GROUND-WATER LEVELS

ROCKINGHAM COUNTY—Continued

362226079410102. County number, RK-244; DENR Upper Piedmont Research Station MW-S4I (Transition Zone well).

LOCATION.--Lat 36°22'26", long 79°41'01", Hydrologic Unit 03010103, .6 mi north of Wentworth Street, .6 mi west of Secondary Road 1993 on North Carolina State University Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER .-- Regolith (saprolitic Felsic Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 35 ft, diameter 4 in., cased to 25 ft, open hole from 25 ft to 35 ft.

INSTRUMENTATION .-- Water-level recorder collecting data at 60-minute intervals. Satellite telemetry at site.

DATUM.--Land-surface datum is 650 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.85 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project. Well is located in close proximity to stream. Well also sampled for water quality.

PERIOD OF RECORD.--May 2002 to September 2003. Continuous record began May 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.43 ft below land-surface datum, Aug. 12, 2003; lowest water level measured 5.28 ft below land-surface datum, Aug. 7, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD MAY TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 06	4.72*	MAY 15	4.80*	JUN 05	4.93*	AUG 07	5.28*	SEP 05	5.21*
*DENR mea	asurements.								

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL								
OCT 23 NOV 20	4.55* 3.84*	DEC 10 FEB 03	4.43* 4.25*	MAR 10 APR 02	3.84* 3.87*	APR 29 JUN 02	4.11* 4.01*	JUL 07 AUG 12	4.13* 3.43*	SEP 10	4.00*

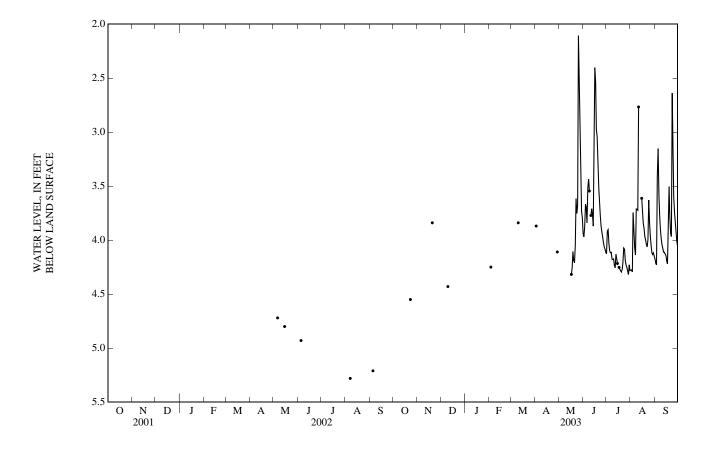
^{*}DENR measurements.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE FOR PERIOD MAY 2003 TO SEPTEMBER 2003 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									3.94	4.13	4.28	4.17
2									3.97	3.92	4.28	4.22
3									3.88	3.90	4.29	4.23
4									3.67	4.03	3.75	3.40
5									3.70	4.10	3.92	3.15
6									3.84	4.12	4.07	3.58
7									3.52	4.11	4.14	3.79
8									3.43	4.18	3.71	3.90
9									3.55	4.18	3.71	3.99
10										4.18	3.72	4.05
11									3.77	4.23	2.77	4.08
12									3.71	4.26		4.11
13									3.76	4.13		4.11
14									3.87	4.17		4.13
15									3.55	4.22	3.61	4.14
16									2.40		3.73	4.19
17								4.32	2.54	4.25	3.84	4.22
18								4.25	2.97	4.27	3.89	3.87
19								4.11	3.04	4.28	3.97	3.51
20								4.11	3.30	4.30	4.00	3.78
20								4.17	3.30	4.50	4.00	3.76
21								4.21	3.51	4.27	4.04	3.93
22								4.04	3.65	4.21	4.06	3.97
23								3.62	3.77	4.07	4.00	2.64
24								3.75	3.87	4.09	3.63	3.33
25								3.68	3.93	4.19	3.84	3.60
26								2.11	3.97	4.23	3.96	3.74
27								3.07	4.02	4.25	3.96 4.05	3.74
28								3.07	4.02	4.29	4.03	3.93
28 29								3.54	4.08	4.29	4.12	4.02
30								3.73	4.08	4.32	4.13	4.02
31								3.73 3.79		4.23	4.12	4.00
31								3.19		4.40	4.13	

WTR YR 2003 MEAN 3.88 HIGH 2.11 LOW 4.32

 $362226079410102.\ County\ number,\ RK-244;\ DENR\ Upper\ Piedmont\ Research\ Station\ MW-S4I\ (Transition\ Zone\ well).$



362226079410102 RK-244 DENR Upper Piedmont Research Station MW-S4I (Transition zone well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD .-- May to September 2003.

PERIOD OF DAILY RECORD .--

SPECIFIC CONDUCTANCE: May to September 2003.

pH: May to September 2003.

WATER TEMPERATURE: May to September 2003. DISSOLVED OXYGEN: May to September 2003.

DISSOLVED OXYGEN, PERCENT SATURATION: May to September 2003.

INSTRUMENTATION .-- Water-quality monitor with satellite telemetry from May to September 2003.

REMARKS.--Station operated in cooperation with North Carolina Department of Environment and Natural Resources, Water Resources Division, as part of the Piedmont/Mountains ground-water project. Dissolved oxygen, percent saturation, is computed using a barometric pressure of 750 mm Hg.

EXTREMES FOR CURRENT YEAR.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	306, May 14, 15, 16	289, July 17, 18
pH, standard units	7.3, on many days during the period	6.8, June 19-21
WATER TEMPERATURE, °C	14.3, September 25	13.7, May 1, 2, 4, 5
DISSOLVED OXYGEN, mg/L	0.9, Aug. 9, 10, 14	0.0, on several days during the period
DISSOLVED OXYGEN, PERCENT SATURATION,%	9, Aug. 9, 10, 14	0, on several days during the period

ROCKINGHAM COUNTY--Continued

362226079410102 RK-244 DENR Upper Piedmont Research Station MW-S4I (Transition zone well)—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS FOR PERIOD MAY TO SEPTEMBER 2003 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									303	292	292	296
2								305	304	292	292	296
3								305	303	291	292	296
4								305	303	291	293	296
5								304	302	291	292	296
3								304	302	271	2)2	270
6								304	302	290	292	296
7								304	302	290	293	296
8								304	302	291	293	296
9								304	302	291	293	296
10								304		291	294	296
11								304	302	291	294	296
12								305	300	291		296
13								305	299	290		296
14								305	298	290		296
15								305	297	290	295	296
16								205	207	200	206	200
16								305	297	290	296	296
17								304	295	290	296	296
18								304	294	290	296	296
19								304	294	290	296	296
20								304	294	290	296	295
21								304	293	291	296	295
22								304	293	291	296	295
23								303	293	291	295	296
24								302	293	291	296	296
25								302	293	291	295	297
23								302	273	271	273	271
26								304	293	291	295	298
27								303	293	291	296	299
28								303	292	292	296	299
29								304	292	292	296	299
30								304	292	292	296	300
31								304		292	296	
MEAN										291		296
MAX										292		300
MIN										290		295

$362226079410102\ RK-244\ DENR\ Upper\ Piedmont\ Research\ Station\ MW-S4I\ (Transition\ zone\ well)\\ --Continued$

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS FOR PERIOD MAY TO SEPTEMBER 2003 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									6.9	6.9	7.1	7.3
2								7.1	6.9	6.9	7.2	7.3
3								7.1	6.9	6.9	7.2	7.3
4								7.1	6.9	6.9	7.2	7.3
5								7.1	6.9	6.9	7.2	7.3
6								7.1	6.9	7.0	7.2	7.3
7								7.1	6.9	6.9	7.2	7.3
8								7.1	6.9	6.9	7.2	7.3
9								7.1	6.9	6.9	7.3	7.3
10								7.2		6.9	7.3	7.3
11								7.2	6.9	6.9	7.3	7.3
12								7.2	6.9	6.9		7.3
13								7.2	7.0	6.9		7.3
14								7.2	7.0	6.9		7.3
15								7.2	7.0	6.9	7.2	7.3
16								7.1	7.0	6.9	7.2	7.3
17								7.0	7.0	6.9	7.2	7.3
18								7.0	7.0	6.9	7.2	7.3
19								7.0	6.9	6.9	7.2	7.3
20								7.0	6.8	7.0	7.2	7.3
21								7.0	6.9	7.0	7.2	7.3
22								7.0	6.9	7.0	7.2	7.3
23								7.0	6.9	7.0	7.2	7.3
24								7.0	6.9	7.0	7.3	7.3
25								6.9	6.9	7.0	7.3	7.3
26								7.0	6.9	7.0	7.3	7.2
27								6.9	6.9	7.1	7.3	7.2
28								6.9	6.9	7.1	7.3	7.3
29								6.9	6.9	7.1	7.3	7.3
30								6.9	6.9	7.1	7.3	7.3
31								6.9		7.1	7.3	
MEAN										7.0		7.3
MAX										7.1		7.3
MIN										6.9		7.2

362226079410102 RK-244 DENR Upper Piedmont Research Station MW-S4I (Transition zone well)—Continued

TEMPERATURE, WATER, DEGREES CELSIUS FOR PERIOD MAY TO SEPTEMBER 2003 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									13.9	13.9	14.0	14.2
2								13.8	13.9	14.0	14.0	14.2
3								13.8	13.9	14.0	14.0	14.2
4								13.8	13.9	14.0	14.0	14.2
5								13.8	13.9	14.0	14.0	14.2
3								13.0	13.7	14.0	14.0	17.2
6								13.8	13.9	14.0	14.0	14.2
7								13.8	13.9	14.0	14.0	14.2
8								13.8	13.9	14.0	14.0	14.2
9								13.8	13.9	14.0	14.0	14.2
10								13.8		14.0	14.0	14.2
11								13.8	13.9	14.0	14.0	14.2
12								13.8	13.9	14.0		14.2
13								13.8	13.9	14.0		14.2
14								13.8	13.9	14.0		14.2
15								13.8	13.9	14.0	14.1	14.2
								42.0	40.0	440		
16								13.8	13.9	14.0	14.1	14.2
17								13.8	13.9	14.0	14.1	14.2
18								13.8	13.9	14.0	14.1	14.2
19								13.8	13.9	14.0	14.1	14.2
20								13.8	13.9	14.0	14.1	14.2
21								13.8	13.9	14.0	14.1	14.2
22												
								13.8	13.9	14.0	14.1	14.2
23								13.8	13.9	14.0	14.1	14.2
24								13.8	13.9	14.0	14.1	14.2
25								13.8	13.9	14.0	14.1	14.2
26								13.8	13.9	14.0	14.1	14.2
27								13.8	13.9	14.0	14.1	14.2
28								13.8	13.9	14.0	14.1	14.2
29								13.9	13.9	14.0	14.1	14.2
30								13.9	13.9	14.0	14.1	14.2
31								13.9			14.1	
31								13.9		14.0	14.2	
MEAN										14.0		14.2
MAX										14.0		14.2
MIN										13.9		14.2
11111										13.7		17.2

 $362226079410102\ RK-244\ DENR\ Upper\ Piedmont\ Research\ Station\ MW-S4I\ (Transition\ zone\ well)\\ --Continued$

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER FOR PERIOD MAY TO SEPTEMBER 2003 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1 2 3 4 5	 	 	 	 	 	 	 	0.2 0.1 0.2 0.1	0.2 0.2 0.2 0.2 0.2	0.2 0.2 0.2 0.2 0.2	0.2 0.2 0.2 0.2 0.2	0.3 0.3 0.3 0.3 0.3
6 7 8 9 10	 	 	 	 	 	 	 	0.1 0.1 0.1 0.1 0.1	0.2 0.1 0.2 0.2	0.2 0.2 0.2 0.2 0.2	0.2 0.2 0.2 0.4	0.3 0.3 0.3 0.3 0.3
11 12 13 14 15	 	 	 	 	 	 	 	0.1 0.1 0.1 0.1 0.1	0.1 0.1 0.1 0.2 0.2	0.2 0.2 0.2 0.2 0.2	 0.5	0.3 0.3 0.3 0.3 0.4
16 17 18 19 20	 	 	 	 	 	 	 	0.1 0.1 0.1 0.1 0.1	0.2 0.2 0.1 0.1 0.1	0.2 0.2 0.3 0.3	0.4 0.3 0.3 0.3 0.3	0.4 0.4 0.4 0.4 0.4
21 22 23 24 25	 	 	 	 	 	 	 	0.1 0.1 0.1 0.1 0.1	0.1 0.1 0.2 0.2 0.2	0.3 0.4 0.3 0.4 0.5	0.3 0.3 0.3 0.3 0.4	0.4 0.4 0.4 0.4 0.4
26 27 28 29 30 31	 	 	 	 	 	 	 	0.1 0.1 0.1 0.1 0.1 0.2	0.2 0.2 0.2 0.2 0.2	0.2 0.2 0.2 0.1 0.2 0.2	0.4 0.3 0.4 0.3 0.3 0.3	0.3 0.3 0.2 0.2 0.2
MEAN MAX MIN	 		 	 		 	 		 	0.2 0.5 0.1	 	0.3 0.4 0.2

362226079410102 RK-244 DENR Upper Piedmont Research Station MW-S4I (Transition zone well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION FOR PERIOD MAY TO SEPTEMBER 2003 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									2	2	2	3
2								2	1	2	$\overline{2}$	3
3								ī	î	2 2	$\frac{2}{2}$	3
4								î	î	2	$\frac{2}{2}$	3
5								0	1	$\frac{2}{2}$	2	3
3								U	1	2	2	3
6								0	2	2	2	3
7								0	1	2	2	3
8								0	1	2 2	2	3
9								0	2	2	4	3
10								0		2		3
11								0	0	2		3
12								ŏ	ŏ	$\frac{2}{2}$		3
13								ő	ő	$\frac{2}{2}$		3
14								0	1	2		3
15								0	1	2	5	4
13								U	1	2	3	4
16								0	1	2	4	4
17								0	1	2	3	4
18								0	0	3	3	4
19								0	0	3	3	4
20								0	0	3	3	4
21								0	0	3	3	4
22								0	0	4	3	4
23								0	1	3	3	
								-				4
24								0	2	4	3	4
25								0	2	5	4	4
26								0	2 2	2	4	3
27								0	2	2	3	3
28								0	2	1	4	3 3 2
29								0	2	0	3	2.
30								ĭ	2	2	3	2 2
31								i		2	3	
								-			J	
MEAN										2		3
MAX										5		4
MIN										0		2

362226079410102 RK-244 DENR Upper Piedmont Research Station MW-S4I (Intermediate Zone well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2002.

REMARKS.--Station operated in cooperation with North Carolina Department of Environment and Natural Resources, Water Resources Division as part of the Piedmont/Mountains ground-water project.

WATER-QUALITY DATA, DECEMBER 2002

Date	Time	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hard- ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Bromide water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)
DEC 10	1500	0.1	6.6	317	14.9	130	33.0	12.2	1.88	8.52	0.12	12.6	31.8
Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Aluminum, water, fltrd, ug/L (01106)	Anti- mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll- ium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)
DEC 10	54.3	213	< 0.10	< 0.04	< 0.06	< 0.008	< 0.02	<2	< 0.30	<2	13	0.20	<13
Date DEC	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Molyb- denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	Alpha radio- activty water, fltrd, Th-230, pCi/L (04126)
10	< 0.04	< 0.8	0.128	0.3	902	E.06	188	2.3	1.35	<3	< 0.2	926	3.9
						Gross beta							

radioac

water, fltrd,

Cs-137,

pCi/L (03515)

5.9

Date

DEC

10...

Uranium natural

water,

fltrd,

ug/L (22703)

0.15

Rn-222,

water,

unfltrd

pCi/L (82303)

5,900