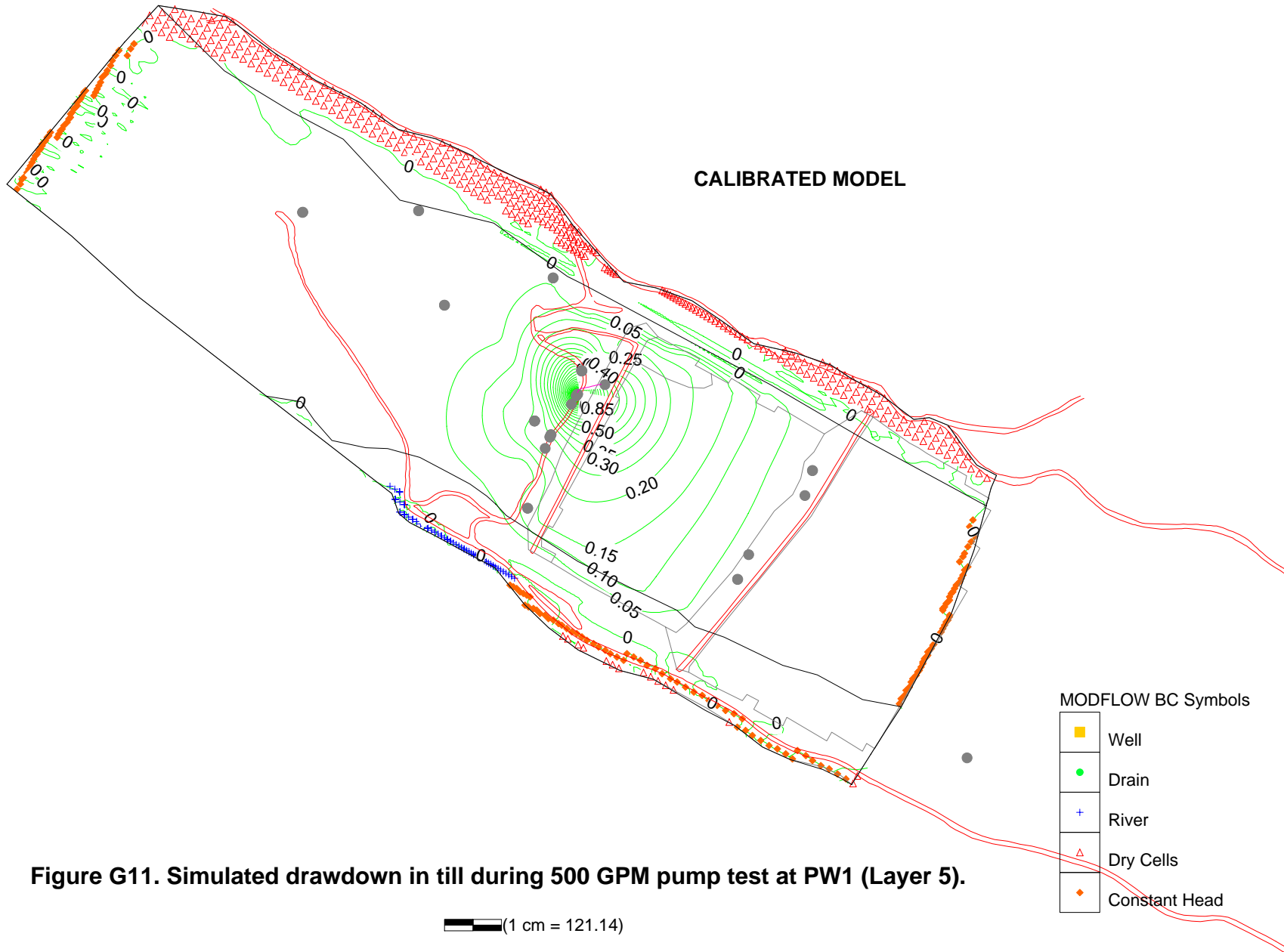


Figure G10. Simulated drawdown in lower Rose Creek aquifer during 500 GPM pump test at PW1 (Layer 4).



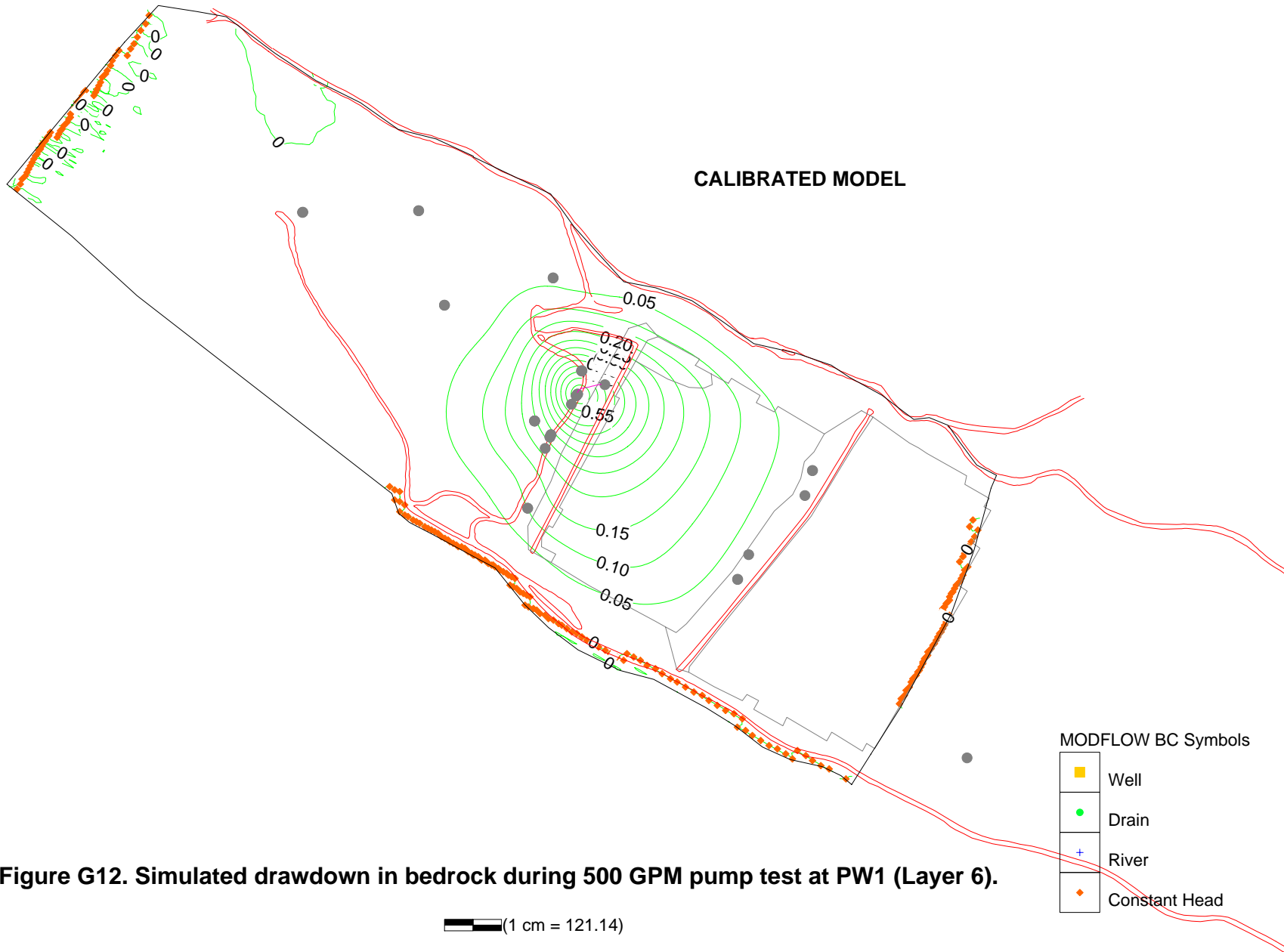
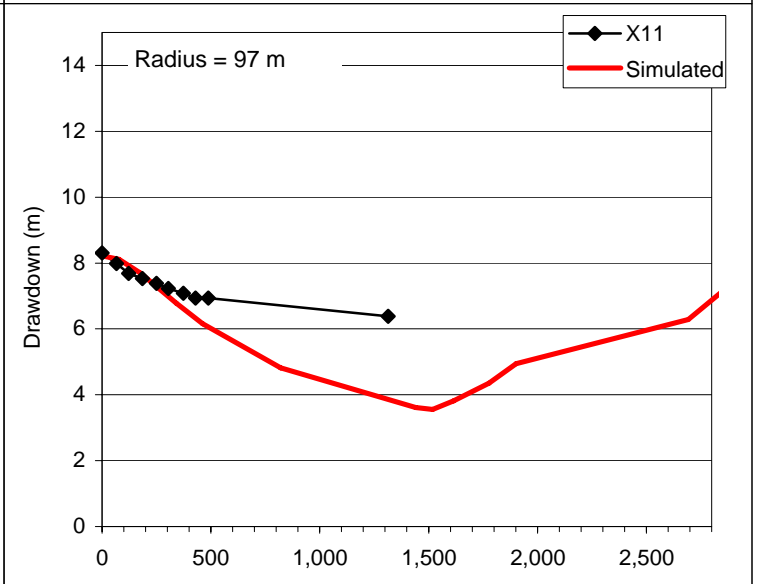
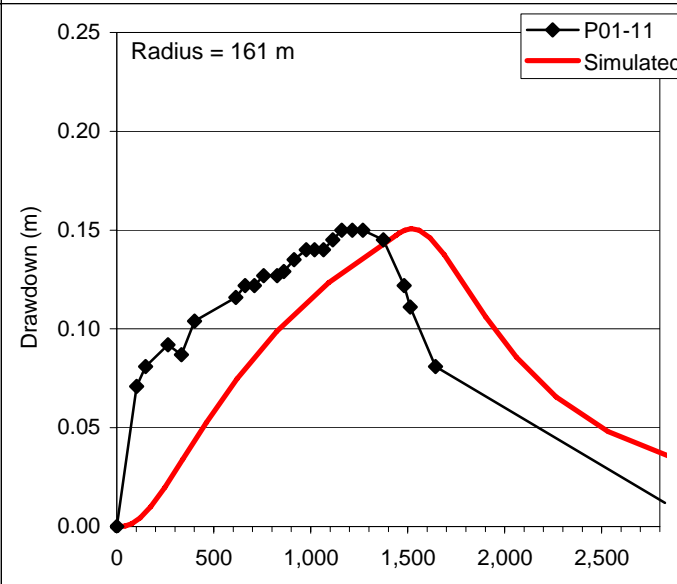
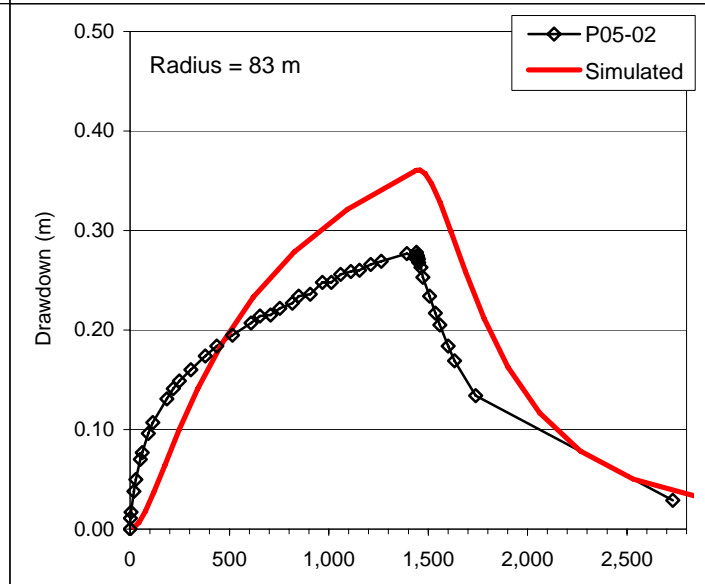
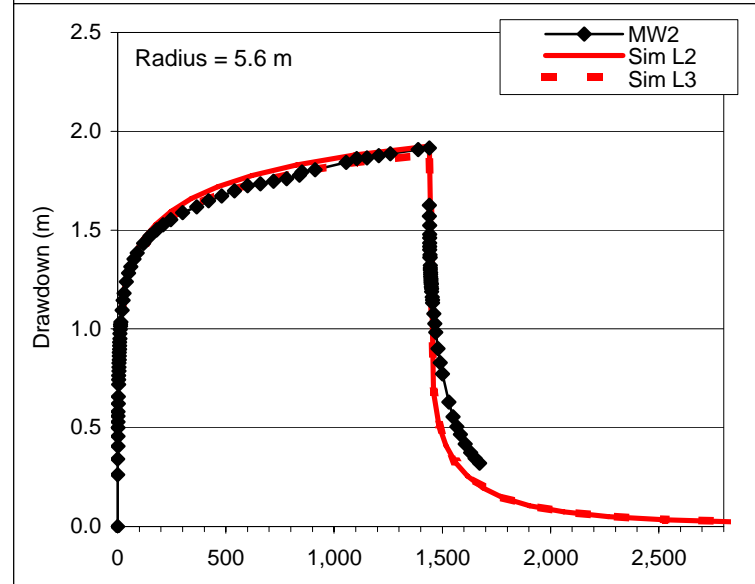
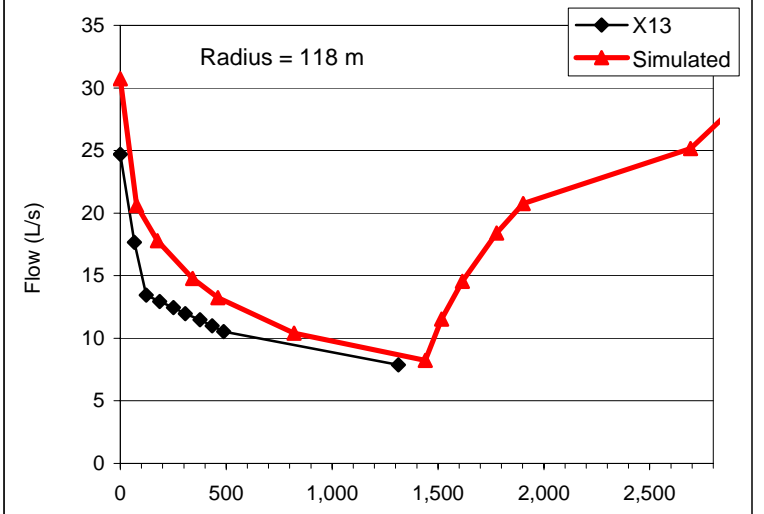
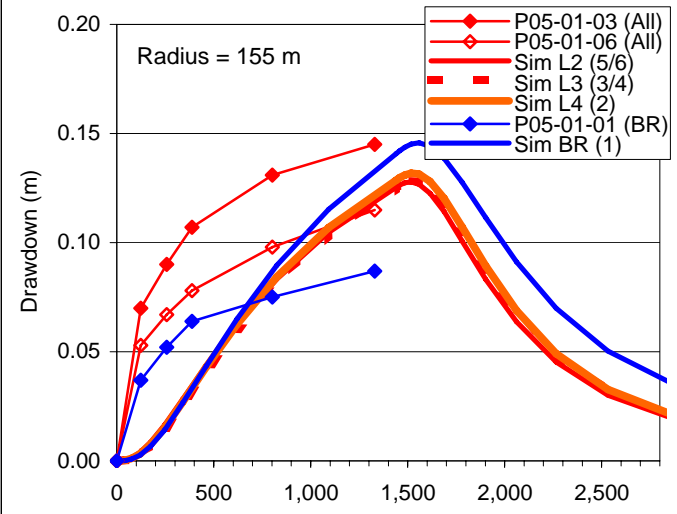
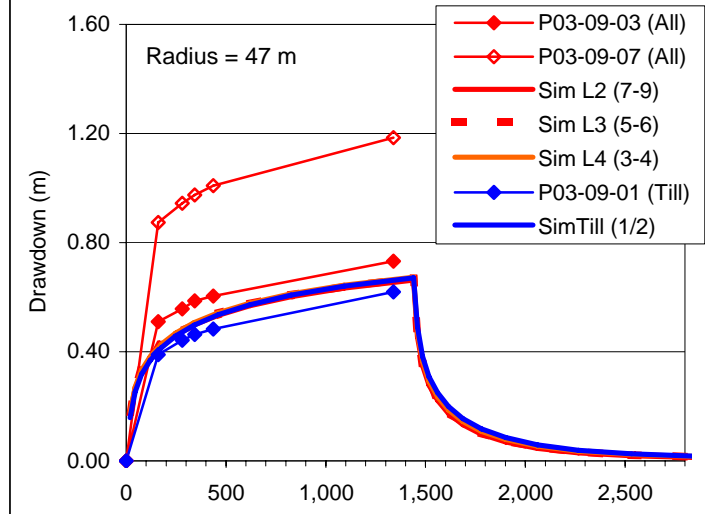
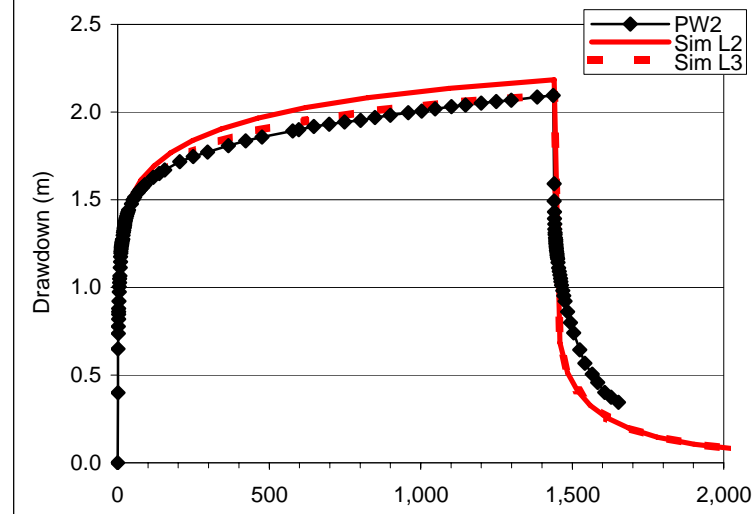
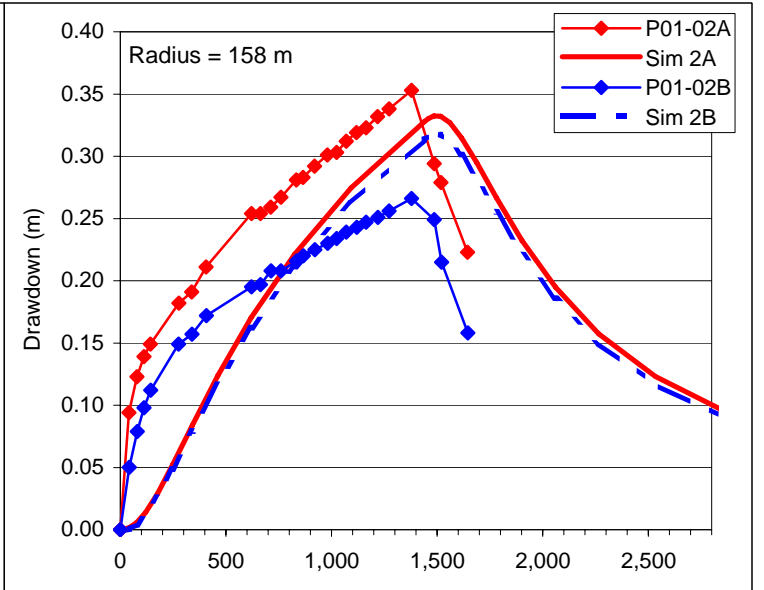
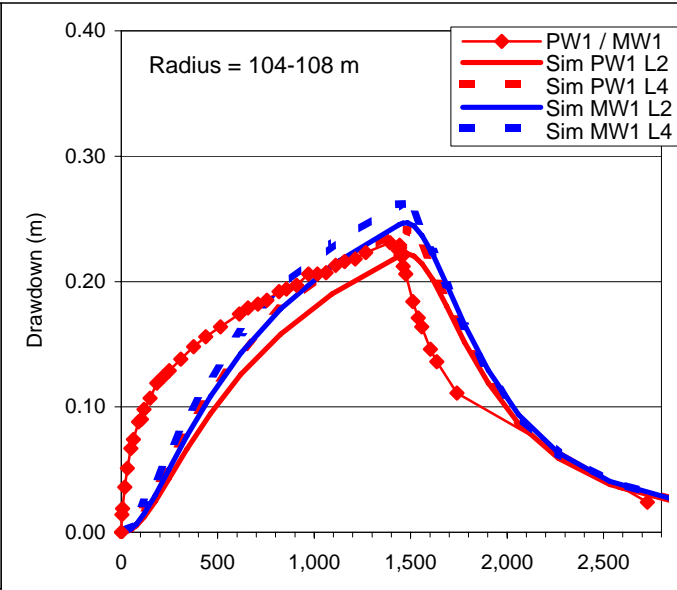
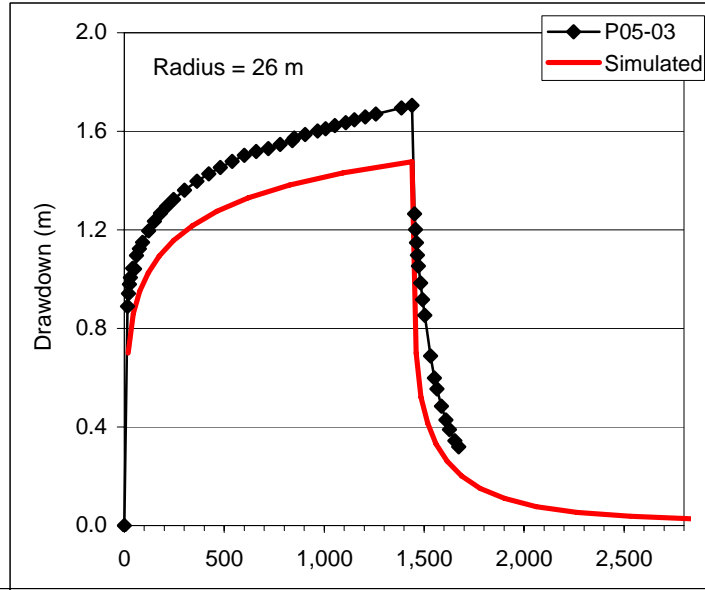


Figure G12. Simulated drawdown in bedrock during 500 GPM pump test at PW1 (Layer 6).

Figure G13. Simulated drawdown and recovery versus time for the 24-hr pumping test at PW-2.

Material	Layer	K (m/d)	K (m/s)	Sy/Ss
CVD	1	0.00864	1.0E-07	0.1 / -
PP Seds	1	0.000078	9.0E-10	- / 0.0001
PP Window	1	0.026	3.0E-07	- / 0.0001
ID	1	0.026	3.0E-07	0.1 / -
Tailings	1	0.0017	2.0E-08	- / 0.0001
Coil N	2, 3, 4	0.864	1.0E-05	0.001/0.001
Coil S	2, 3, 4	0.864	1.0E-05	0.0001/0.0001
U/S All.	2, 3, 4	12.96	1.5E-04	0.001/0.001
D/S All.	2, 3, 4	25.92	3.0E-04	0.001/0.001
All. (CVD-N)	2, 3, 4	43.2	5.0E-04	0.1/0.001
All. (CVD-S)	2, 3, 4	43.2	5.0E-04	0.0001/0.0001
All. PW2	2, 3	432	5.0E-03	0.0001/0.0001
Basal Till	5	0.026	3.0E-07	0.01 / 1e-6
Slope Till	2, 3, 4, 5	0.26	3.0E-06	0.05 / 1e-6
Bedrock	6	0.017	2.0E-07	0.001 / 1e-6
Drain Conductance (m/d)			51.84	PW2 597 GPM
River Conductance (m/d)			5.184	



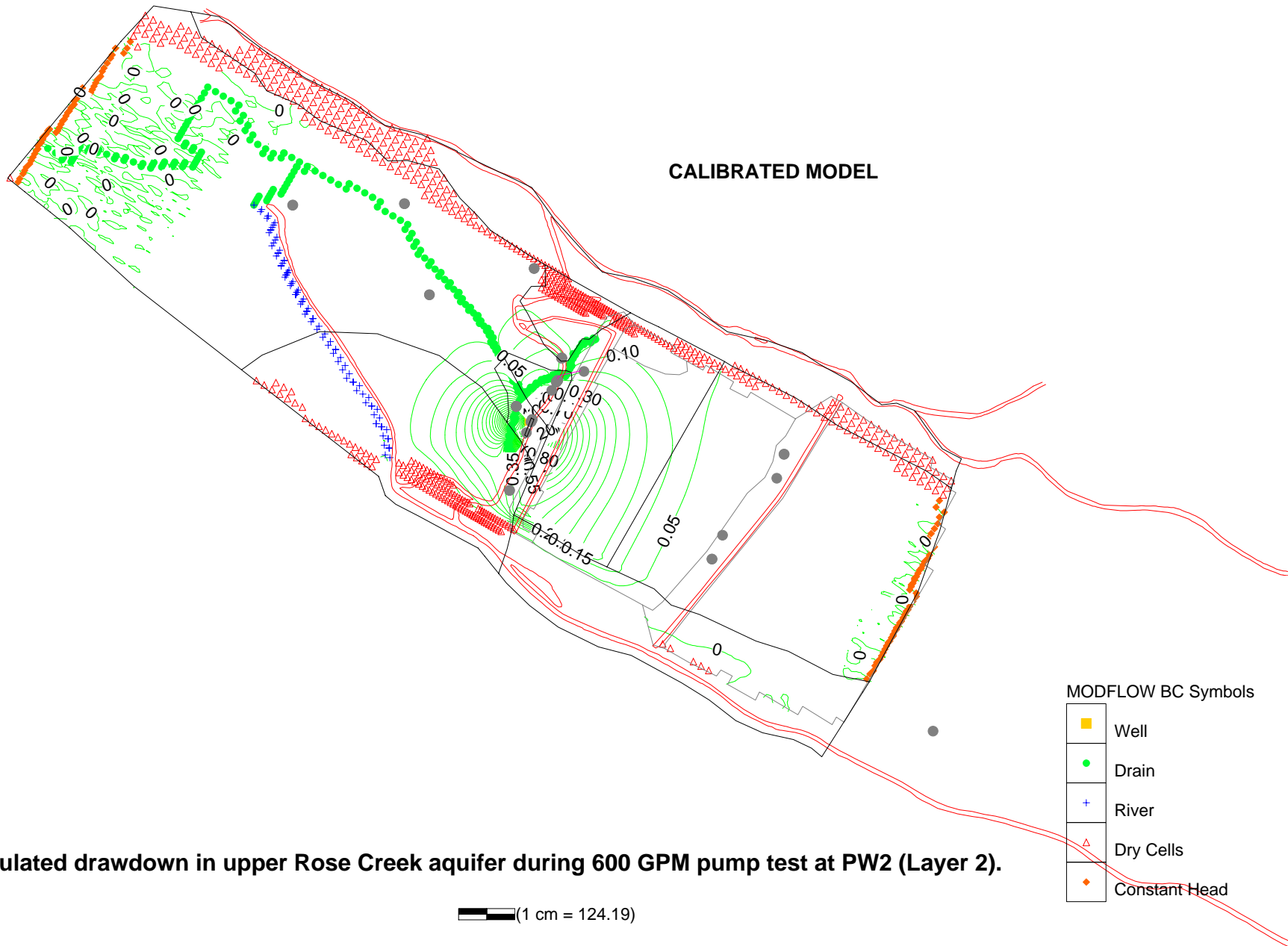


Figure G14. Simulated drawdown in upper Rose Creek aquifer during 600 GPM pump test at PW2 (Layer 2).

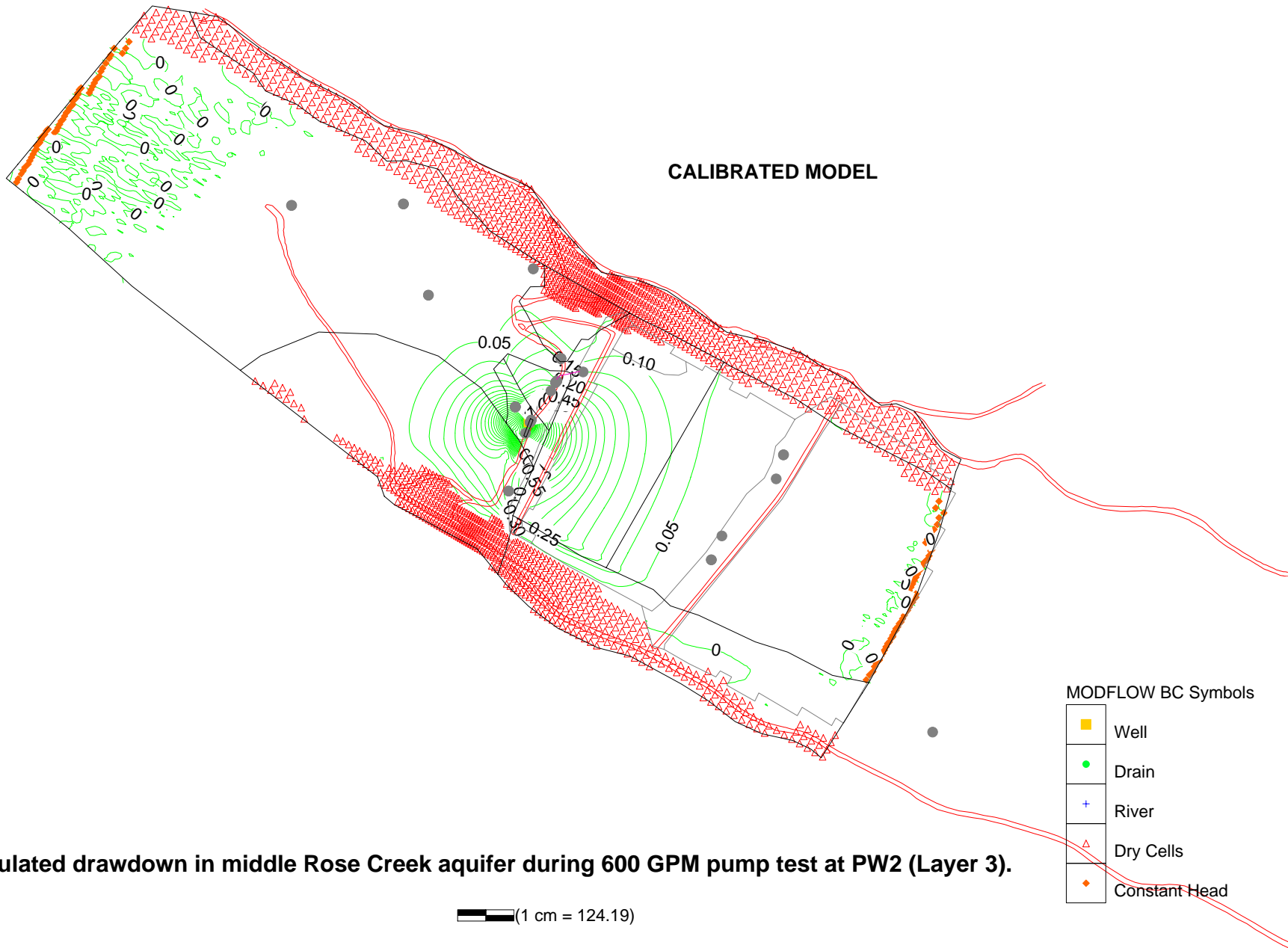


Figure G15. Simulated drawdown in middle Rose Creek aquifer during 600 GPM pump test at PW2 (Layer 3).

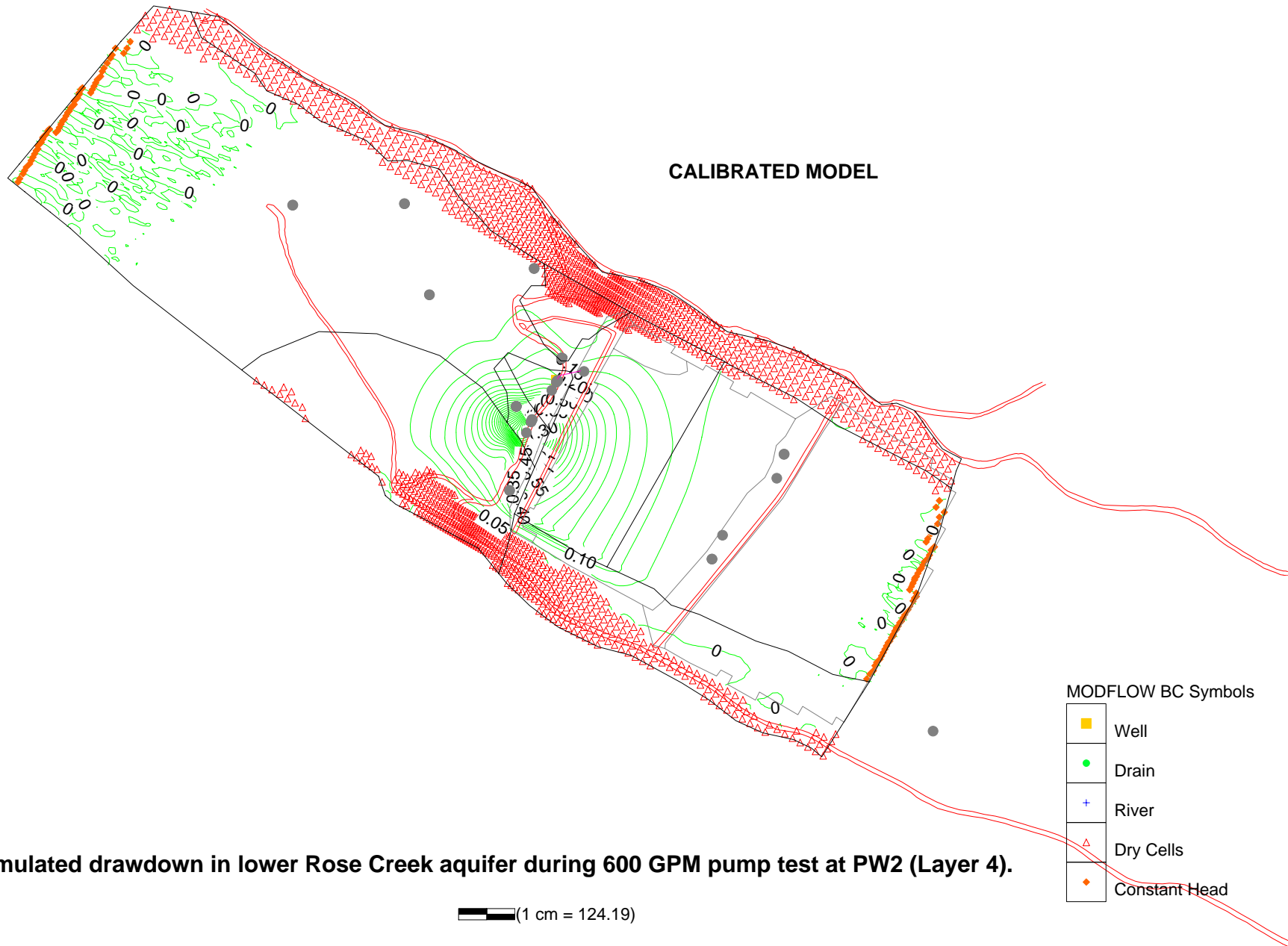


Figure G16. Simulated drawdown in lower Rose Creek aquifer during 600 GPM pump test at PW2 (Layer 4).

