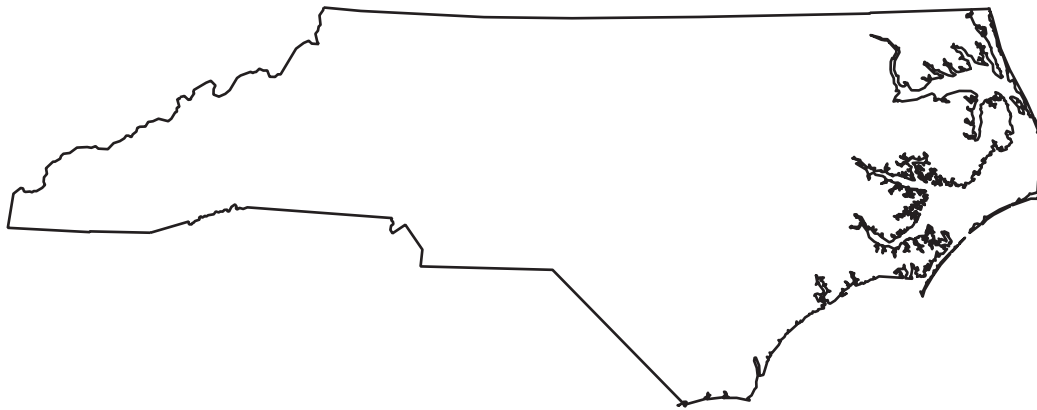


Prepared in cooperation with the North Carolina Department of Environment and Natural Resources, and with other State, municipal, and Federal agencies

Water Resources Data North Carolina Water Year 2003

Volume 2
Ground-Water Records



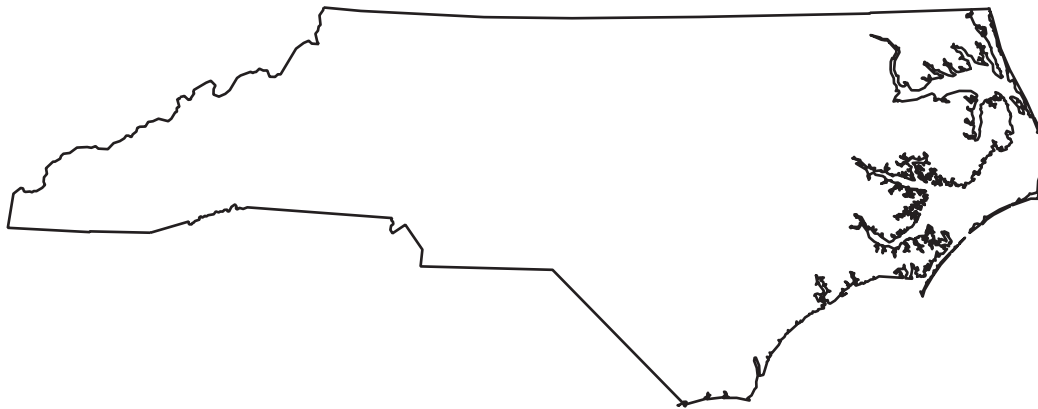
Water-Data Report NC-03-2

Water Resources Data North Carolina Water Year 2003

Volume 2. Ground-Water Records

By S.S. Howe, P.L. Breton, and M.J. Chapman

Water-Data Report NC-03-2



Prepared in cooperation with the North Carolina Department of Environment and Natural Resources,
and with other State, municipal, and Federal agencies

**U.S. Department of the Interior
U.S. Geological Survey**

U.S. Department of the Interior

Gale A. Norton, Secretary

U.S. Geological Survey

Charles G. Groat, Director

2004

U.S. Geological Survey
3916 Sunset Ridge Road
Raleigh, NC 27607
(919) 571-4000

Information about the USGS, North Carolina District is available on the Internet at <http://nc.water.usgs.gov/>

Information about all USGS reports and products is available by calling 1-888-ASK-USGS or on the Internet via the World Wide Web at <http://www.usgs.gov/>

Additional earth science information is available by accessing the USGS home page at <http://www.usgs.gov/>

Suggested citation:

Howe, S.S., Breton, P.L., and Chapman, M.J., 2004, Water Resources Data, North Carolina, Water Year 2003, Volume 2—Ground-Water Records: U.S. Geological Survey Water-Data Report NC-03-2, 477 p.

This volume of the annual hydrologic-data report is one of a series of annual reports across the Nation that document hydrologic data gathered from the U.S. Geological Survey's ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records provide hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Ground-water data for North Carolina are contained in this volume.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

R. Gene Barker	Brad A. Huffman	Eric M. Sadorf
W. Scott Caldwell	Philip S. Jen	Kathleen M. Sarver
Kirsten M. Cassingham	Terry L. Middleton	Douglas G. Smith
Michelle Cienek	Michael D. Penley	Timothy B. Spruill
Alissa Coes	Cassandra Pfeifle	Erik L. Staub
Jeffrey L. Corbett	Bobby C. Ragland	Bruce C. Steiner
Gloria A. Ferrell	Jeanne C. Robbins	A. Gerald Strickland
Jason M. Fine	Jerald B. Robinson	Anthony J. Tesoriero
Ronald G. Garrett	Dana L. Robison	Ramona J. Traynor
Stephen L. Harden	Eric S. Rudisill	Bentley T. Walton
Kay E. Hedrick		Beth M. Wrege

Rick Bolich, from the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section, was involved with the data collection as part of the Piedmont/Mountains cooperative ground-water project.

Pamilee L. Breton edited much of the text, tables, and graphs of this report. Pamilee L. Breton and Stephen S. Howe assembled the report.

This report was prepared in cooperation with the State of North Carolina, other agencies, and under the general supervision of Gerald L. Ryan, District Chief; and Jess D. Weaver, Regional Hydrologist, Southeastern Region.

REPORT DOCUMENTATION PAGE*Form Approved*
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE March 18, 2004	3. REPORT TYPE AND DATES COVERED Annual Data - Oct. 1, 2002 thru Sept. 30, 2003	
4. TITLE AND SUBTITLE Water Resources Data, North Carolina, Water Year 2003 Volume 2. Ground-Water Data			5. FUNDING NUMBERS	
6. AUTHOR(S) S.S. Howe, P.L. Breton and M.J. Chapman				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Geological Survey Water Resources Division 3916 Sunset Ridge Road Raleigh, North Carolina 27607			8. PERFORMING ORGANIZATION REPORT NUMBER USGS-WDR-NC-03-2	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Geological Survey Water Resources Division 3916 Sunset Ridge Road Raleigh, North Carolina 27607			10. SPONSORING / MONITORING AGENCY REPORT NUMBER USGS-WDR-NC-03-2	
11. SUPPLEMENTARY NOTES Prepared in cooperation with the State of North Carolina and other agencies				
12a. DISTRIBUTION / AVAILABILITY STATEMENT No restriction on distribution. This report may be purchased from: National Technical Information Center Springfield, VA 22161			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Water-resources data for the 2003 water year for North Carolina consist of records of ground-water levels and water quality of ground water; records of stage, discharge, and water quality of streams; and stage and contents of lakes and reservoirs. This report contains ground-water level data from 143 observation wells and ground-water-quality data from 72 wells. The collection of water-resources data in North Carolina is a part of the National Water-Data System operated by the U.S. Geological Survey in cooperation with State, municipal, and Federal agencies.				
14. SUBJECT TERMS North Carolina, Hydrologic data, Groundwater, Water quality, Chemical analysis, Water temperature, Sampling, Water level, Water analysis, Elevation			15. NUMBER OF PAGES 477	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT	

CONTENTS

	Page
Preface	iii
Introduction	1
Cooperation	1
Objective concept for ground-water-level data	2
Major aquifers	2
Summary of water-resources conditions	6
Precipitation	6
Ground water	6
Index wells	7
Natural-effects wells	7
Induced-effects wells	7
Downstream order and station number	17
Numbering system for wells and miscellaneous sites	17
Special networks and programs	19
Explanation of stage- and water-discharge records	20
Data collection and computation	20
Data presentation	21
Station manuscript	22
Peak discharge greater than base discharge	23
Data table of daily mean values	23
Statistics of monthly mean data	23
Summary statistics	23
Identifying estimated daily discharge	25
Accuracy of field data and computed results	26
Other data records available	26
Explanation of precipitation records	26
Data collection and computation	26
Data presentation	27
Explanation of water-quality records	27
Collection and examination of data	27
Water analysis	27
Surface-water-quality records	28
Classification of records	28
Accuracy of the records	28
Arrangement of records	29
On-site measurements and sample collection	29
Water temperature	29
Sediment	30
Laboratory measurements	30
Data presentation	30
Remark codes	32
Water-quality control data	32
Blank samples	32
Reference samples	33
Replicate samples	33
Spike samples	34

	Page
Explanation of ground-water-level records.....	34
Site identification numbers.....	34
Data collection and computation.....	34
Data presentation.....	35
Water-level tables.....	36
Hydrographs.....	36
Ground-water-quality data.....	36
Data collection and computation.....	36
Laboratory measurements.....	36
Access to USGS water data.....	37
References.....	37
Definition of terms.....	38
Techniques of Water-Resources Investigations.....	53
Ground-water levels.....	58
Period of record high water levels for selected wells.....	397
Period of record low water levels for selected wells.....	397
Water quality data, miscellaneous station analyses.....	398
Index.....	473

ILLUSTRATIONS

	Page
Figure 1. Locations of weather stations and index wells in North Carolina	4
2. Geologic section A-A' across North Carolina and hydrogeologic section B-B' in the Coastal Plain of North Carolina	5
3. Monthly precipitation at index stations for 2003 water year and mean monthly precipitation for the period 1971-2000	9
4. Locations of observation wells in Brunswick County	10
5. Locations of observation wells in Onslow County	11
6. Locations of observation wells in Scotland, Hoke, Robeson, Bladen, Columbus and Sampson Counties	12
7. Locations of observation wells in Greene County	13
8. Locations of observation wells in western North Carolina.....	14
9. Locations of observation wells in eastern North Carolina.....	15
10. Water levels in index observation wells in the Blue Ridge, Piedmont, and Coastal Plain Provinces	16
11. System for numbering wells and miscellaneous sites (latitude and longitude)	18

TABLES

Table 1. Type, objective, and use of data from the North Carolina observation-well program.....	3
Factors for converting inch-pound units to International System Units (SI)	inside back cover

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED

	Page
AVERY	
NC-220, DENR Linville Research Station well H78d8, County number, AV-074	58
BEAUFORT	
NC-212, PCS Phosphate, Aurora Division, County number, BO-200	59
BERTIE	
NC-153, DENR Cremo Research Station well G19b6, County number, BE-087	60
NC-154, DENR Roxobel Research Station well F22b7, County number, BE-080	62
BLADEN	
North Carolina Division of Forest Resources, County number, BL-057	64
E.I. du Pont de Nemours well P-5, County number, BL-086	65
Town of Dublin well 3, County number, BL-094	66
DENR Bladenboro Research Station well Z41u2, County number, BL-100	67
Elizabethtown well 1, County number, BL-121	68
Peanut Processors, Inc., County number, BL-131	69
Smithfield Packing Co., Inc., County number, BL-142	70
Bladen County Water District White Oak well 1, County number, BL-147	71
NC-178, DENR Bladenboro Research Station well Z41u3, County number, BL-101	72
BRUNSWICK	
DENR Bolivia Research Station well FF33d1, County number, BR-099	74
Brunswick County Water Supply well 15A, County number, BR-100	76
DENR Calabash Research Station well HH39j3, County number, BR-116	78
DENR Calabash Research Station well HH39j7, County number, BR-123	80
NC-180, DENR Bolivia Research Station well FF33d2, County number, BR-078	82
NC-181, DENR Sunset Harbor Research Station well GG34s6, County number, BR-079	84
NC-182, DENR Sunset Harbor Research Station well GG34s7, County number, BR-080	86
NC-197, DENR Southport Research Station well GG32t4, County number, BR-081	88
NC-198, DENR Southport Research Station well GG32t5, County number, BR-082	90
NC-199, DENR Southport Research Station well GG32t6, County number, BR-083	92
BUNCOMBE	
DENR Bent Creek Research Station well MW-1S, County number, BU-068	94
DENR Bent Creek Research Station well MW-1I, County number, BU-069	95
DENR Bent Creek Research Station well MW-1D, County number, BU-070	96
DENR Bent Creek Research Station well MW-2S, County number, BU-071	97
DENR Bent Creek Research Station well MW-2I, County number, BU-072	98
DENR Bent Creek Research Station well MW-2D, County number, BU-073	99
DENR Bent Creek Research Station well MW-3S, County number, BU-074	100
DENR Bent Creek Research Station well MW-3I, County number, BU-075	101
DENR Bent Creek Research Station well MW-3D, County number, BU-076	102
DENR Bent Creek Research Station well MW-4S, County number, BU-077	103
DENR Bent Creek Research Station well MW-4I, County number, BU-078	104
DENR Bent Creek Research Station well MW-4D, County number, BU-079	105
DENR Bent Creek Research Station well MW-5S, County number, BU-080	106
DENR Bent Creek Research Station well MW-5I, County number, BU-081	107
DENR Bent Creek Research Station well MW-5D, County number, BU-082	108
DENR Bent Creek Research Station well MW-7S, County number, BU-083	109
DENR Bent Creek Research Station well MW-7I, County number, BU-084	110
DENR Bent Creek Research Station well MW-7D, County number, BU-085	111

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED

	Page
CARTERET	
NC-139, DENR Camp Glenn Research Station well X17j5, County number, CT-153	112
CHEROKEE	
NC-191, Coats American Company, County number, CE-028	114
NC-192, Coats American Company, County number, CE-029	116
COLUMBUS	
DENR Clarendon Research Station well DD42n4, County number, CO-102.....	118
DENR Lake Waccamaw Research Station well CC38b8, County number, CO-117.....	120
Tabor City well 104, County number, CO-161	122
Whiteville well 7, County number, CO-163	123
NC-179, DENR Carver Moore Research Station well AA39v2, County number, CO-089	124
CRAVEN	
DENR Cherry Point Research Station well U18q5, County number, CR-552	126
DAVIE	
NC-142, U.S. Geological Survey, County number, DV-025	128
DUPLIN	
NC-174, DENR Rose Hill Research Station well V32v1, County number, DU-126	130
NC-218, DENR Rose Hill Research Station well V32v6, County number, DU-135	132
NC-222, DENR Rose Hill Research Station well V32v8, County number, DU-136	134
NC-224, DENR Rose Hill Research Station well V32v3, County number, DU-134	136
GREENE	
DENR Lizzie L2, well N26q2, County number, GR-082.....	138
DENR Lizzie L6, well N26q6, County number, GR-085.....	139
DENR Lizzie L2S, County number, GR-087	141
DENR Lizzie L2D, County number, GR-088.....	143
DENR Lizzie L4D, County number, GR-092.....	145
DENR Lizzie L15S, County number, GR-108	147
DENR Lizzie L15D, County number, GR-109.....	149
DENR Lizzie L17, County number, GR-110.....	151
DENR Lizzie L18, County number, GR-111	152
DENR Lizzie L55, County number, GR-147.....	153
DENR Lizzie LWQ2M, County number, GR-166.....	154
DENR Lizzie LWQ15M, County number, GR-167.....	156
DENR Lizzie LWQ70S, County number, GR-168	158
DENR Lizzie LWQ70D, County number, GR-169	160
DENR Lizzie LWQ71D, County number, GR-171	162

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED

	Page
HAYWOOD	
NPS, Mt. Pisgah Campground USGS well 1, County number, HW-066	164
NPS, Mt. Pisgah Campground USGS well 2, County number, HW-067	165
NPS, Mt. Pisgah Campground USGS well 3, County number, HW-068	166
NPS, Mt. Pisgah Campground USGS well 4, County number, HW-069	167
NPS, Mt. Pisgah Campground USGS well 5, County number, HW-070	168
NPS, Mt. Pisgah Campground USGS well 6, County number, HW-071	169
NPS, Mt. Pisgah Campground USGS well 7, County number, HW-072	170
NPS, Mt. Pisgah Campground Piezometer A, County number, HW-073	171
NPS, Mt. Pisgah Campground Piezometer B, County number, HW-074	172
NC-40, Blue Ridge Paper Products, Inc., County number, HW-047	174
HERTFORD	
NC-155, DENR Como Research Station well B20u6, County number, HF-085	176
HOKE	
DENR McCain Research Station well T48i2, County number, HO-032	178
Town of Raeford well 8, County number, HO-037	180
DENR Raeford Research Station well U46e6, County number, HO-047	182
IREDELL	
DENR Langtree Research Station MW-2, County number IR-130	184
DENR Langtree Research Station MW-2I, County number IR-131	192
DENR Langtree Research Station MW-2D, County number IR-132	195
DENR Langtree Research Station MW-1, County number IR-145	203
DENR Langtree Research Station MW-1I, County number IR-146	204
DENR Langtree Research Station MW-1D, County number IR-147	205
DENR Langtree Research Station MW-3, County number IR-148	206
DENR Langtree Research Station MW-3I, County number IR-149	207
DENR Langtree Research Station MW-4, County number IR-151	208
DENR Langtree Research Station MW-4IA, County number IR-152A	209
DENR Langtree Research Station MW-4D, County number IR-153	210
DENR Langtree Research Station MW-5S, County number IR-154	211
DENR Langtree Research Station MW-5I, County number IR-155	212
DENR Langtree Research Station MW-5D, County number IR-156	213
DENR Langtree Research Station MW-6S, County number IR-157	214
DENR Langtree Research Station MW-6D, County number IR-159	215
DENR Langtree Research Station MW-6IB, County number IR-160	216
JONES	
NC-173, DENR Comfort Research Station well U26j8, County number, JO-035	218
LENOIR	
NC-128, City of Kinston, County number, LN-128	220
NC-185, DENR Graingers Research Station well Q25d12, County number, LN-110	222
NC-223, DENR Graingers Research Station well Q25d11, County number, LN-105	224
MECKLENBURG	
NC-146, U.S. Geological Survey, County number, ME-301	226
NEW HANOVER	
Kure Beach Research Station well KB-1, County number, NH-525	228

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED

	Page
ON SLOW	
NC-52, Camp Geiger, U.S. Marine Corps, County number, ON-035	230
Camp Lejeune, U.S. Marine Corps, Rifle Range well RR-97A, County number, ON-218	232
DENR Dixon Tower Research Station well Y25q3, County number, ON-227	234
DENR Dixon Tower Research Station well Y25q6, County number, ON-230	236
DENR Hadnot Point Research Station well X24s1, County number, ON-255	238
DENR Hadnot Point Research Station well X24s2, County number, ON-256	240
DENR Hadnot Point Research Station well X24s6, County number, ON-266	242
DENR Hadnot Point Research Station well X24s7, County number, ON-267	244
U.S. Geological Survey, Ragged Point well, County number, ON-291	246
U.S. Geological Survey, Paradise Point well, County number, ON-292	248
U.S. Geological Survey, Sneads Ferry Road well, County number, ON-293	250
U.S. Geological Survey, Town Creek well 1, County number, ON-294	252
ORANGE	
NC-126, Chi Psi Fraternity, County number, OR-069	254
PASQUOTANK	
NC-150, DENR Elizabeth City Forest Service Research Station well D11v5, County number, PK-199	256
NC-195, U.S. Geological Survey, County number, PK-141	258
NC-203, DENR Morgans Corner Research Station well C12w2, County number, PK-190	260
NC-204, DENR Morgans Corner Research Station well C12w4, County number, PK-191	262
PITT	
NC-160, U.S. Geological Survey, County number, PI-532	264
NC-184, DENR Conley Research Station well N23p3, County number, PI-536	266
ROBESON	
NC-177, DENR Littlefield School Research Station well Y42f9, County number, RB-183	268
DENR Rowland Research Station well Z47m2, County number, RB-148	270
DENR Rex Rennert Research Station well V45u4, County number, RB-168	272
DENR Littlefield School Research Station well Y42f10, County number, RB-184	274
DENR Littlefield School Research Station well Y42f11, County number, RB-185	276
DENR Boardman Research Station well AA43q1, County number, RB-188	278
Lumberton well 3, County number, RB-199	280
Campbell Soup Company, County number, RB-264	282
ROCKINGHAM	
DENR Upper Piedmont Research Station well MW-N1S, County number, RK-227	284
DENR Upper Piedmont Research Station well MW-N1I, County number, RK-228	285
DENR Upper Piedmont Research Station well MW-N1D, County number, RK-229	286
DENR Upper Piedmont Research Station well MW-N2S, County number, RK-230	287
DENR Upper Piedmont Research Station well MW-N2I, County number, RK-231	288
DENR Upper Piedmont Research Station well MW-N2D, County number, RK-232	289
DENR Upper Piedmont Research Station well MW-N3I, County number, RK-233	290
DENR Upper Piedmont Research Station well MW-N3D, County number, RK-234	291
DENR Upper Piedmont Research Station well MW-N4I, County number, RK-235	292
DENR Upper Piedmont Research Station well MW-N4D, County number, RK-236	293
DENR Upper Piedmont Research Station well MW-S1I, County number, RK-237	294
DENR Upper Piedmont Research Station well MW-S1D, County number, RK-238	295
DENR Upper Piedmont Research Station well MW-S3S, County number, RK-239	296
DENR Upper Piedmont Research Station well MW-S3UI, County number, RK-240	297

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED

	Page
ROCKINGHAM—Continued.	
DENR Upper Piedmont Research Station well MW-S3LI, County number, RK-241	298
DENR Upper Piedmont Research Station well MW-S3D, County number, RK-242	299
DENR Upper Piedmont Research Station well MW-S4S, County number, RK-243.....	300
DENR Upper Piedmont Research Station well MW-S4I, County number, RK-244.....	310
DENR Upper Piedmont Research Station well MW-S4D, County number, RK-245	320
ROWAN	
NC-193, DENR Piedmont Research Station well L63t1, County number, RO-149	330
NC-193, DENR Piedmont Research Station well L63t1, County number, RO-149, Precipitation.....	332
SAMPSON	
Clinton well 18D, County number, SA-134	333
Clinton well 18S, County number, SA-135	334
Clinton observation well 1200, County number, SA-140	336
Roseboro well 2, County number, SA-144.....	338
SCOTLAND	
NC-194, U.S. Geological Survey, County number, SC-080.....	340
Town of Laurinburg well 4, County number, SC-040	342
Town of Wagram well 3, County number, SC-106.....	344
SWAIN	
NC-219, County number, SW-036	345
TRANSYLVANIA	
NC-144, U.S. Geological Survey, County number, TR-065	346
NC-147, U.S. Geological Survey, County number, TR-066	348
WAKE	
DENR Lake Wheeler Research Station MW-1S, County number, WK-277	350
DENR Lake Wheeler Research Station MW-1I, County number, WK-278	360
DENR Lake Wheeler Research Station MW-1D Upper Zone, County number, WK-279A.....	370
DENR Lake Wheeler Research Station MW-1D Lower Zone, County number, WK-279B	378
DENR Lake Wheeler Research Station MW-2S, County number, WK-280	380
DENR Lake Wheeler Research Station MW-2I, County number, WK-281	381
DENR Lake Wheeler Research Station MW-2T, County number, WK-282.....	382
DENR Lake Wheeler Research Station MW-2D, County number, WK-283.....	383
DENR Lake Wheeler Research Station MW-3S, County number, WK-284	384
DENR Lake Wheeler Research Station MW-3I, County number, WK-285	385
DENR Lake Wheeler Research Station MW-3D, County number, WK-286.....	386
DENR Lake Wheeler Research Station PW-1, County number, WK-287	387
DENR Lake Wheeler Research Station PZ-1, County number, WK-288	388
DENR Lake Wheeler Research Station PZ-2, County number, WK-289	389
WASHINGTON	
NC-157, DENR Lake Phelps Research Station well L13i2, County number, WS-099	390
NC-158, U.S. Geological Survey, County number, WS-100.....	392
WAYNE	
NC-148, U.S. Geological Survey, County number, WA-154	394
YADKIN	
NC-221, DENR East Bend Research Station well F61f3, County number, YD-200.....	396

INTRODUCTION

Water-resources data for the 2003 water year for North Carolina consist of records of ground-water levels and water quality of ground water; records of stage, discharge, and water quality of streams; and stage and contents of lakes and reservoirs. This report contains ground-water-level data from 143 observation wells and ground-water-quality data from 72 wells. The collection of water-resources data in North Carolina is a part of the National Water-Data System operated by the U.S. Geological Survey in cooperation with State, municipal, and other Federal agencies.

Records of ground-water levels were published from 1935 to 1974 in a series of Water-Supply Papers entitled "Ground-Water Levels in the United States." Water-supply papers can be found in the libraries of principal cities and universities throughout the United States or can be purchased from the U.S. Geological Survey, Earth Science Information Center, Open-File Reports Section, Denver Federal Center, Box 25286, Mail Stop 517, Denver, Colorado 80225.

Ground-water-level data beginning with the 1975 water year are published only in reports on a State-by-State basis. Beginning with the 1975 water year these Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report NC-03-2. Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161. Beginning with the 2001 water year, water-data reports are available online at <http://nc.water.usgs.gov/reports/WDR/>.

COOPERATION

Cooperative agreements between the U.S. Geological Survey and organizations of the State of North Carolina for the systematic collection of water-resources data began in 1895 and continued through 1909. Following a lapse of 8 years, the State of North Carolina resumed cooperation in October 1918. Organizations that have cooperative agreements with the U.S. Geological Survey and assisted in collecting the water-resources data contained in this report are:

North Carolina Department of Environment and Natural Resources
Division of Water Resources
Division of Water Quality, Groundwater Section

The following organizations have cooperative agreements with the U.S. Geological Survey and assisted in the data-collection program by furnishing funds or services:

Brunswick County
Lumber River Council of Governments

The following Federal agencies assisted in the data-collection program by furnishing funds or services:

U.S. Marine Corps, Camp Lejeune
U.S. Marine Corps, Cherry Point, MCAS
U.S. Environmental Protection Agency

OBJECTIVE CONCEPT FOR GROUND-WATER-LEVEL DATA

The ground-water-level data collected during the 2003 water year from observation wells in the statewide program and special project wells are published in this report. The statewide program is a cooperative program between the U.S. Geological Survey (USGS) and the North Carolina Department of Environment and Natural Resources (DENR). Observation wells for this program are located so that a limited number of wells provide representative information about the major aquifers of the State. Monitoring wells for this program are categorized in one of two networks based on specific objectives (table 1). The first network, the natural-effects network, has the objective of measuring the effects of natural stresses on ground-water storage. This network contains climatic-effects wells, which monitor the effects of climate, such as rainfall and the duration of the growing season, on ground-water storage in unconfined aquifers. This network also contains terrane-effects wells which are used to define the effects of different depths to the water table, and topography and geology on ground-water storage in response to climatic stresses. The second network, the induced-effects network, defines the effect of human-induced stress on the ground-water system; the major induced stress being ground-water withdrawal by pumping. Within the induced-effects network are local-effects wells located near large-capacity pumping wells or well fields. These local-effects wells are used to measure daily or weekly water-level fluctuations. Areal-effects wells, also in the induced-effects network, are used to determine the status of ground-water storage in an aquifer over a large area and to aid in determining the areal extent of major aquifers.

The particular effect each well in the statewide program monitors is explained in the information header for each well. The headers for the special project wells contain a reference to those projects.

MAJOR AQUIFERS

The major aquifers in North Carolina can be divided into two zones related to the physiographic provinces of the State. The Piedmont and Blue Ridge Provinces (fig. 1) extend across the western 60 percent of the State and are, for the most part, underlain by fractured, igneous and metamorphic rocks (fig. 2). The fractured igneous and metamorphic rocks have low permeability but are, nevertheless, the major aquifers in the Piedmont and Blue Ridge Provinces. These rocks are covered almost everywhere by regolith, which is either a clayey or sandy saprolite consisting of weathered parent material, or sand and clayey-sand alluvium. The regolith, although not a major aquifer, contains most of the ground water in storage and is a source of water to the underlying igneous and metamorphic rock aquifers. All observation wells in the Piedmont and Blue Ridge Provinces that were measured in the 2003 water year tapped the regolith.

The Coastal Plain Province covers the eastern 40 percent of North Carolina, where aquifers are within a wedge of sedimentary rock layers that dip and thicken to the southeast (fig. 2). The Coastal Plain sediments have been divided by Winner and Coble (1996) into 10 aquifers separated by confining units.

Ground water in the regolith of the Piedmont and Blue Ridge Provinces and in the surficial aquifer of the Coastal Plain Province generally is unconfined. Ground water in the other Coastal Plain aquifers generally is under confined conditions.

Table 1.--Type, objective, and use of data from the North Carolina observation-well program
 [Adapted from Winner, 1981]

Type	Objective	Use of data
Natural effects		
Climatic effects	To define effects of climate on ground-water storage.	Hydrographs showing natural changes in storage.
Terrane effects	To define effects of climate on ground-water storage as modified by topography and geology.	Hydrographs showing natural changes in storage as modified by topography and geology.
Induced effects		
Local effects	To define effects of ground-water withdrawals on storage near points of withdrawal.	Maps showing potentiometric-surface depressions. Hydrographs showing changes in water levels with time.
	To define the hydraulic characteristics of aquifers.	Graphs showing water levels during pumping conditions as a function of pumping rates.
	To define effectiveness of confining beds in separating aquifers.	
Areal effects	To determine status of storage over the entire areal extent of the aquifer.	Regional water-level maps. Maps showing net change in storage over a specific time period.
	To define regional continuity of aquifers.	Define recharge and discharge areas for areal extensive aquifers.

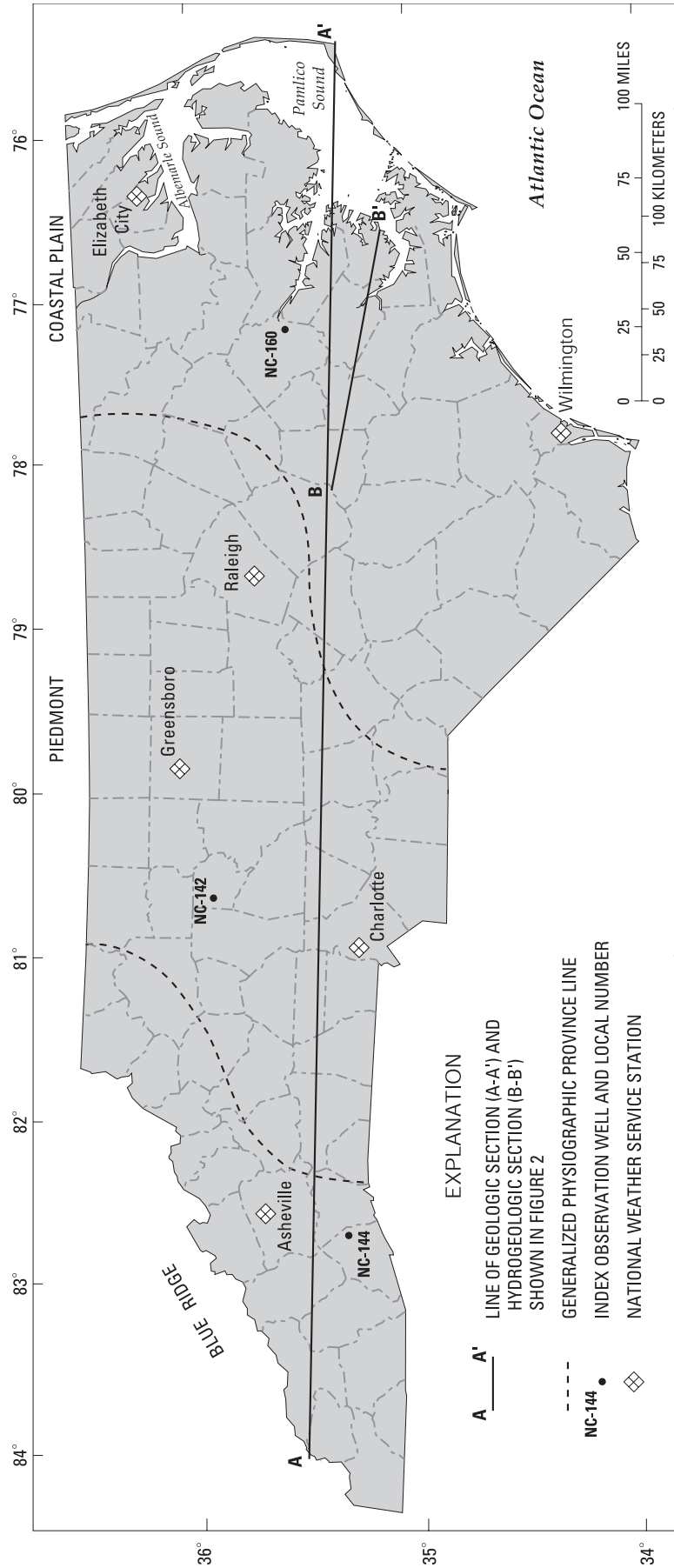


Figure 1.--Locations of weather stations and index wells in North Carolina.

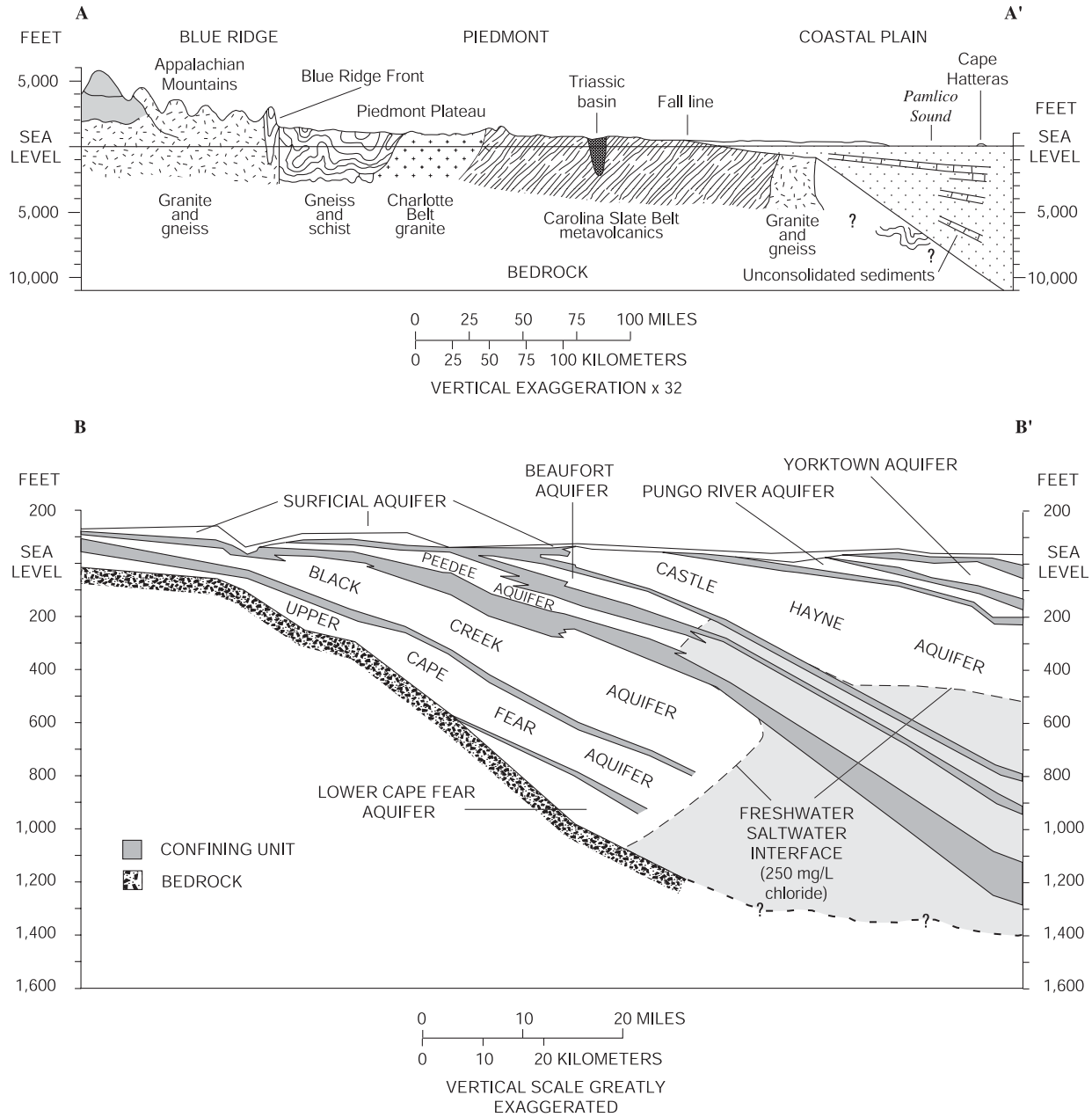


Figure 2.--Geologic section A -A' across North Carolina and hydrogeologic section B - B' in the Coastal Plain of North Carolina (as shown in figure 1).

SUMMARY OF WATER-RESOURCES CONDITIONS

Precipitation

Precipitation during water year 2003 was considered above average throughout most of North Carolina, in contrast to the drought conditions that occurred during water years 1998 through 2002. Precipitation amounts at the six index stations for the first quarter of water year 2003 (October through December) were well above average across the State except at the Wilmington station. Precipitation amounts were 3.39 (Asheville) and 4.57 (Charlotte) inches above average in the western part of the State, 5.68 (Greensboro) and 8.78 (Raleigh) inches above average in the central part of the State, and 7.47 (Elizabeth City) inches above average and 2.32 (Wilmington) inches below average in the eastern part of the State. Average precipitation amounts are mean monthly values based on data from 1971 through 2000, the 30-year base period used by the National Weather Service. Data collected at the six key National Weather Service stations (figs. 1 and 3) indicate that above-average precipitation was recorded for all months during the first quarter at Charlotte, Greensboro, Raleigh, and Elizabeth City.

Precipitation totals for the second quarter of the 2003 water year (January through March) were generally lower than those reported in the first quarter. However, above-average monthly mean precipitation occurred at Charlotte, Greensboro, Raleigh, and Elizabeth City during the second quarter. Precipitation was below average at all index sites in January and above average at all index sites in February. The most precipitation during the quarter was reported in Greensboro at 3.46 inches above average. Above-average conditions also were reported at Charlotte (0.69 inch above average), Raleigh (0.18 inch above average), and Elizabeth City (1.27 inches above average) during this period. Asheville had the least amount of recorded precipitation at 2.48 inches below average followed by Wilmington at 1.35 inches below average for the second quarter.

Precipitation amounts were above average across the State also during the third quarter (April through June). Charlotte had the greatest amount of precipitation during this period with a total of 24.00 inches for the quarter or 13.97 inches above average. Asheville reported a total of 19.81 inches or 7.52 inches above average. Precipitation amounts were 6.66 (Greensboro) and 2.78 (Raleigh) inches above average in the central part of the State, and 6.64 (Wilmington) and 6.37 (Elizabeth City) inches above average in the eastern part of the State. All six key National Weather Service stations indicate that above-average precipitation amounts were recorded for all months during the third quarter in all three provinces of North Carolina.

Precipitation conditions were above average in the western and central parts of the State during the fourth quarter (July through September). Although most of the index sites recorded above-average monthly precipitation, Wilmington (4.95 inches) reported below-average precipitation for the entire quarter. The remaining index sites reported above average for the quarter, Asheville (8.83 inches), Charlotte (10.00 inches), Greensboro (12.25 inches), Raleigh (5.09 inches), and Elizabeth City (1.38 inches).

In summary, from October 2002 to September 2003, above-average annual precipitation occurred across the State except in Wilmington. The National Weather Service reported the following annual precipitation amounts for the 2003 water year at these selected stations: Asheville, 64.30 inches (17.26 inches above average); Charlotte, 72.74 inches (29.23 inches above average); Greensboro, 71.19 inches (28.05 inches above average); Raleigh, 59.88 inches (16.83 inches above average); Elizabeth City, 63.47 inches (16.49 inches above average); and Wilmington, 55.09 inches (1.98 inches below average).

Ground Water

Cross sections illustrating the simplified geology and Coastal Plain aquifers of North Carolina are shown in figure 2. Ground-water levels in the surficial aquifer of the Coastal Plain Province and in the weathered surficial layer (regolith) of the Piedmont and Blue Ridge Provinces of North Carolina respond to climatic influences. The continual discharge of ground water to streams, evapotranspiration to the air by plants, or movement of ground water to deeper aquifers is a function of periodic ground-water recharge by precipitation. Water levels in the unconfined aquifers generally decline throughout the growing season and are typically highest during the winter months when evapotranspiration losses are lowest. In addition to seasonal changes, water levels in deeper, confined aquifers in the Coastal Plain also can respond to pumping. Locations of wells discussed in this report are shown in figures 4–10, p. 10–16.

Index Wells

Water levels in index observation wells in the Blue Ridge, Piedmont, and Coastal Plain Provinces (fig. 1) provide a general indication of ground-water fluctuations in the shallow aquifers of these provinces. Hydrographs of monthend water levels in these index observation wells (fig. 10) include mean monthend water levels for the period of record and record high and low monthend water levels during the 2002 water year. Real-time plots of data for these wells can be accessed online at <http://nc.waterdata.usgs.gov/nwis/gw>, and long-term records are available for comparison online at <http://groundwaterwatch.usgs.gov/>.

Water levels in the Blue Ridge index well NC-144 (351808082374302, TR-065; figs. 8, 10 and p. 346) recovered from period-of-record low water levels during water year 2002, to average (for period of record 1981-present) and above-average conditions during water year 2003. The daily mean water level rose about 13 feet (ft) from October 2002 to June 2003, indicating a significant increase in ground-water storage for the shallow saprolite aquifer. Similar recovery conditions were observed during water year 2003 in the Piedmont index well NC-142 (355359080331701, DV-025; figs. 8, 10 and p. 128). Water levels in well NC-142 rose from period-of-record lows recorded in water year 2002, to above-average conditions for water year 2003. The water level rose by more than 8 ft from October 2002 to July 2003, indicating a significant increase in ground-water storage for the shallow saprolite aquifer. In the Coastal Plain index well NC-160 (353219077153801 PI-532; figs. 9, 10 and p. 264), water levels also recovered from below-average conditions in the fall of 2002, to above-average conditions for much of water year 2003. A water-level rise of more than 6 ft was recorded from October 2002 to September 2003, indicating a significant increase in storage for the shallow surficial aquifer.

Natural-Effects Wells

Ground-water levels in North Carolina were influenced by a wide range of rainfall across the State during the 2003 water year. Overall, the State recovered from the past 5 years of drought, to above-average rainfall conditions. The effects of the above-average rainfall on recharge to the ground-water system was most evident in recovery from extreme period-of-record lows observed in water year 2002, to average and above-average water levels in the two Blue Ridge wells, the two Piedmont wells, and a Coastal Plain well throughout most of the 2003 water year. In general, the recovery to average ground-water levels was observed within the first 6 months of the water year, across the State. The Blue Ridge wells had indicated an overall pattern of declining water levels during the last 5 drought years, and recovered to average conditions by early spring. The water levels in Blue Ridge wells NC-191 (351117083545001, CE-028; fig. 8 and p. 114) and well NC-144 (351808082374302, TR-065; figs. 8, 10 and p. 346) began to rise in the fall of 2002. Comparison of the daily low and high mean water levels for water year 2003 indicated an overall increase in storage of more than 13 ft each for wells NC-144 and NC-191. In Piedmont well NC-142 (355359080331701, DV-025; figs. 8, 10 and p. 128), the lowest water level in 21 years (period of record) was recorded in water year 2002; however, in water year 2003 the daily mean water level rose more than 8 ft from October 2002 to July 2003, indicating a substantial recovery of ground-water storage. Likewise in Piedmont well NC-193 (354057080362601, RO-149; fig. 8 and p. 330), the lowest water level in 13 years was recorded in water year 2002, and a recovery of more than 5 ft was recorded from October 2002 to June 2003. Water levels in Coastal Plain climatic-effects wells NC-148 (351849078163901, WA-154; fig. 9 and p. 394) and well NC-194 (345812079313401, SC-080; fig. 6 and p. 340) also responded to above-average rainfall conditions in water year 2003. Well NC-148 rose nearly 8 ft from November 2002 to August 2003, and well NC-194 rose more than 5 ft from October 2003 to September 2003.

Induced-Effects Wells

Ground-water withdrawals in the Coastal Plain have resulted in declining water levels in confined aquifers in some areas of the Coastal Plain for a number of years. This declining trend is shown by the long-term record from several induced-effects observation wells that tap four of the major aquifers in eastern North Carolina—the Castle Hayne, Black Creek, upper Cape Fear, and lower Cape Fear aquifers (fig. 2).

The record of observation well NC-212 (351934076481001, BO-200; fig. 9 and p. 59) shows the fluctuations of water levels in the Castle Hayne aquifer resulting from changes in pumping at a large mining and manufacturing operation in the eastern part of Beaufort County. Major pumping activities have occurred in this area for more than three decades. The range of fluctuation in the water level as a result of pumping is about 35 ft for water year 2003. The areal cone of depression resulting from this pumping has covered more than 3,000 square miles (mi²) (Coble and others, 1989).

The record of observation well NC-139 (344323076451301, CT-153; fig. 9 and p. 112) in Carteret County shows the effects of seasonal pumping from the Castle Hayne aquifer in order to meet increased demand for water in the coastal area during the summer months. The decline in water levels in the long-term record (p. 113) was observed until the mid-1990's, when water levels were more stable. Observation well ON-227 (fig. 5 and p. 234), completed in the Castle Hayne aquifer in Onslow County, shows a similar decline from late 1994 through 2002; however, water levels recovered about 3 ft during water year 2003.

Water levels in the Castle Hayne aquifer are not declining everywhere throughout the eastern Coastal Plain. This is especially true in the areas of the aquifer that are not covered by extensive confining units (Strickland and others, 1992). The water levels in Castle Hayne well NC-52 (344425077272501, ON-035; fig. 5 and p. 230) in Onslow County exhibit climatic-effect fluctuations. Although well NC-52 is near water-supply wells at U.S. Marine Corps Camp Lejeune, no effects of withdrawals from these wells can be observed in the long-term record.

Ground-water withdrawals, estimated at 134 million gallons per day over 15 counties, have resulted in water-level declines in the State's central Coastal Plain (CCP) (Walters, 1997). In August 2002, the North Carolina State Legislature designated those 15 counties as the CCP Capacity Use Area, whereby reductions in ground-water withdrawals in the Cretaceous aquifers, primarily the Black Creek and upper Cape Fear aquifers, are scheduled to begin by the year 2008. Examples of the long-term effects of these withdrawals can be observed in data from several wells. Water levels recorded in well NC-128 (351600077381001, NC-128; fig. 9 and p. 220) indicate the effects of pumping from the Black Creek aquifer in Lenoir County. Water-level declines of as much as 4 ft per year have been recorded in well NC-128 until 1998 when water levels began to recover. The period of record hydrograph for well NC-128 (p. 221) shows a long-term decline of almost 80 ft from 1972 to 1997. Well ON-256 (344139077211202, ON-256; fig. 5 and p. 240) in Onslow County is also in the Black Creek aquifer. Declines averaging about 2 ft per year have been observed since the well record began in late 1994 with no water level recovery in recent years.

Withdrawals for public and industrial use from the upper Cape Fear aquifer in Bladen County have caused water levels to decline in well NC-177 (343840078550009, RB-183; fig. 6 and p. 268). Prior to 1992, the rate of water-level decline in well NC-177 was about 1.7 ft per year. In mid-October 1992, major withdrawals for industrial use (from the same aquifer) began in northwestern Bladen County; as a result, the rate of decline in well NC-177 was about 6.3 ft per year between late 1992 and 1996. Between late 1996 and 2001, the rate of decline in well NC-177 was about 3 ft per year (Strickland, 1995, 1999). The water level began to recover in January 2002 and continued to recover during water year 2003, most likely as a result of pumping reductions.

Water-level declines in well NC-155 (363026077001906, HF-085; fig. 9 and p. 176), which is completed in the lower Cape Fear aquifer in Hertford County, result primarily from major withdrawals in Virginia that began in the 1940's. These withdrawals have caused a regional cone of depression in the lower Cape Fear aquifer, which extends about 30 miles into North Carolina (Coble and others, 1989). Water-level records from well NC-155 indicate that the maximum (drawdown) rate of decline of 4 ft per year occurred in the late 1980's. From 1993 to 1998, the rate of decline decreased to less than 2 ft per year. A slight recovery in water levels was observed from 1999 to 2003.

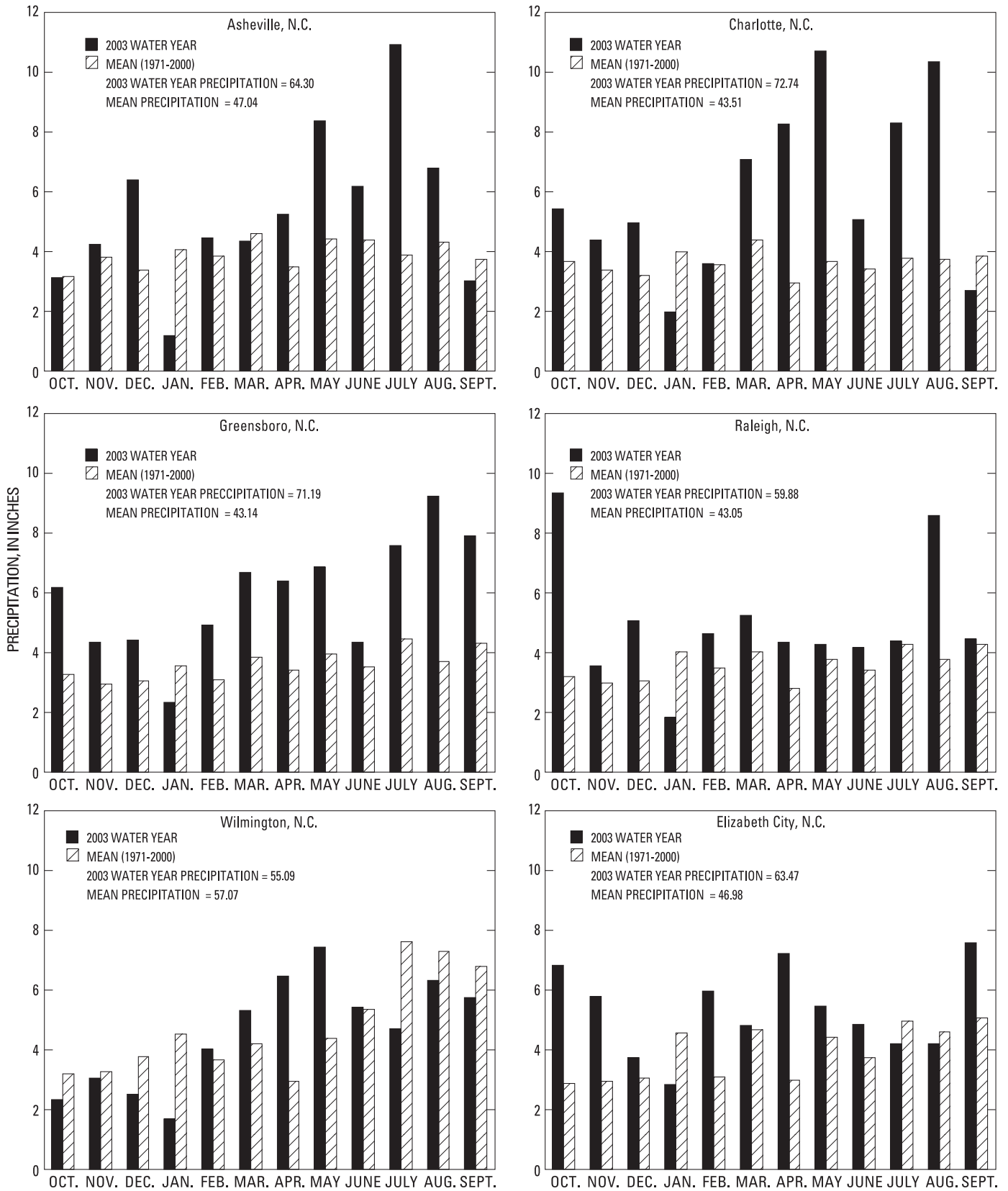
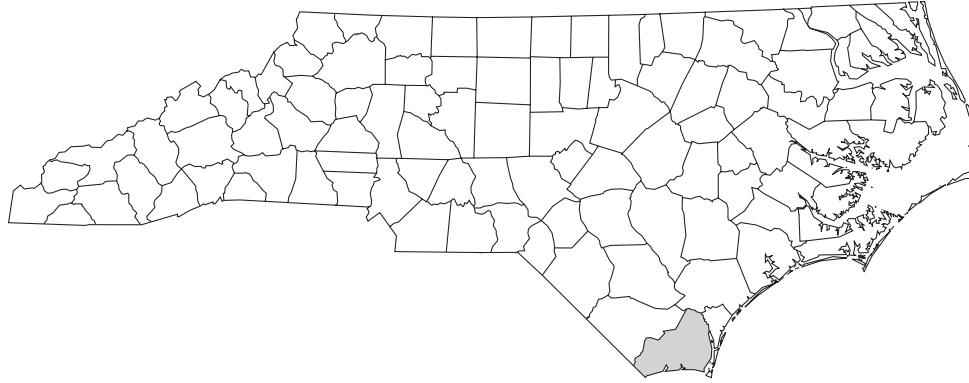


Figure 3.--Monthly precipitation for the 2003 water year and mean monthly precipitation for the period 1971-2000 at index stations (data from National Oceanic and Atmospheric Administration reports).



LOCATION OF BRUNSWICK COUNTY IN NORTH CAROLINA

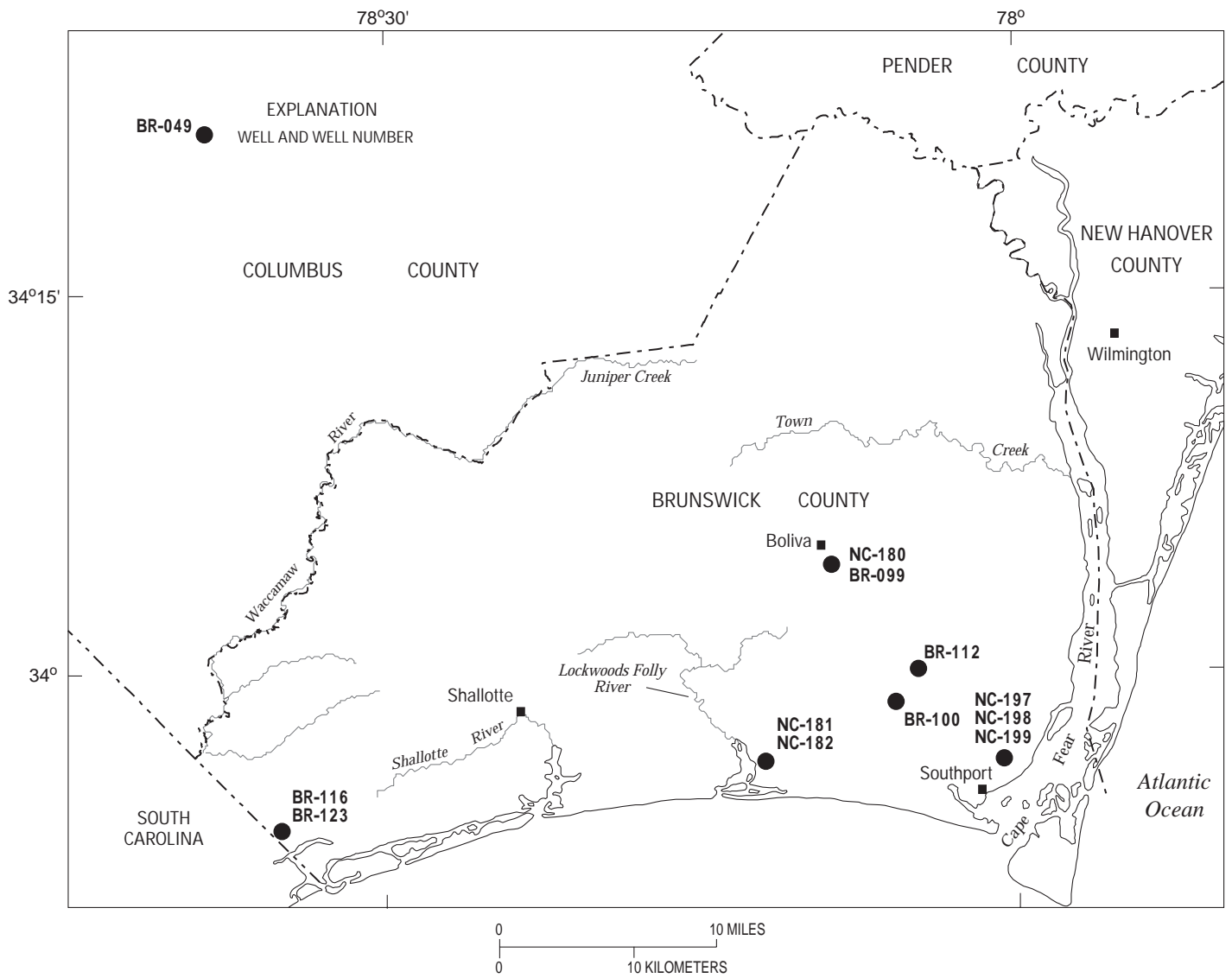
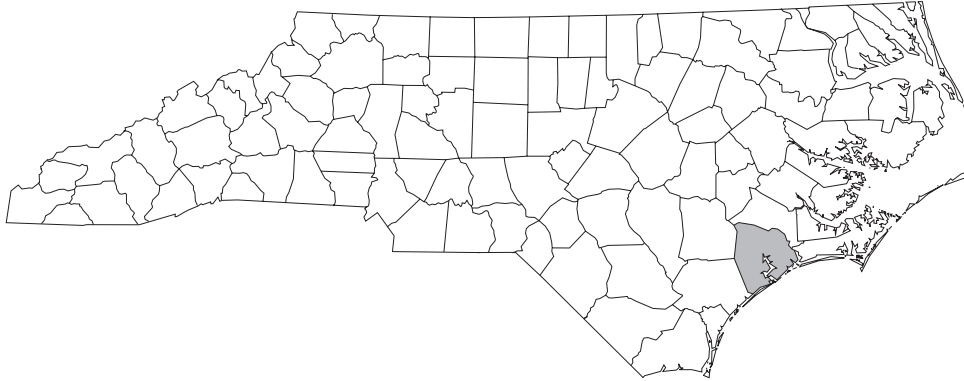


Figure 4.--Locations of observation wells in Brunswick County.



LOCATION OF ONSLOW COUNTY IN NORTH CAROLINA

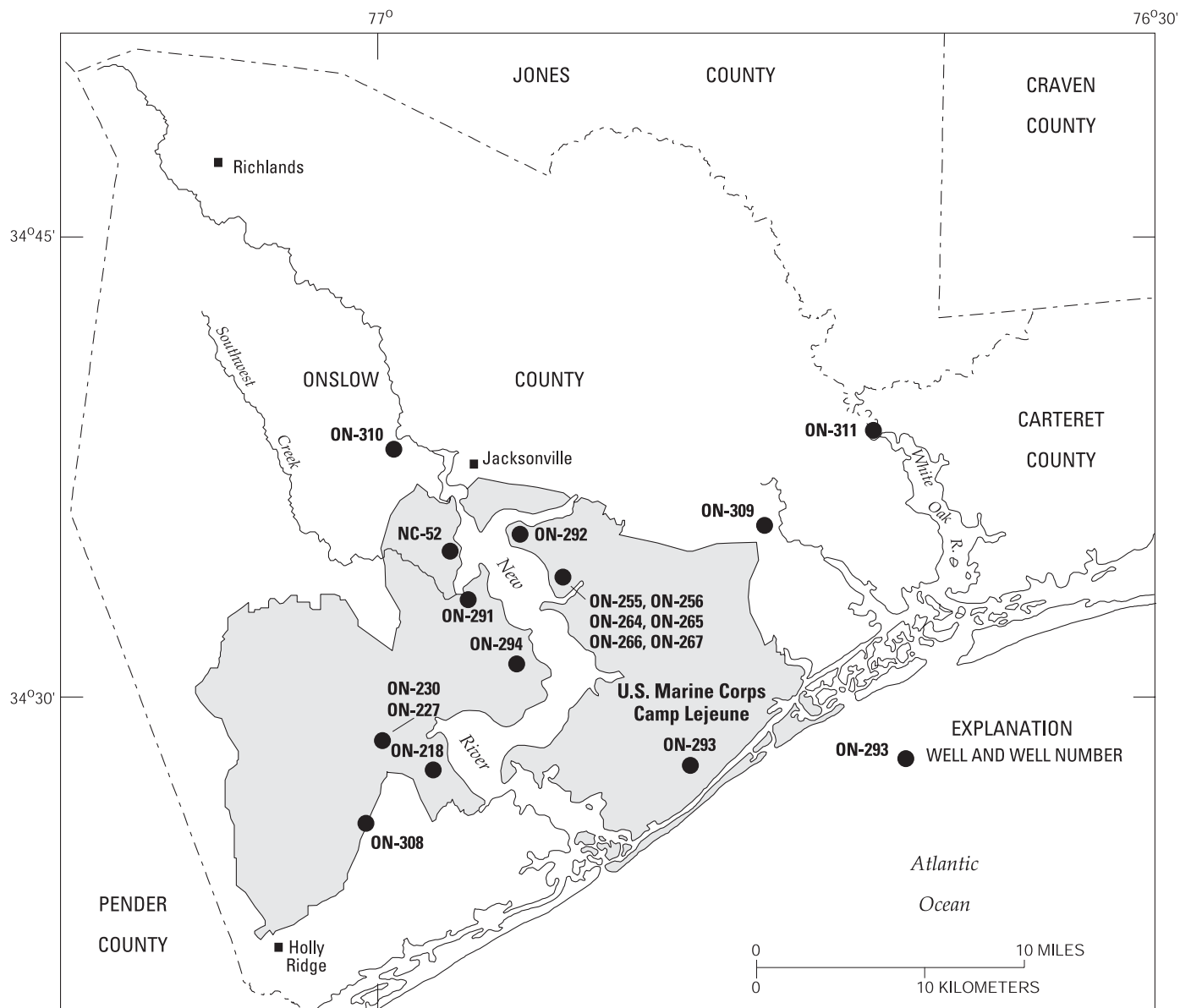
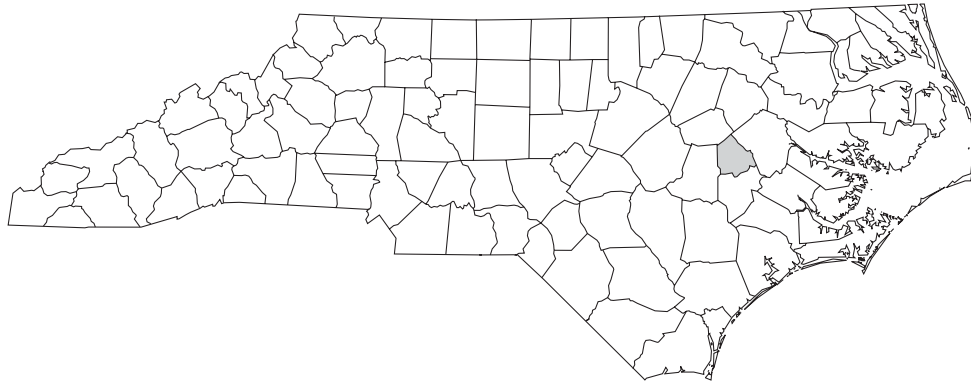


Figure 5.--Locations of observation wells in Onslow County.



LOCATION OF GREENE COUNTY IN NORTH CAROLINA

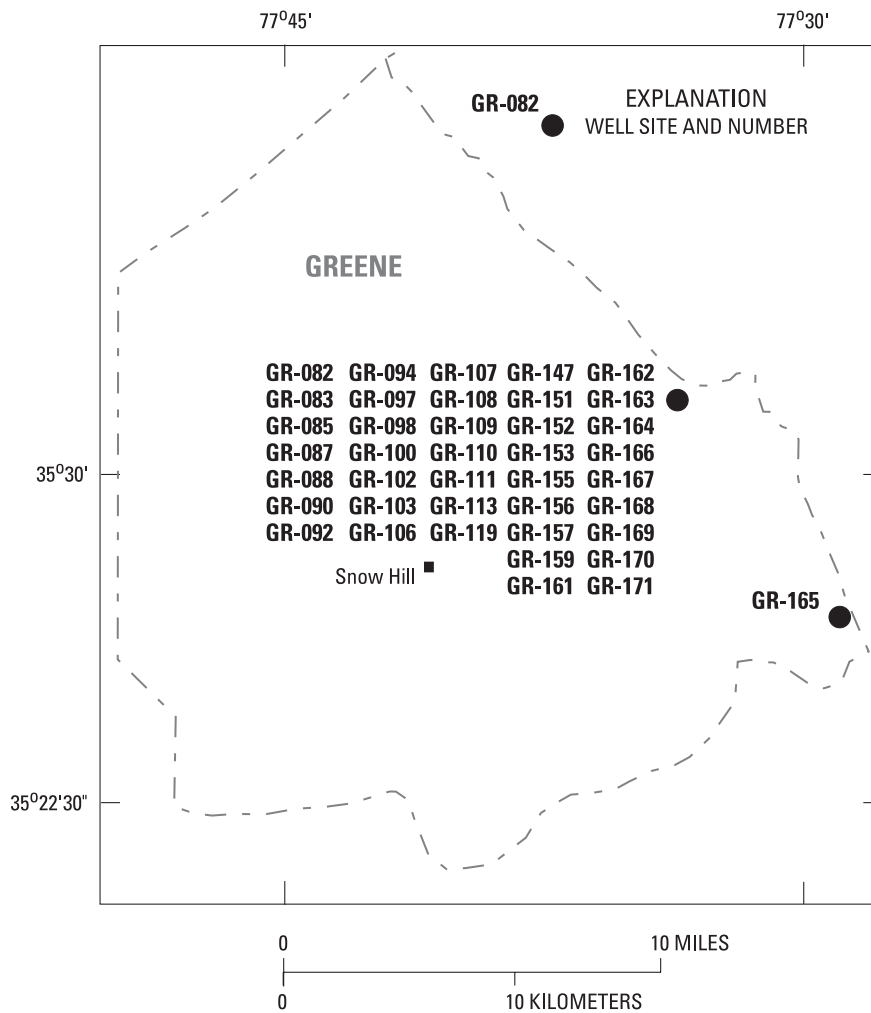


Figure 7.--Locations of observation wells in Greene County.

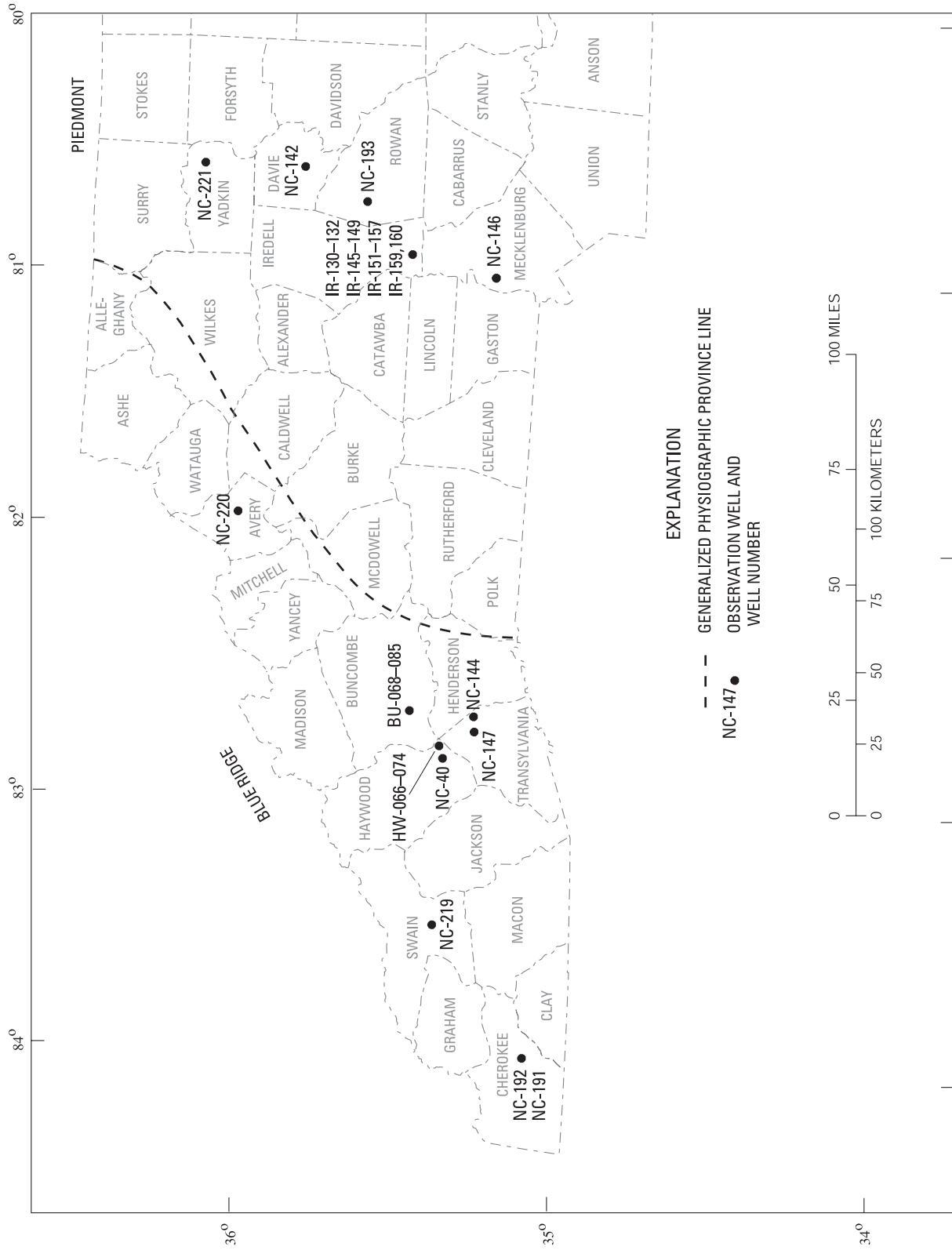


Figure 8.--Locations of observation wells in western North Carolina.

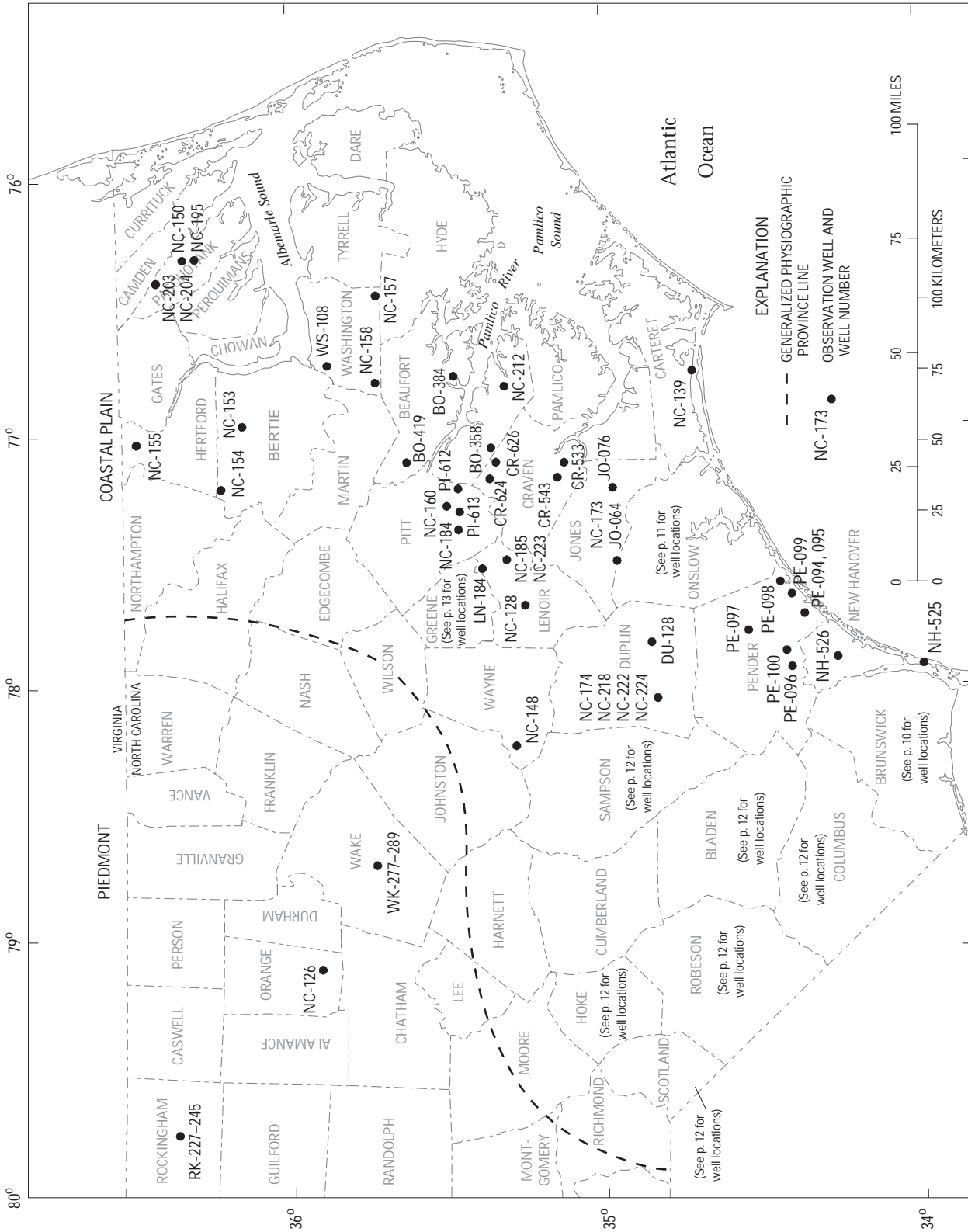


Figure 9.--Locations of observation wells in eastern North Carolina.

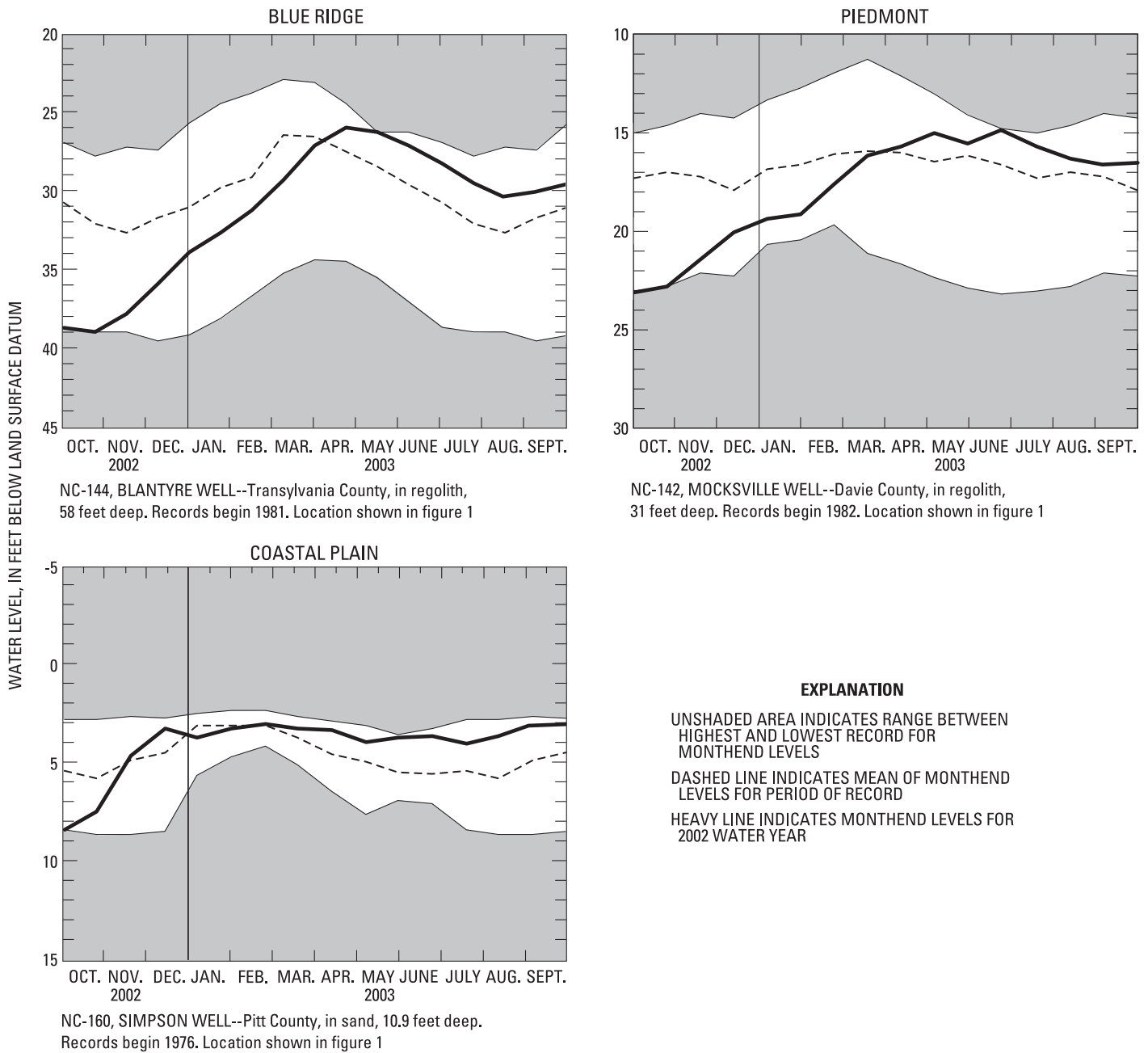


Figure 10.--Water levels in index observation wells in the Blue Ridge, Piedmont, and Coastal Plain Provinces.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, hydrologic-station records in USGS reports have been listed in order of downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary entering between two main-stream stations is listed between those stations. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is located with respect to the stream to which it is immediately tributary is indicated by an indentation in that list of stations in the front of this report. Each indentation represents one rank. This downstream order and system of indentation indicates which stations are on tributaries between any two stations and the rank of the tributary on which each station is located.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 09004100, which appears just to the left of the station name, includes a 2-digit part number "09" plus the 6-digit (or 8-digit) downstream order number "004100." In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as "01," "02," and so forth, would be assigned as one would for wells (see fig. 11). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

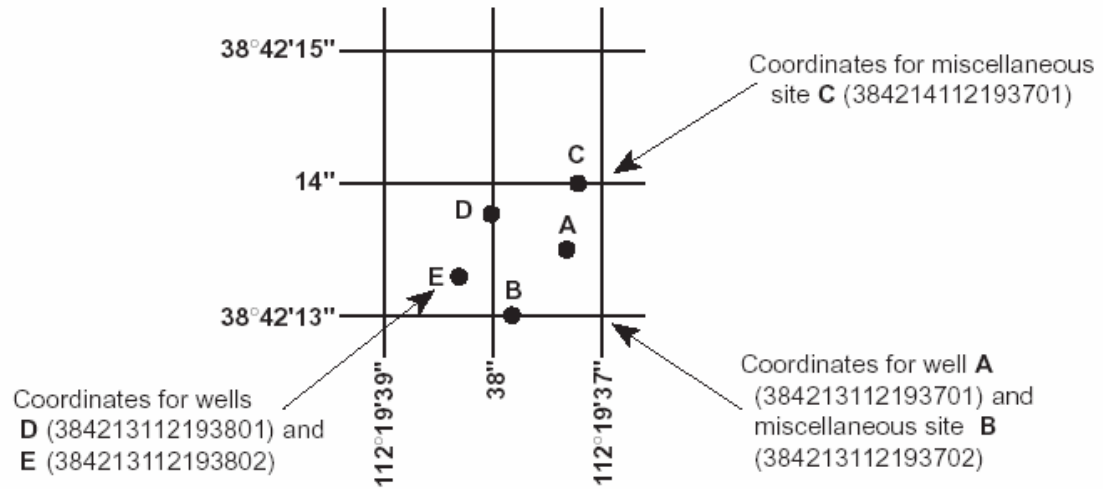


Figure 11. System for numbering wells and miscellaneous sites (latitude and longitude).

Local well numbers in this report generally fall within two numbering systems. All wells are indicated by a two-letter county prefix followed by a sequential number, such as ME-301 for a well in Mecklenburg County and RB-185 for a well in Robeson County. In addition, wells that belong in the statewide North Carolina observation-well program are indicated by the prefix NC- followed by a sequential number, for example NC-160.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from <http://water.usgs.gov/hbn/>.

National Stream-Quality Accounting Network (NASQAN) is a network of sites used to monitor the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and remobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program may be accessed from <http://water.usgs.gov/nasqan/>.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from <http://bqs.usgs.gov/acidrain/>.

The USGS National Water-Quality Assessment (NAWQA) Program is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a

wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program may be accessed from <http://water.usgs.gov/nawqa/>.

The USGS National Streamflow Information Program (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from <http://water.usgs.gov/nsip/>.

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

For stream-gaging stations, discharge-rating tables for any stage are prepared from stage-discharge curves. If extensions to the rating curves are necessary to express discharge greater than measured, the extensions are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams and weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features of the stream channel, the daily mean discharge is computed by the shifting-control method in which correction factors based on individual discharge measurements and notes by engineers and observers are used when applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the controlling section, the daily mean discharge is computed by the shifting-control method.

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the volume or contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow that clarify information presented under the various headings of the station description.

LOCATION.—Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in “River Mileage Measurement,” Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.—Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.—This term indicates the time period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that its flow reasonably can be considered equivalent to flow at the present station.

REVISED RECORDS.—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.—The type of gage in current use, the datum of the current gage referred to a standard datum, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.—All periods of estimated daily discharge either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the USGS.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (<http://water.usgs.gov/nwis/nwis>). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations to document the revision in a REVISED RECORDS entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. Any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the REMARKS and in the inclusion of a stage-capacity table when daily volumes are given.

Peak Discharge Greater than Base Discharge

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed TOTAL gives the sum of the daily figures for each month; the line headed MEAN gives the arithmetic average flow in cubic feet per second for the month; and the lines headed MAX and MIN give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month is expressed in cubic feet per second per square mile (line headed CFSM); or in inches (line headed IN); or in acre-feet (line headed AC-FT). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and a corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as FOR WATER YEARS __-__, BY WATER YEAR (WY), and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being

reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS __-__, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the ANNUAL 7-DAY MINIMUM statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

ANNUAL TOTAL.—The sum of the daily mean values of discharge for the year.

ANNUAL MEAN.—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

HIGHEST ANNUAL MEAN.—The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.—The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.—The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.—The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

MAXIMUM PEAK FLOW.—The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.—The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.—The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicate the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.—The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.—The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.—The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first table lists annual maximum stage and discharge at crest-stage stations, and the second table lists discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are often made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for a special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified. This identification is shown either by flagging individual daily values with the letter “e” and noting in a table footnote, “e—Estimated,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The degree of accuracy of the records is stated in the REMARKS in the station description. "Excellent" indicates that about 95 percent of the daily discharges are within 5 percent of the true value; "good" within 10 percent; and "fair," within 15 percent. "Poor" indicates that daily discharges have less than "fair" accuracy. Different accuracies may be attributed to different parts of a given record.

Values of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft³/s; to the nearest tenths between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures above 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharge values listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Data Records Available

Information of a more detailed nature than that published for most of the stream-gaging stations such as discharge measurements, gage-height records, and rating tables is available from the District office. Also, most stream-gaging station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the District office (see address that is shown on the back of the title page of this report).

EXPLANATION OF PRECIPITATION RECORDS

Data Collection and Computation

Rainfall data generally are collected using electronic data loggers that measure the rainfall in 0.01-inch increments every 15 minutes using either a tipping-bucket rain gage or a collection well gage. Twenty-four hour rainfall totals are tabulated and presented. A 24-hour period extends from just past midnight of the previous day to midnight of the current day. Snowfall-affected data can result during cold weather when snow fills the rain-gage funnel and then melts as temperatures rise. Snowfall-affected data are subject to errors. Missing values are indicated by this symbol "---" in the table.

Data Presentation

Precipitation records collected at surface-water gaging stations are identified with the same station number and name as the stream-gaging station. Where a surface-water daily-record station is not available, the precipitation record is published with its own name and latitude-longitude identification number.

Information pertinent to the history of a precipitation station is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, period of record, and general remarks.

The following information is provided with each precipitation station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

INSTRUMENTATION.—Information on the type of rainfall collection system is given.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of records.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs. A list of TWRIs is provided in this report.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross-section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A *continuous-record station* is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A *partial-record station* is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A *miscellaneous sampling site* is a location other than a continuous- or partial-record station, where samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently.

Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Water temperature	≤±0.2 °C	>±0.2 to 0.5 °C	>±0.5 to 0.8 °C	>±0.8 °C

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Specific conductance	≤ ±3%	> ±3 to 10%	> ±10 to 15%	> ±15%
Dissolved oxygen	≤ ±0.3 mg/L	> ±0.3 to 0.5 mg/L	> ±0.5 to 0.8 mg/L	> ±0.8 mg/L
pH	≤ ±0.2 unit	> ±0.2 to 0.5 unit	> ±0.5 to 0.8 unit	> ±0.8 unit
Turbidity	≤ ±5%	> ±5 to 10%	> ±10 to 15%	> ±15%

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI's Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. These TWRI's are listed in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may be collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

DRAINAGE AREA.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—This indicates the time periods for which published water-quality records for the station are available. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.—Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (<http://waterdata.usgs.gov/nwis>). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this section:

Printed Output	Remark
E or e	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of "E." These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District office are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the District office.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank

sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is produced for local needs. (See NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES, p. 17, for a detailed explanation).

Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRI's referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI's Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figures 8 and 9; each well is identified on the map by its local well number.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are referenced to the North American Datum of 1983 (NAD83).

AQUIFER.—This entry designates by name and geologic age the aquifer that the well taps.

WELL CHARACTERISTICS.—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

INSTRUMENTATION.—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

DATUM.—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD 29) unless otherwise noted; it is reported with a precision depending on the method of determination.

REMARKS.—This entry describes factors that may influence the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-Level Tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide.

Most methods for collecting and analyzing water samples are described in the TWRI's. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District office (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. (See Remark Codes, Water-Quality Control Data, Blank Samples, Reference Samples, Replicate Samples, and Spike Samples, p. 32-34 for a detailed explanation.)

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from <http://water.usgs.gov>.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (See address that is shown on the back of the title page of this report.)

REFERENCES

- Coble, R.W., Strickland, A.G., and Bailey, M.C., 1989, Ground-water level data for North Carolina, 1987: U.S. Geological Survey Open-File Report 89-68, 152 p.
- Eimers, J.L., Lyke, W.L., and Brockman, A.R., 1990, Simulation of ground-water flow in aquifers in Cretaceous rocks in the central Coastal Plain, North Carolina: U.S. Geological Survey Water-Resources Investigations Report 89-4153, 101 p.
- Strickland, A.G., 1995, Water-level conditions in the upper Cape Fear aquifer, 1992-94, in parts of Bladen and Robeson Counties, North Carolina: U.S. Geological Survey Water-Resources Investigations Report 95-4129, 1 sheet.
- Strickland, A.G., 1999, Water-level conditions in the upper Cape Fear aquifer, 1994-98, in parts of Bladen and Robeson Counties, North Carolina: U.S. Geological Survey Water-Resources Investigations Report 99-4127, 1 sheet.
- Strickland, A.G., Coble, R.W., Edwards, L.A., and Pope, B.F., 1992, Ground-water level data for North Carolina, 1988-90: U.S. Geological Survey Open-File Report 92-57, 167 p.
- Walters, D.A., 1997, Estimated water use, by county, in North Carolina, 1995: U.S. Geological Survey Open-File Report 97-559, 102 p.
- Winner, M.D., Jr., 1981, An observation-well network concept as applied to North Carolina: U.S. Geological Survey Water-Resources Investigations Report 81-13, 59 p.
- Winner, M.D., Jr., and Coble, R.W., 1996, Hydrogeologic framework of the North Carolina Coastal Plain Aquifer System: U.S. Geological Survey Professional Paper 1404-I, 106 p. + 24 pl.

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from <http://water.usgs.gov/glossaries.html>.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an “unfiltered” sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also “Annual runoff”)

Adenosine triphosphate (ATP) is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

Adjusted discharge is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also “Biomass” and “Dry weight”)

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a “filtered” sample.

Annual runoff is the total quantity of water that is discharged (“runs off”) from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most

low-flow frequency analyses use a climatic year (April 1–March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that purposely is placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also “Substrate”)

Ash mass is the mass or amount of residue present after the residue from a dry-mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also “Biomass” and “Dry mass”)

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Bedload is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ($\mu\text{m}^3/\text{mL}$). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/cm²) or biovolume per square centimeter ($\mu\text{m}^3/\text{cm}^2$). (See also "Phytoplankton" and "Periphyton")

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

Canadian Geodetic Vertical Datum 1928 is a geodetic datum derived from a general adjustment of Canada's first order level network in 1928.

Cell volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } \frac{4}{3} \pi r^3 \quad \text{cone } \frac{1}{3} \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi (π) is the ratio of the circumference to the diameter of a circle; $\pi = 3.14159\dots$

From cell volume, total algal biomass expressed as biovolume ($\mu\text{m}^3/\text{mL}$) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per

sample volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

Cfs-day (See “Cubic foot per second-day”)

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also “Biochemical oxygen demand (BOD)”]

Clostridium perfringens (*C. perfringens*) is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also “Bacteria”)

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure, as used in this report, is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Cubic foot per second (CFS, ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term “second-foot” sometimes is used synonymously with “cubic foot per second” but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [(ft³/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, (ft³/s)/mi²] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also “Annual runoff”)

Daily mean suspended-sediment concentration is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also “Sediment” and “Suspended-sediment concentration”)

Daily record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Verti-

cal Datum of 1929,” and “North American Vertical Datum of 1988”)

Diatoms (*Bacillariophyta*) are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ($\mu\text{m}^3/\text{mL}$). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu\text{m}^3/\text{cm}^2$). (See also “Phytoplankton” and “Periphyton”)

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or flow, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of “dissolved” constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the “residue-on-evaporation” method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alterna-

tively, alkalinity concentration (as mg/L CaCO_3) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = - \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth’s surface that contains a drainage system with a common outlet for its surface runoff. (See “Drainage area”)

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also “Ash mass,” “Biomass,” and “Wet mass”)

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also “Wet weight”)

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

Enterococcus bacteria commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus faecalis*, *Streptococcus*

faecium, *Streptococcus avium*, and their variants. (See also “Bacteria”)

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

***Escherichia coli* (*E. coli*)** are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Estimated (E) value of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

Euglenoids (*Euglenophyta*) are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening tech-

nique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

Green algae (*Chlorophyta*) are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating “moss” in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ($\mu\text{m}^3/\text{mL}$). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm²) or biovolume per square centimeter ($\mu\text{m}^3/\text{cm}^2$). (See also “Phytoplankton” and “Periphyton”)

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate (CaCO₃).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA Web site:
<http://www.co-ops.nos.noaa.gov/tideglos.html>

Hilsenhoff’s Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = \text{sum} \frac{(n)(a)}{N},$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See “Datum”)

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also “Annual runoff”)

Instantaneous discharge is the discharge at a particular instant of time. (See also “Discharge”)

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a “less than” (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term ‘non-detection value’ (NDV).

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-

sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. See *NOAA Web site*:
<http://www.co-ops.nos.noaa.gov/tideglos.html>

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

Mean high or low tide is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

Measuring point (MP) is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

Megahertz is a unit of frequency. One megahertz equals one million cycles per second.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Method of Cubatures is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

Methylene blue active substances (MBAS) indicate the presence of detergents (anionic surfactants). The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass

(kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, $\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, $\mu\text{S/cm}$) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD 29) is a fixed reference adopted as a standard geodetic datum for

elevations determined by leveling. It formerly was called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. See NOAA Web site: <http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88> (See "North American Vertical Datum of 1988")

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

Nekton are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Datum of 1927 (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

North American Datum of 1983 (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

North American Vertical Datum of 1988 (NAVD 88) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

Open or screened interval is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m²), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, most of the organic matter is removed, and the sample is subjected to mechani-

cal and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or percent of total is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of

the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

Phytoplankton is the plant part of the plankton. They usually are microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and commonly are known as algae. (See also "Plankton")

Picocurie (PC, pCi) is one-trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [$\text{mg C}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg C}/(\text{m}^3/\text{time})$] for phytoplankton. The carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method and is preferred for use with unenriched water samples.

Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [$\text{mg O}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg O}/(\text{m}^3/\text{time})$] for phytoplankton. The oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable from bed (bottom) material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. (See also "Bed material")

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average

and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See “Recurrence interval”)

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged (“runs off”) from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also “Annual runoff”)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as “fluvial sediment.” Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also “Annual 7-day minimum” and “Recurrence interval”)

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it

may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See “Gage height”)

Stage-discharge relation is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

Streamflow is the discharge that occurs in a natural channel. Although the term “discharge” can be applied to the flow of a canal, the word “streamflow” uniquely describes the discharge in a surface stream course. The term “streamflow” is more general than “runoff” as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Surrogate is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is defined operationally as the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment, and, thus, the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of “suspended, recoverable” constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also “Suspended”)

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also “Sediment”)

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also “Sediment” and “Suspended sediment”)

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027. (See also “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also “Sediment”)

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as “suspended, total.” Determinations of “suspended, total” constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also “Suspended”)

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata*, is the following:

Kingdom:	Animal
Phylum:	Arthropoda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	<i>Hexagenia</i>
Species:	<i>Hexagenia limbata</i>

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term “temperature recorder” is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) sample, regardless of the constituent’s physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as “total.” (Note that the word “total” does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also “Bacteria”)

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as “total sediment discharge,” “total chloride discharge,” and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. This

term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as “total in bottom material.”

Total length (fish) is the straight-line distance from the anterior point of a fish specimen’s snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also “Organism count/volume”)

Total recoverable is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also “Bedload,” “Bedload discharge,” “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution because of the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to USEPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

Vertical datum (See “Datum”)

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and, subsequently, analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are components of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the

12 months. Thus, the year ending September 30, 2002, is called the “2002 water year.”

Watershed (See “Drainage basin”)

WDR is used as an abbreviation for “Water-Data Report” in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for “Water-Resources Data” in reports published prior to 1976.)

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

Wet mass is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

WSP is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (See also “Plankton”)

Techniques of Water-Resources Investigations of the U.S. Geological Survey

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, section A of book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at <http://water.usgs.gov/pubs/twri/>. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Products can then be ordered by telephone, or online at <http://www.usgs.gov/sales.html>, or by FAX to (303)236-469 of an order form available online at <http://mac.usgs.gov/isb/pubs/forms/>. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

1–D1. *Water temperature—Influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS–TWRI book 1, chap. D1. 1975. 65 p.

1–D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI book 1, chap. D2. 1976. 24 p.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

2–D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI book 2, chap. D1. 1974. 116 p.

2–D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI book 2, chap. D2. 1988. 86 p.

Section E. Subsurface Geophysical Methods

2–E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS–TWRI book 2, chap. E1. 1971. 126 p.

2–E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS–TWRI book 2, chap. E2. 1990. 150 p.

Section F. Drilling and Sampling Methods

2–F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS–TWRI book 2, chap. F1. 1989. 97 p.

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

- 3–A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.
- 3–A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS–TWRI book 3, chap. A2. 1967. 12 p.
- 3–A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 p.
- 3–A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS–TWRI book 3, chap. A4. 1967. 44 p.
- 3–A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI book 3, chap. A5. 1967. 29 p.
- 3–A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 p.
- 3–A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 p.
- 3–A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A8. 1969. 65 p.
- 3–A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 p.
- 3–A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A10. 1984. 59 p.
- 3–A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 p.
- 3–A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 p.
- 3–A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 p.
- 3–A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI book 3, chap. A14. 1983. 46 p.
- 3–A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI book 3, chap. A15. 1984. 48 p.
- 3–A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI book 3, chap. A16. 1985. 52 p.
- 3–A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI book 3, chap. A17. 1985. 38 p.
- 3–A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI book 3, chap. A18. 1989. 52 p.
- 3–A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A19. 1990. 31 p.
- 3–A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 p.
- 3–A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI book 3, chap. A21. 1995. 56 p.

Section B. Ground-Water Techniques

- 3–B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 p.
- 3–B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 p.
- 3–B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI book 3, chap. B3. 1980. 106 p.
- 3–B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS–TWRI book 3, chap. B4. 1990. 232 p.

3–B4. *Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS–TWRI book 3, chap. B4. 1993. 8 p.

3–B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI book 3, chap. B5. 1987. 15 p.

3–B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI book 3, chap. B6. 1987. 28 p.

3–B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS–TWRI book 3, chap. B7. 1992. 190 p.

3–B8. *System and boundary conceptualization in ground-water flow simulation*, by T.E. Reilly: USGS–TWRI book 3, chap. B8. 2001. 29 p.

Section C. Sedimentation and Erosion Techniques

3–C1. *Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI book 3, chap. C1. 1970. 55 p.

3–C2. *Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 p.

3–C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 p.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

4–A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.

4–A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 p.

4–A3. *Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at <http://water.usgs.gov/pubs/twri/twri4a3/>. (Accessed August 30, 2002.)

Section B. Surface Water

4–B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI book 4, chap. B1. 1972. 18 p.

4–B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI book 4, chap. B2. 1973. 20 p.

4–B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS–TWRI book 4, chap. B3. 1973. 15 p.

Section D. Interrelated Phases of the Hydrologic Cycle

4–D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

Book 5. Laboratory Analysis

Section A. Water Analysis

5–A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.

5–A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.

5–A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI book 5, chap. A3. 1987. 80 p.

56 Publications on Techniques of Water Resources Investigations—Continued

5–A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.

5–A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI book 5, chap. A5. 1977. 95 p.

5–A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS–TWRI book 5, chap. A6. 1982. 181 p.

Section C. Sediment Analysis

5–C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

Book 6. Modeling Techniques

Section A. Ground Water

6–A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI book 6, chap. A1. 1988. 586 p.

6–A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS–TWRI book 6, chap. A2. 1991. 68 p.

6–A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS–TWRI book 6, chap. A3. 1993. 136 p.

6–A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS–TWRI book 6, chap. A4. 1992. 108 p.

6–A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak: USGS–TWRI book 6, chap. A5. 1993. 243 p.

6–A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI book 6, chap. A6. 1996. 125 p.

6–A7. *User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002. 77 p.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7–C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI book 7, chap. C1. 1976. 116 p.

7–C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI book 7, chap. C2. 1978. 90 p.

7–C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8–A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.

8–A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

Section B. Instruments for Measurement of Discharge

8–B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9–A1. *National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.

9–A2. *National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.

9–A3. *National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.

9–A4. *National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.

9–A5. *National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999. 149 p.

9–A6. *National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.

9–A7. *National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.

9–A8. *National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.

9–A9. *National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.

GROUND-WATER LEVELS

AVERY COUNTY

360455081530101. Local number NC-220; DENR Linville Research Station well H78d8; County number, AV-074.

LOCATION.--Lat 36°04'55.08", long 81°53'01.73", Hydrologic Unit 03050101, near Linville. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Phyllite.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 300 ft, diameter 6 in., cased to 10 ft.

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

DATUM.--Land-surface datum is 3,919.00 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 1.00 ft above land-surface datum.

REMARKS.--Well is part of terrane-effects network.

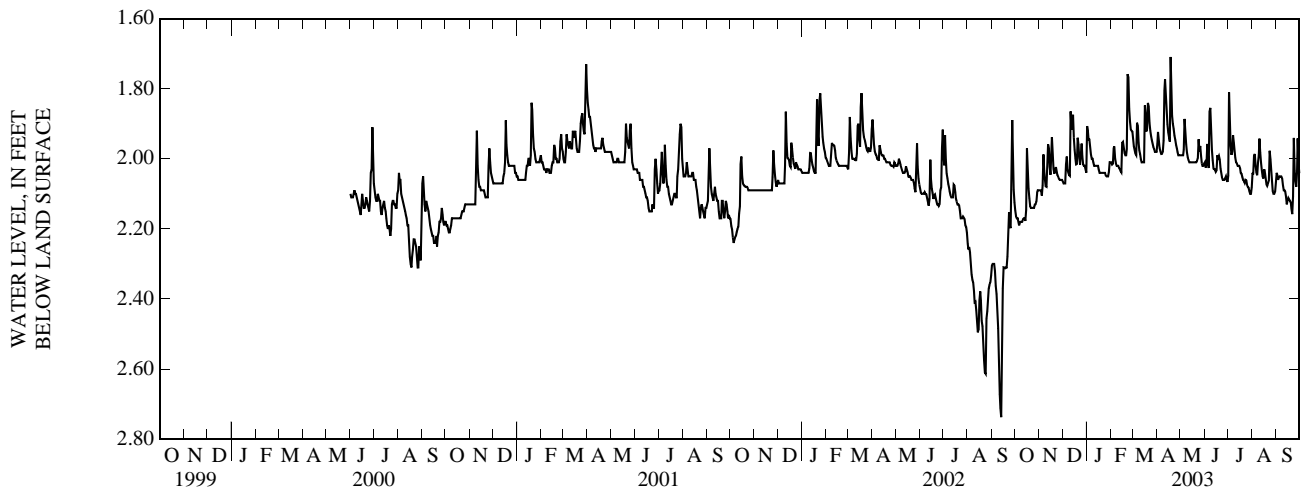
PERIOD OF RECORD.--June 2000 to current year. Records from March 1972 to March 2000 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.64 ft below land-surface datum, Mar. 29, 2001; lowest water level recorded, 2.74 ft below land-surface datum, Sept. 13, 14, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.15	2.09	2.07	1.91	2.01	1.94	1.96	1.99	2.01	2.05	2.04	2.04
2	2.16	2.09	2.07	1.92	2.02	1.96	1.92	1.99	2.02	1.81	2.04	2.05
3	2.17	2.09	2.07	1.94	2.01	1.98	1.95	1.99	2.02	1.87	1.99	2.06
4	2.17	2.10	2.07	1.94	1.97	1.99	1.97	1.99	1.96	1.96	1.99	2.05
5	2.18	2.08	2.02	1.97	1.96	1.99	1.98	1.97	2.00	1.99	2.02	2.05
6	2.19	1.99	1.99	1.99	2.00	1.90	1.99	1.89	2.03	1.98	2.04	2.05
7	2.18	2.03	2.03	2.00	2.01	1.91	1.99	1.92	1.87	1.93	2.05	2.05
8	2.18	2.06	2.04	2.00	2.02	1.95	1.98	1.96	1.85	1.95	2.01	2.06
9	2.18	2.08	2.05	2.01	2.02	1.98	1.95	1.98	1.93	1.97	1.99	2.08
10	2.18	2.08	2.05	2.02	2.02	1.99	1.80	2.00	1.97	2.00	1.94	2.09
11	2.17	2.01	1.86	2.02	2.03	2.00	1.77	2.00	2.00	2.01	1.98	2.09
12	2.17	1.96	1.92	2.02	2.03	2.01	1.82	2.01	2.03	2.01	2.01	2.09
13	2.17	1.97	1.90	2.02	2.04	2.01	1.86	2.01	2.03	2.02	2.03	2.11
14	2.18	2.02	1.87	2.02	2.04	2.01	1.90	2.01	2.03	2.02	2.05	2.13
15	2.15	2.05	1.94	2.02	1.95	2.01	1.93	2.01	2.04	2.02	2.06	2.12
16	1.97	1.99	1.97	2.03	1.95	1.85	1.94	2.01	2.03	2.03	2.03	2.11
17	2.03	1.94	2.00	2.04	1.97	1.87	1.95	2.01	1.99	2.04	2.04	2.12
18	2.08	1.99	2.02	2.04	1.98	1.92	1.71	2.01	2.00	2.04	2.06	2.12
19	2.11	2.03	2.01	2.04	1.99	1.91	1.80	2.01	1.99	2.05	2.07	2.12
20	2.14	2.04	1.94	2.04	1.99	1.84	1.88	2.01	2.00	2.06	2.08	2.14
21	2.14	2.03	1.96	2.04	1.97	1.85	1.90	2.01	2.03	2.06	2.07	2.16
22	2.14	2.02	2.00	2.04	1.76	1.90	1.91	2.01	2.04	2.07	2.06	2.11
23	2.14	2.04	2.02	2.04	1.77	1.92	1.93	2.00	2.05	2.06	1.98	1.94
24	2.14	2.05	1.99	2.04	1.86	1.94	1.95	1.94	2.06	2.06	2.00	2.03
25	2.14	2.05	1.96	2.05	1.89	1.95	1.96	1.98	2.06	2.07	2.04	2.07
26	2.13	2.06	1.99	2.05	1.92	1.96	1.97	1.96	2.06	2.08	2.06	2.08
27	2.13	2.06	2.02	2.05	1.92	1.97	1.98	1.99	2.06	2.08	2.09	2.04
28	2.12	2.06	2.02	2.05	1.92	1.97	1.99	2.01	2.05	2.09	2.10	1.94
29	2.10	2.06	2.02	2.04	---	1.98	1.99	2.02	2.06	2.10	2.10	2.01
30	2.09	2.06	2.03	2.01	---	1.98	1.99	2.02	2.07	2.10	2.09	2.04
31	2.09	---	2.04	2.01	---	1.98	---	2.01	---	2.08	2.07	---

WTR YR 2003 MEAN 2.01 HIGH 1.71 LOW 2.19



BEAUFORT COUNTY

351934076481001. Local number, NC-212; County number, BO-200.

LOCATION.--Lat 35°19'33.7", long 76°48'12.0", Hydrologic Unit 03020104, 1.5 mi north of Aurora, west of State Highway 306 on service road to south gate of PCS Phosphate. Owner: PCS Phosphate, Aurora Division.

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 168 ft, diameter 4 in., cased to 160 ft, open hole to 168 ft; measured depth 168 ft, December 1999.

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

DATUM.--Land-surface datum is 7 ft above NGVD of 1929 (from topographic map). Measuring point: Recorder shelf, 3.00 ft above land-surface datum.

REMARKS.--Well drilled to replace NC-13 (station number 35193207648001). Well is part of local-effects network.

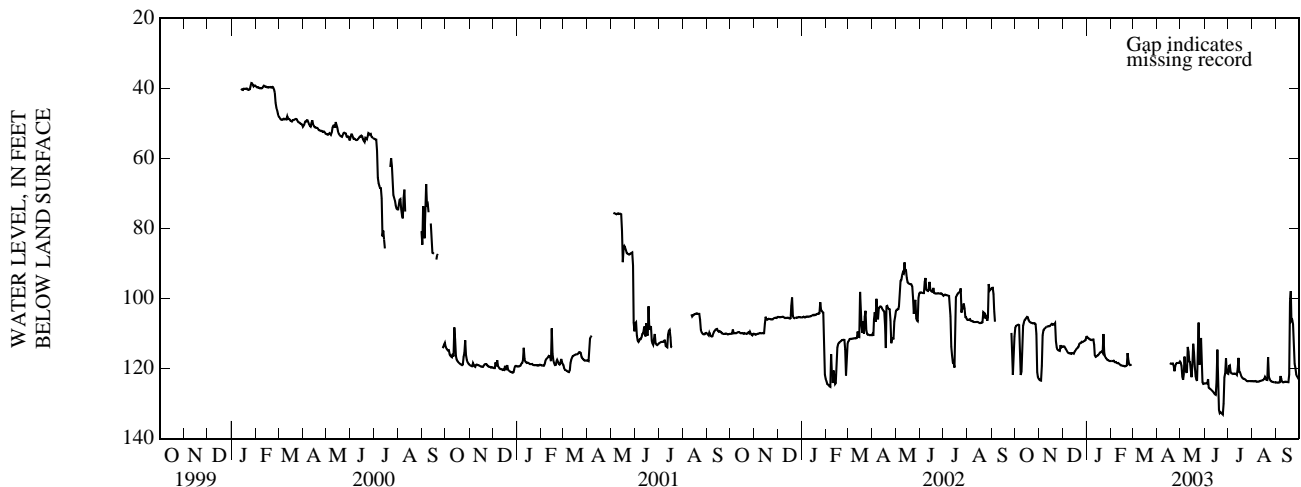
PERIOD OF RECORD.--January 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 38.37 ft below land-surface datum, Jan. 26, 2000; lowest water level recorded, 133.38 ft below land-surface datum, June 25, 2003.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

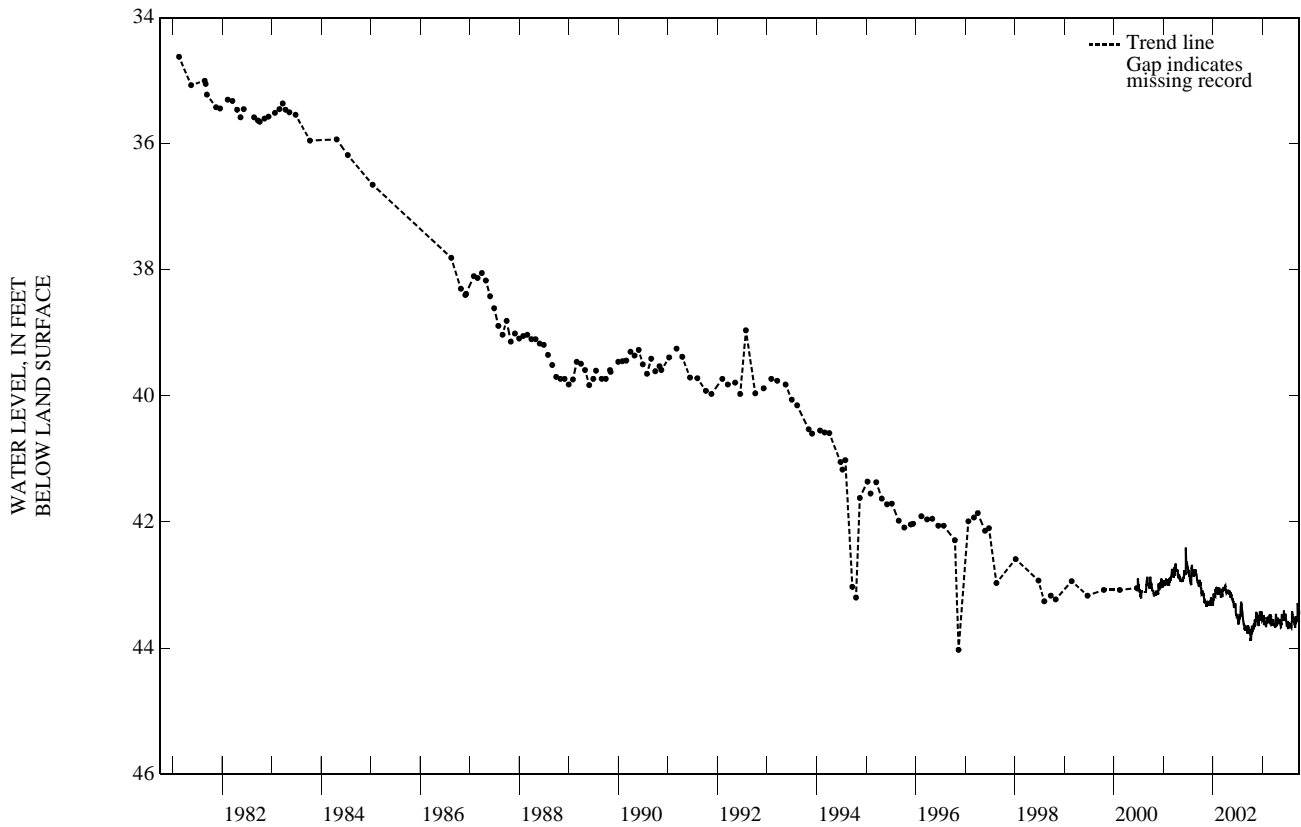
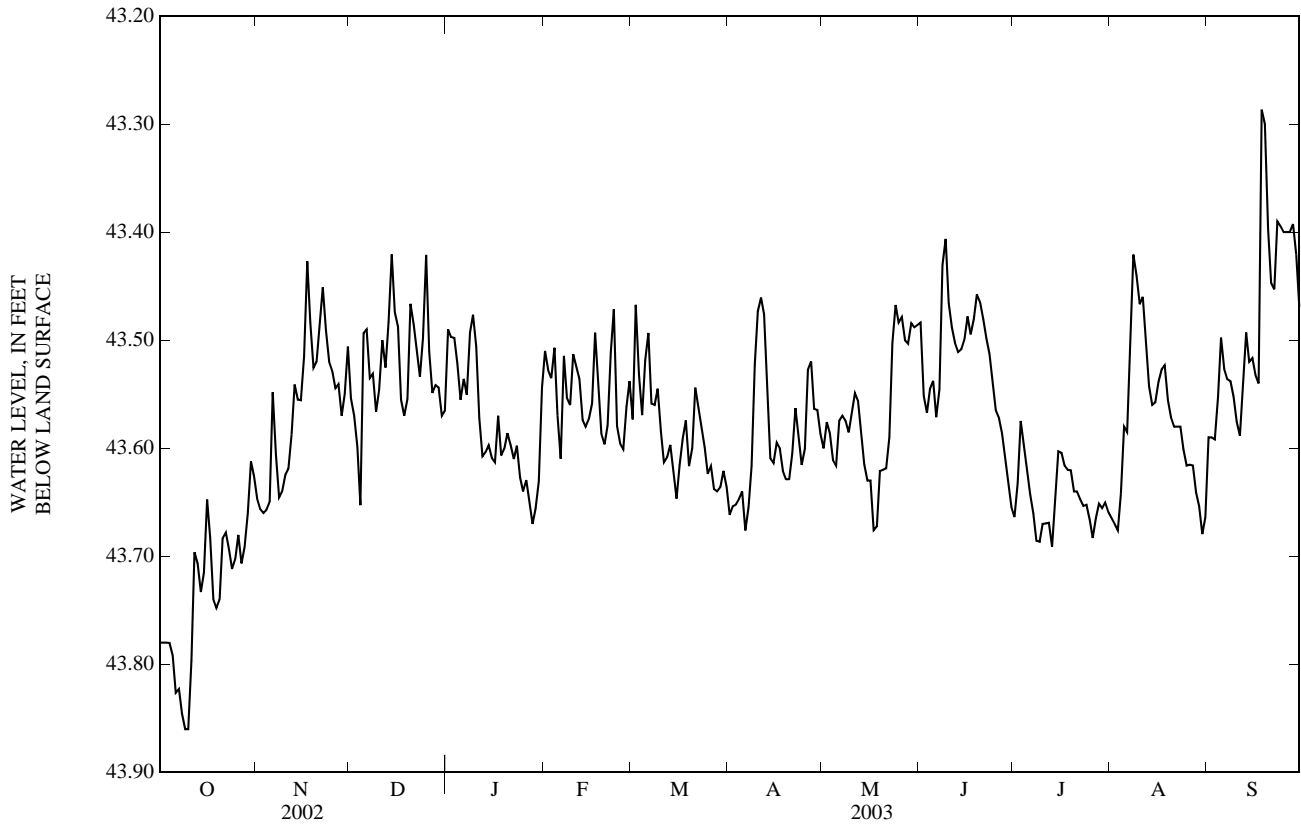
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108.33	123.19	113.66	110.89	117.78	---	---	118.29	124.17	121.49	123.56	123.94
2	107.83	123.35	113.64	111.24	117.81	---	---	119.22	124.19	119.28	123.59	124.02
3	107.62	123.40	113.67	111.32	117.82	---	---	122.32	124.17	119.11	123.63	124.02
4	107.53	119.21	114.07	111.58	117.75	---	---	123.19	124.21	121.10	123.58	124.02
5	107.45	110.46	114.48	111.73	118.02	---	---	121.72	123.01	121.34	123.56	123.92
6	107.54	109.08	114.92	111.73	118.17	---	---	116.56	125.41	121.43	123.72	122.13
7	114.41	108.75	115.33	111.84	118.10	---	---	120.19	125.64	121.51	123.72	123.02
8	121.83	108.51	115.54	111.70	118.32	---	---	120.98	125.79	121.43	123.67	123.74
9	120.80	108.30	115.64	111.67	118.46	---	---	120.94	126.03	121.41	123.70	123.89
10	114.46	108.10	115.64	113.22	118.39	---	---	113.80	126.25	121.43	123.65	123.91
11	107.72	108.00	115.61	116.25	118.62	---	---	115.28	126.48	121.53	123.49	123.84
12	106.80	107.86	115.78	116.65	118.79	---	---	118.00	126.74	121.82	123.44	123.73
13	106.09	107.86	115.60	116.52	119.00	---	---	118.16	127.09	120.12	123.39	123.74
14	105.91	107.87	115.55	116.31	119.09	---	---	120.47	127.31	116.93	123.33	123.80
15	105.59	107.66	115.71	116.21	119.14	---	---	122.43	127.46	120.95	123.20	123.84
16	105.22	107.41	115.20	115.97	119.26	---	---	118.83	123.54	121.03	122.99	123.86
17	105.31	107.24	114.87	115.55	119.22	---	118.44	112.92	114.61	121.60	122.37	121.72
18	106.14	107.48	114.56	115.39	119.34	---	118.58	115.37	121.45	122.25	122.69	101.08
19	106.53	107.43	114.29	115.24	119.34	---	118.63	119.35	131.74	122.64	123.17	97.88
20	106.74	107.31	114.10	115.11	119.23	---	118.60	122.12	132.74	122.86	123.23	106.40
21	106.88	106.99	113.76	115.50	119.11	---	118.50	122.97	132.44	122.89	116.67	106.12
22	106.95	112.18	112.95	110.10	115.54	---	119.16	123.49	132.58	123.00	122.21	107.32
23	107.03	113.92	112.75	115.44	117.65	---	120.76	115.04	132.84	123.20	122.92	113.84
24	107.06	114.50	112.69	116.56	118.80	---	119.23	106.86	133.11	123.40	123.39	118.66
25	107.02	114.74	112.37	116.97	118.95	---	118.65	118.90	130.05	123.56	123.66	119.86
26	107.03	114.87	112.46	117.19	118.91	---	118.36	117.57	122.50	123.57	123.72	121.60
27	107.30	114.95	112.35	117.53	118.80	---	118.37	111.27	121.30	123.56	123.77	122.21
28	110.10	113.30	112.17	117.58	---	---	118.39	118.87	117.08	123.55	123.86	122.55
29	120.99	113.94	112.07	117.72	---	---	118.34	123.81	121.06	123.56	123.88	122.96
30	122.27	113.67	111.91	117.83	---	---	117.98	124.37	121.39	123.60	123.94	123.23
31	122.86	---	110.92	117.85	---	---	---	124.33	---	123.58	123.93	---

WTR YR 2003 MEAN 117.83 HIGH 97.88 LOW 133.11



BERTIE COUNTY—Continued

361002076562106. Local number, NC-153; DENR Cremo Research Station well G19b6; County number, BE-087.



GROUND-WATER LEVELS

BERTIE COUNTY—Continued

36142007711407. Local number, NC-154; DENR Roxobel Research Station well F22b7; County number, BE-080.

LOCATION.--Lat 36°14'21", long 77°11'13", Hydrologic Unit 03010203, 3.8 mi northeast of Roxobel on Secondary Road 1249. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 12 ft, diameter 4 in., cased to 7 ft, screened interval from 7 to 12 ft.

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

DATUM.--Land-surface datum is 74 ft above NGVD of 1929 (from topographic map). Measuring point: Top of instrument shelf, 3.05 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--November 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.27 ft below land-surface datum, Jan. 30, 31, 2000; lowest water level recorded, 9.31 ft below land-surface datum, Sept. 5, 1987.

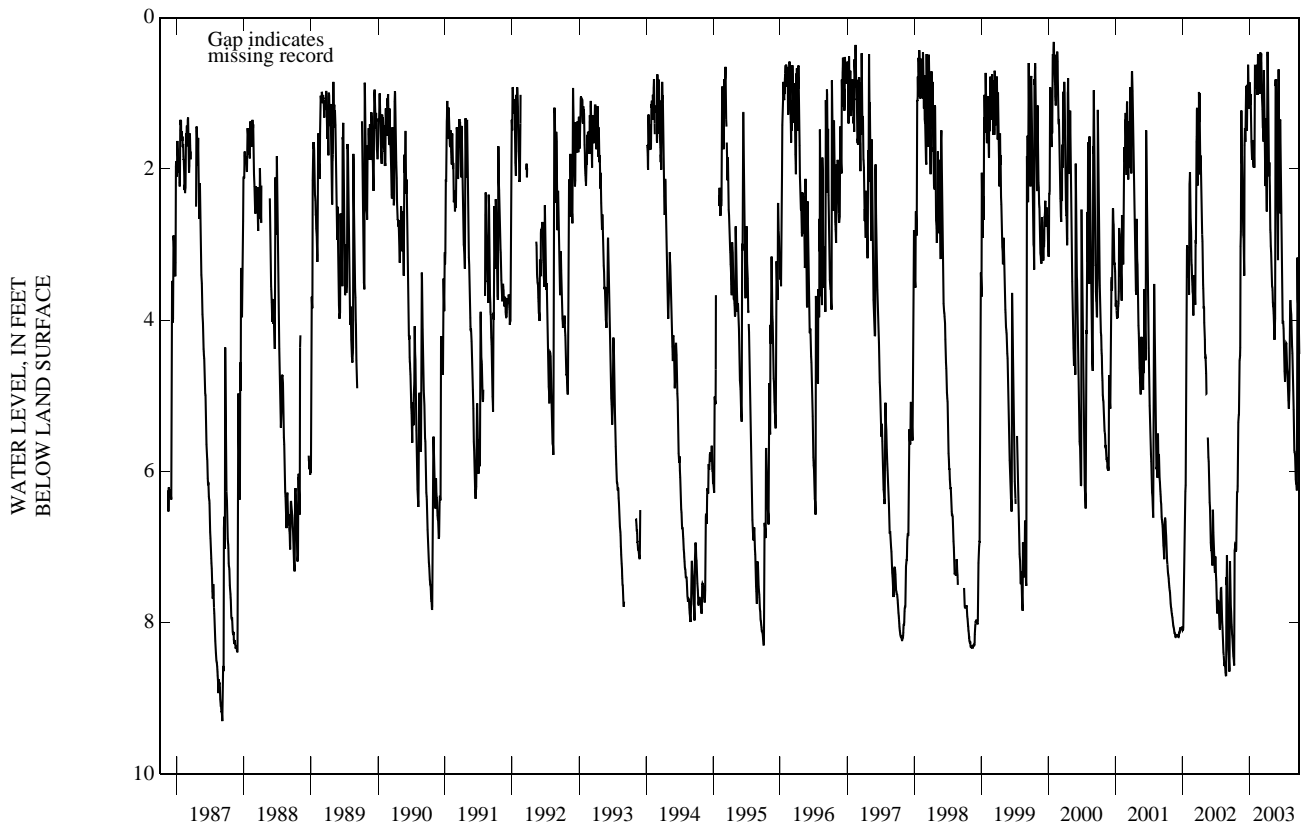
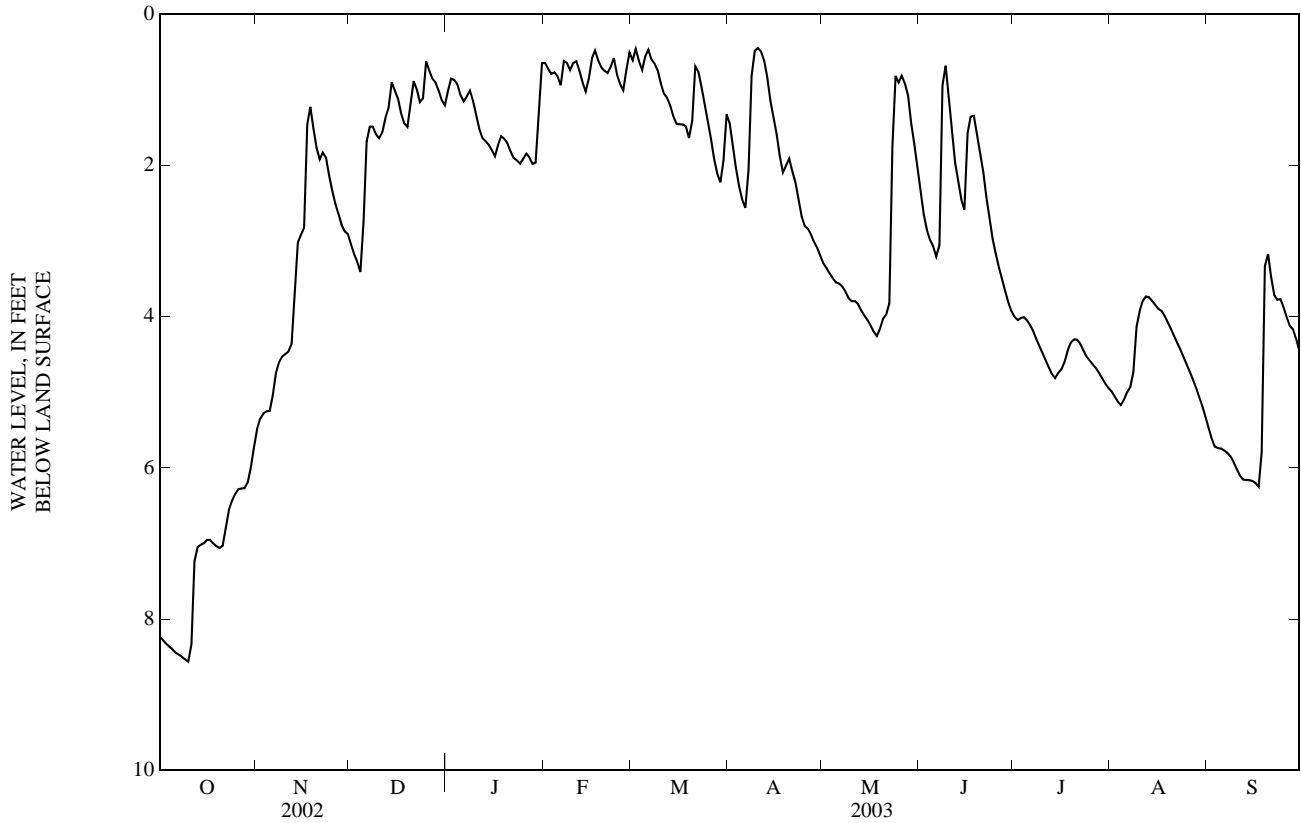
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.24	5.48	3.04	1.01	0.65	0.61	1.44	3.30	2.33	4.00	4.99	5.47
2	8.28	5.35	3.17	0.86	0.73	0.46	1.73	3.37	2.65	4.05	5.06	5.61
3	8.33	5.28	3.28	0.87	0.79	0.62	2.04	3.43	2.86	4.02	5.12	5.72
4	8.37	5.25	3.41	0.93	0.77	0.74	2.28	3.50	2.98	4.01	5.17	5.74
5	8.41	5.25	2.74	1.07	0.82	0.56	2.45	3.55	3.07	4.05	5.10	5.75
6	8.45	5.05	1.69	1.15	0.94	0.47	2.56	3.56	3.20	4.11	5.00	5.77
7	8.47	4.75	1.49	1.09	0.62	0.60	2.06	3.60	3.05	4.20	4.93	5.80
8	8.50	4.60	1.49	1.01	0.65	0.66	0.82	3.67	0.94	4.30	4.73	5.85
9	8.54	4.53	1.59	1.15	0.74	0.74	0.49	3.76	0.68	4.39	4.14	5.92
10	8.57	4.50	1.64	1.34	0.65	0.92	0.45	3.80	1.08	4.48	3.92	6.01
11	8.34	4.46	1.56	1.52	0.62	1.05	0.49	3.80	1.51	4.58	3.79	6.10
12	7.24	4.36	1.37	1.64	0.75	1.11	0.61	3.83	1.97	4.67	3.73	6.15
13	7.05	3.67	1.24	1.68	0.91	1.21	0.84	3.92	2.20	4.76	3.75	6.16
14	7.02	3.02	0.90	1.73	1.02	1.35	1.14	3.98	2.45	4.81	3.79	6.16
15	7.00	2.92	1.01	1.80	0.85	1.45	1.37	4.05	2.59	4.74	3.85	6.17
16	6.95	2.83	1.12	1.88	0.58	1.46	1.60	4.12	1.58	4.70	3.90	6.20
17	6.95	1.46	1.31	1.73	0.48	1.46	1.88	4.20	1.36	4.60	3.93	6.25
18	7.00	1.23	1.44	1.62	0.61	1.48	2.10	4.26	1.35	4.45	3.99	5.80
19	7.03	1.52	1.49	1.65	0.71	1.64	2.01	4.17	1.58	4.34	4.08	3.33
20	7.06	1.77	1.20	1.71	0.75	1.41	1.91	4.03	1.83	4.30	4.16	3.17
21	7.03	1.92	0.89	1.82	0.78	0.69	2.08	3.98	2.09	4.31	4.25	3.48
22	6.79	1.83	0.99	1.91	0.70	0.77	2.23	3.82	2.42	4.36	4.35	3.72
23	6.55	1.90	1.17	1.93	0.58	0.96	2.46	1.76	2.69	4.45	4.43	3.78
24	6.44	2.14	1.12	1.98	0.80	1.19	2.68	0.82	2.97	4.53	4.53	3.77
25	6.34	2.33	0.62	1.91	0.93	1.43	2.81	0.90	3.17	4.58	4.63	3.88
26	6.28	2.51	0.74	1.85	1.01	1.65	2.84	0.82	3.34	4.63	4.73	4.01
27	6.27	2.64	0.85	1.89	0.73	1.91	2.92	0.92	3.50	4.68	4.83	4.12
28	6.27	2.79	0.91	1.98	0.51	2.10	3.02	1.08	3.67	4.74	4.94	4.17
29	6.19	2.87	1.01	1.97	---	2.23	3.10	1.45	3.81	4.82	5.06	4.30
30	5.99	2.91	1.14	1.39	---	1.94	3.20	1.72	3.93	4.89	5.18	4.45
31	5.73	---	1.21	0.65	---	1.33	---	2.05	---	4.94	5.33	---

WTR YR 2003 MEAN 3.11 HIGH 0.45 LOW 8.57

BERTIE COUNTY—Continued

36142007711407. Local number, NC-154; DENR Roxobel Research Station well F22b7; County number, BE-080.



GROUND-WATER LEVELS

BLADEN COUNTY

344119078354201. County number, BL-057.

LOCATION.--Lat 34°41'21", long 78°35'41", Hydrologic Unit 03030005, 4.2 mi north of Elizabethtown on Secondary Road 242 at Bladen Lakes State Forest Headquarters. Owner: North Carolina Division of Forest Resources.

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled domestic well, depth 334 ft, diameter 6 in., screened interval from 327 to 334 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 73 ft above NGVD of 1929 (from topographic map). Measuring point: Vent hole in top of sanitary seal, 0.7 ft above land-surface datum.

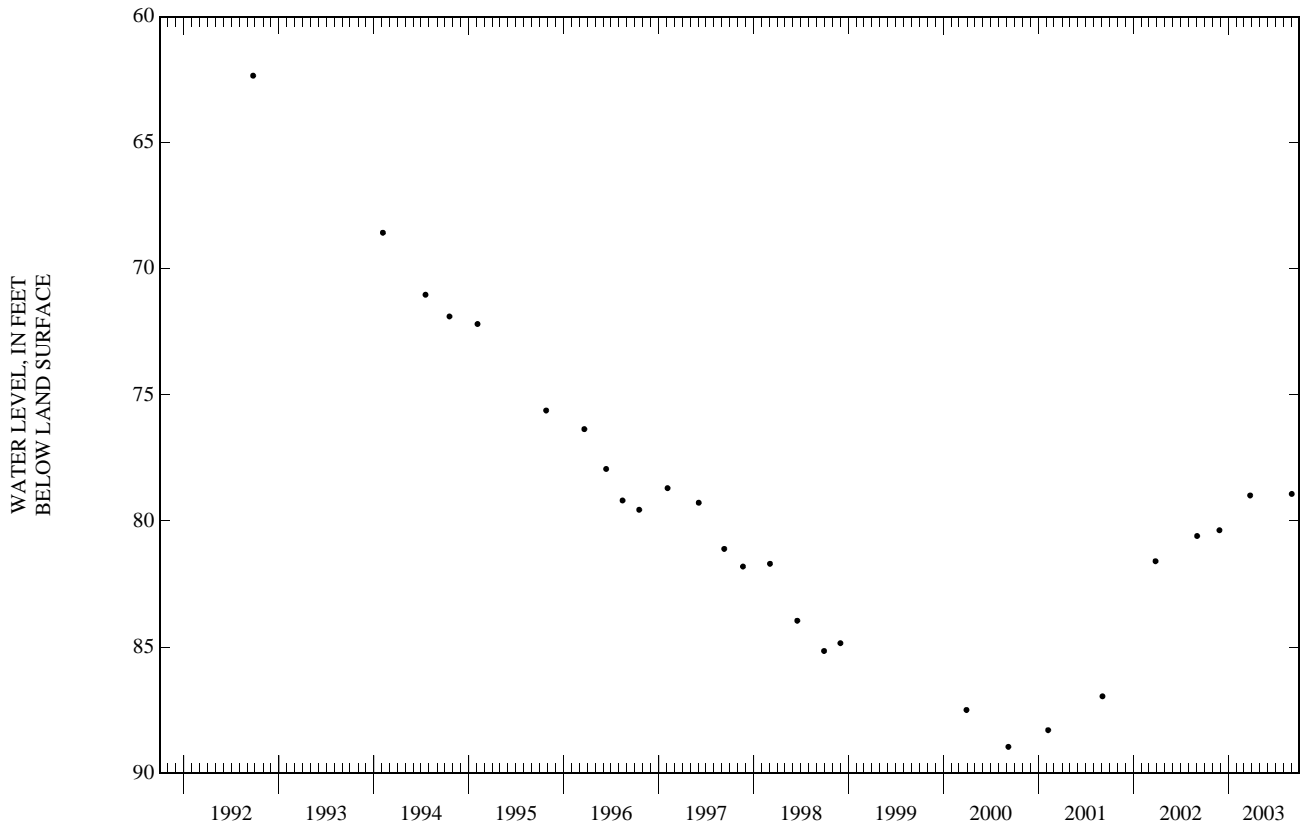
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 62.34 ft below land-surface datum, Sept. 23, 1992; lowest water level measured, 88.96 ft below land-surface datum, Sept. 6, 2000.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	80.37	MAR 25	78.99	SEP 01	78.93



BLADEN COUNTY—Continued

345037078501807. County number, BL-086; E.I. du Pont de Nemours observation well P-5.

LOCATION.--Lat 34°50'40", long 78°50'12", Hydrologic Unit 03030005, at E.I. du Pont de Nemours and Company, Inc., Fayetteville Works plant, 1.1 mi east of State Highway 87. Owner: E.I. du Pont de Nemours and Company, Inc.

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 330 ft, diameter 4 in., screened interval from 325 to 330 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 147.3 ft above NGVD of 1929. Measuring point: Top of 4-inch casing, 2.35 ft above land-surface datum.

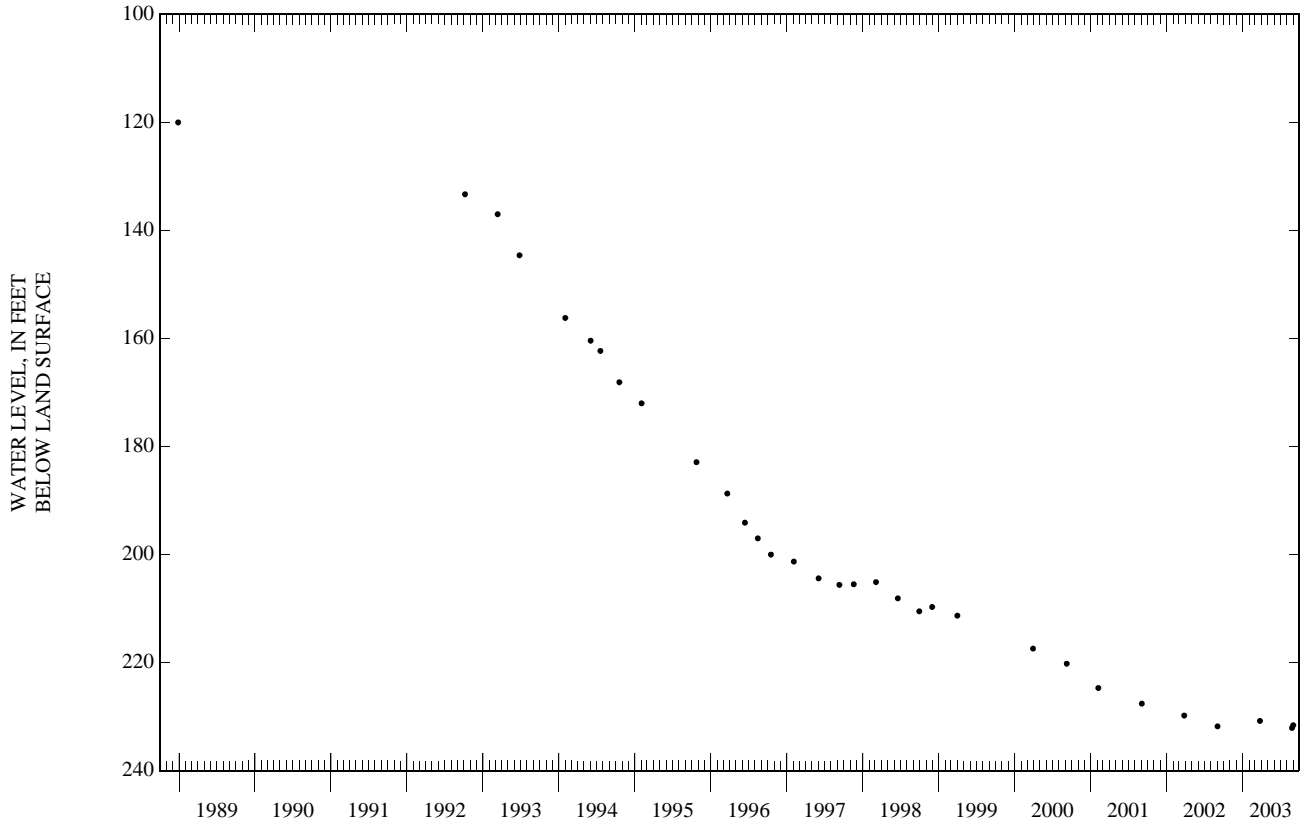
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--December 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 120.0 ft below land-surface datum, Dec. 27, 1988; lowest water level measured, 232.1 ft below land-surface datum, Aug. 26, 2003.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 25	230.8	AUG 26	232.1	SEP 01	231.6



GROUND-WATER LEVELS
BLADEN COUNTY—Continued

343908078432003. County number, BL-094; Dublin well 3.

LOCATION.--Lat 34°39'06", long 78°43'27", Hydrologic Unit 03030005, 0.4 mi southeast of Dublin on Secondary Road 1003. Owner: Town of Dublin.

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 460 ft (reported by owner), screened at various intervals between 390 and 430 ft (reported by driller).

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 144 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 1.5-inch vent pipe in pump pedestal, 1.55 ft above land-surface datum.

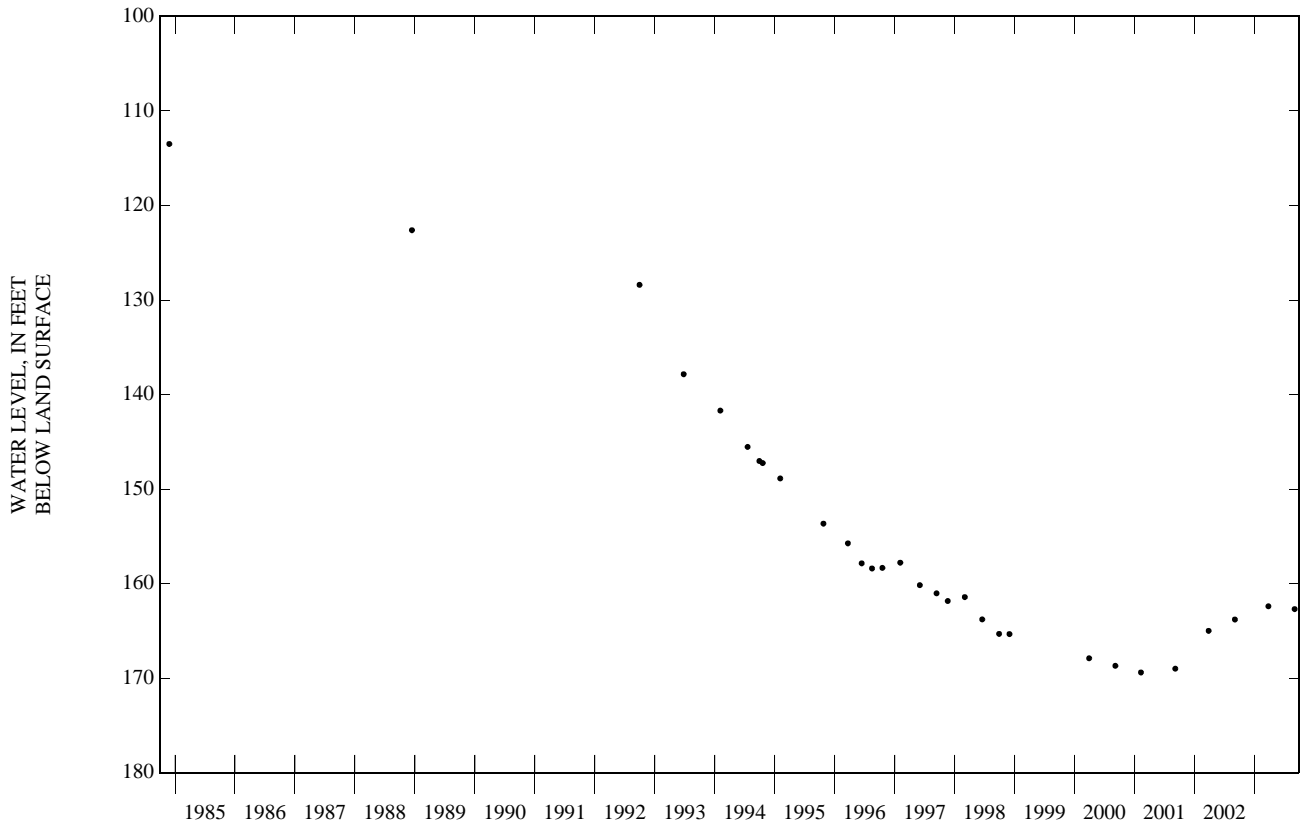
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--November 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 113.5 ft below land-surface datum, Nov. 26, 1984 (reported by driller); lowest water level measured, 169.4 ft below land-surface datum, Feb. 8, 2001.

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

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 26	162.4	SEP 02	162.7



BLADEN COUNTY—Continued

343027078451902. County number, BL-100; DENR Bladenboro Research Station well Z41u2.

LOCATION.--Lat 34°30'25", long 78°45'16", Hydrologic Unit 03040206, 3 mi southeast of Bladenboro, south of State Highway 211 on Secondary Road 1172. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 480 ft, diameter 4 in. to 147 ft, diameter 2.5 in. from 147 to 480 ft, screened interval from 470 to 480 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 106 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 4-inch casing, 1.73 ft above land-surface datum (since December 2000).

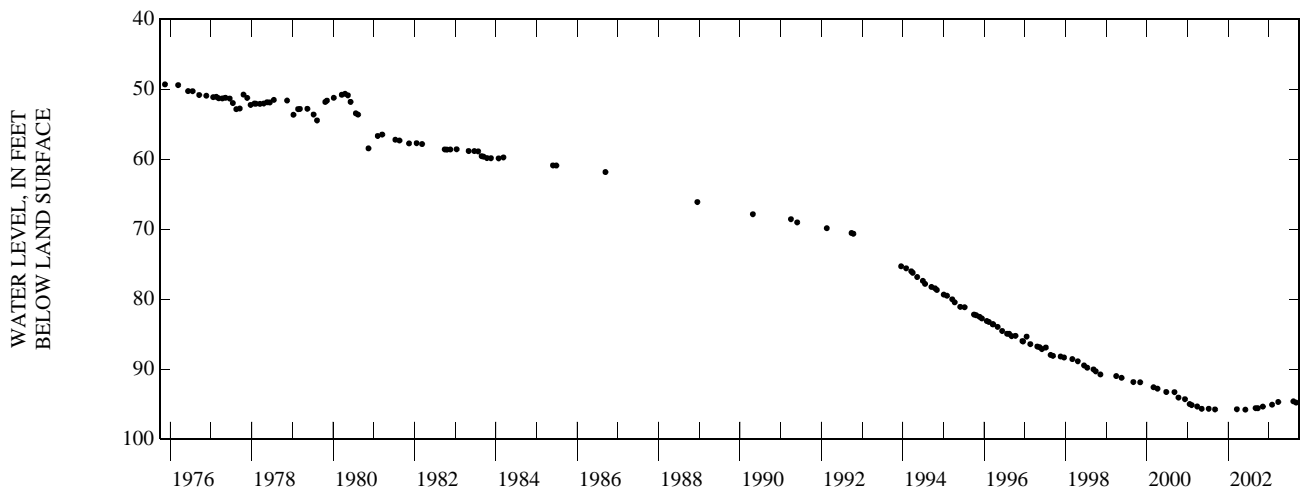
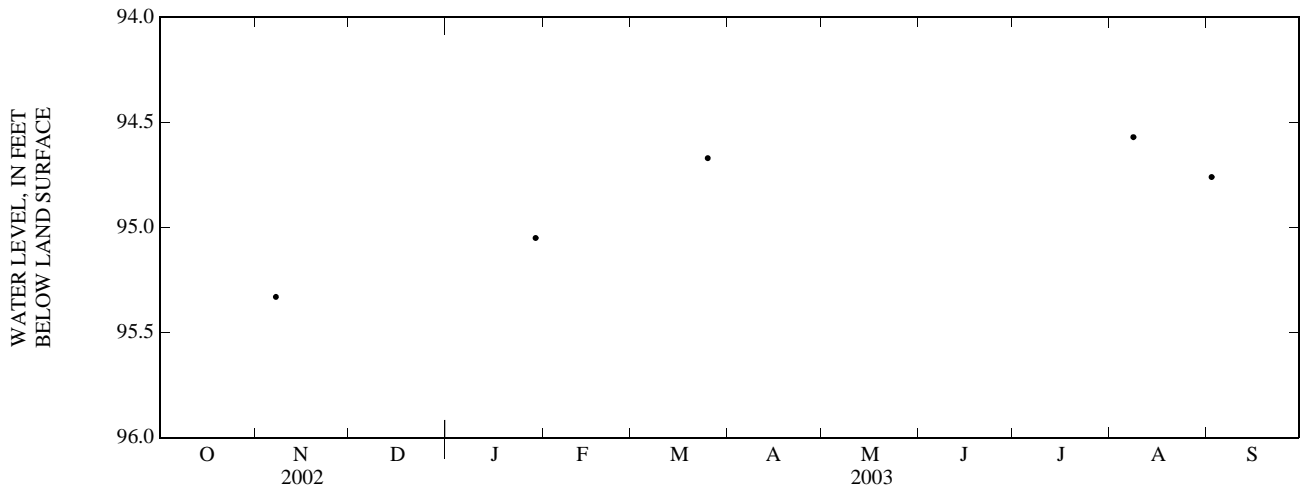
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--November 1975 to current year. Records from November 1975 to September 1986 are from the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 49.32 ft below land-surface datum, Nov. 14, 1975; lowest water level measured, 95.76 ft below land-surface datum, June 3, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 07	95.33	JAN 29	95.05	MAR 25	94.67	AUG 08	94.57	SEP 02	94.76



GROUND-WATER LEVELS
 BLADEN COUNTY—Continued

343726078360201. County number, BL-121; Elizabethtown well 1.

LOCATION.--Lat 34°37'27", long 78°36'01", Hydrologic Unit 03030005, 0.4 mi east of U.S. Highway 701 on East Swanzy Street. Owner: Town of Elizabethtown.

AQUIFER.--Black Creek, upper Cape Fear, and lower Cape Fear aquifers of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 495 ft (reported by driller), diameter 10 in., screened at various intervals between 149 and 485 ft (reported by driller).

INSTRUMENTATION.--Measured periodically with steel tape.

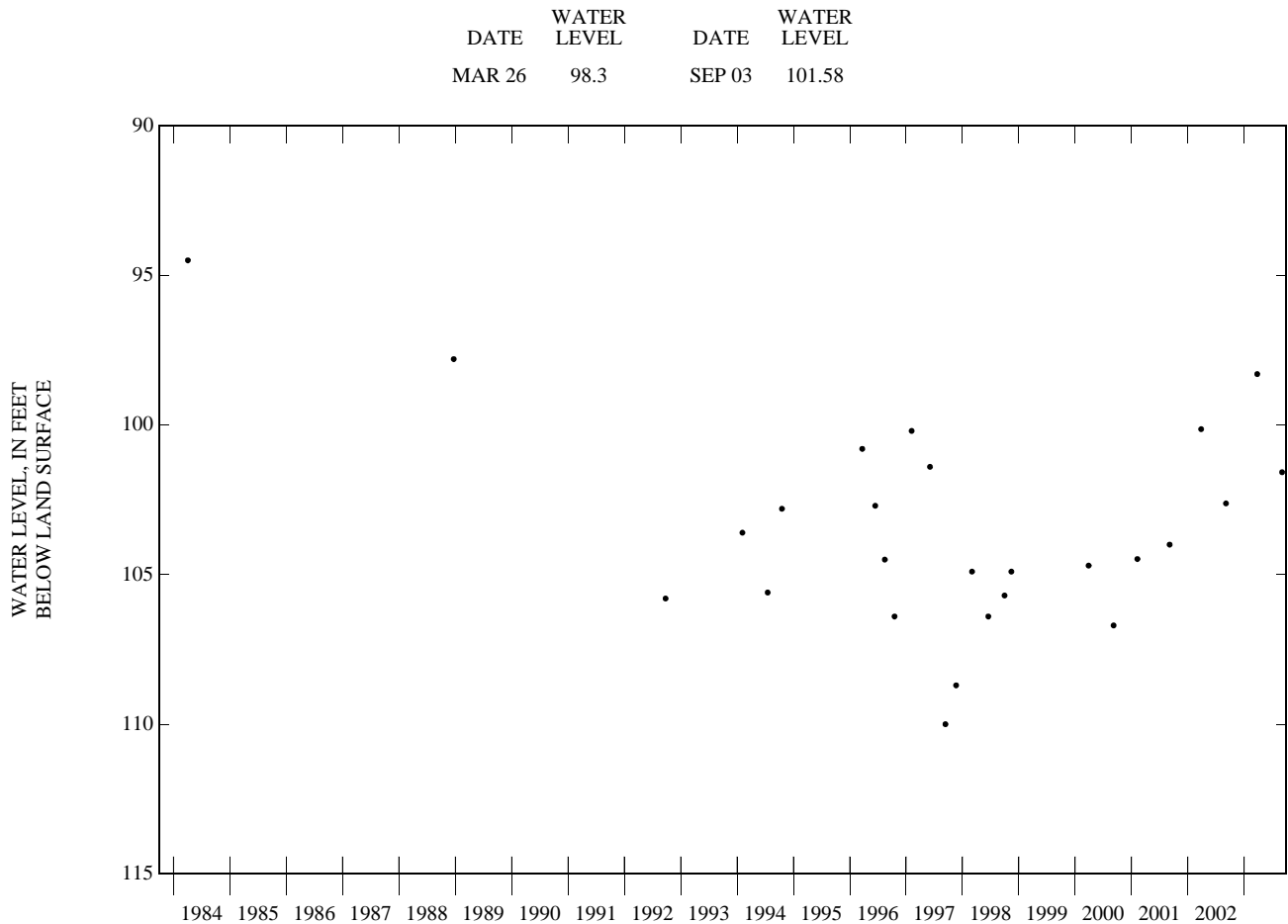
DATUM.--Land-surface datum is 120 ft above NGVD of 1929 (from topographic map). Measuring point: One-inch hole in base of pump mount, 1.2 ft above land-surface datum.

REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--April 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 94.5 ft below land-surface datum, Apr. 3, 1984 (reported by driller); lowest water level measured, 110.0 ft below land-surface datum, Sept. 12, 1997.

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



BLADEN COUNTY—Continued

343900078383205. County number, BL-131.

LOCATION.--Lat 34°39'01", long 78°38'35", Hydrologic Unit 03030005, north of Elizabethtown on State Highways 41 and 87 at Peanut Processors, Inc. Owner: Peanut Processors, Inc.

AQUIFER.--Black Creek, upper Cape Fear, and lower Cape Fear aquifers of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused supply well, depth 482 ft (reported), screened at various intervals between 200 and 482 ft (reported).

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 137.7 ft above NGVD of 1929. Measuring point: Top of well access pipe in pump pedestal, 2.8 ft above land-surface datum.

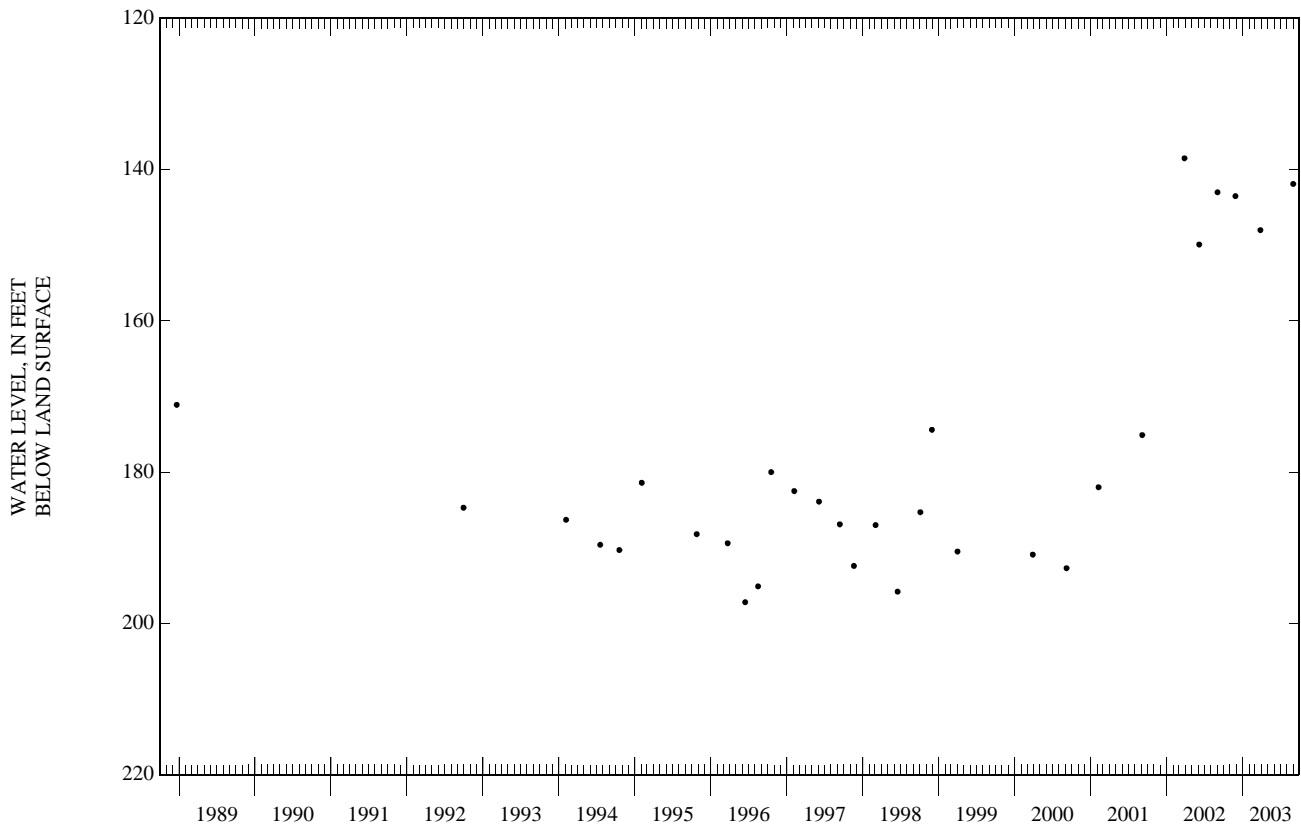
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--December 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 138.5 ft below land-surface datum, Mar. 27, 2002; lowest water level measured, 197.2 ft below land-surface datum, June 14, 1996.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	143.5	MAR 27	148.0	SEP 01	141.9



GROUND-WATER LEVELS
BLADEN COUNTY—Continued

344441078482402. County number, BL-142.

LOCATION.--Lat 34°44'43", long 78°48'23", Hydrologic Unit 03040203, 1 mi northwest of Tar Heel on State Highway 87 at Smithfield Packing Co., Inc., Tar Heel Division. Owner: Smithfield Packing Co., Inc.

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 375 ft, diameter 2 in., screened intervals from 210 to 220 ft, 245 to 250 ft, 315 to 320 ft, 345 to 350 ft, and 370 to 375 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 130 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 6-inch steel protective casing, 2.3 ft above land-surface datum.

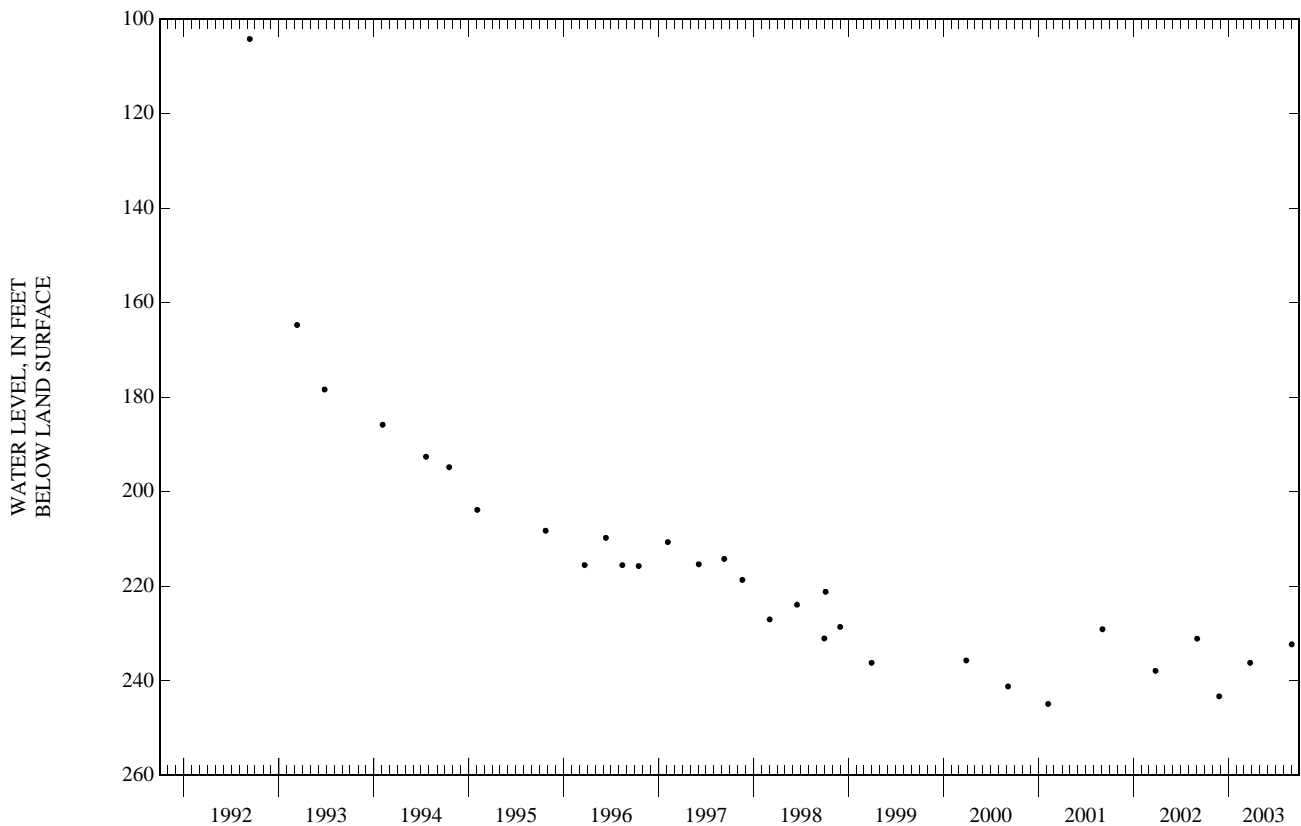
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 104.23 ft below land-surface datum, Sept. 10, 1992; lowest water level measured, 244.9 ft below land-surface datum, Feb. 6, 2001.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 26	243.3	MAR 25	236.2	SEP 01	232.3



BLADEN COUNTY—Continued

344434078423201. County number, BL-147; Bladen County Water District White Oak well 1.

LOCATION.--Lat 34°44'36", long 78°42'30", Hydrologic Unit 03030005, in White Oak, 0.3 mi south of Secondary Road 1318 on State Highway 53. Owner: Bladen County Water District.

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused supply well, depth 311 ft, diameter 6 in., screened intervals from 290 to 295 ft and 306 to 311 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 60 ft above NGVD of 1929 (from topographic map). Measuring point: Hole in top of sanitary seal, 0.8 ft above land-surface datum.

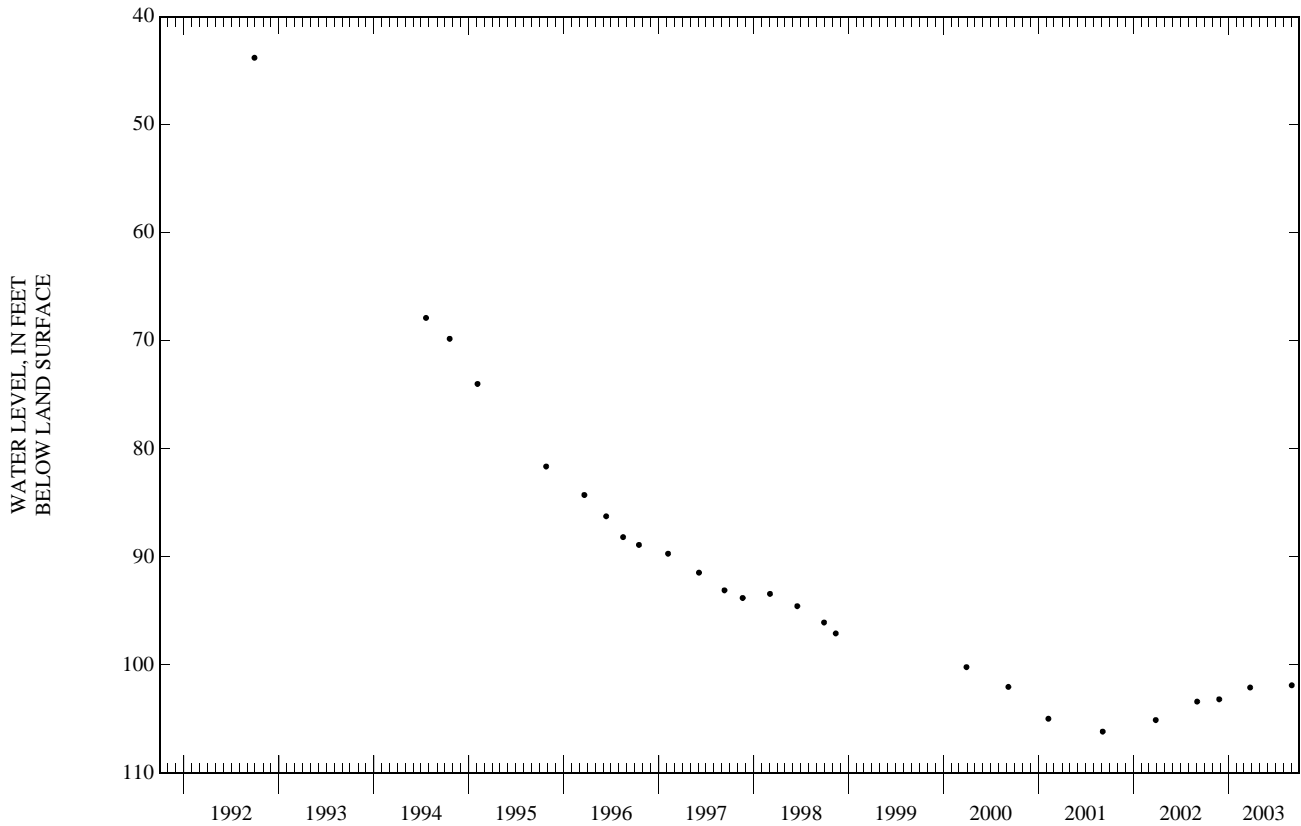
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 43.80 ft below land-surface datum, Sept. 28, 1992; lowest water level measured, 106.17 ft below land-surface datum, Sept. 4, 2001.

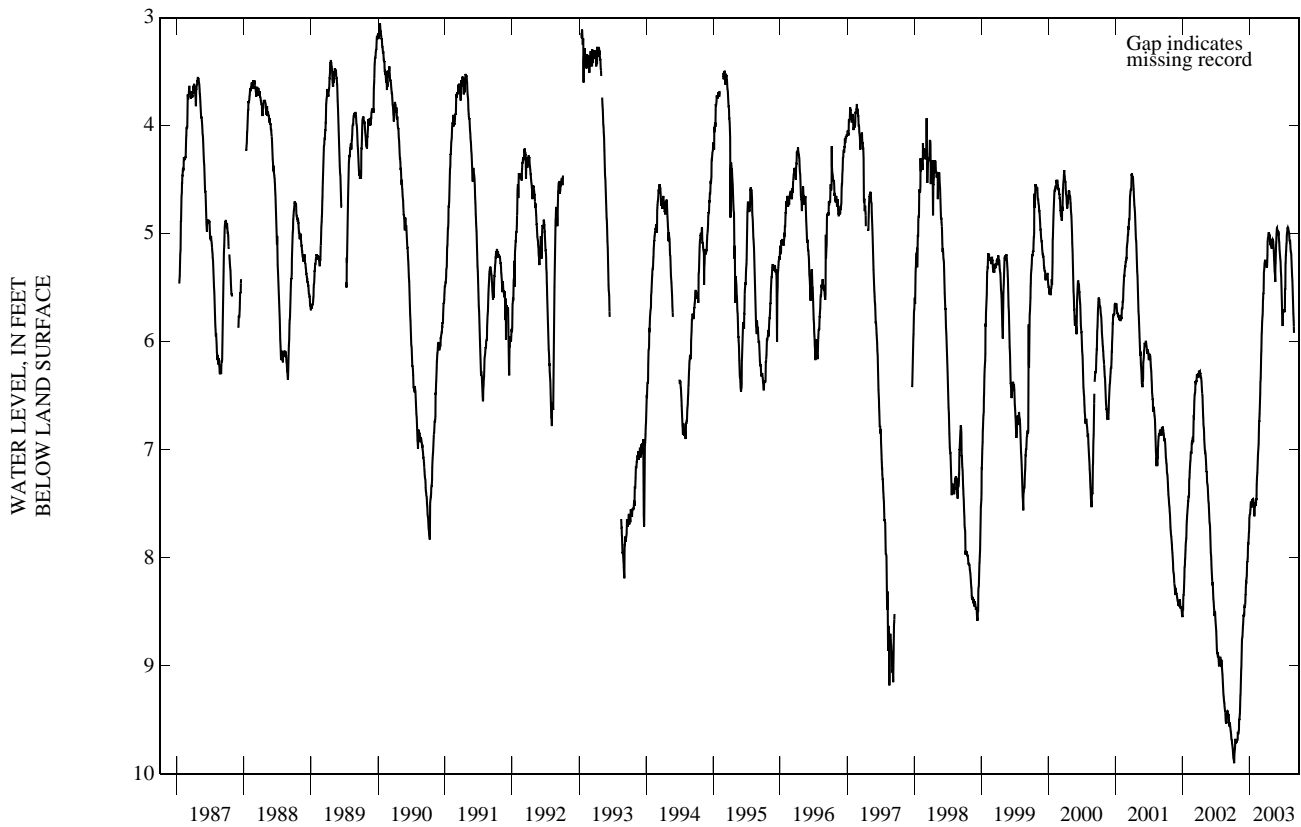
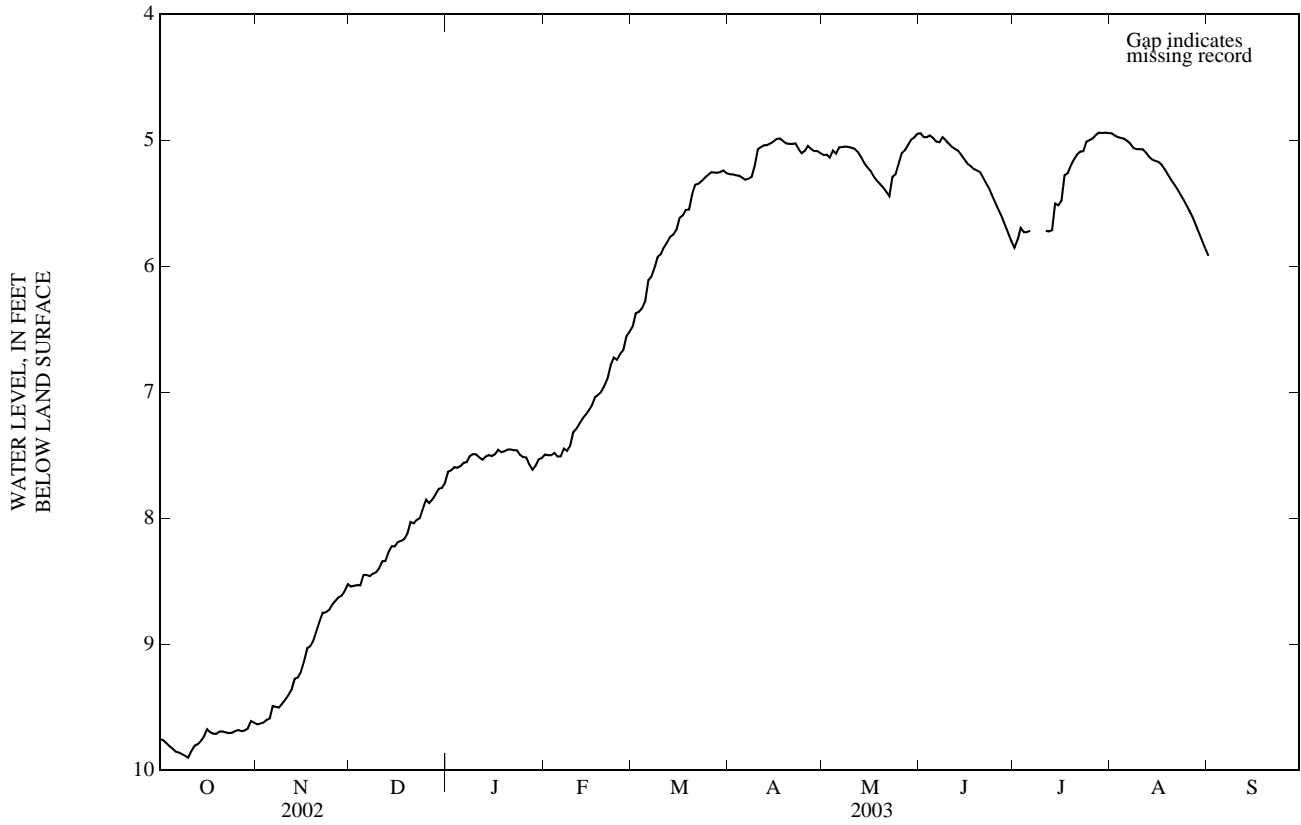
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 26	103.18	MAR 25	102.09	SEP 01	101.88



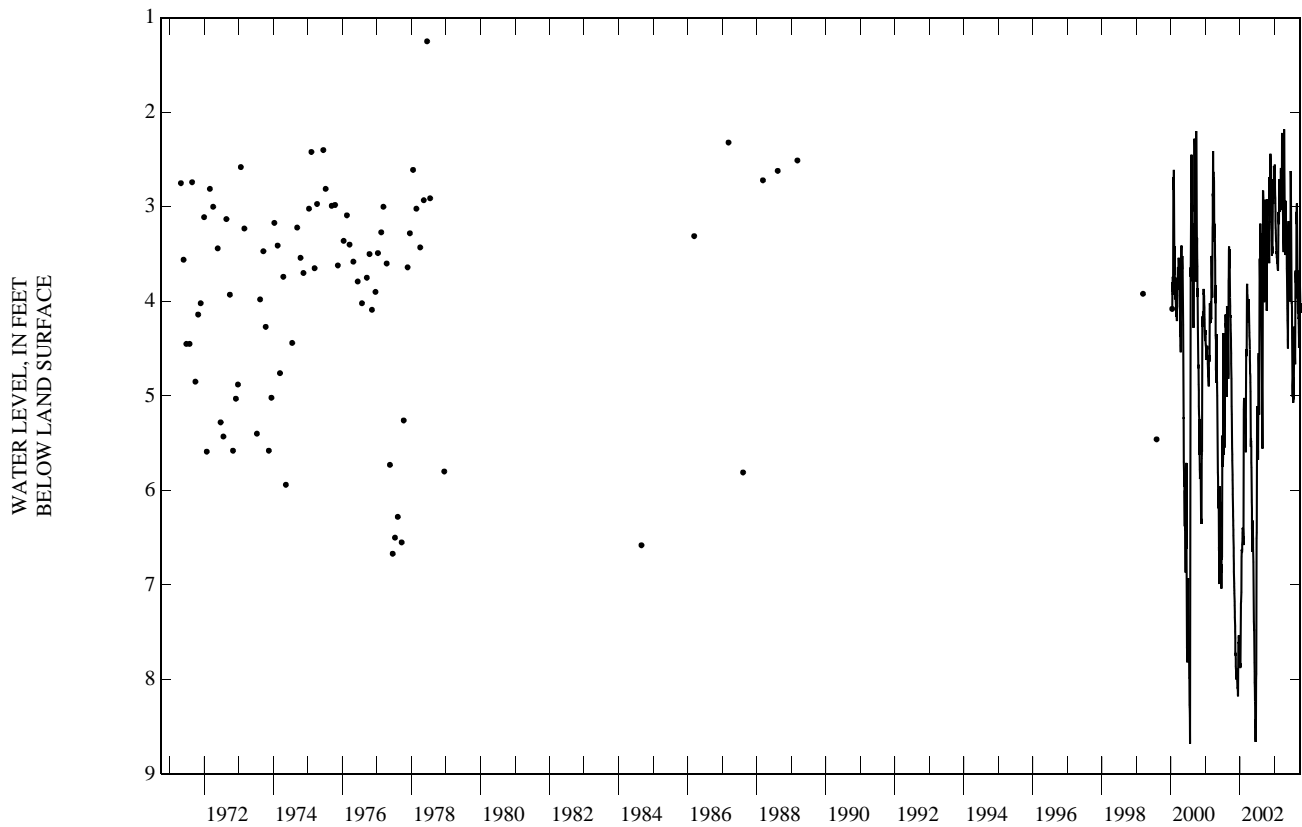
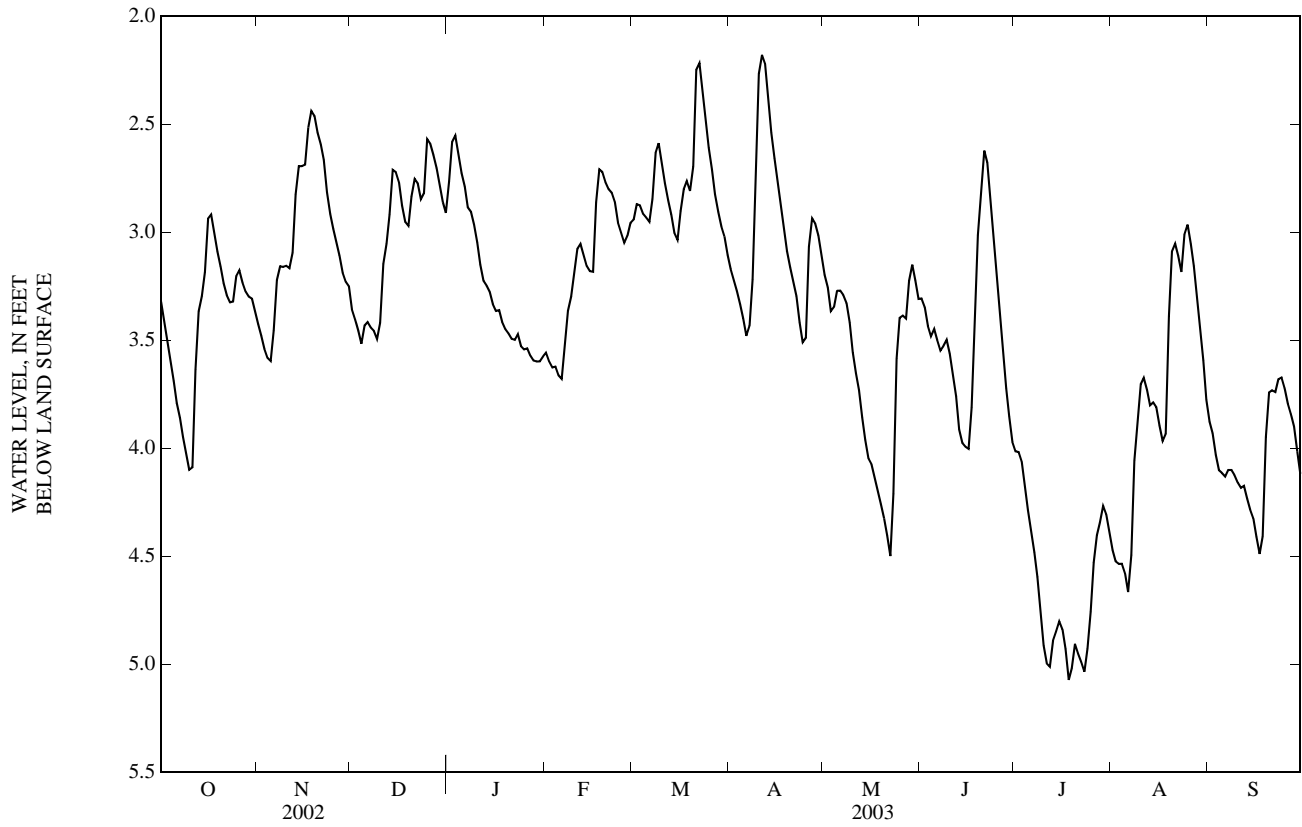
GROUND-WATER LEVELS
BLADEN COUNTY—Continued

343027078451903. Local number, NC-178; DENR Bladenboro Research Station well Z41u3; County number, BL-101.



GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

340416078084201. County number, BR-099; DENR Bolivia Research Station well FF33d1.



GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335334078352102. County number, BR-116; DENR Calabash Research Station well HH39j3.

LOCATION.--Lat 33°53'34.32", long 78°35'21.34", Hydrologic Unit 03040207, .75 mi west of Country Club Drive on Carolina Shores Drive. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 660 ft, diameter 2.5 in.; cased to 644 ft and from 654 to 660 ft, screened interval from 644 to 654 ft.

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

DATUM.--Land-surface datum is 47.59 ft above NGVD of 1929. Measuring point: Top of casing, 2.79 ft above land-surface datum.

REMARKS.--Well is part of Brunswick County ground-water study.

PERIOD OF RECORD.--May 1973 to current year. Continuous record began October 1999.

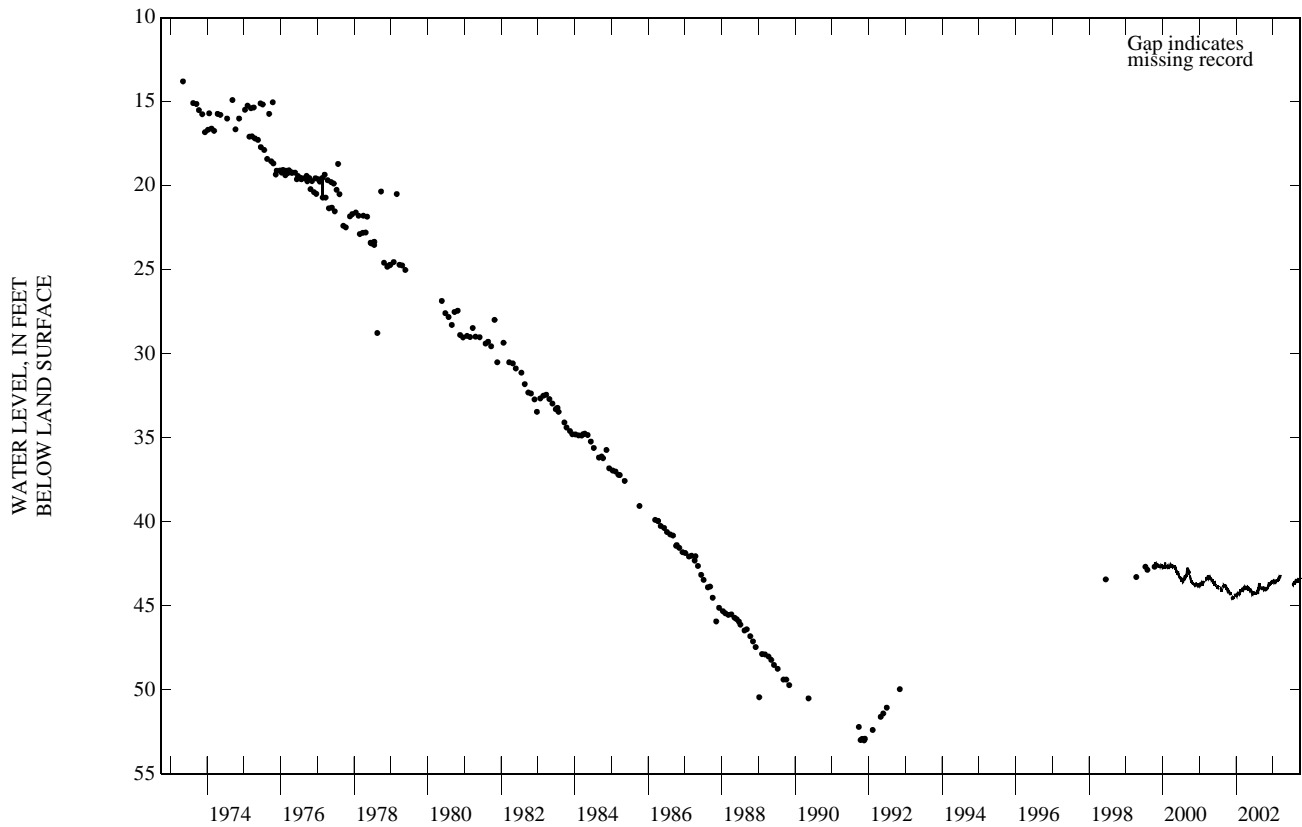
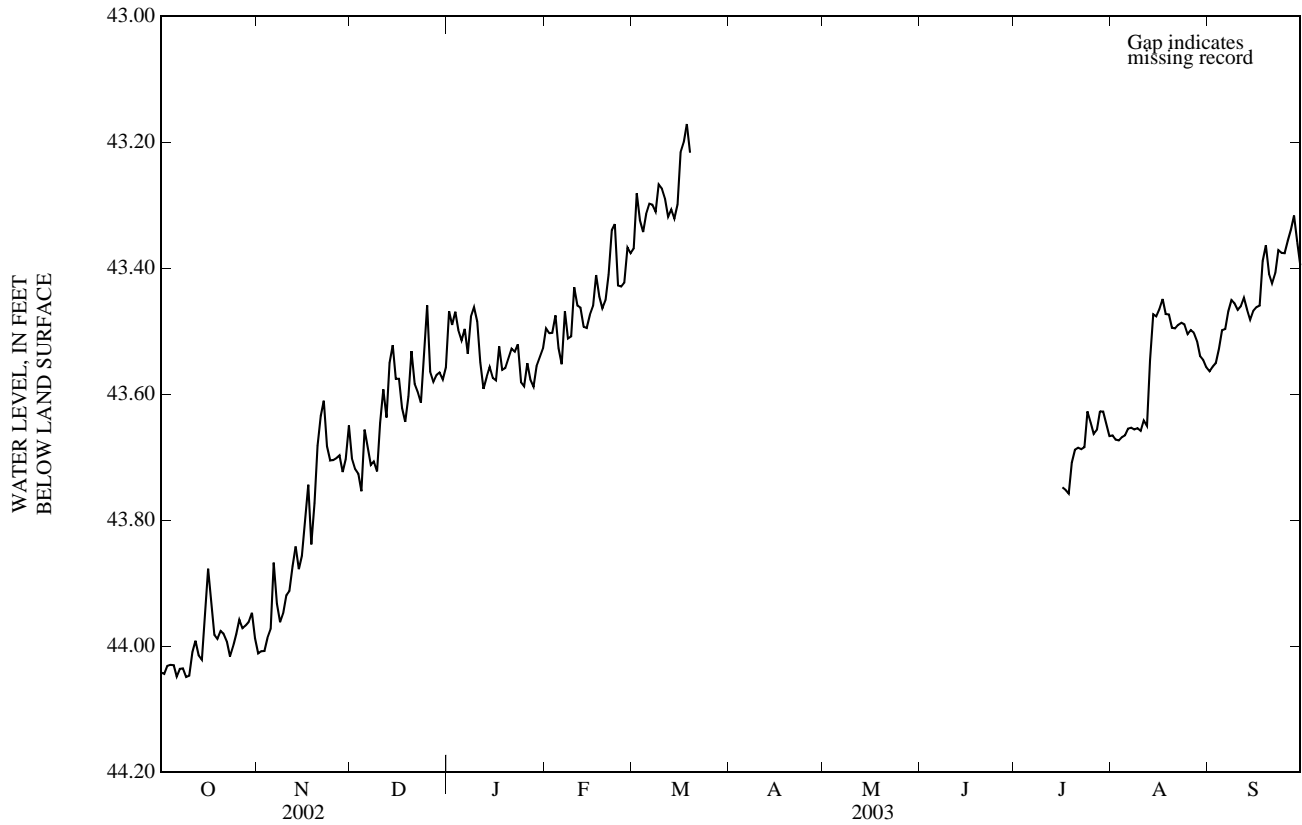
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.79 ft below land-surface datum, May 7, 1973; lowest water level recorded, 53.00 ft below land-surface datum, Nov. 11, 1991.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44.04	44.01	43.70	43.47	43.50	43.37	---	---	---	---	43.67	43.56
2	44.04	44.01	43.72	43.49	43.50	43.28	---	---	---	---	43.67	43.56
3	44.03	44.01	43.73	43.47	43.50	43.32	---	---	---	---	43.67	43.55
4	44.03	43.99	43.75	43.50	43.48	43.34	---	---	---	---	43.67	43.53
5	44.03	43.97	43.66	43.51	43.53	43.31	---	---	---	---	43.67	43.50
6	44.05	43.87	43.68	43.50	43.55	43.30	---	---	---	---	43.65	43.50
7	44.04	43.93	43.71	43.54	43.47	43.30	---	---	---	---	43.65	43.47
8	44.03	43.96	43.71	43.48	43.51	43.31	---	---	---	---	43.66	43.45
9	44.05	43.95	43.72	43.46	43.51	43.27	---	---	---	---	43.65	43.46
10	44.05	43.92	43.65	43.48	43.43	43.27	---	---	---	---	43.66	43.47
11	44.01	43.91	43.59	43.55	43.46	43.29	---	---	---	---	43.64	43.46
12	43.99	43.87	43.64	43.59	43.46	43.32	---	---	---	---	43.65	43.45
13	44.01	43.84	43.55	43.57	43.49	43.31	---	---	---	---	43.55	43.47
14	44.02	43.88	43.52	43.56	43.50	43.32	---	---	---	---	43.47	43.48
15	43.95	43.86	43.58	43.57	43.47	43.30	---	---	---	---	43.48	43.47
16	43.88	43.80	43.58	43.58	43.46	43.22	---	---	---	43.75	43.46	43.46
17	43.93	43.74	43.62	43.52	43.41	43.20	---	---	---	43.75	43.45	43.46
18	43.98	43.84	43.64	43.56	43.45	43.17	---	---	---	43.76	43.47	43.39
19	43.99	43.77	43.60	43.56	43.46	43.22	---	---	---	43.71	43.47	43.36
20	43.98	43.68	43.53	43.54	43.45	---	---	---	---	43.69	43.49	43.41
21	43.98	43.63	43.58	43.53	43.41	---	---	---	---	43.69	43.50	43.42
22	43.99	43.61	43.60	43.53	43.34	---	---	---	---	43.69	43.49	43.41
23	44.02	43.68	43.61	43.52	43.33	---	---	---	---	43.68	43.49	43.37
24	44.00	43.70	43.54	43.58	43.43	---	---	---	---	43.63	43.49	43.38
25	43.98	43.70	43.46	43.59	43.43	---	---	---	---	43.65	43.50	43.38
26	43.96	43.70	43.56	43.55	43.42	---	---	---	---	43.66	43.50	43.36
27	43.97	43.70	43.58	43.58	43.37	---	---	---	---	43.66	43.50	43.34
28	43.97	43.72	43.57	43.59	43.38	---	---	---	---	43.63	43.52	43.32
29	43.96	43.70	43.57	43.56	---	---	---	---	---	43.63	43.54	43.36
30	43.95	43.65	43.58	43.54	---	---	---	---	---	43.65	43.55	43.40
31	43.99	---	43.56	43.53	---	---	---	---	---	43.67	43.56	---
WTR YR	2003	MEAN	43.61	HIGH	43.17	LOW	44.05					

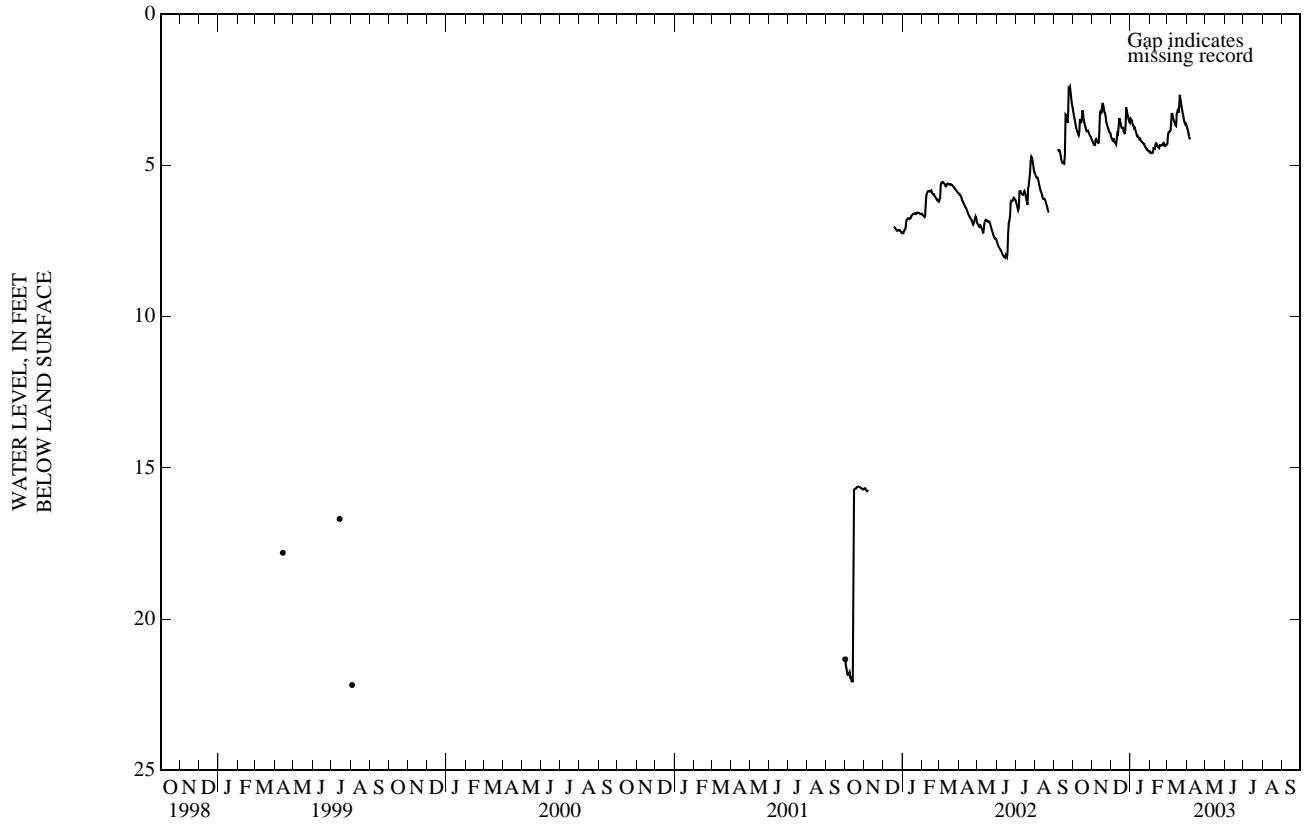
GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335334078352102. County number, BR-116; DENR Calabash Research Station well HH39j3.



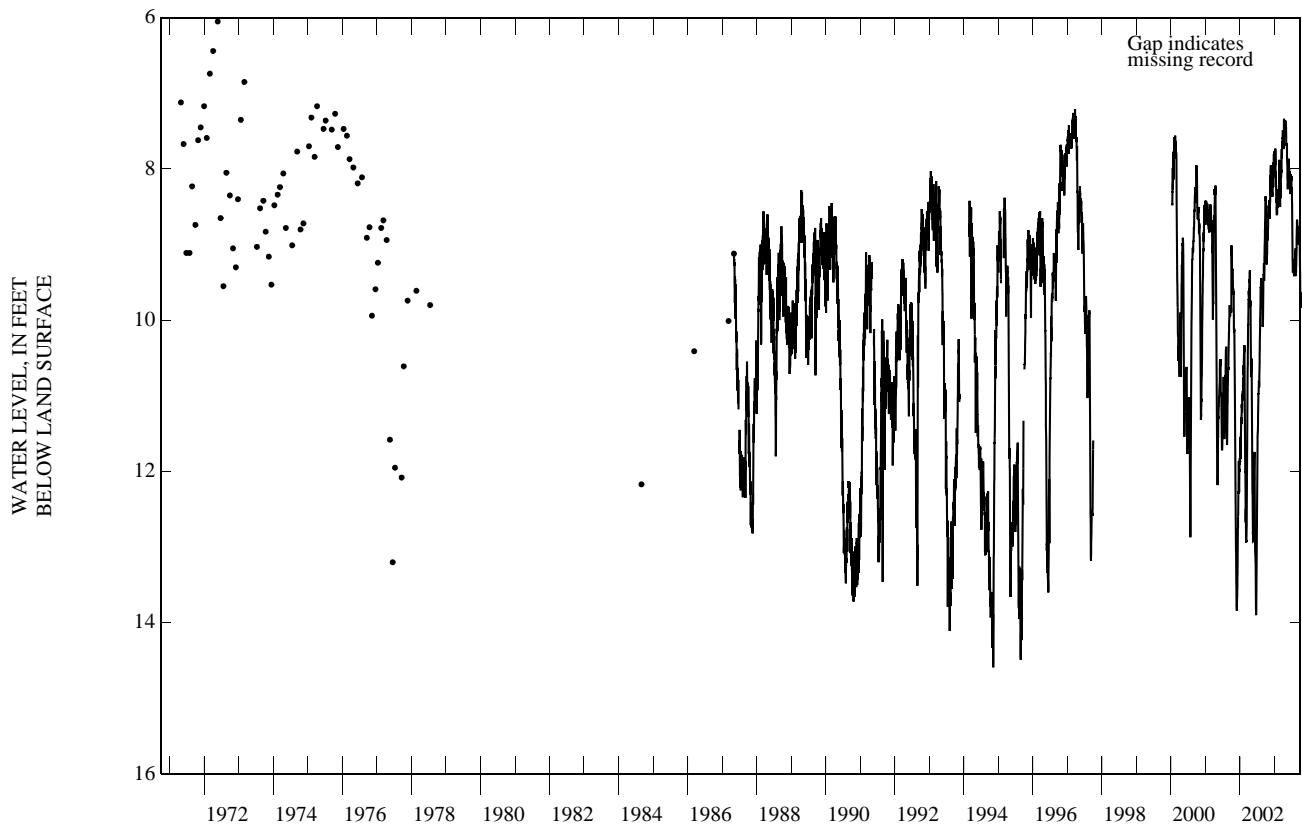
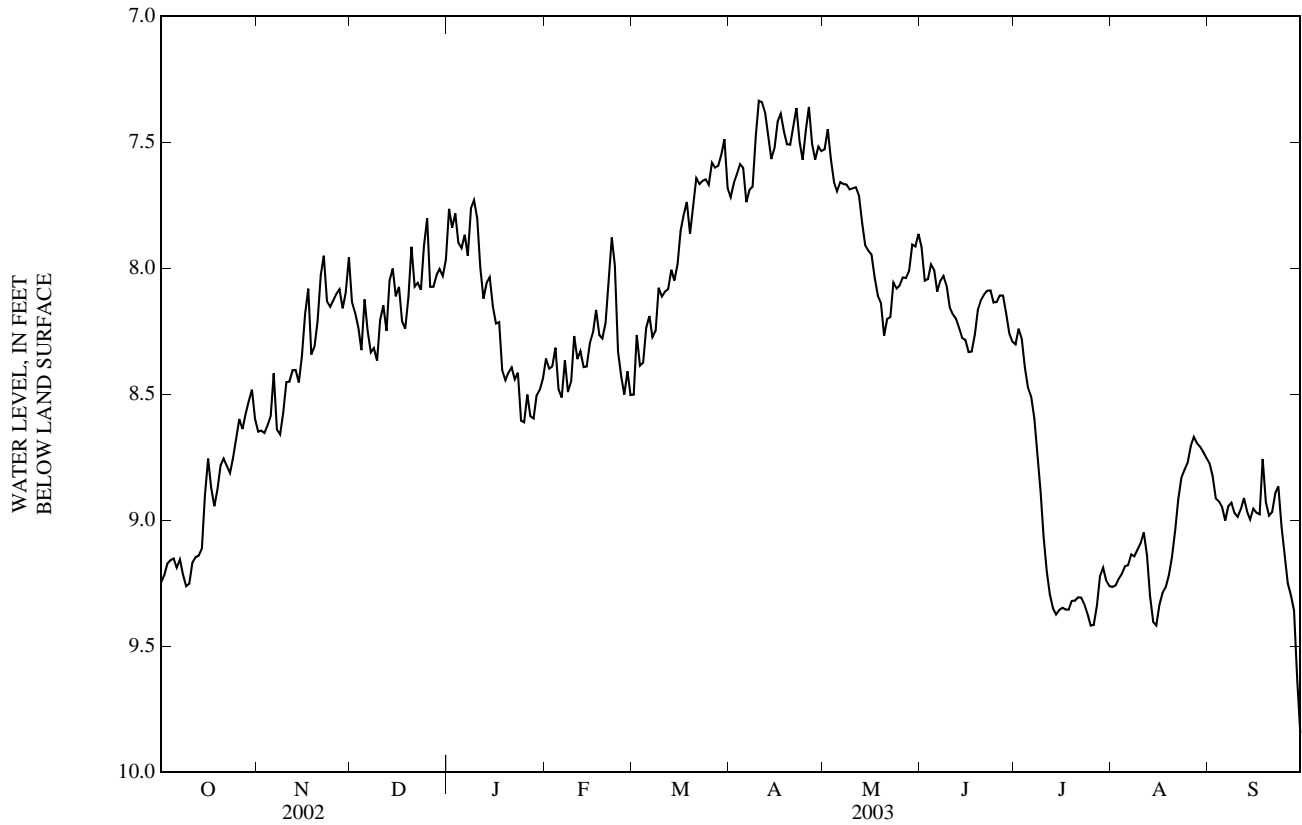
GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335334078352106. Local number, BR-123; DENR Calabash Research Station well HH39j7.



GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

340416078084202. Local number, NC-180; DENR Bolivia Research Station well FF33d2; County number, BR-078.



GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335629078115406. Local number, NC-181; DENR Sunset Harbor Research Station well GG34s6; County number, BR-079.

LOCATION.--Lat 33°56'29.05", long 78°11'56.22", Hydrologic Unit 03040207, 1 mi north of Sunset Harbor, and 4.3 mi south of State Highway 211 on Secondary Road 1112. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Peedee aquifer of Late Cretaceous Age.

WELL CHARACTERISTICS.--Drilled observation well, depth 102 ft, diameter 6 in., cased to 84 ft, open hole from 84 to 102 ft.

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

DATUM.--Land-surface datum is 28.06 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 2.02 ft above land-surface datum.

REMARKS.--Well is part of Brunswick County ground-water study. Water levels affected by localized pumping.

PERIOD OF RECORD.--March 1987 to current year. Records from July 1974 to March 1978 are unpublished and available in the files of the Groundwater Section, DENR.

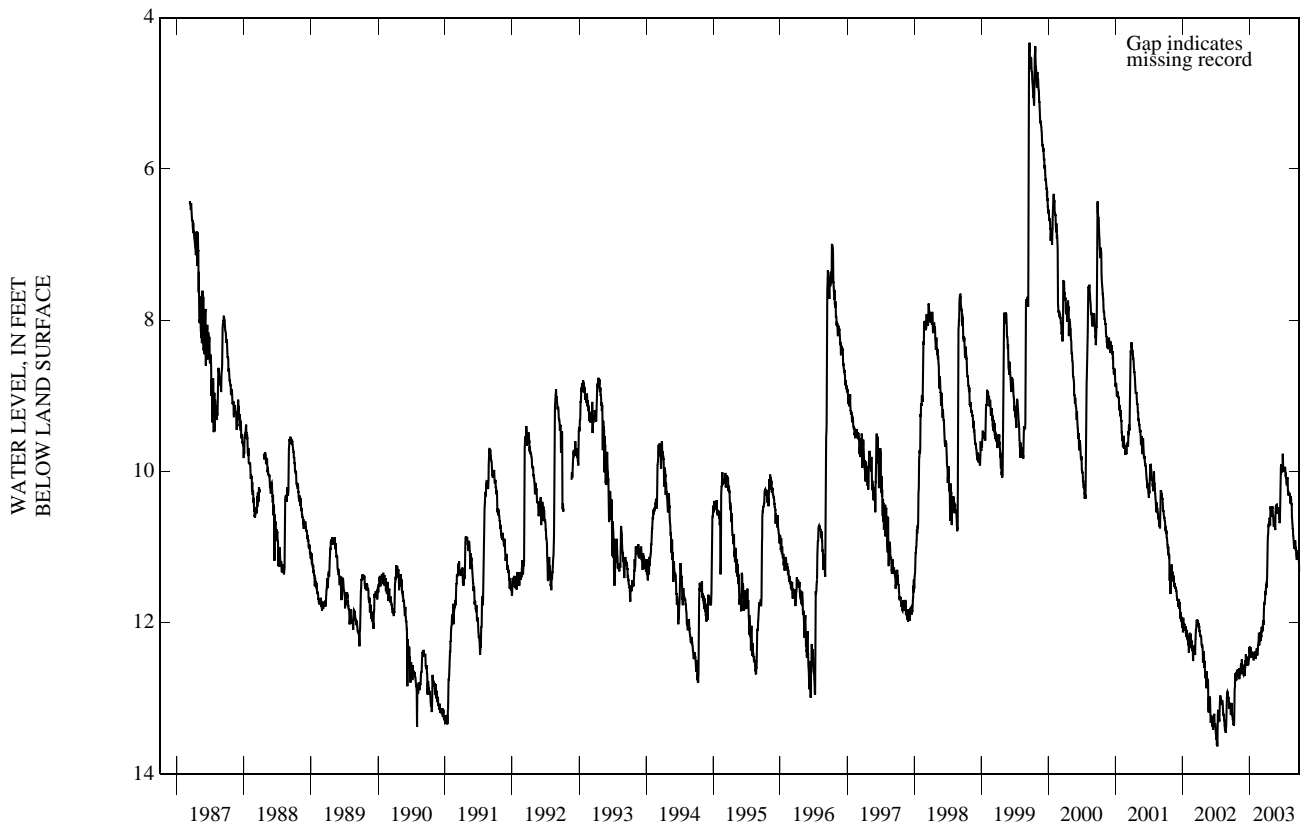
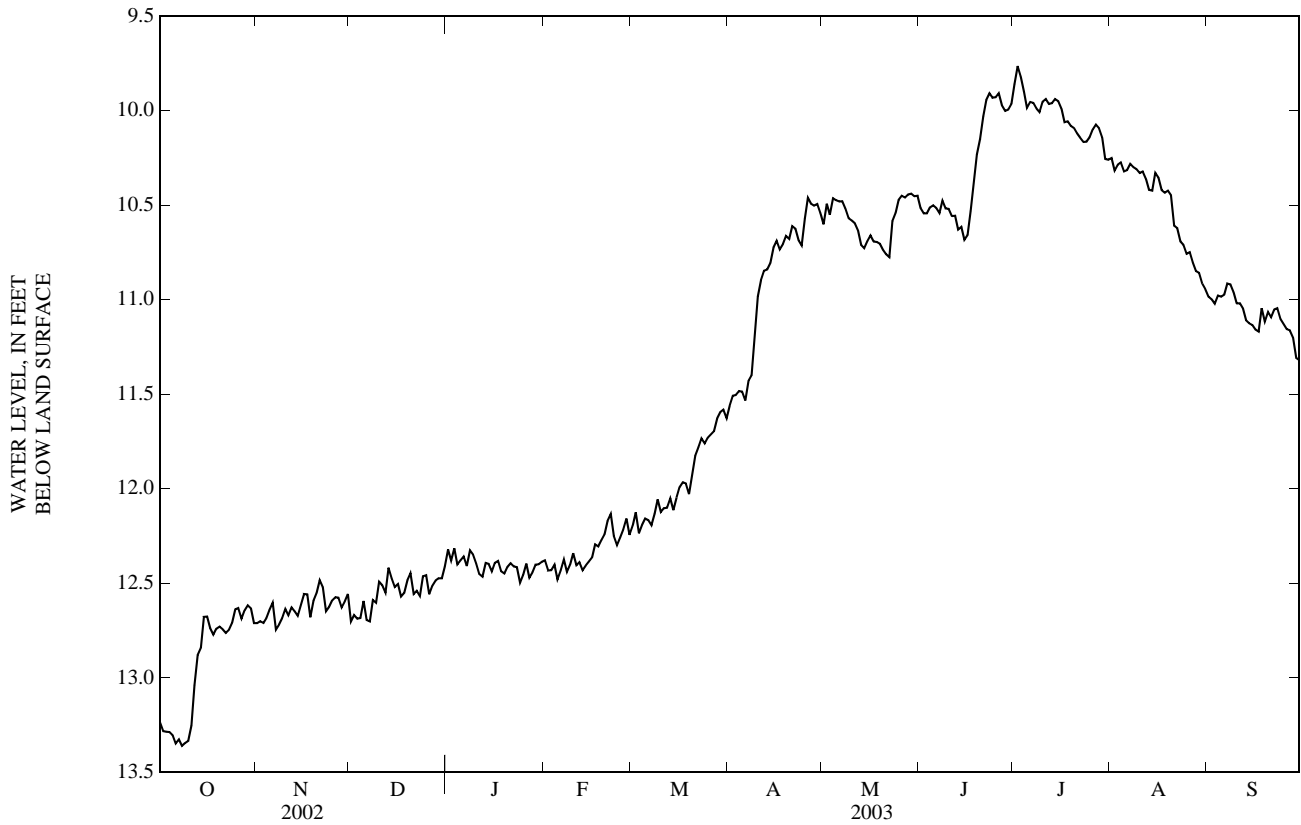
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.24 ft below land-surface datum, Oct. 22, 1999; lowest water level recorded, 14.08 ft below land-surface datum, July 10, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.23	12.71	12.70	12.32	12.38	12.20	11.56	10.60	10.52	9.86	10.25	10.98
2	13.28	12.70	12.67	12.38	12.43	12.13	11.51	10.49	10.54	9.77	10.32	11.00
3	13.29	12.71	12.69	12.32	12.43	12.24	11.50	10.55	10.54	9.82	10.29	11.02
4	13.29	12.68	12.68	12.40	12.40	12.19	11.48	10.46	10.51	9.90	10.27	10.98
5	13.30	12.64	12.59	12.38	12.48	12.16	11.49	10.47	10.50	9.99	10.32	10.98
6	13.35	12.60	12.69	12.36	12.43	12.17	11.53	10.48	10.51	9.96	10.32	10.97
7	13.33	12.75	12.70	12.41	12.37	12.19	11.43	10.48	10.54	9.96	10.28	10.91
8	13.36	12.72	12.59	12.33	12.44	12.13	11.40	10.52	10.48	9.99	10.30	10.92
9	13.34	12.69	12.60	12.35	12.40	12.06	11.18	10.57	10.52	10.01	10.31	10.96
10	13.33	12.64	12.49	12.40	12.34	12.12	10.98	10.58	10.52	9.95	10.33	11.02
11	13.25	12.67	12.51	12.45	12.40	12.10	10.90	10.60	10.56	9.94	10.32	11.02
12	13.04	12.63	12.55	12.47	12.39	12.10	10.85	10.63	10.56	9.96	10.36	11.05
13	12.88	12.65	12.42	12.39	12.43	12.05	10.84	10.71	10.63	9.96	10.42	11.11
14	12.84	12.67	12.47	12.40	12.41	12.11	10.81	10.73	10.62	9.94	10.42	11.12
15	12.68	12.62	12.52	12.44	12.39	12.05	10.72	10.69	10.68	9.95	10.33	11.13
16	12.68	12.56	12.50	12.39	12.36	11.99	10.69	10.66	10.66	9.99	10.35	11.16
17	12.74	12.56	12.57	12.38	12.29	11.97	10.73	10.69	10.53	10.06	10.42	11.17
18	12.77	12.68	12.55	12.44	12.31	11.97	10.71	10.70	10.37	10.06	10.43	11.05
19	12.74	12.59	12.48	12.45	12.27	12.03	10.66	10.70	10.23	10.08	10.42	11.12
20	12.73	12.55	12.45	12.41	12.24	11.92	10.68	10.74	10.15	10.09	10.45	11.07
21	12.74	12.48	12.56	12.39	12.17	11.83	10.61	10.76	10.03	10.12	10.61	11.09
22	12.76	12.52	12.54	12.41	12.13	11.78	10.62	10.78	9.94	10.14	10.62	11.05
23	12.75	12.65	12.57	12.41	12.25	11.73	10.69	10.59	9.91	10.17	10.69	11.05
24	12.71	12.62	12.46	12.50	12.30	11.76	10.71	10.54	9.93	10.16	10.71	11.10
25	12.64	12.59	12.46	12.46	12.26	11.73	10.57	10.47	9.93	10.14	10.76	11.13
26	12.63	12.57	12.56	12.40	12.22	11.71	10.46	10.45	9.91	10.10	10.75	11.16
27	12.69	12.58	12.51	12.47	12.16	11.70	10.49	10.46	9.97	10.07	10.80	11.16
28	12.64	12.63	12.49	12.44	12.24	11.63	10.50	10.44	10.00	10.09	10.85	11.20
29	12.62	12.60	12.47	12.40	---	11.59	10.49	10.44	10.0	10.14	10.86	11.31
30	12.63	12.56	12.47	12.40	---	11.58	10.54	10.45	9.96	10.26	10.92	11.32
31	12.71	---	12.41	12.39	---	11.63	---	10.45	---	10.26	10.95	---
WTR YR	2003	MEAN 11.51	HIGH 9.77	LOW 13.36								

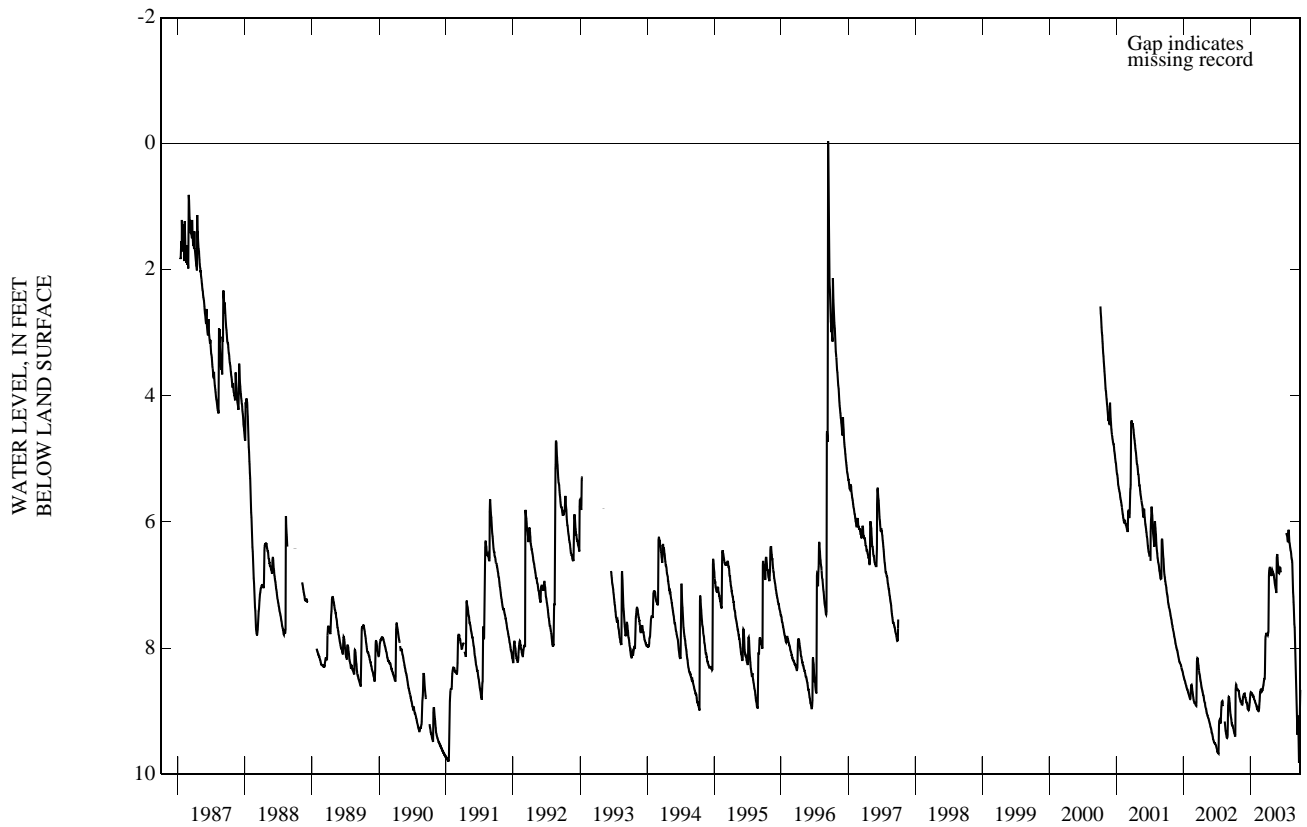
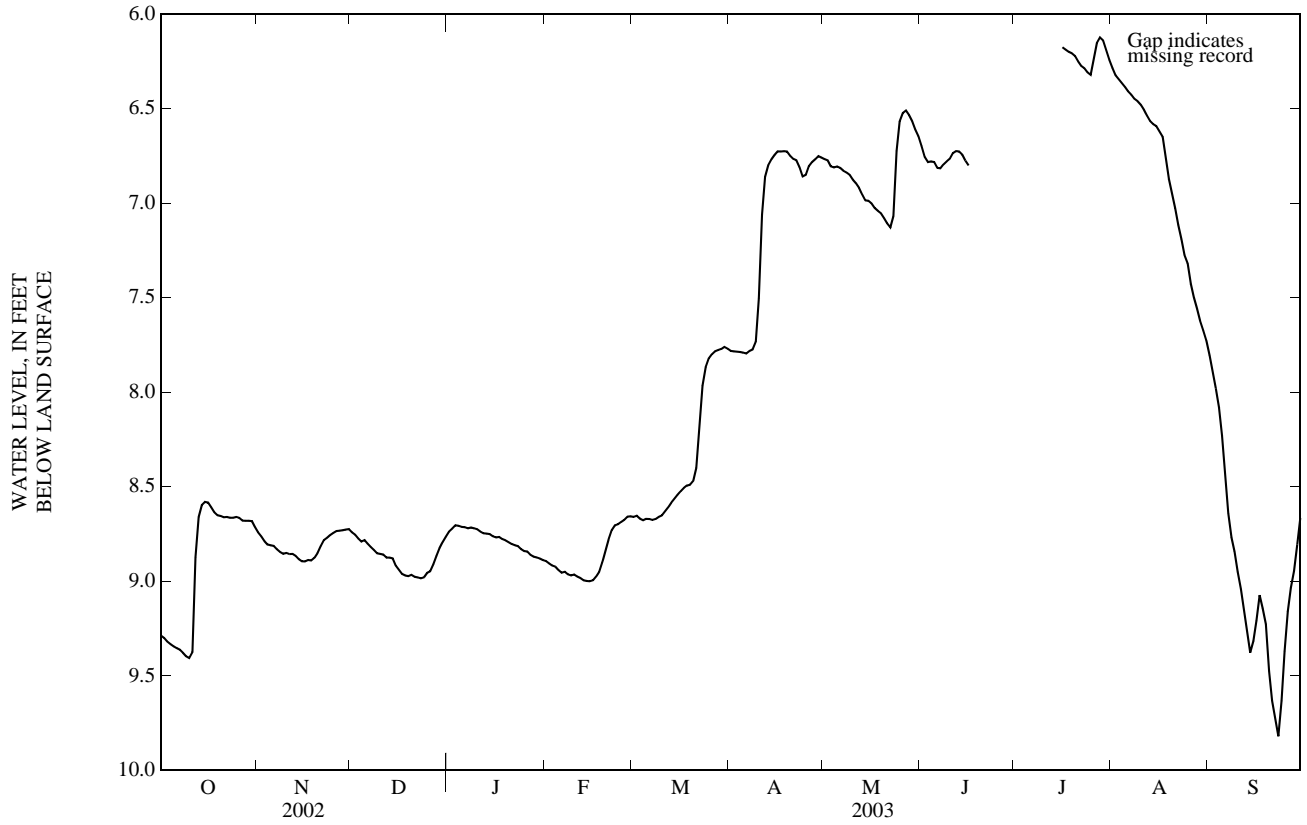
GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335629078115406. Local number, NC-181; DENR Sunset Harbor Research Station well GG34s6; County number, BR-079.



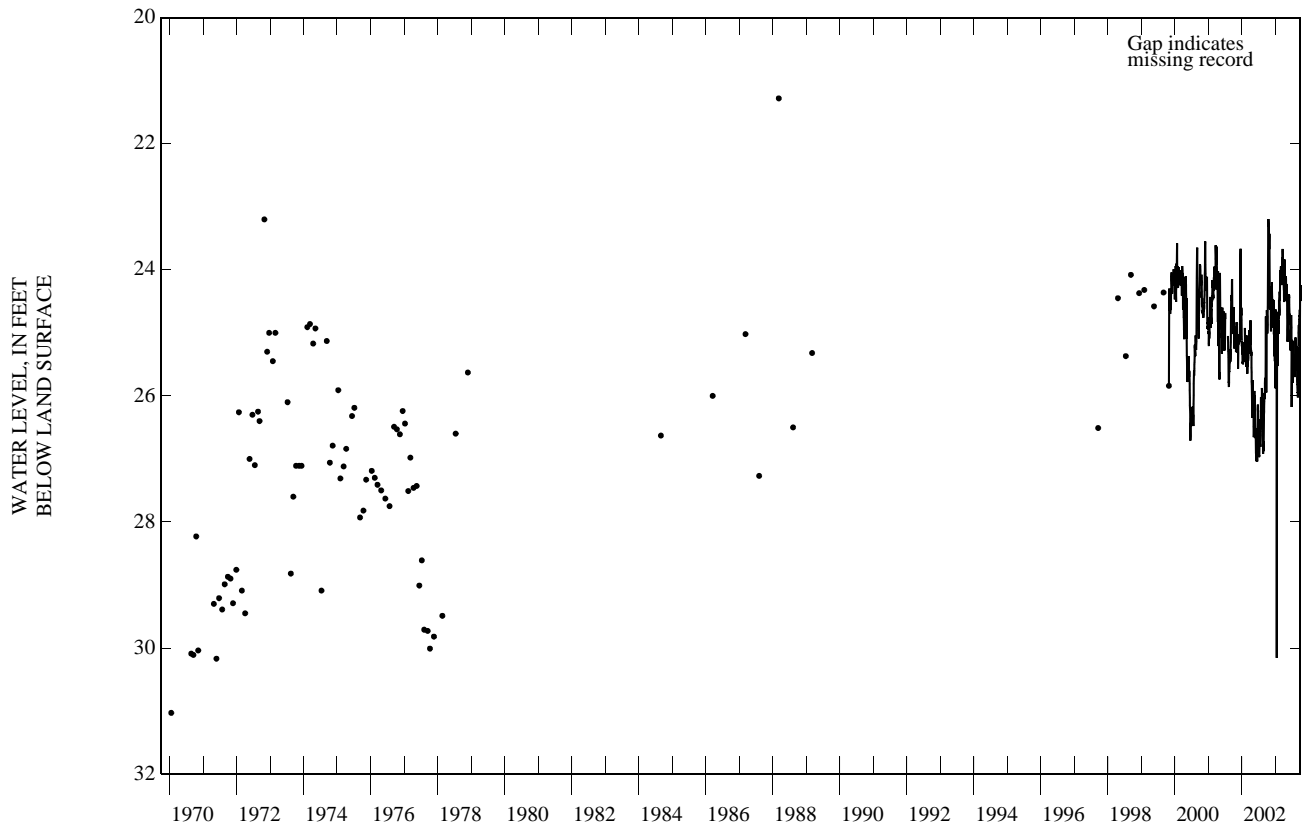
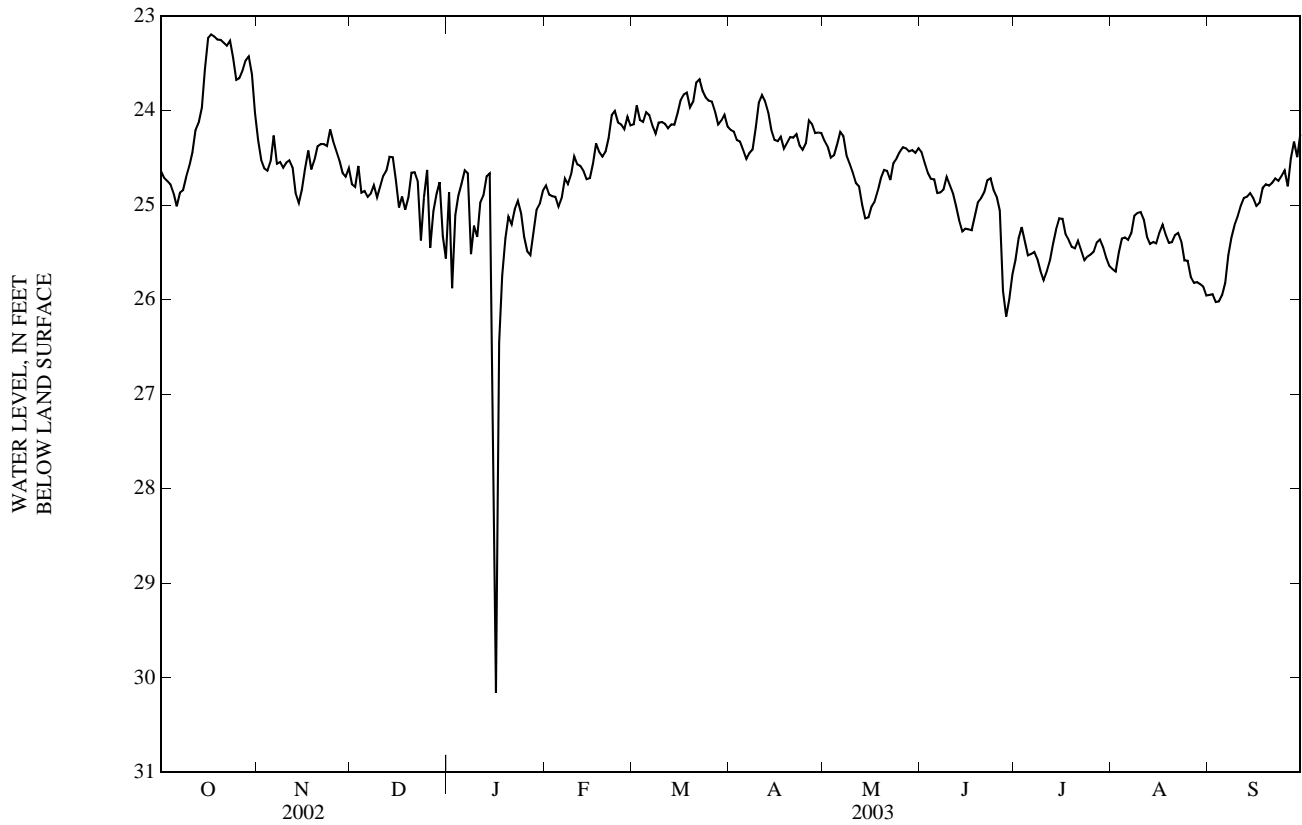
GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335629078115407. Local number, NC-182; DENR Sunset Harbor Research Station well GG34s7; County number, BR-080.



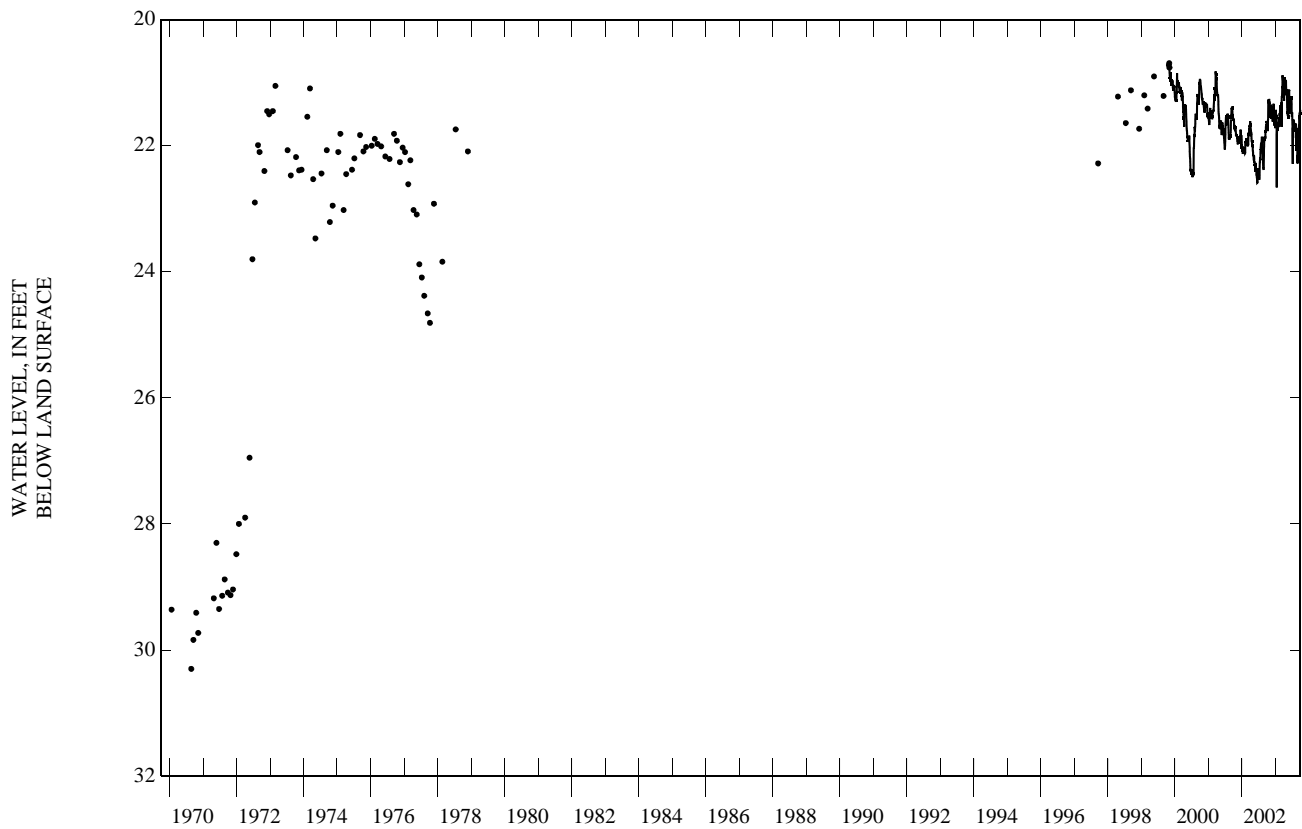
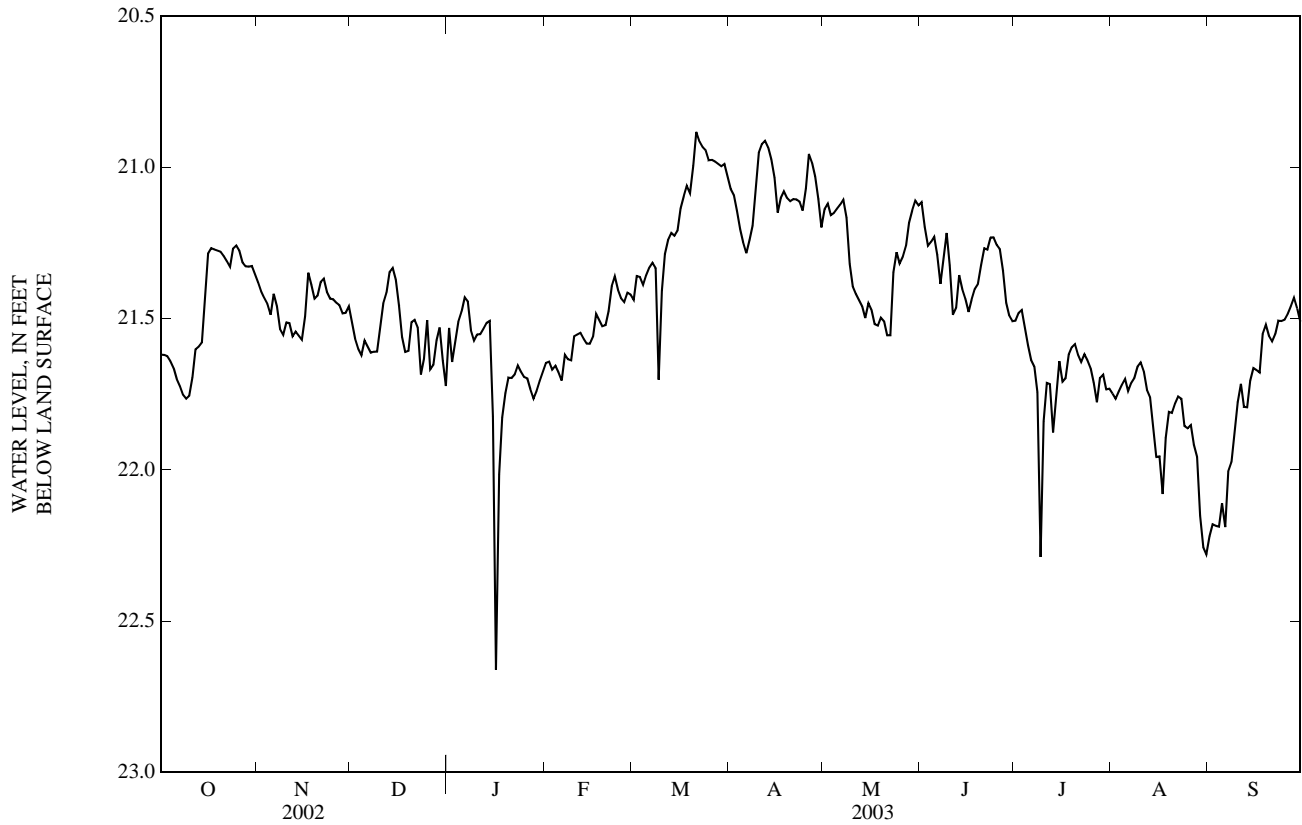
GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335631078003604. Local number, NC-197; DENR Southport Research Station well GG32t4; County number, BR-081.



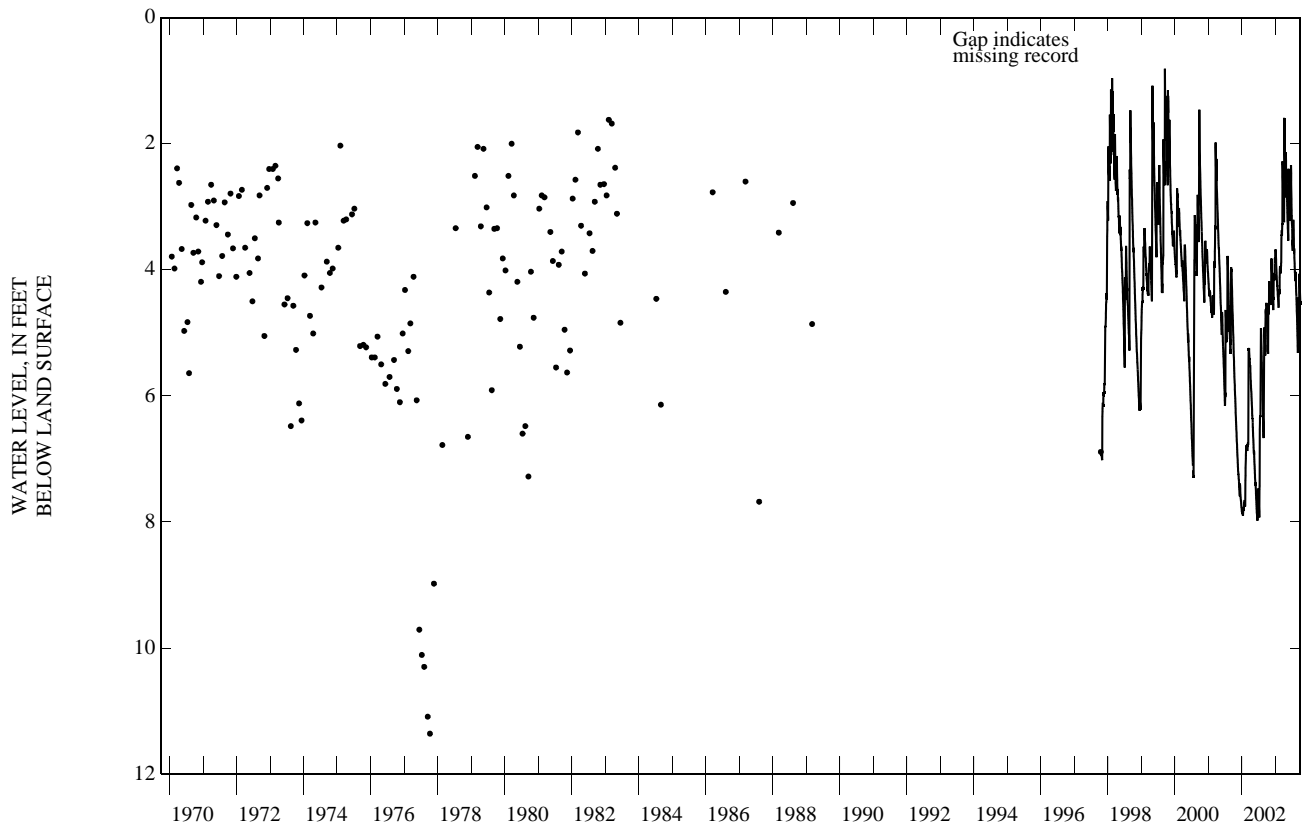
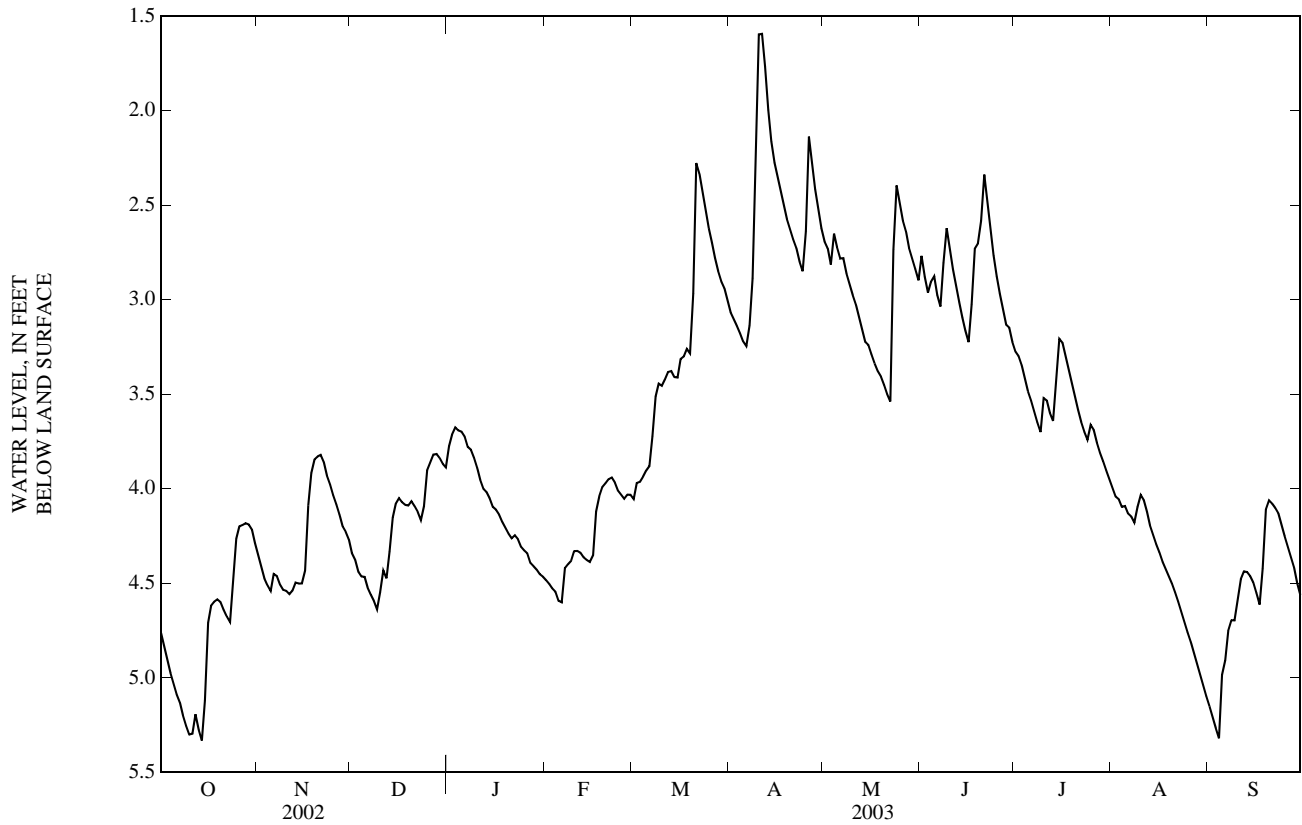
GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335631078003605. Local number, NC-198; DENR Southport Research Station well GG32t5; County number, BR-082.



GROUND-WATER LEVELS
BRUNSWICK COUNTY—Continued

335631078003606. Local number, NC-199; DENR Southport Research Station well GG32t6; County number, BR-083.



GROUND-WATER LEVELS

BUNCOMBE COUNTY

352840082381001. County number, BU-068; DENR Bent Creek Research Station MW-1S (Regolith well).

LOCATION.--Lat 35°28'39.3", long 82°38'10.2", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 22 ft, diameter 4 in., cased to 8 ft, screened interval from 8 ft to 22 ft, sand filter packed from 6 ft to 22 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,210 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.95 ft above land-surface datum.

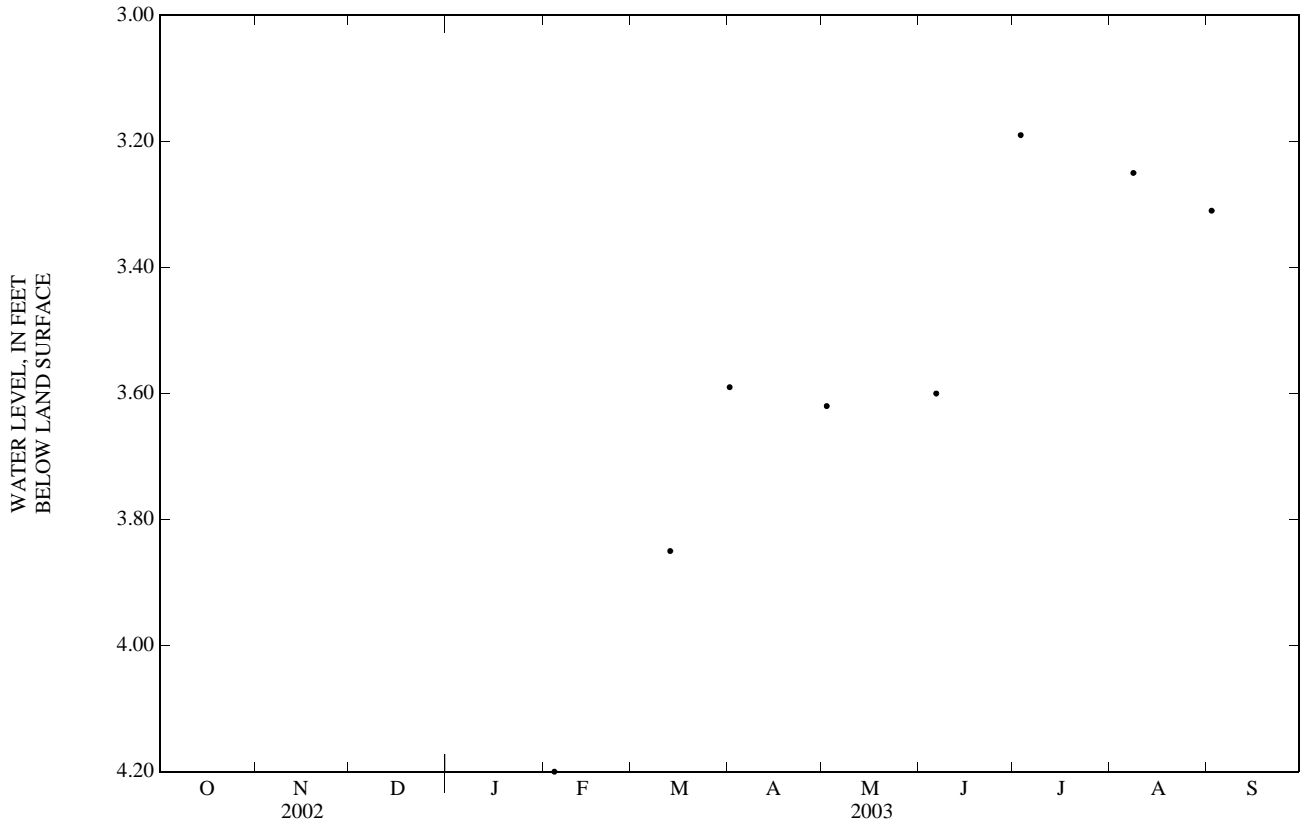
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.19 ft below land-surface datum, July 3, 2003; lowest water level measured 4.20 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	4.20	APR 01	3.59	JUN 06	3.60	AUG 08	3.25
MAR 13	3.85	MAY 02	3.62	JUL 03	3.19	SEP 02	3.31



BUNCOMBE COUNTY—Continued

352840082381002. County number, BU-069; DENR Bent Creek Research Station MW-1I (Transition Zone well).

LOCATION.--Lat 35°28'40.1", long 82°38'10.3", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 53 ft, diameter 4 in., cased to 38 ft, screened interval from 38 ft to 53 ft, sand filter packed from 32 ft to 53 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,210 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.77 ft above land-surface datum.

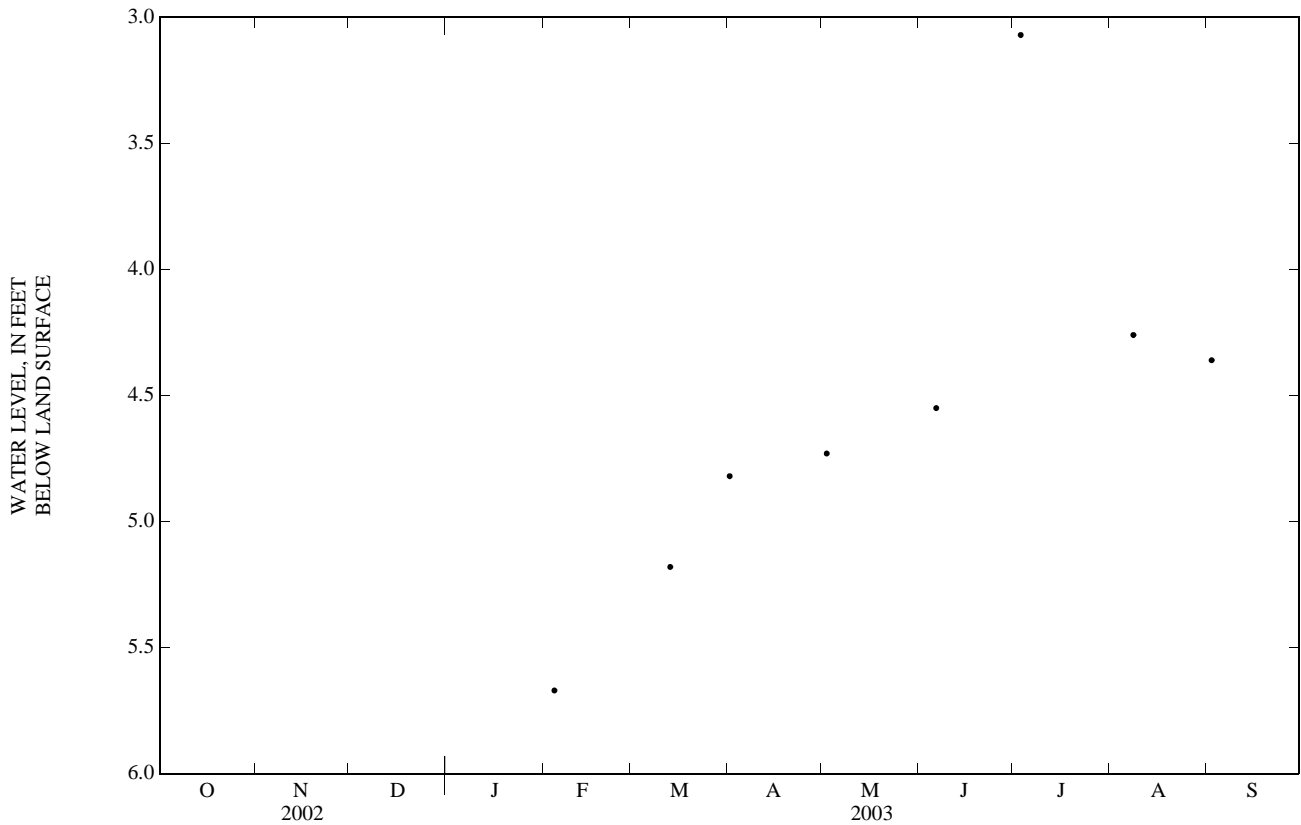
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.07 ft below land-surface datum, July 3, 2003; lowest water level measured 5.67 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	5.67	APR 01	4.82	JUN 06	4.55	AUG 08	4.26
MAR 13	5.18	MAY 02	4.73	JUL 03	3.07	SEP 02	4.36



GROUND-WATER LEVELS
BUNCOMBE COUNTY—Continued

352840082381003. County number, BU-070; DENR Bent Creek Research Station MW-1D (Bedrock well).

LOCATION.--Lat 35°28'40.9", long 82°38'11.7", North American Datum of 1983, Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 221 ft, diameter 6 in., cased to 55 ft, open hole from 55 ft to 221 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,210 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.50 ft above land-surface datum.

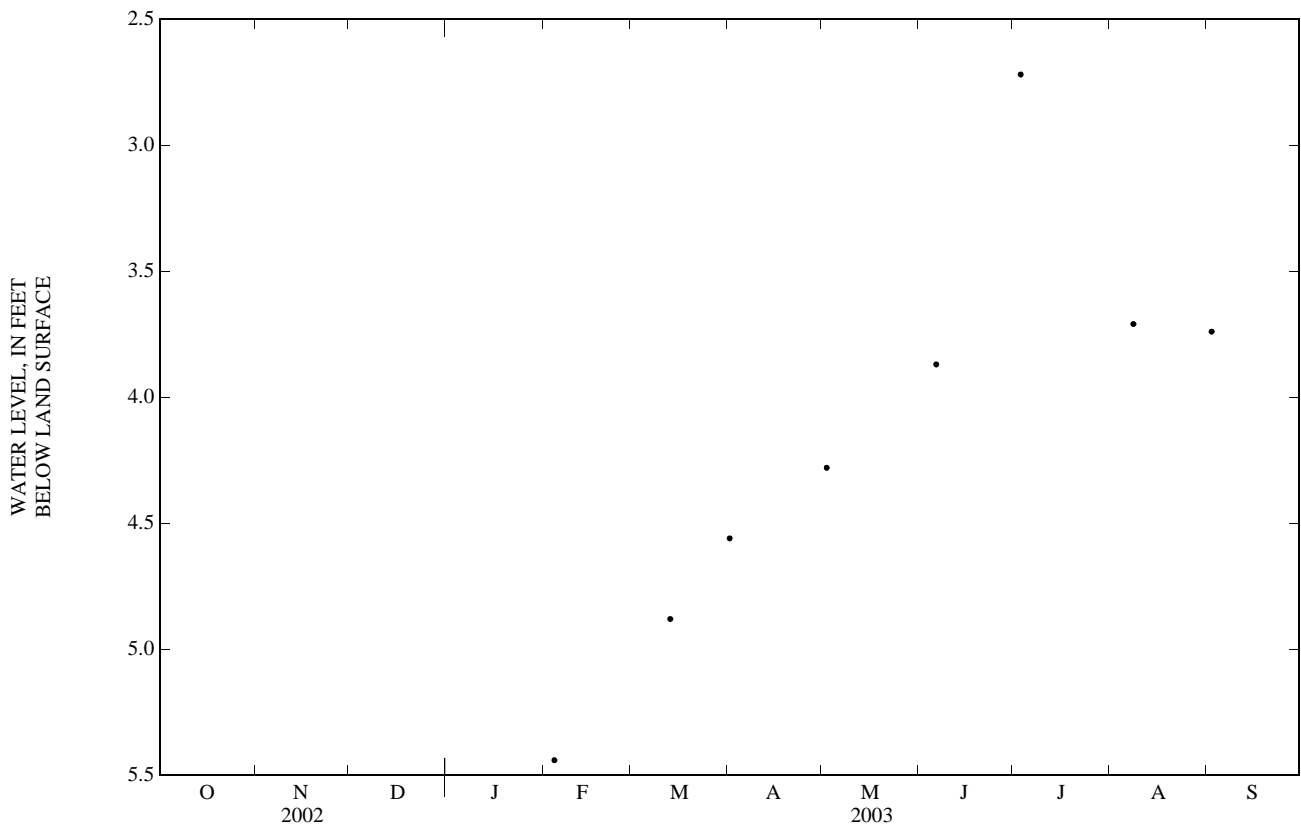
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.72 ft below land-surface datum, July 3, 2003; lowest water level measured 5.44 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	5.44	APR 01	4.56	JUN 06	3.87	AUG 08	3.71
MAR 13	4.88	MAY 02	4.28	JUL 03	2.72	SEP 02	3.74



BUNCOMBE COUNTY--Continued

352854082380501. County number, BU-071; DENR Bent Creek Research Station MW-2S (Regolith well).

LOCATION.--Lat 35°28'54.4", long 82°38'05.9", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 20 ft, diameter 4 in., cased to 5 ft, screened interval from 5 ft to 20 ft, sand filter packed from 3 ft to 20 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,180 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.96 ft above land-surface datum.

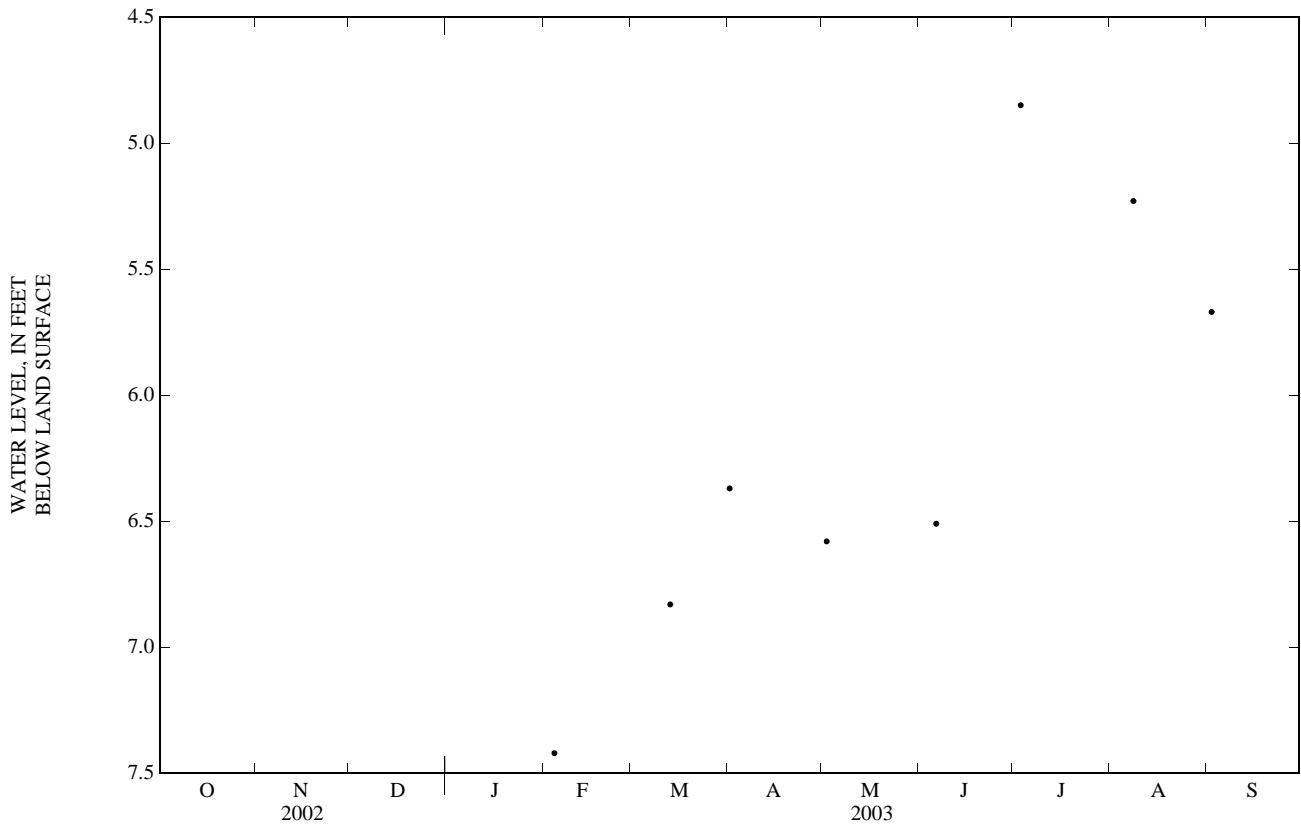
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.85 ft below land-surface datum, July 3, 2003; lowest water level measured 7.42 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	7.42	APR 01	6.37	JUN 06	6.51	AUG 08	5.23
MAR 13	6.83	MAY 02	6.58	JUL 03	4.85	SEP 02	5.67



GROUND-WATER LEVELS
BUNCOMBE COUNTY—Continued

352854082380502. County number, BU-072; DENR Bent Creek Research Station MW-2I (Transition Zone well).

LOCATION.--Lat 35°28'54.1", long 82°38'05.5", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 36 ft, diameter 4 in., cased to 21 ft, screened interval from 21 ft to 36 ft, sand filter packed from 18 ft to 36 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,180 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.89 ft above land-surface datum.

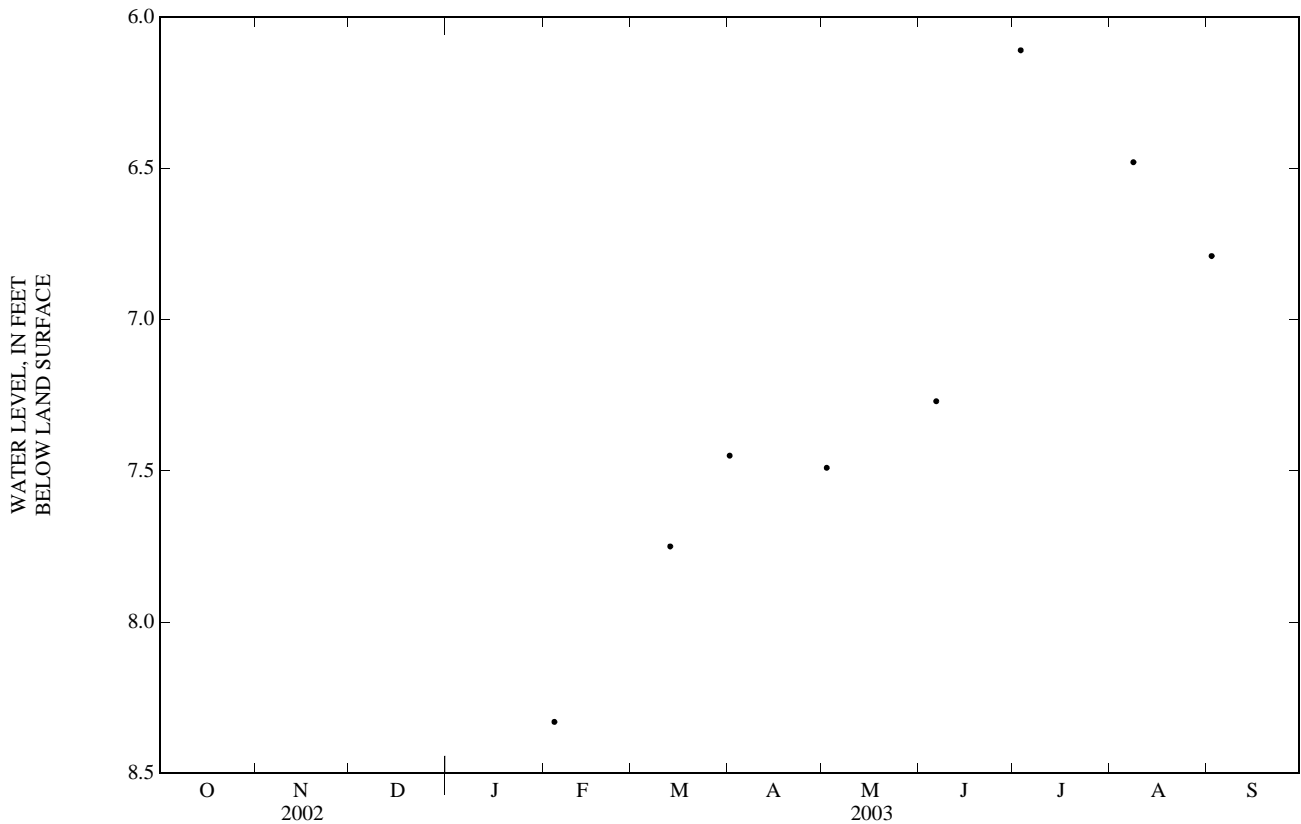
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.11 ft below land-surface datum, July 3, 2003; lowest water level measured 8.33 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	8.33	APR 01	7.45	JUN 06	7.27	AUG 08	6.48
MAR 13	7.75	MAY 02	7.49	JUL 03	6.11	SEP 02	6.79



BUNCOMBE COUNTY—Continued

352854082380503. County number, BU-073; DENR Bent Creek Research Station MW-2D (Bedrock well).

LOCATION.--Lat 35°28'40.9", long 82°38'11.7", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 6 in., cased to 53 ft, open hole from 53 ft to 300 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,180 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 4.59 ft above land-surface datum.

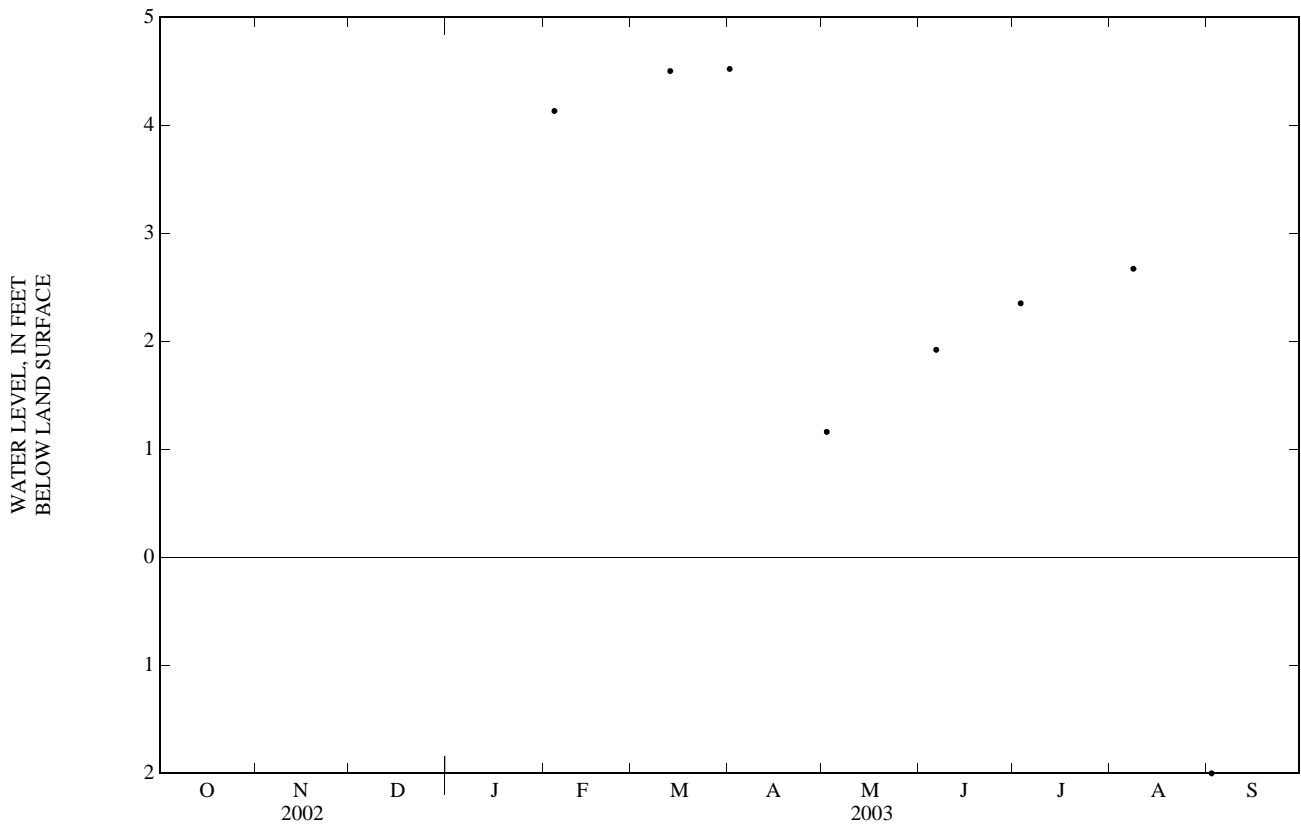
REMARKS.--Well is part of Piedmont/Mountains groundwater project. Lower water levels recorded in May 2003 affected by April 2003 sampling event.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.52 ft above land-surface datum, April 1, 2003; lowest water level measured 1.16 ft above land-surface datum, May 2, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM (READINGS ABOVE LAND-SURFACE INDICATED BY "+"),
FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	+4.13	APR 01	+4.52	JUN 06	+1.92	AUG 08	+2.67
MAR 13	+4.5	MAY 02	+1.16	JUL 03	+2.35	SEP 02	



GROUND-WATER LEVELS

BUNCOMBE COUNTY—Continued

352856082381201. County number, BU-074; DENR Bent Creek Research Station MW-3S (Regolith well).

LOCATION.--Lat 35°28'56.6", long 82°38'12", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 30 ft, diameter 4 in., cased to 15 ft, screened interval from 15 ft to 30 ft, sand filter packed from 13 ft to 25 ft, natural fill from 25 ft to 30 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,200 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.82 ft above land-surface datum.

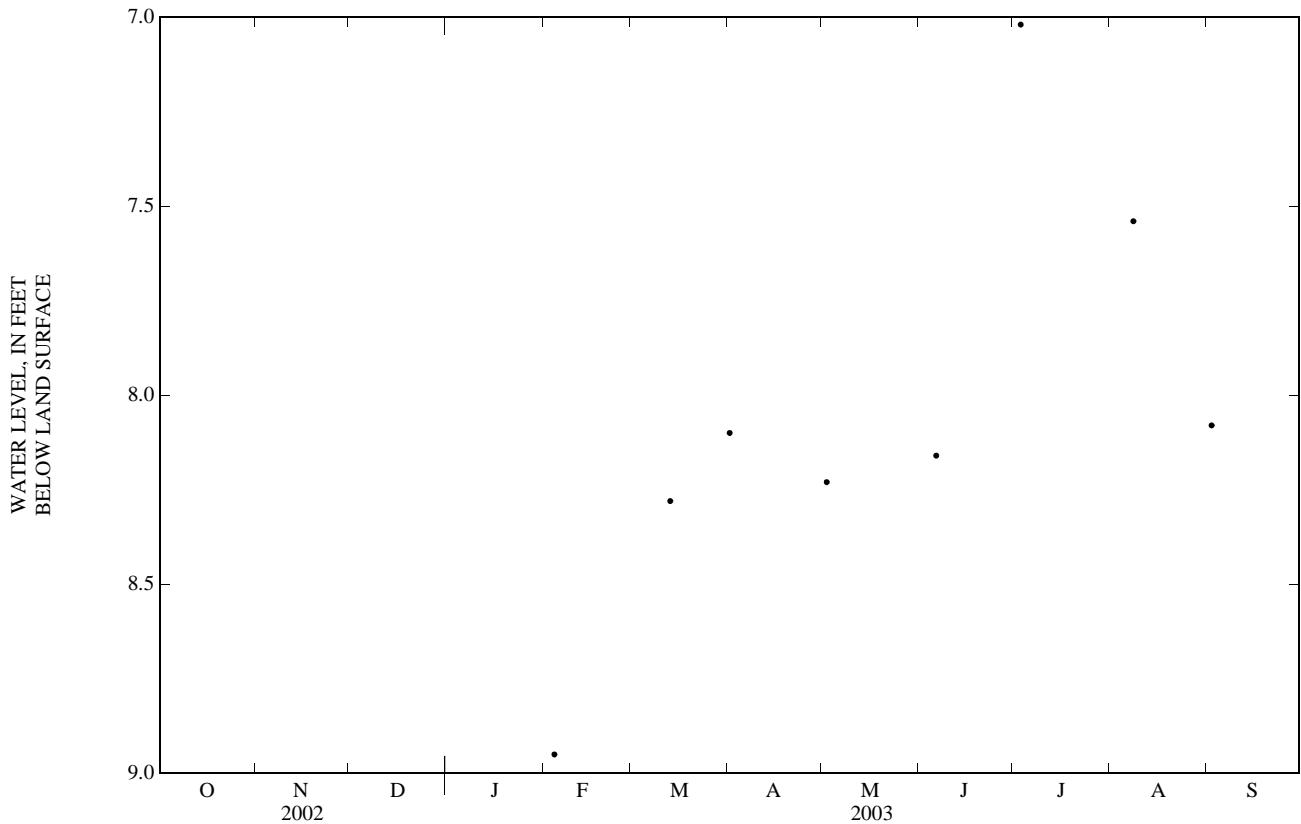
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.02 ft below land-surface datum, July 3, 2003; lowest water level measured 8.95 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	8.95	APR 01	8.10	JUN 06	8.16	AUG 08	7.54
MAR 13	8.28	MAY 02	8.23	JUL 03	7.02	SEP 02	8.08



BUNCOMBE COUNTY—Continued

352856082381202. County number, BU-075; DENR Bent Creek Research Station MW-3I (Transition Zone well).

LOCATION.--Lat 35°28'57", long 82°38'11.8", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 50 ft, diameter 4 in., cased to 35 ft, screened interval from 35 ft to 50 ft, sand filter packed from 33 ft to 50 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,200 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 3.06 ft above land-surface datum.

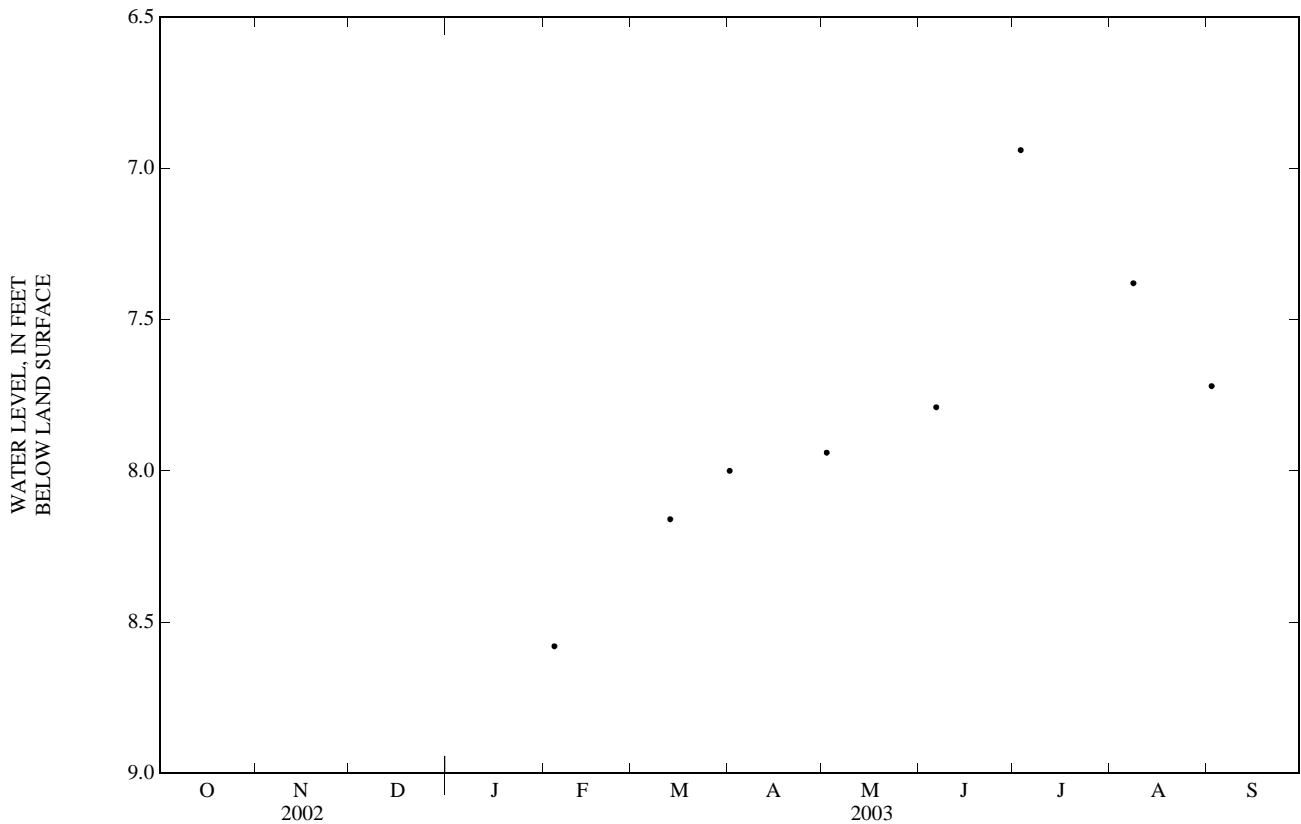
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.94 ft below land-surface datum, July 3, 2003; lowest water level measured 8.58 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	8.58	APR 01	8.00	JUN 06	7.79	AUG 08	7.38
MAR 13	8.16	MAY 02	7.94	JUL 03	6.94	SEP 02	7.72



GROUND-WATER LEVELS

BUNCOMBE COUNTY—Continued

352856082381203. County number, BU-076; DENR Bent Creek Research Station MW-3D (Bedrock well).

LOCATION.--Lat 35°28'56.5", long 82°38'12.1", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 6 in., cased to 61 ft, open hole from 61 ft to 300 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,200 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.74 ft above land-surface datum.

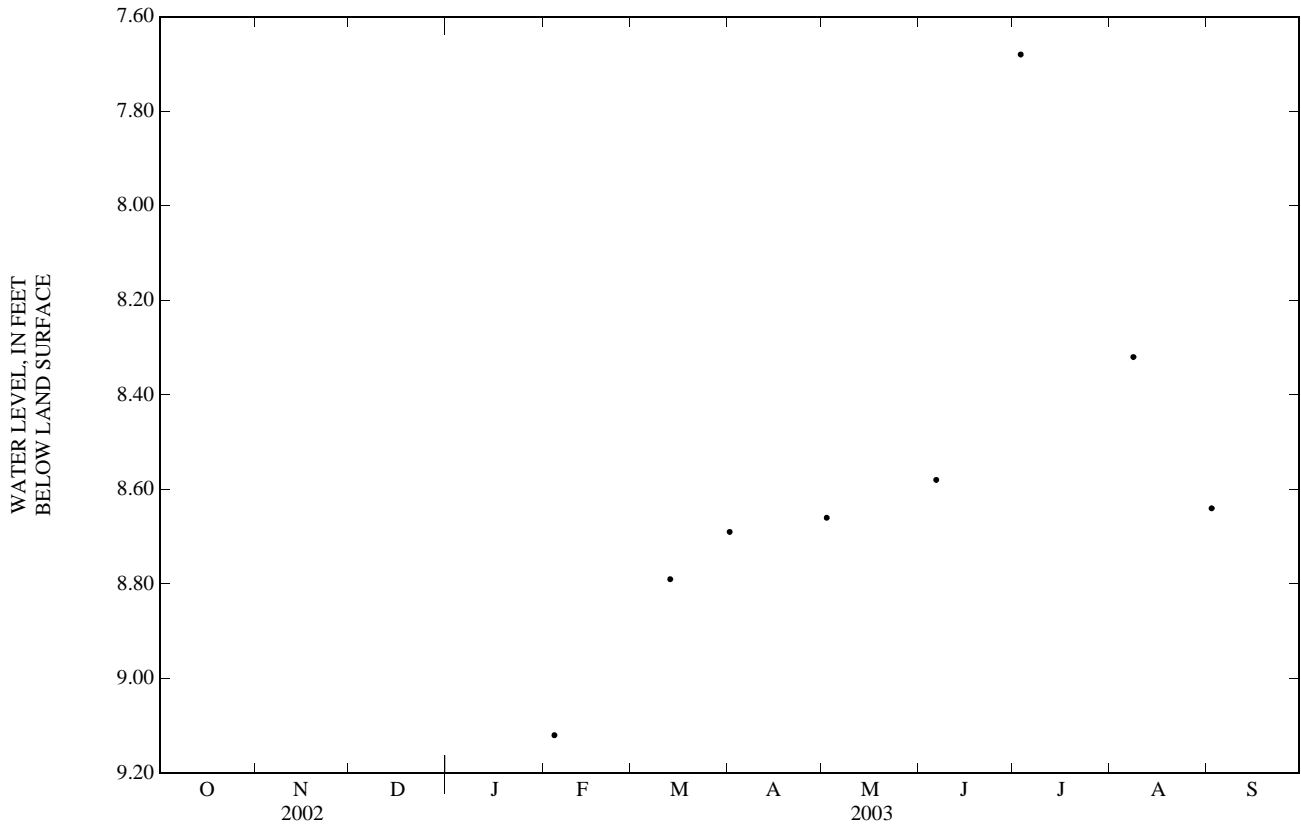
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.68 ft below land-surface datum, July 3, 2003; lowest water level measured 9.12 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	9.12	APR 01	8.69	JUN 06	8.58	AUG 08	8.32
MAR 13	8.79	MAY 02	8.66	JUL 03	7.68	SEP 02	8.64



BUNCOMBE COUNTY—Continued

352808082382601. County number, BU-077; DENR Bent Creek Research Station MW-4S (Regolith well).

LOCATION.--Lat 35°28'08.2", long 82°38'26.7", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 22 ft, diameter 4 in., cased to 7 ft, screened interval from 7 ft to 22 ft, sand filter packed from 5 ft to 22 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,240 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 3.12 ft above land-surface datum.

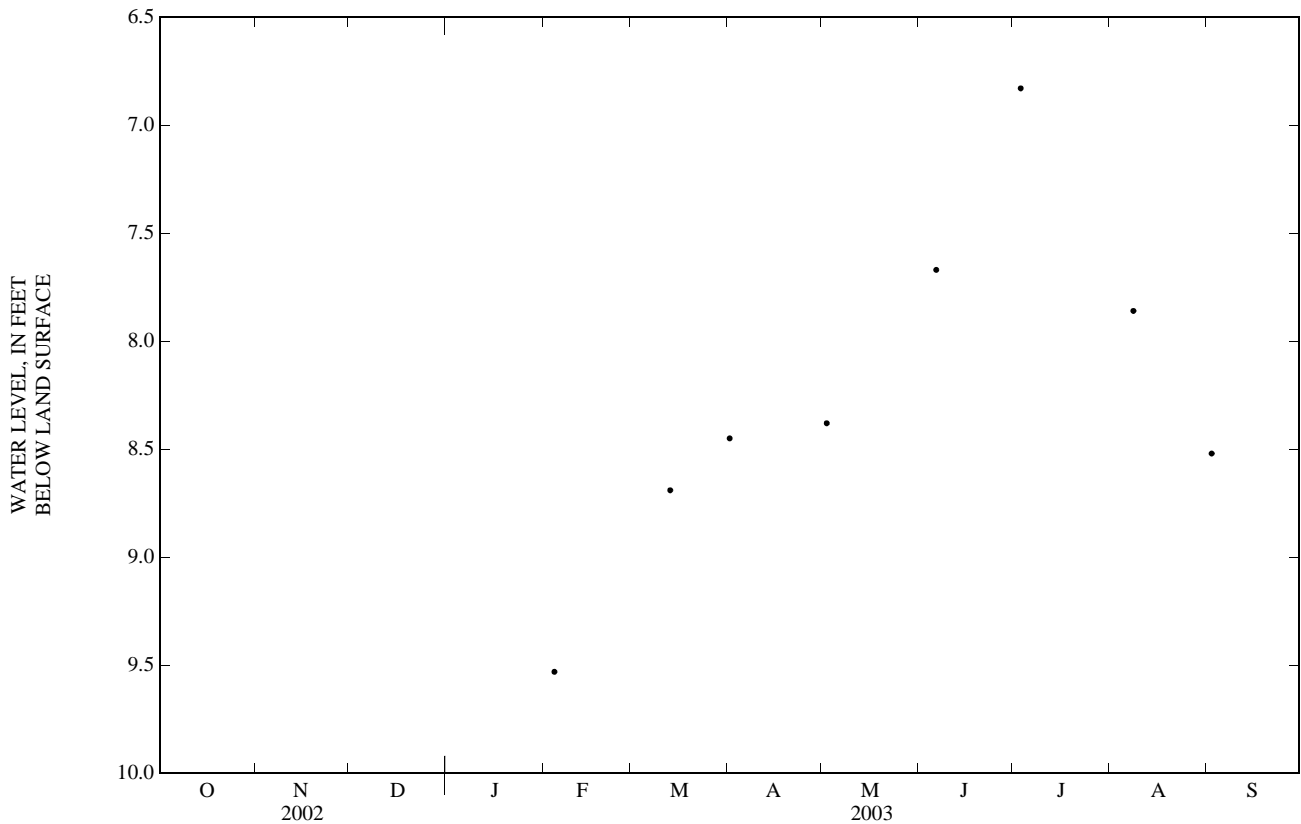
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.83 ft below land-surface datum, July 3, 2003; lowest water level measured 9.53 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	9.53	APR 01	8.45	JUN 06	7.67	AUG 08	7.86
MAR 13	8.69	MAY 02	8.38	JUL 03	6.83	SEP 02	8.52



GROUND-WATER LEVELS
 BUNCOMBE COUNTY—Continued

352808082382602. County number, BU-078; DENR Bent Creek Research Station MW-4I (Transition Zone well).

LOCATION.--Lat 35°28'08.1", long 82°38'26.1", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 41 ft, diameter 4 in., cased to 26 ft, screened interval from 26 ft to 41 ft, sand filter packed from 24 ft to 41 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,240 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 3.02 ft above land-surface datum.

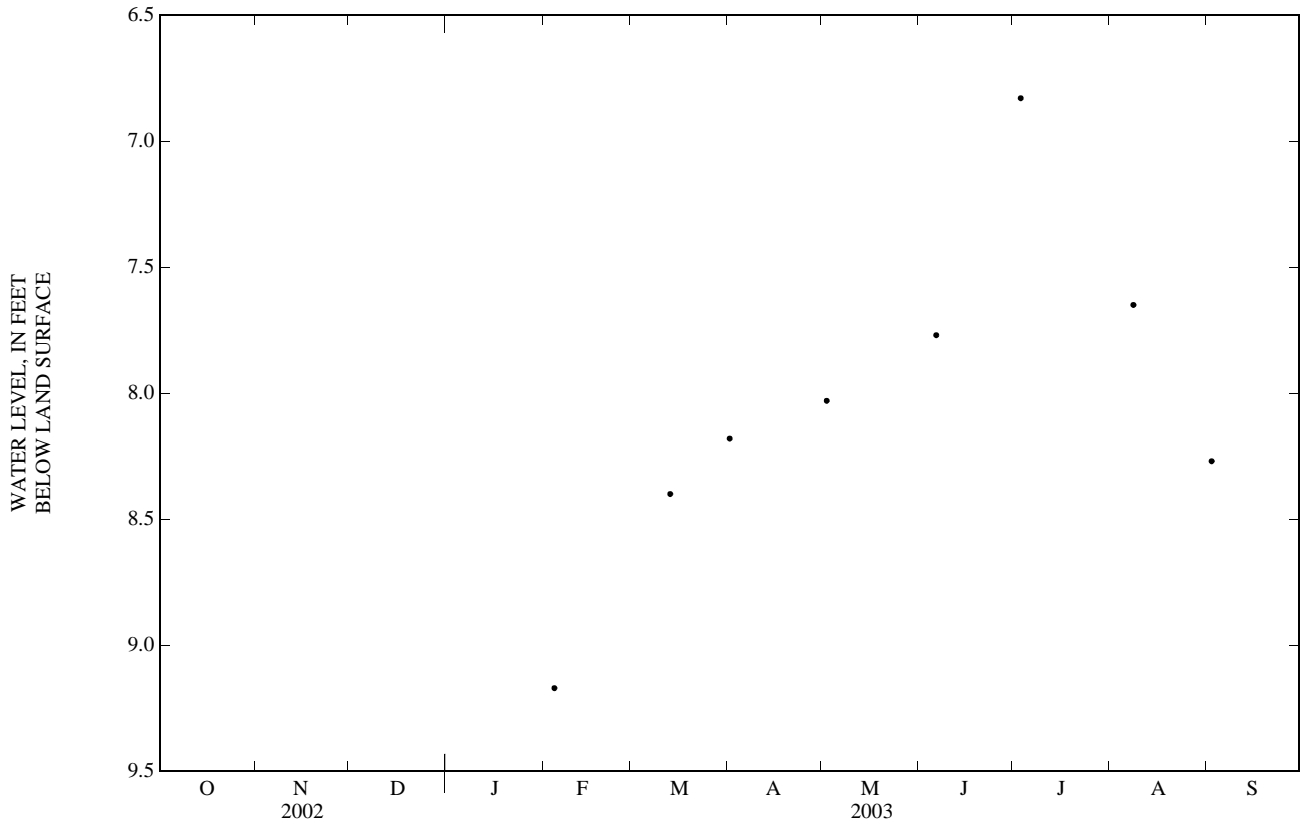
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.83 ft below land-surface datum, July 3, 2003; lowest water level measured 9.17 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	9.17	APR 01	8.18	JUN 06	7.77	AUG 08	7.65
MAR 13	8.40	MAY 02	8.03	JUL 03	6.83	SEP 02	8.27



BUNCOMBE COUNTY—Continued

352808082382603. County number, BU-079; DENR Bent Creek Research Station MW-4D (Bedrock well).

LOCATION.--Lat 35°28'07.9", long 82°38'25.9", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 501 ft, diameter 6 in., cased to 61 ft, open hole from 61 ft to 501 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,240 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 3.02 ft above land-surface datum.

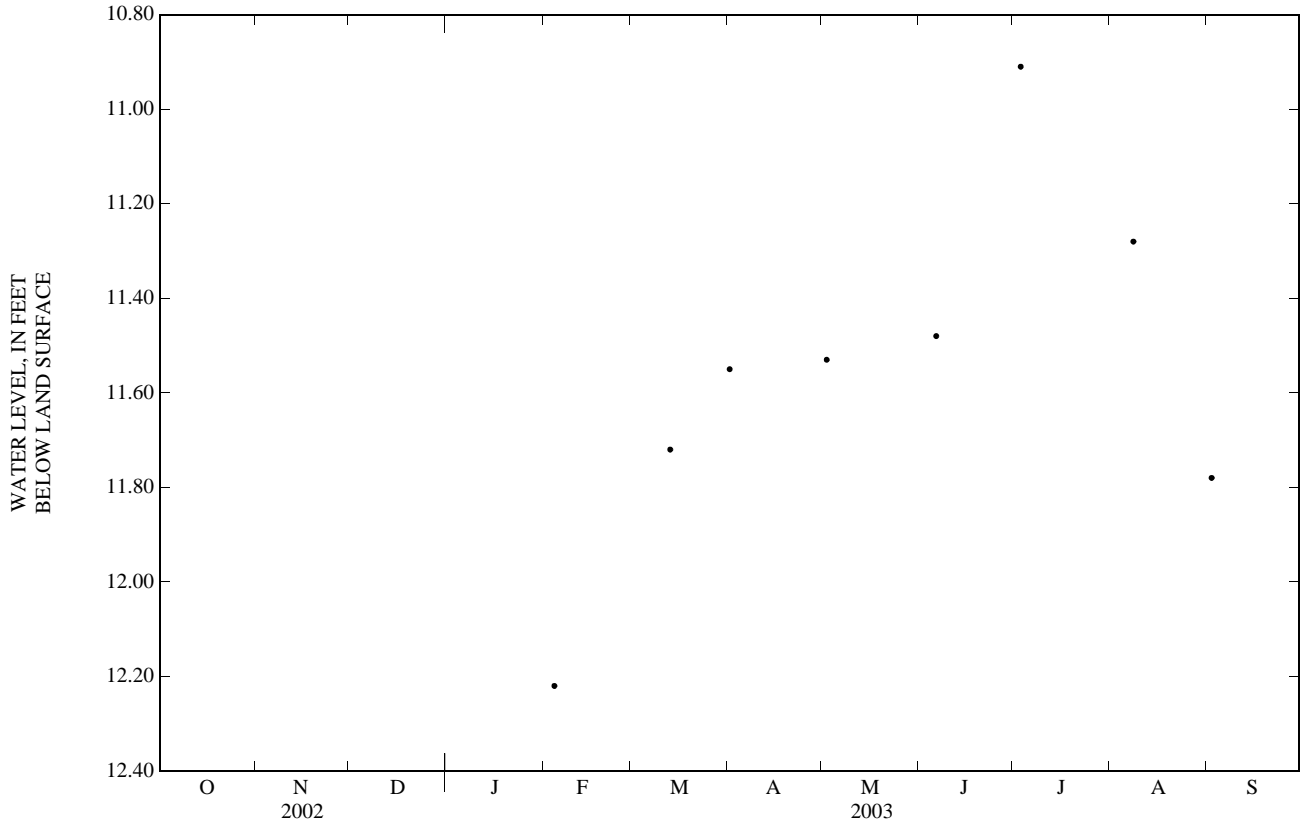
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.91 ft below land-surface datum, July 3, 2003; lowest water level measured 12.22 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	12.22	APR 01	11.55	JUN 06	11.48	AUG 08	11.28
MAR 13	11.72	MAY 02	11.53	JUL 03	10.91	SEP 02	11.78



GROUND-WATER LEVELS

BUNCOMBE COUNTY—Continued

352810082383501. County number, BU-080; DENR Bent Creek Research Station MW-5S (Regolith well).

LOCATION.--Lat 35°28'10.4", long 82°38'34.5", North American Datum of 1983, Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 24 ft, diameter 4 in., cased to 9 ft, screened interval from 9 ft to 24 ft, sand filter packed from 7 ft to 9 ft, natural fill from 9 ft to 24 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,300 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 3.01 ft above land-surface datum.

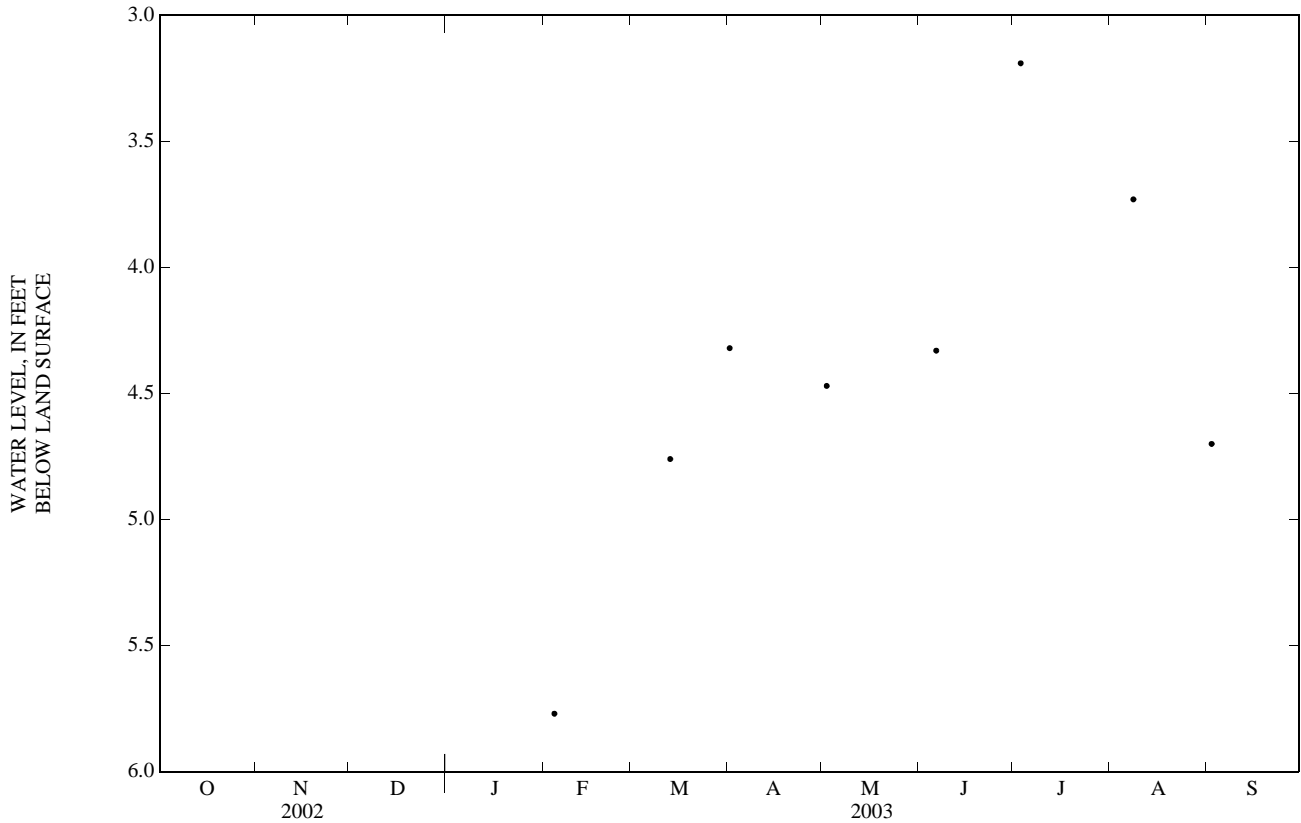
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.19 ft below land-surface datum, July 3, 2003; lowest water level measured 5.77 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	5.77	APR 01	4.32	JUN 06	4.33	AUG 08	3.73
MAR 13	4.76	MAY 02	4.47	JUL 03	3.19	SEP 02	4.70



BUNCOMBE COUNTY—Continued

352810082383502. County number, BU-081; DENR Bent Creek Research Station MW-5I (Transition Zone well).

LOCATION.--Lat 35°28'10.5", long 82°38'35.2", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 47 ft, diameter 4 in., cased to 32 ft, screened interval from 32 ft to 47 ft, sand filter packed from 28 ft to 47 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,300 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.70 ft above land-surface datum.

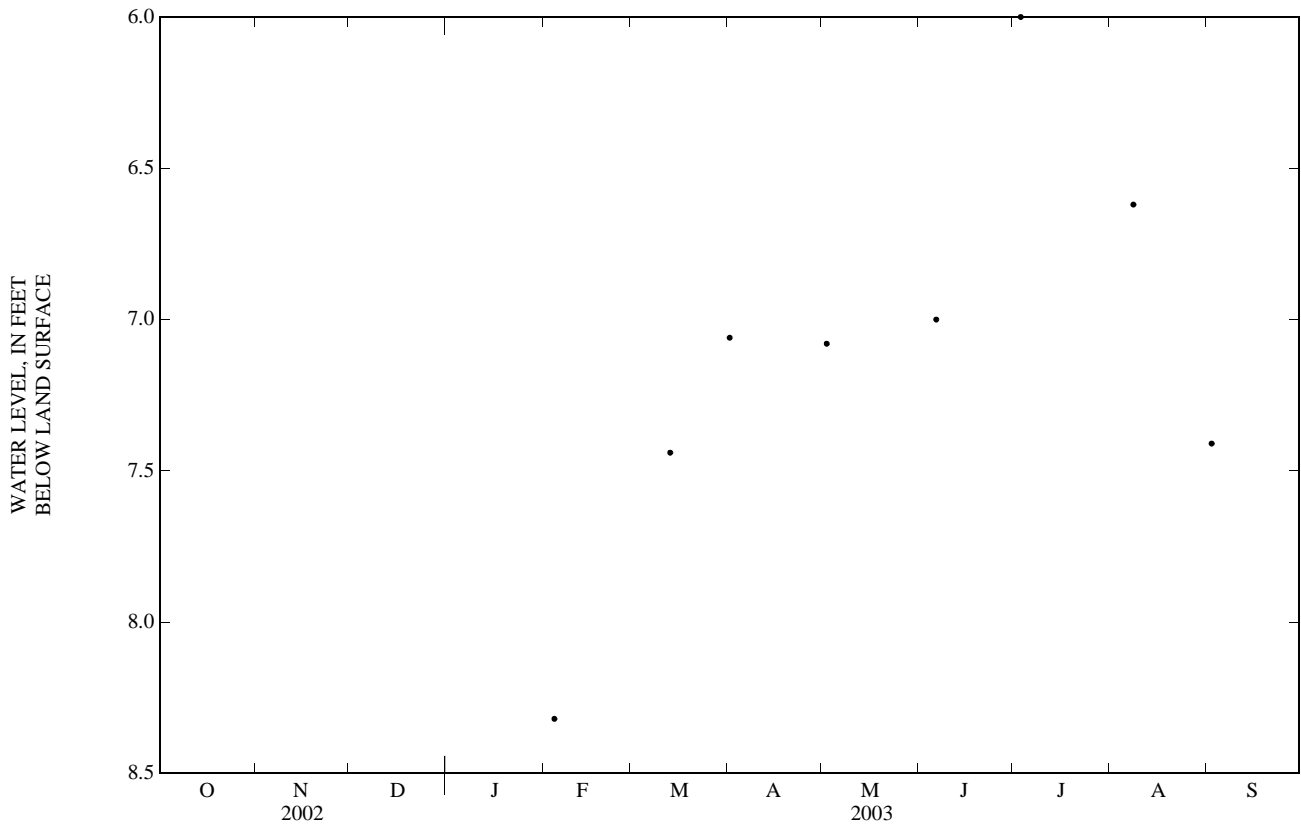
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.00 ft below land-surface datum, July 3, 2003; lowest water level measured 8.32 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	8.32	APR 01	7.06	JUN 06	7.00	AUG 08	6.62
MAR 13	7.44	MAY 02	7.08	JUL 03	6.00	SEP 02	7.41



GROUND-WATER LEVELS

BUNCOMBE COUNTY—Continued

352810082383503. County number, BU-082; DENR Bent Creek Research Station MW-5D (Bedrock well).

LOCATION.--Lat 35°28'10", long 82°38'34.9", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 6 in., cased to 62 ft, open hole from 62 ft to 300 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,300 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.58 ft above land-surface datum.

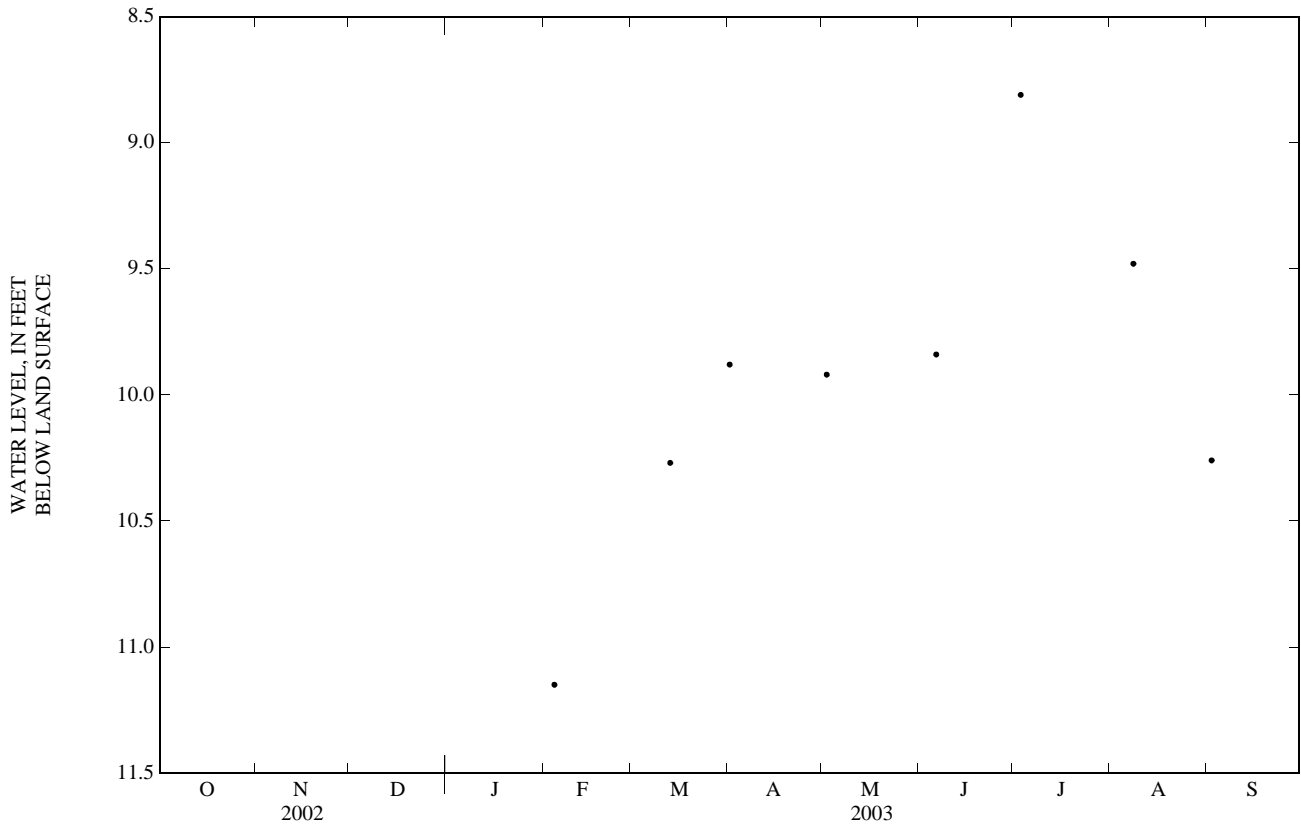
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.81 ft below land-surface datum, July 3, 2003; lowest water level measured 11.15 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	11.15	APR 01	9.88	JUN 06	9.84	AUG 08	9.48
MAR 13	10.27	MAY 02	9.92	JUL 03	8.81	SEP 02	10.26



BUNCOMBE COUNTY—Continued

352827082383901. County number, BU-083; DENR Bent Creek Research Station MW-7S (Regolith well).

LOCATION.--Lat 35°28'27.1", long 82°38'39.1", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 25 ft, diameter 4 in., cased to 10 ft, screened interval from 10 ft to 25 ft, sand filter packed from 8 ft to 25 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,380 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.96 ft above land-surface datum.

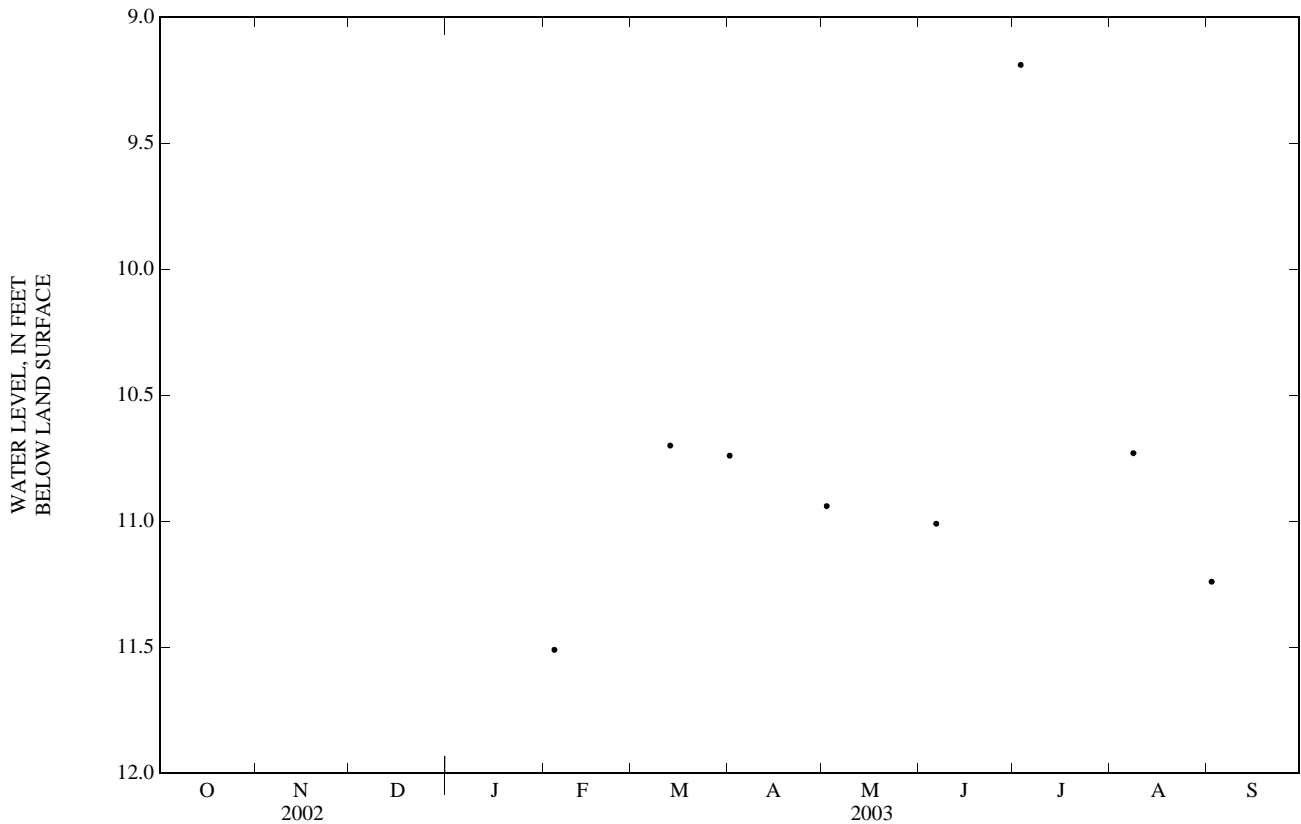
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.19 ft below land-surface datum, July 3, 2003; lowest water level measured 11.51 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	11.51	APR 01	10.74	JUN 06	11.01	AUG 08	10.73
MAR 13	10.70	MAY 02	10.94	JUL 03	9.19	SEP 02	11.24



GROUND-WATER LEVELS

BUNCOMBE COUNTY—Continued

352827082383902. County number, BU-084; DENR Bent Creek Research Station MW-7I (Transition Zone well).

LOCATION.--Lat 35°28'27.2", long 82°38'38.5", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 50 ft, diameter 4 in., cased to 30 ft, screened interval from 30 ft to 50 ft, sand filter packed from 27 ft to 45 ft, natural fill from 45 ft to 50 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,380 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.91 ft above land-surface datum.

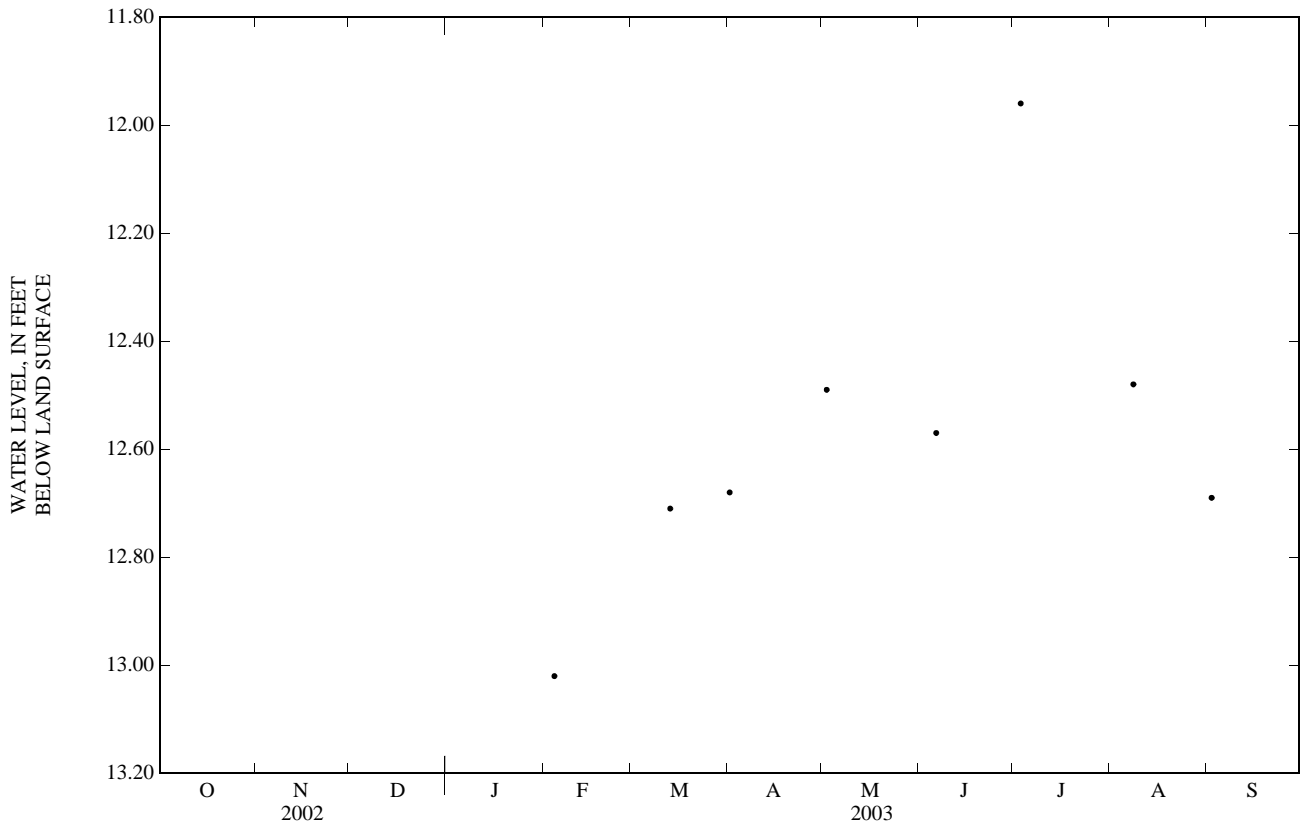
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.96 ft below land-surface datum, July 3, 2003; lowest water level measured 13.02 ft below land-surface datum, Feb. 4, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	13.02	APR 01	12.68	JUN 06	12.57	AUG 08	12.48
MAR 13	12.71	MAY 02	12.49	JUL 03	11.96	SEP 02	12.69



BUNCOMBE COUNTY—Continued

352827082383903. County number, BU-085; DENR Bent Creek Research Station MW-7D (Bedrock well).

LOCATION.--Lat 35°28'27.3", long 82°38'38.8", Hydrologic Unit 06010105, 1.2 mi north of Blue Ridge Parkway, 3.1 mi west of Brevard Road in Bent Creek Research Forest. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 285 ft, diameter 6 in., cased to 62 ft, open hole from 62 ft to 285 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 2,380 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.93 ft above land-surface datum.

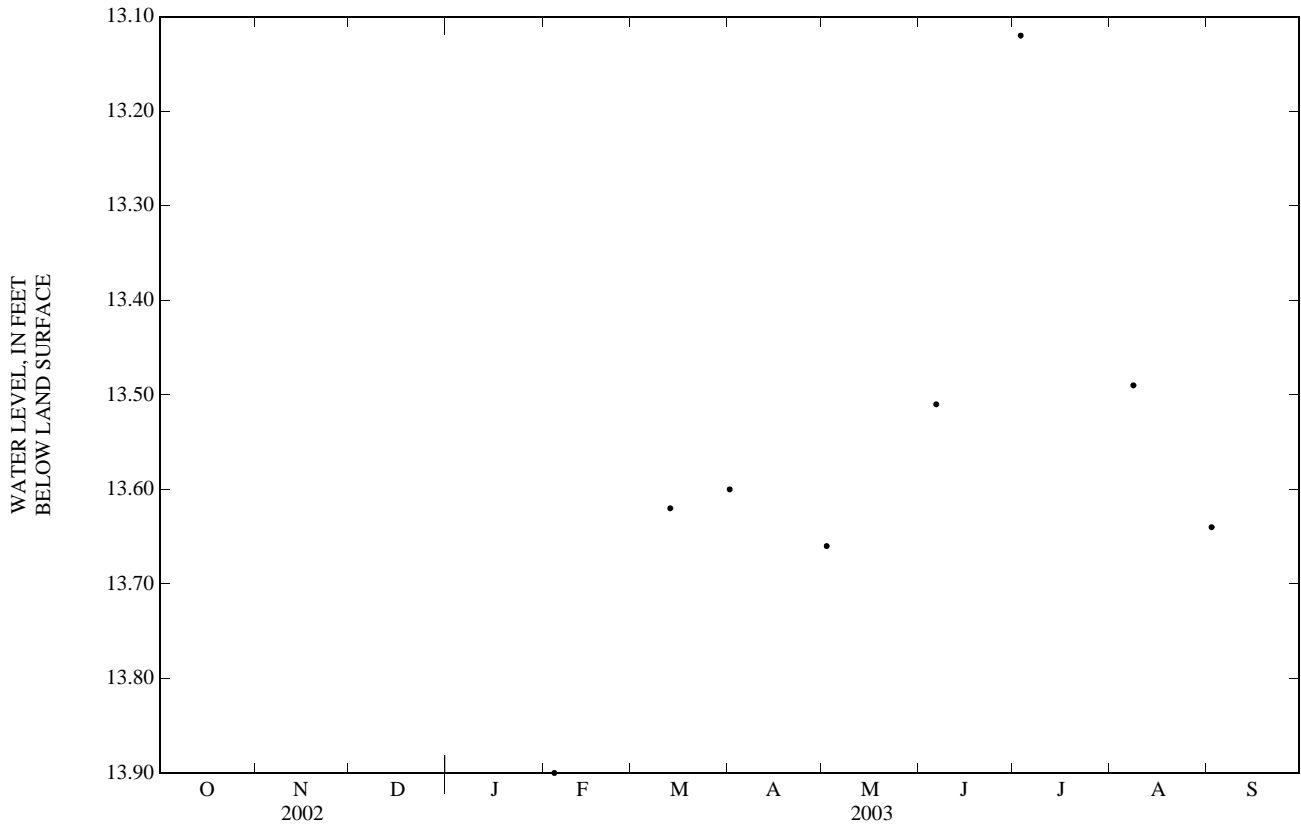
REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--February 2003 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.12 ft below land-surface datum, July 3, 2003; lowest water level measured 13.90 ft below land-surface datum, Feb. 4, 2003.

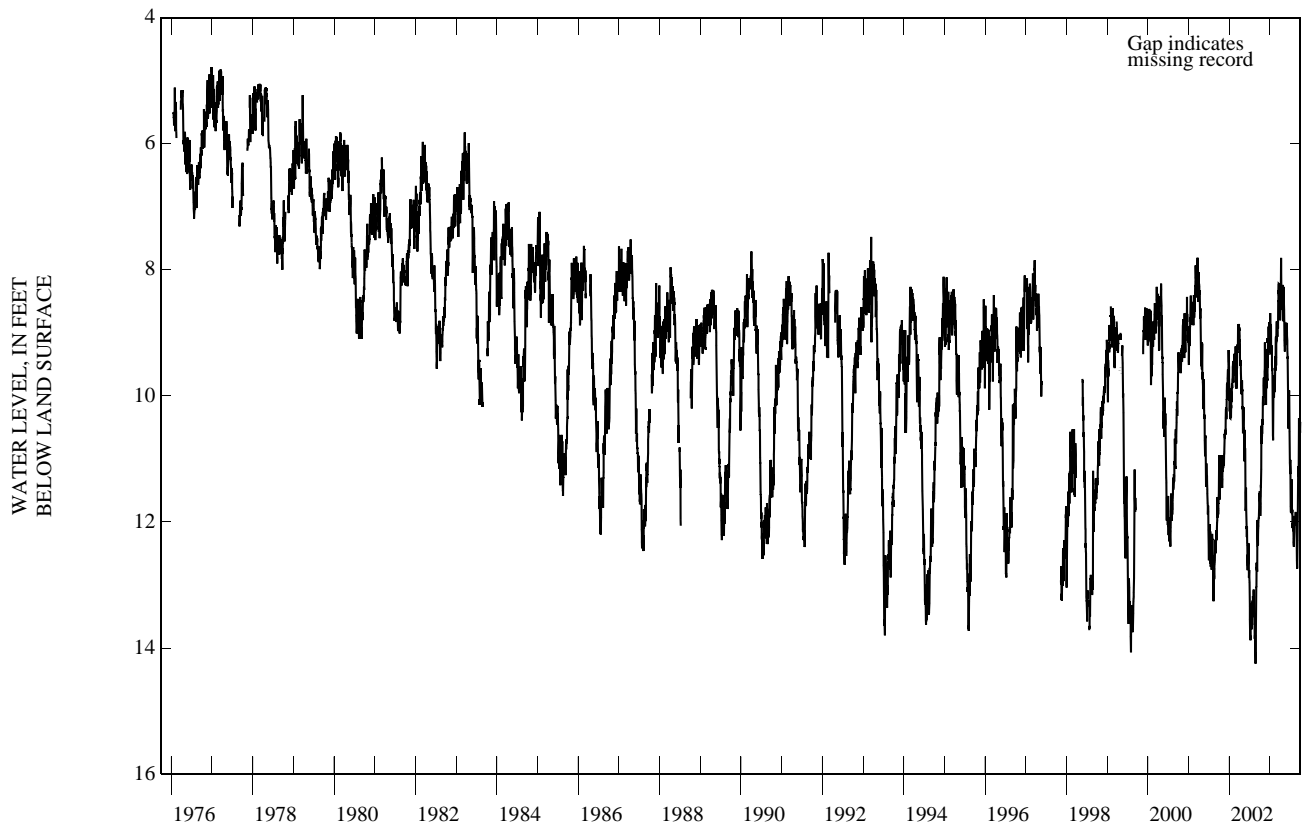
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 04	13.9	APR 01	13.60	JUN 06	13.51	AUG 08	13.49
MAR 13	13.62	MAY 02	13.66	JUL 03	13.12	SEP 02	13.64



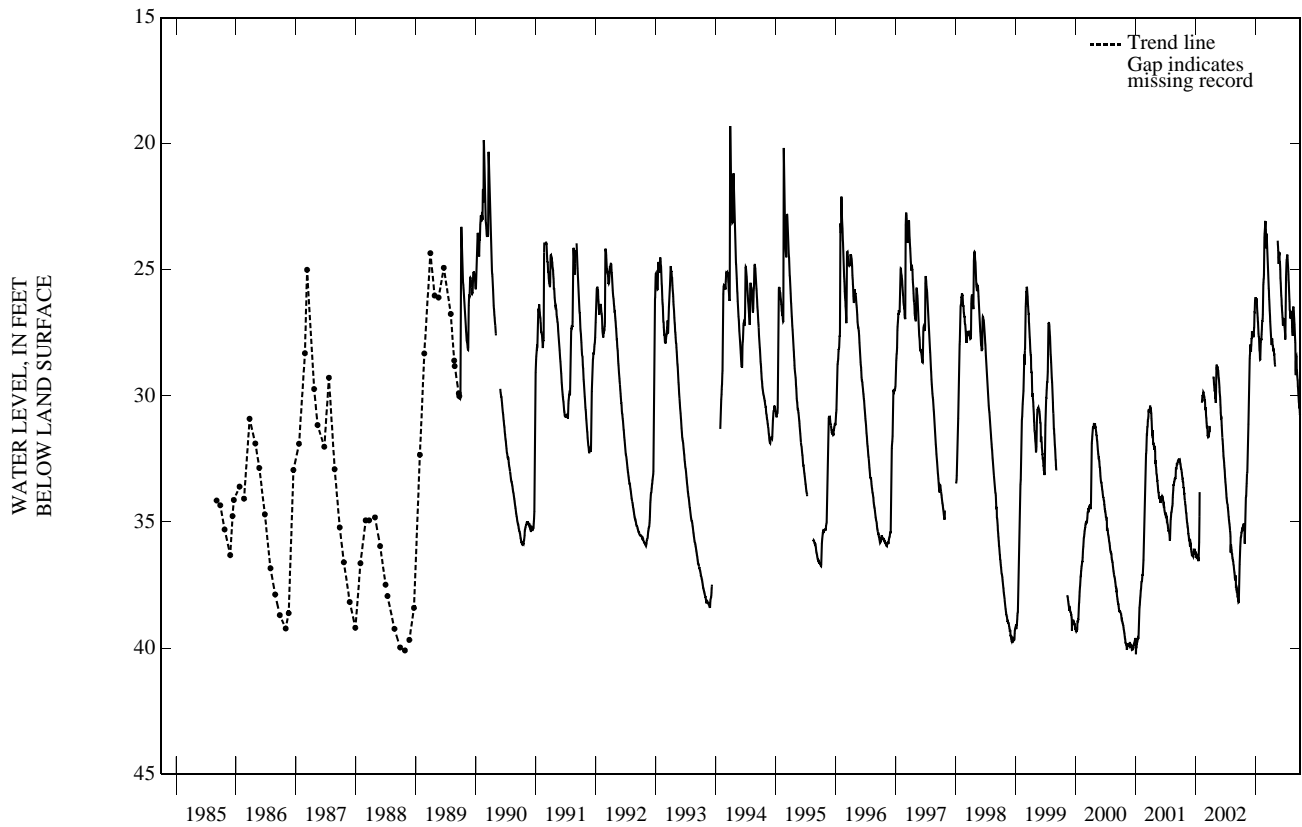
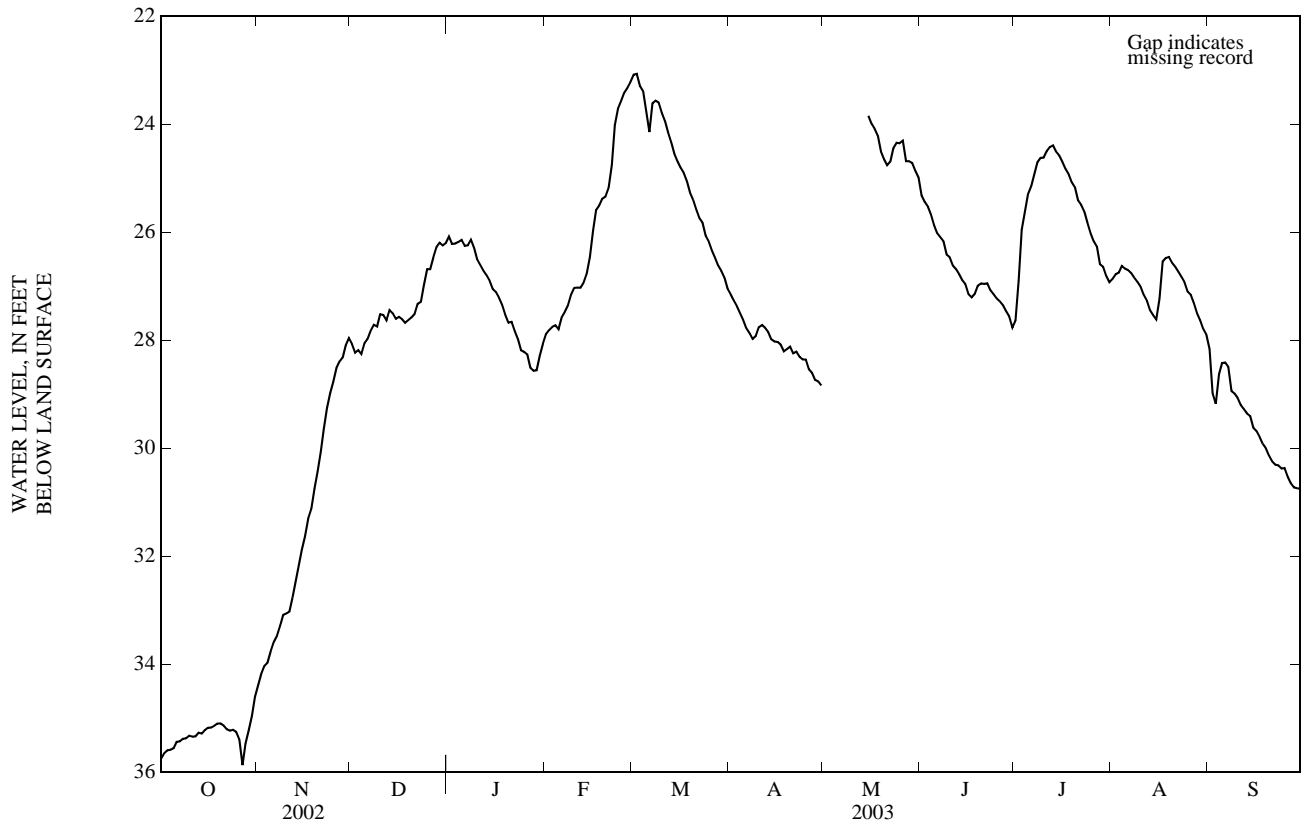
CARTERET COUNTY—Continued

344323076451301. Local number, NC-139; DENR Camp Glenn Research Station well X17j5; County name, CT-153.



CHEROKEE COUNTY—Continued

351117083545001. Local number, NC-191; County number, CE-028.



GROUND-WATER LEVELS
CHEROKEE COUNTY—Continued

351121083545002. Local number, NC-192; County name, CE-029.

LOCATION.--Lat 35°11'21", long 83°54'50", Hydrologic Unit 06020002, 0.7 mi north of Marble, 75 ft west of Secondary Road 1377. Owner: Coats American Company.

AQUIFER.--Saprolite derived from schist of Precambrian age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 24 ft, diameter 4 in., cased to 14 ft, screened interval from 14 to 24 ft, sand filter pack from 6 to 24 ft.

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

DATUM.--Land-surface datum is 1,710 ft above NGVD of 1929 (from topographic map). Measuring point: Three saw cuts in top of casing, 3.35 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--October 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.26 ft above land-surface datum, Feb. 26, 2001; lowest water level recorded, 14.44 ft below land-surface datum, Nov. 4, 5, 6, 1993.

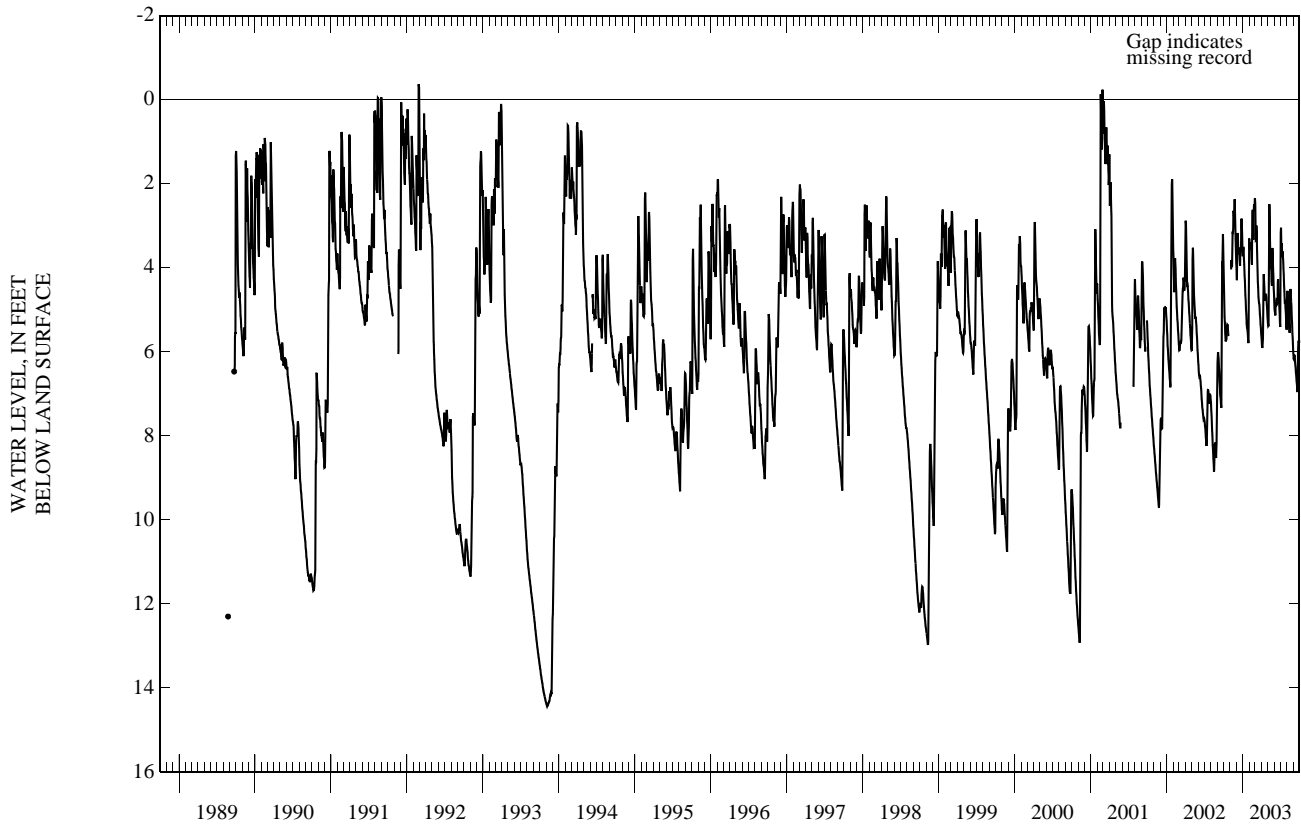
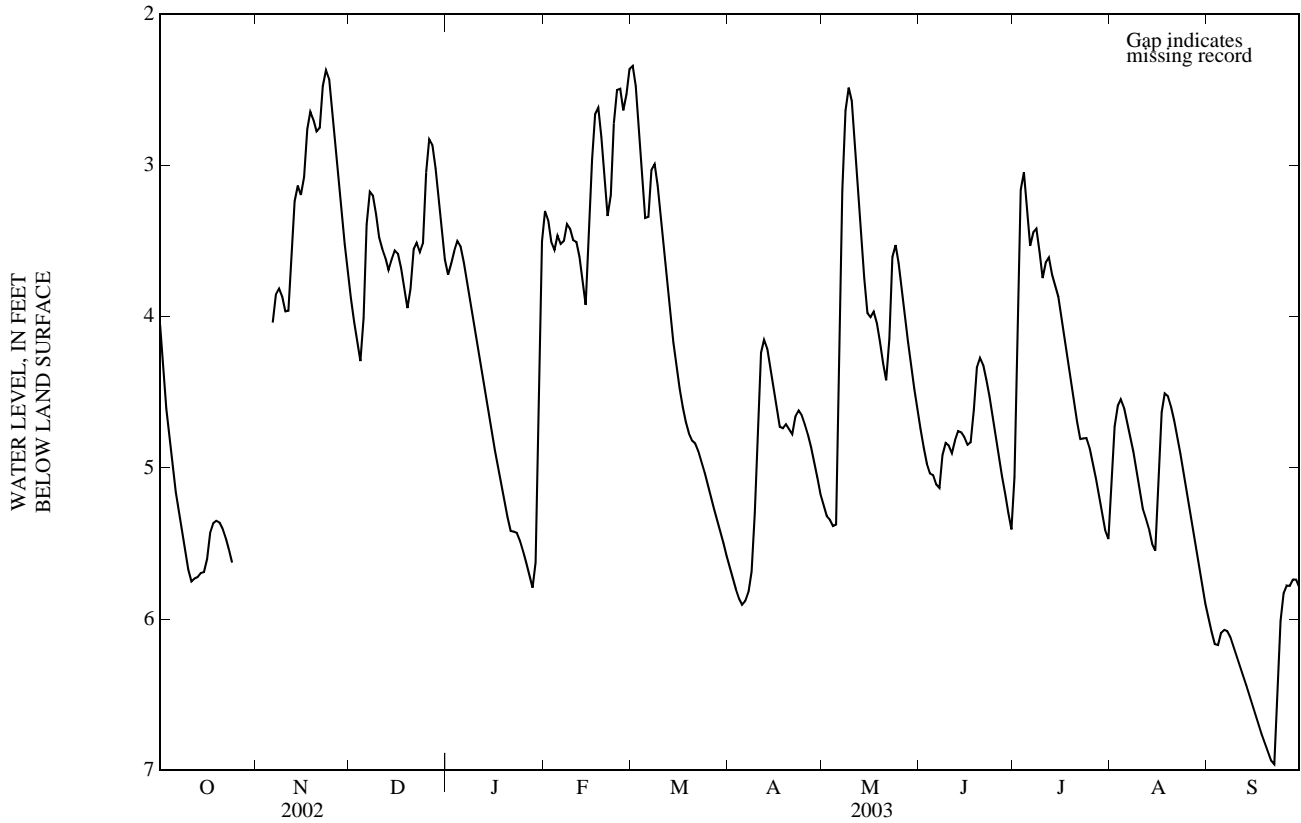
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.05	---	3.88	3.72	3.30	2.34	5.66	5.24	4.75	5.06	5.08	6.00
2	4.35	---	4.04	3.65	3.36	2.48	5.73	5.32	4.87	3.87	4.73	6.08
3	4.61	---	4.17	3.57	3.51	2.76	5.80	5.34	4.97	3.16	4.59	6.17
4	4.82	---	4.29	3.50	3.56	3.06	5.87	5.39	5.04	3.05	4.55	6.17
5	5.00	---	4.01	3.54	3.46	3.35	5.91	5.38	5.05	3.26	4.60	6.09
6	5.16	4.04	3.39	3.64	3.52	3.34	5.88	4.24	5.11	3.53	4.69	6.07
7	5.30	3.85	3.17	3.78	3.50	3.03	5.82	3.17	5.13	3.44	4.79	6.08
8	5.43	3.81	3.20	3.92	3.39	2.99	5.69	2.64	4.92	3.42	4.89	6.12
9	5.56	3.87	3.32	4.05	3.42	3.14	5.30	2.49	4.84	3.58	5.01	6.18
10	5.67	3.97	3.48	4.17	3.50	3.35	4.68	2.57	4.85	3.75	5.14	6.24
11	5.75	3.96	3.55	4.29	3.51	3.58	4.24	2.84	4.90	3.64	5.27	6.31
12	5.73	3.61	3.61	4.41	3.60	3.80	4.15	3.12	4.82	3.61	5.34	6.37
13	5.72	3.24	3.69	4.54	3.77	3.99	4.21	3.45	4.76	3.72	5.41	6.43
14	5.70	3.13	3.62	4.65	3.92	4.17	4.33	3.75	4.77	3.79	5.50	6.50
15	5.69	3.20	3.56	4.77	3.47	4.33	4.48	3.98	4.80	3.87	5.55	6.57
16	5.60	3.08	3.59	4.89	2.96	4.47	4.61	4.00	4.85	4.01	5.13	6.63
17	5.43	2.76	3.68	5.00	2.66	4.60	4.73	3.97	4.83	4.16	4.63	6.70
18	5.37	2.65	3.81	5.10	2.62	4.70	4.74	4.04	4.62	4.30	4.51	6.76
19	5.35	2.70	3.94	5.21	2.81	4.77	4.71	4.17	4.34	4.43	4.53	6.82
20	5.36	2.78	3.82	5.32	3.09	4.82	4.75	4.31	4.27	4.56	4.59	6.88
21	5.40	2.75	3.55	5.42	3.34	4.84	4.78	4.42	4.32	4.69	4.69	6.93
22	5.47	2.48	3.51	5.42	3.20	4.89	4.66	4.15	4.42	4.81	4.79	6.96
23	5.54	2.37	3.57	5.43	2.72	4.96	4.62	3.61	4.53	4.81	4.91	6.44
24	5.63	2.43	3.52	5.48	2.50	5.03	4.65	3.53	4.65	4.80	5.04	6.01
25	---	2.62	3.05	5.55	2.49	5.11	4.71	3.65	4.79	4.87	5.17	5.83
26	---	2.86	2.83	5.63	2.64	5.19	4.78	3.82	4.92	4.96	5.30	5.78
27	---	3.08	2.87	5.71	2.53	5.27	4.86	3.99	5.06	5.07	5.43	5.78
28	---	3.31	3.02	5.79	2.36	5.35	4.96	4.17	5.17	5.18	5.56	5.74
29	---	3.52	3.22	5.63	---	5.43	5.06	4.33	5.30	5.30	5.68	5.74
30	---	3.71	3.43	4.25	---	5.50	5.17	4.48	5.41	5.41	5.79	5.79
31	---	---	3.62	3.50	---	5.58	---	4.62	---	5.47	5.90	---

WTR YR 2003 MEAN 4.46 HIGH 2.34 LOW 6.96

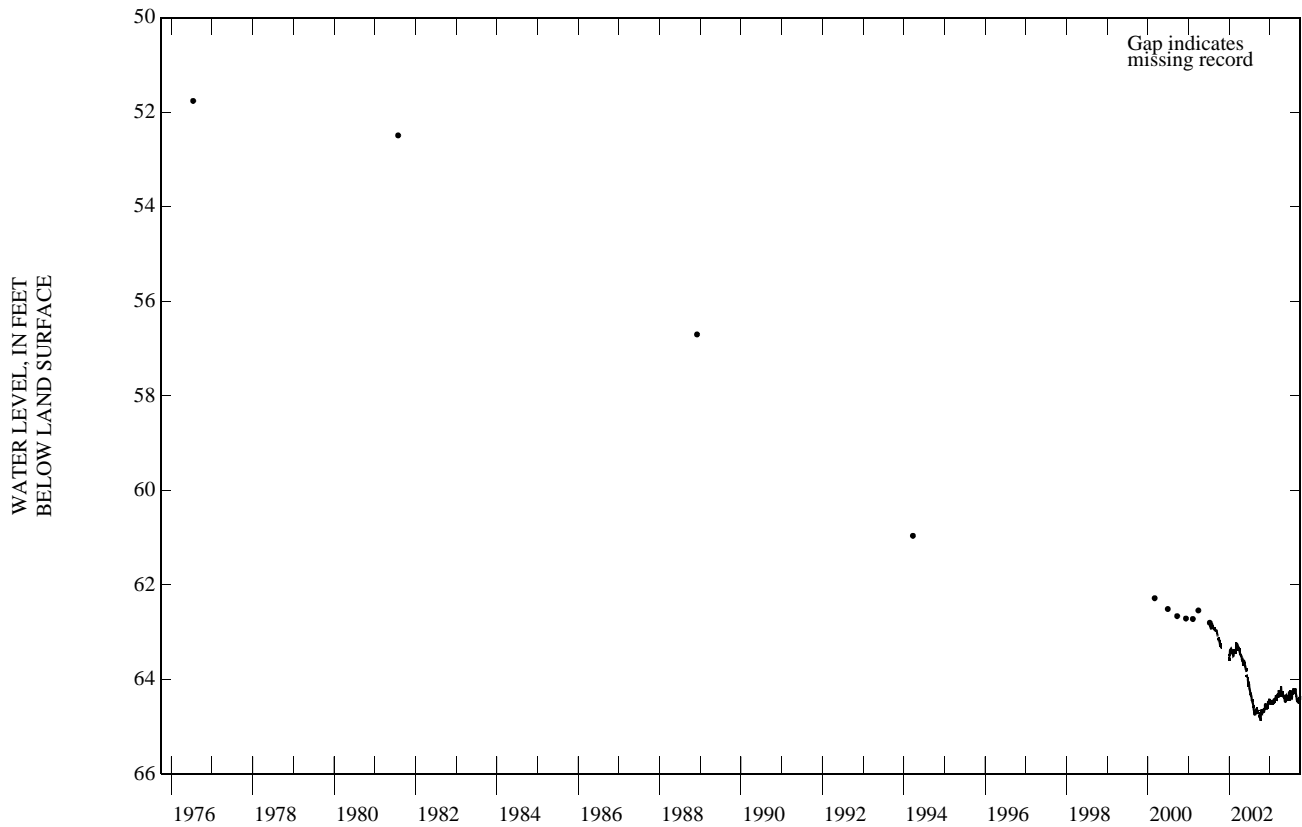
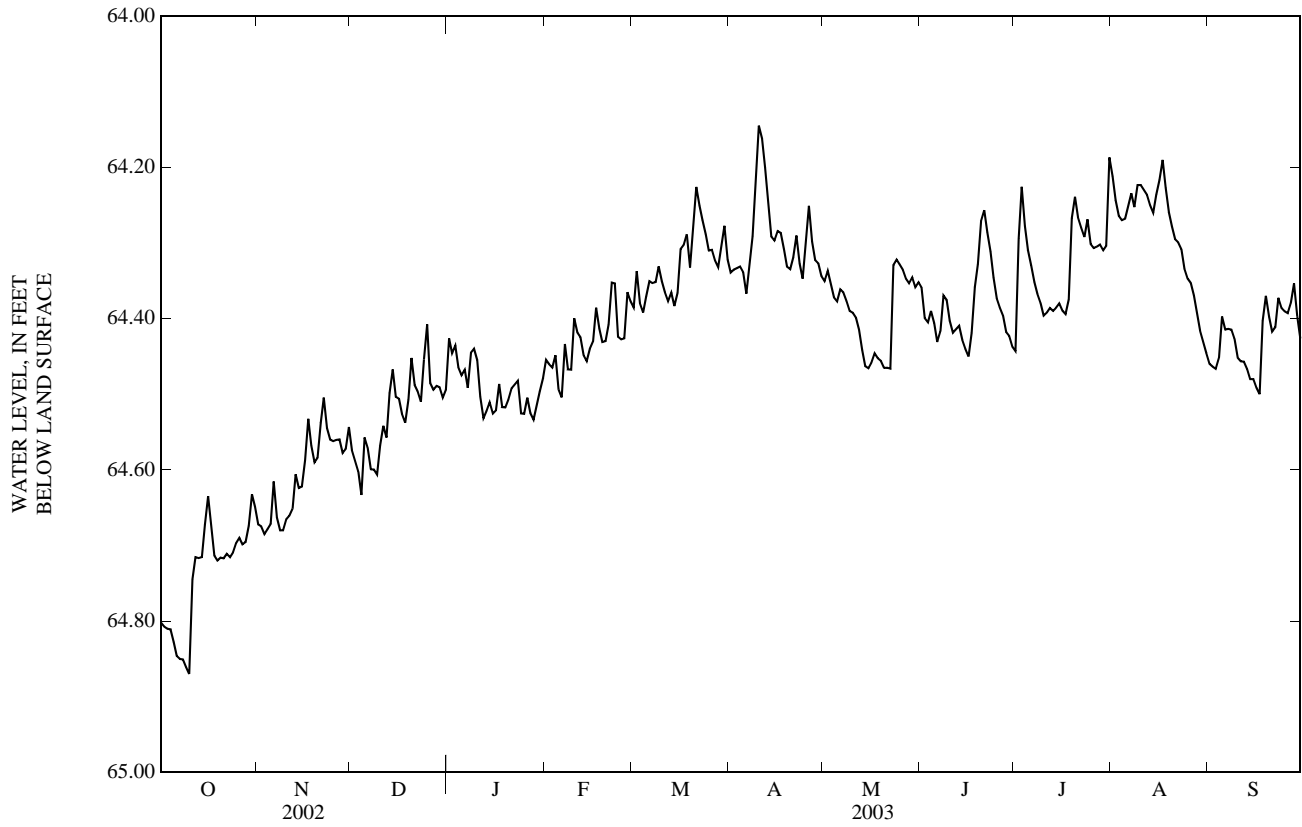
CHEROKEE COUNTY—Continued

351121083545002. Local number, NC-192; County name, CE-029.



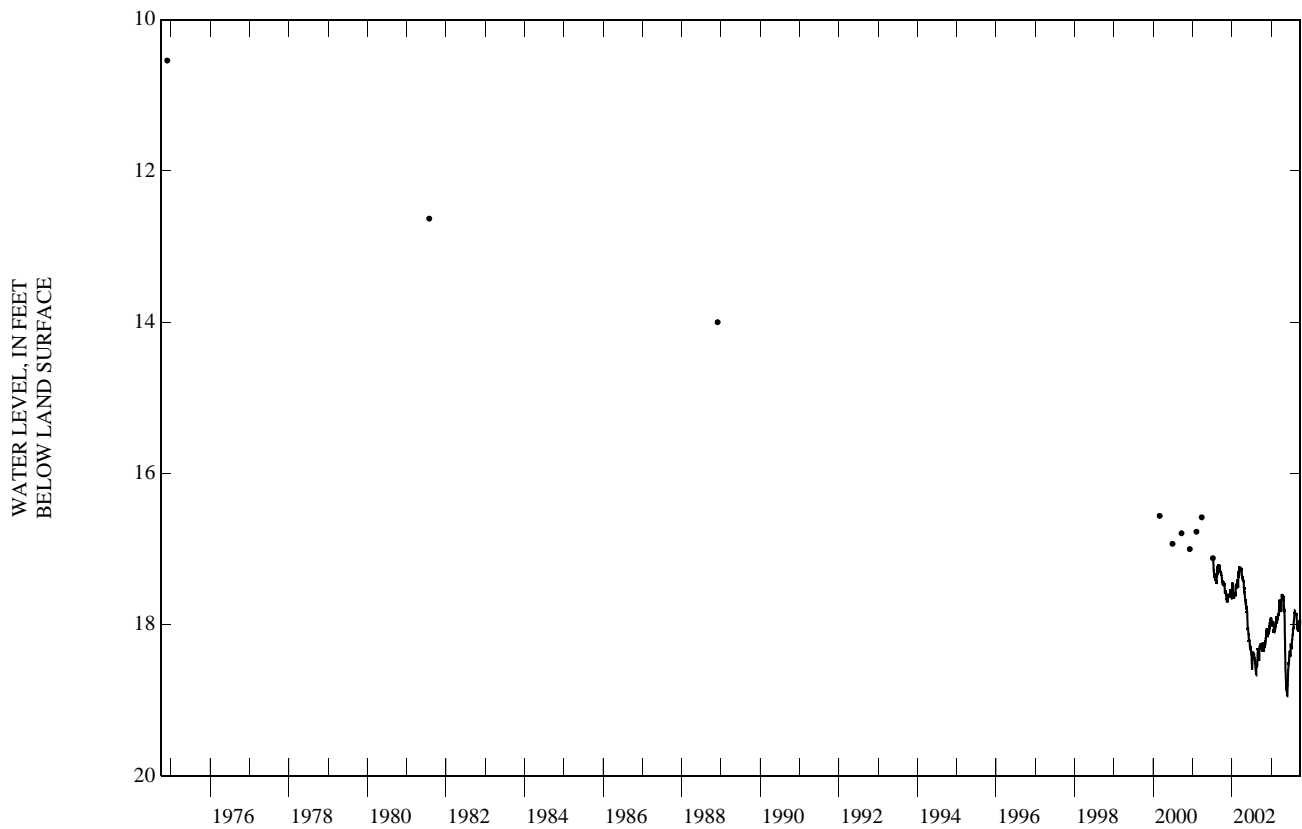
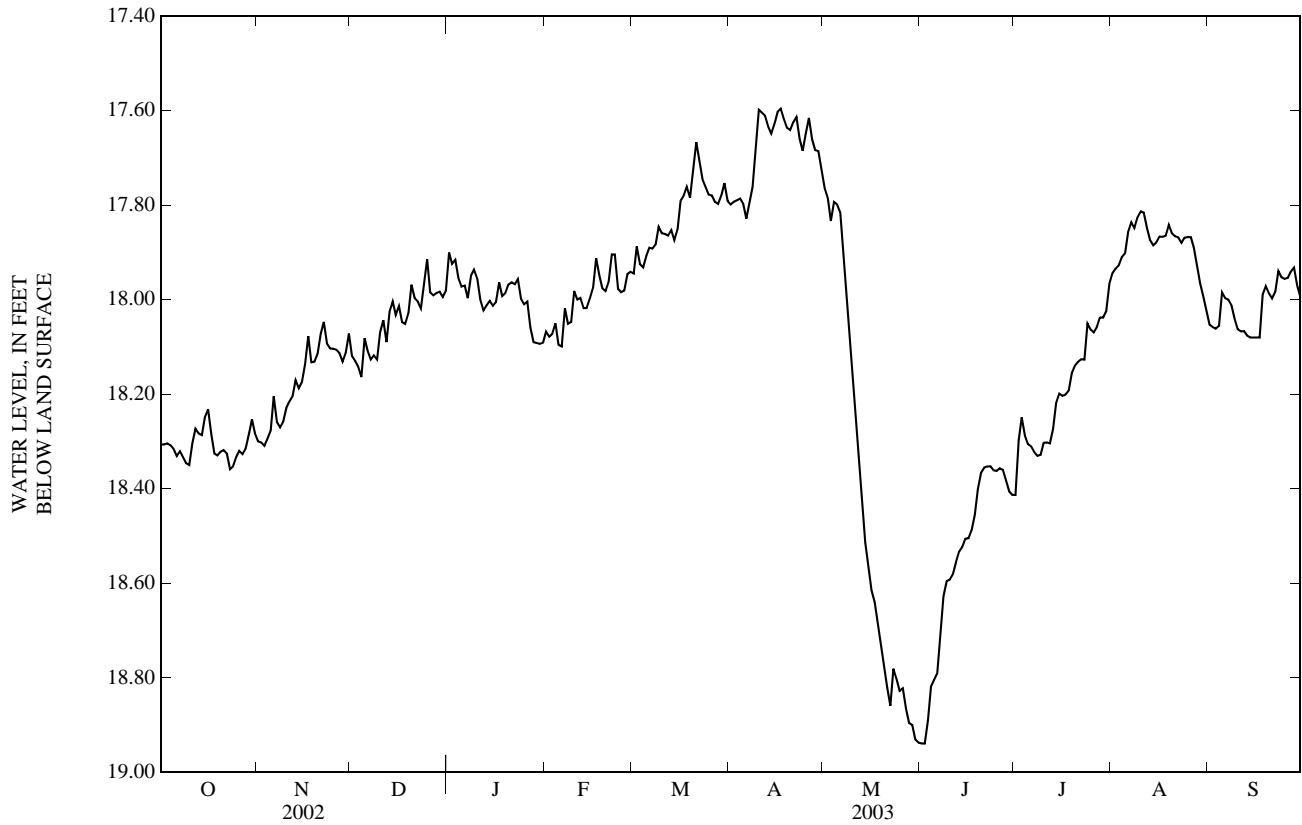
GROUND-WATER LEVELS
COLUMBUS COUNTY—Continued

341237078534213. County number, CO-102; DENR Clarendon Research Station well DD42n4.



GROUND-WATER LEVELS
COLUMBUS COUNTY—Continued

341932078315105. County number, CO-117; DENR Lake Waccamaw Research Station well CC38b8.



GROUND-WATER LEVELS
COLUMBUS COUNTY—Continued

340920078523904. County number, CO-161; Tabor City well 104.

LOCATION.--Lat 34°09'19.5", long 78°52'38.6", Hydrologic Unit 03040206, in Tabor City off Railroad Street. Owner: Town of Tabor City.

AQUIFER.--Peedee and Black Creek aquifers of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 362 ft, diameter 12 in., screened intervals from 193 to 198 ft, 215 to 220 ft, 255 to 295 ft, 307 to 317 ft, and 330 to 350 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 100 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 1.5-inch nipple in well access pipe in pump pedestal, 1.48 ft above land-surface datum.

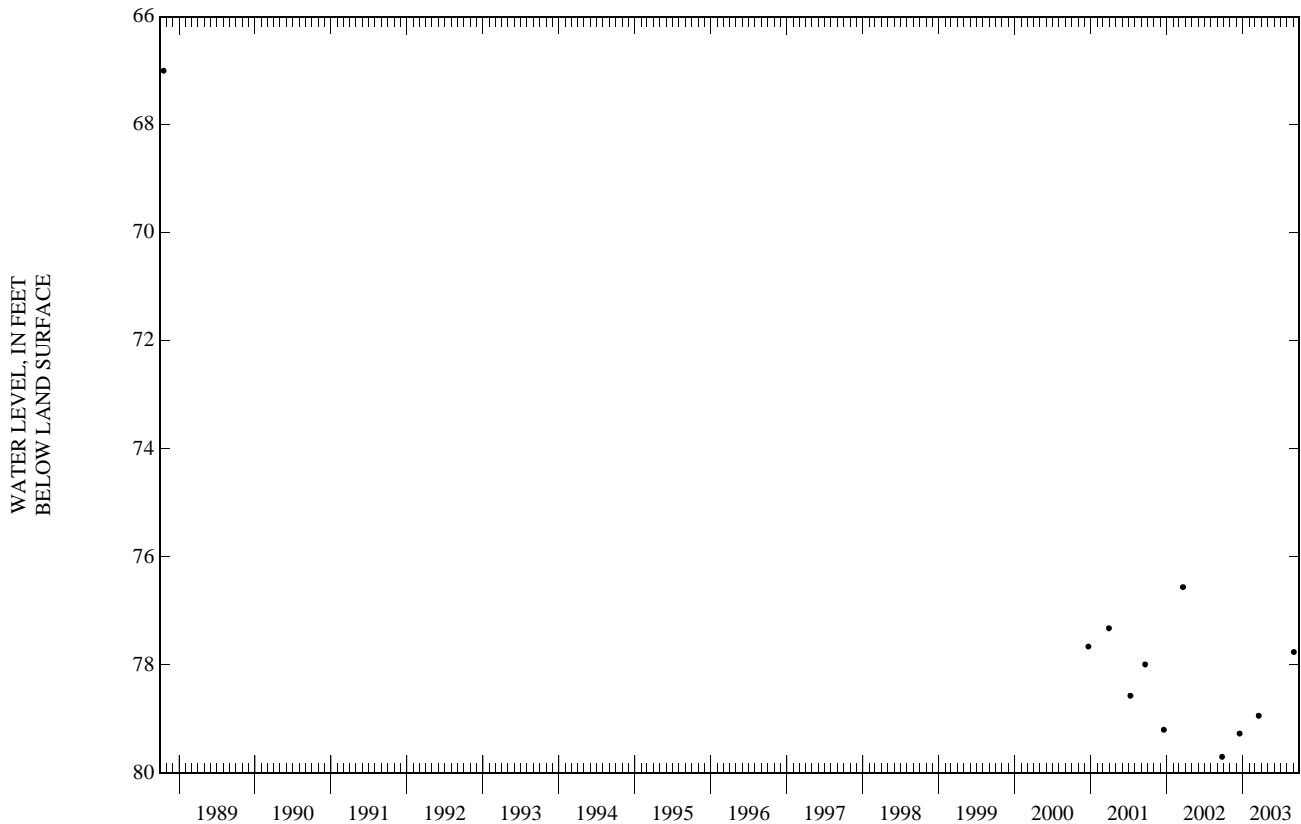
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--October 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 67 ft below land-surface datum, Oct. 18, 1988 (reported by driller); lowest measured, 79.70 ft below land-surface datum, Sept. 24, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 17	79.27	MAR 19	78.94	SEP 04	77.76



COLUMBUS COUNTY—Continued

341736078433201. County number, CO-163; Whiteville well 7.

LOCATION.--Lat 34°17'35.5", long 78°43'31.8", Hydrologic Unit 03040206, 0.3 mi south of U.S. Highway 701 on Pleasant Plains Road. Owner: City of Whiteville.

AQUIFER.--Peedee and Black Creek aquifers of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 334 ft, diameter 12 in., screened intervals from 211 to 215 ft, 229 to 234 ft, 241 to 261 ft, 267 to 277 ft, 287 to 300 ft and 305 to 329 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 106 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 0.5-inch PVC fitting in pump base, 2.22 ft above land-surface datum

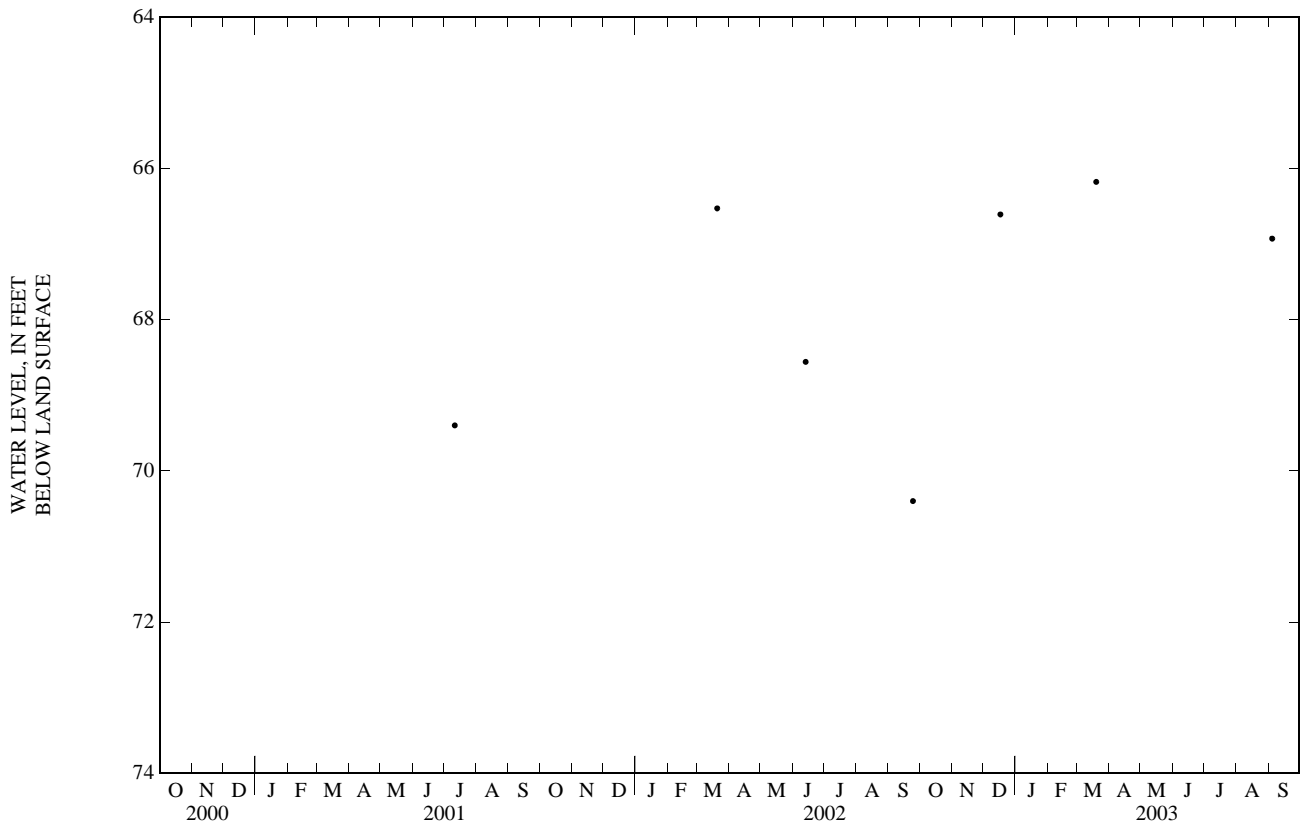
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--July 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 66.18 ft below land-surface datum, Mar. 19, 2003; lowest measured, 70.4 ft below land-surface datum, Sept. 24, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 17	66.61	MAR 19	66.18	SEP 04	66.93



GROUND-WATER LEVELS
COLUMBUS COUNTY—Continued

342508078360802. Local number, NC-179; DENR Carver Moore Research Station well AA39v2; County number, CO-089.

LOCATION.--Lat 34°25'07.5", long 78°36'09.0", Hydrologic Unit 03040206, 6.7 mi north of Hallsboro, east of Secondary Road 1001 at abandoned school on Secondary Road 1724. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 506 ft, diameter 4 in., screened interval from 496 to 506 ft.

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

DATUM.--Land-surface datum is 105.53 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 2.10 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--September 1975 to current year. Periodic water-level measurements November 1990 to June 2000. Continuous record January 1987 to November 1990, June 2000 to current year. Records from September 1975 to April 1986 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.11 ft below land-surface datum, July 20, 1976; lowest water level recorded, 50.32 ft below land-surface datum, Oct. 8-11, 2002.

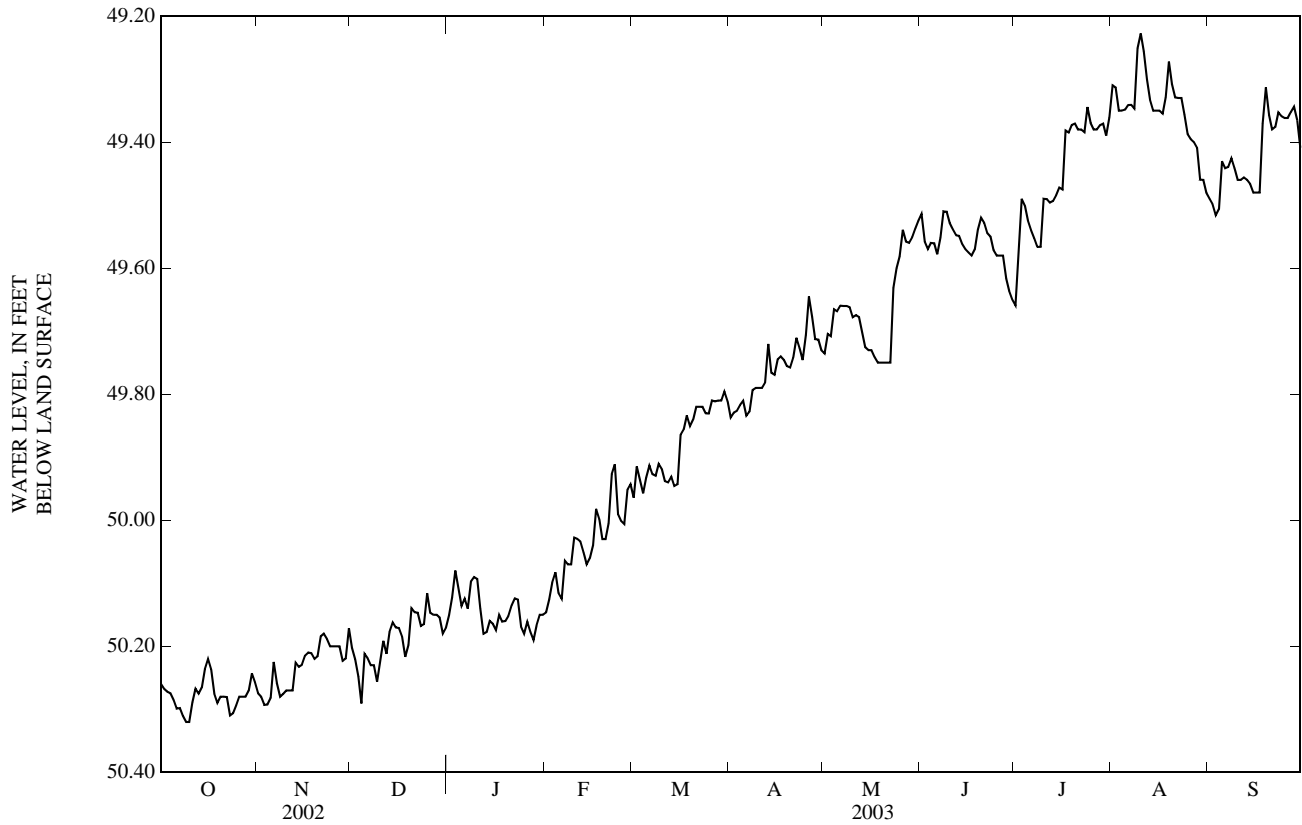
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50.26	50.27	50.20	50.15	50.15	49.96	49.84	49.74	49.51	49.66	49.31	49.49
2	50.27	50.28	50.22	50.12	50.13	49.91	49.83	49.70	49.56	49.57	49.31	49.50
3	50.27	50.29	50.25	50.08	50.10	49.94	49.83	49.71	49.57	49.49	49.35	49.52
4	50.27	50.29	50.29	50.11	50.08	49.96	49.82	49.67	49.56	49.50	49.35	49.51
5	50.29	50.28	50.21	50.14	50.12	49.93	49.81	49.67	49.56	49.52	49.35	49.43
6	50.30	50.23	50.22	50.12	50.12	49.91	49.83	49.66	49.58	49.54	49.34	49.44
7	50.30	50.26	50.23	50.14	50.06	49.93	49.83	49.66	49.55	49.55	49.34	49.44
8	50.31	50.28	50.23	50.10	50.07	49.93	49.79	49.66	49.51	49.57	49.35	49.43
9	50.32	50.28	50.26	50.09	50.07	49.91	49.79	49.66	49.51	49.57	49.25	49.44
10	50.32	50.27	50.22	50.09	50.03	49.92	49.79	49.68	49.53	49.49	49.23	49.46
11	50.29	50.27	50.19	50.14	50.03	49.94	49.79	49.67	49.54	49.49	49.26	49.46
12	50.27	50.27	50.21	50.18	50.03	49.94	49.78	49.68	49.55	49.50	49.30	49.46
13	50.28	50.23	50.18	50.18	50.05	49.93	49.72	49.70	49.55	49.49	49.33	49.46
14	50.27	50.23	50.16	50.16	50.07	49.95	49.77	49.73	49.56	49.48	49.35	49.47
15	50.24	50.23	50.17	50.16	50.06	49.94	49.77	49.73	49.57	49.47	49.35	49.48
16	50.22	50.21	50.17	50.17	50.04	49.86	49.74	49.73	49.58	49.48	49.35	49.48
17	50.24	50.21	50.18	50.15	49.98	49.86	49.74	49.74	49.58	49.38	49.35	49.48
18	50.28	50.21	50.22	50.16	50.00	49.83	49.75	49.75	49.57	49.38	49.33	49.37
19	50.29	50.22	50.20	50.16	50.03	49.85	49.76	49.75	49.54	49.37	49.27	49.31
20	50.28	50.22	50.14	50.15	50.03	49.84	49.76	49.75	49.52	49.37	49.31	49.36
21	50.28	50.18	50.15	50.14	50.01	49.82	49.74	49.75	49.53	49.38	49.33	49.38
22	50.28	50.18	50.15	50.12	49.93	49.82	49.71	49.75	49.54	49.38	49.33	49.38
23	50.31	50.19	50.17	50.13	49.91	49.82	49.73	49.63	49.55	49.38	49.33	49.35
24	50.31	50.20	50.16	50.17	49.99	49.83	49.75	49.60	49.57	49.34	49.36	49.36
25	50.29	50.20	50.12	50.18	50.00	49.83	49.71	49.58	49.58	49.37	49.39	49.36
26	50.28	50.20	50.15	50.16	50.01	49.81	49.65	49.54	49.58	49.38	49.40	49.36
27	50.28	50.20	50.15	50.18	49.95	49.81	49.68	49.56	49.58	49.38	49.40	49.35
28	50.28	50.22	50.15	50.19	49.94	49.81	49.71	49.56	49.62	49.37	49.41	49.34
29	50.27	50.22	50.15	50.17	---	49.81	49.71	49.55	49.64	49.37	49.46	49.37
30	50.24	50.17	50.18	50.15	---	49.80	49.73	49.54	49.65	49.39	49.46	49.41
31	50.26	---	50.17	50.15	---	49.81	---	49.52	---	49.36	49.48	---

WTR YR 2003 MEAN 49.83 HIGH 49.23 LOW 50.32

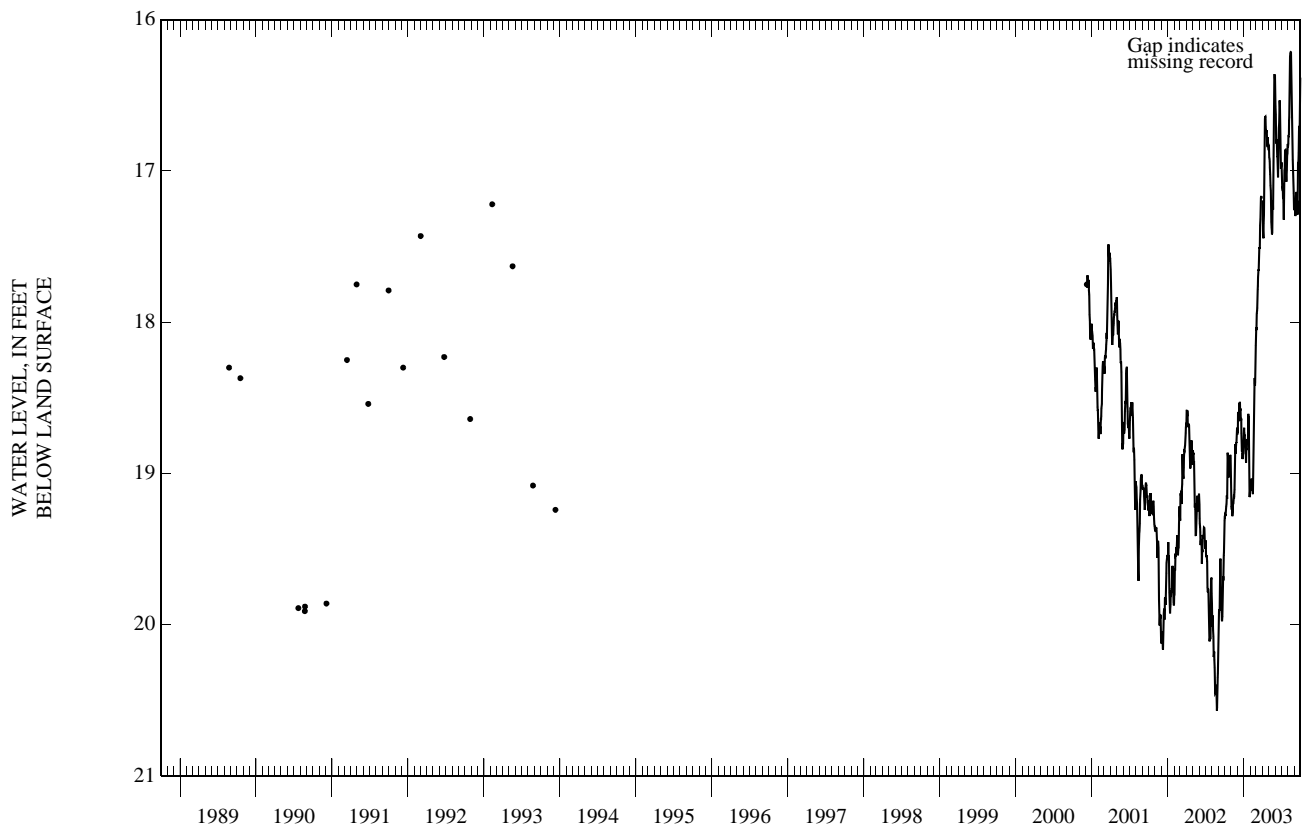
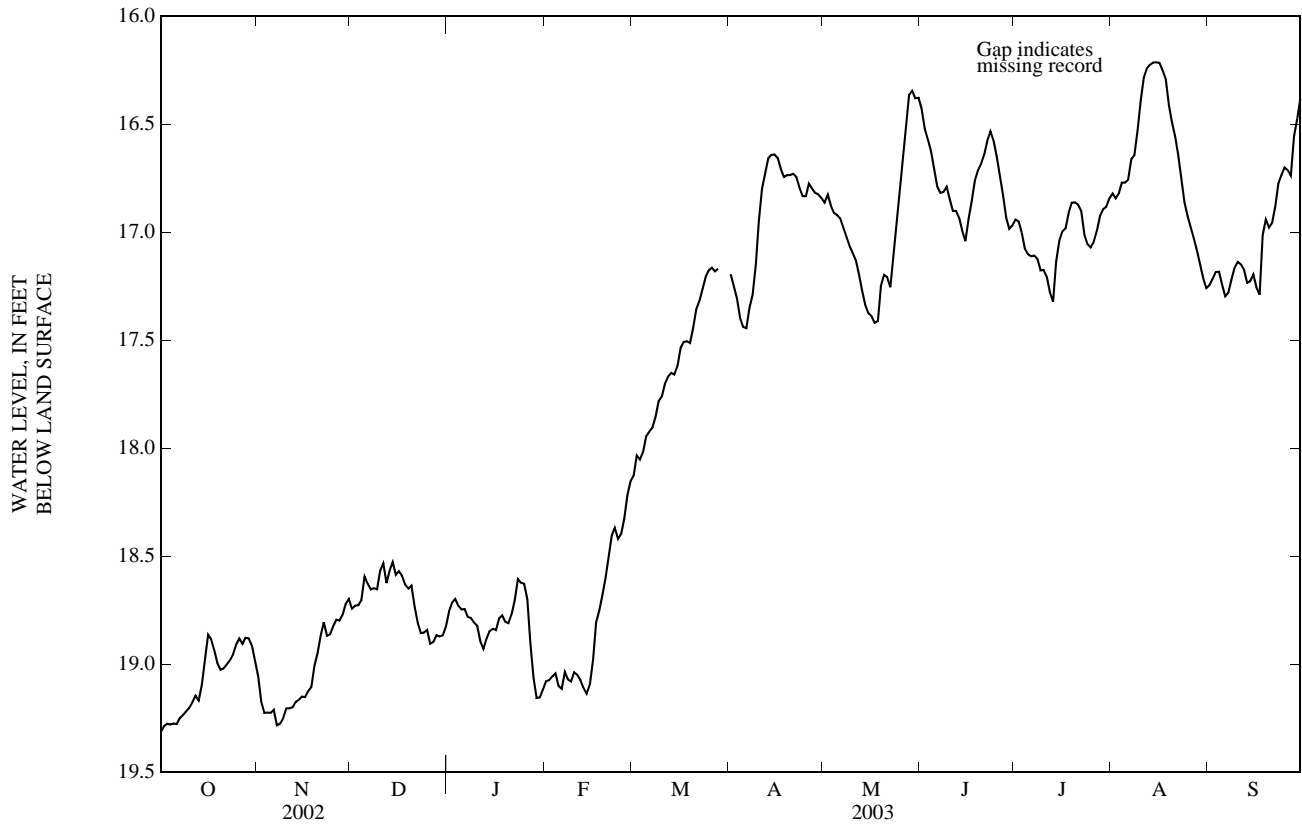
GROUND-WATER LEVELS
COLUMBUS COUNTY—Continued

342508078360802. Local number, NC-179; DENR Carver Moore Research Station well AA39v2; County number, CO-089.



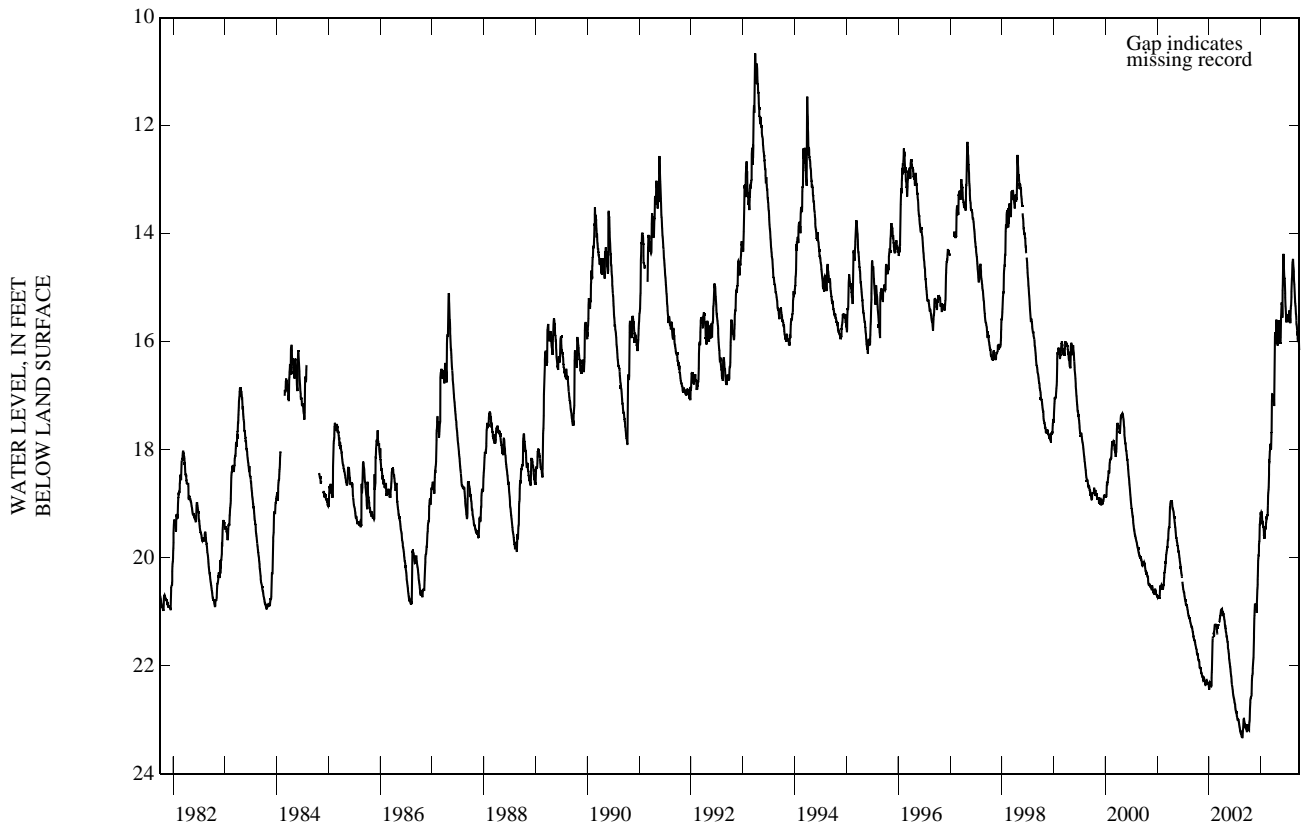
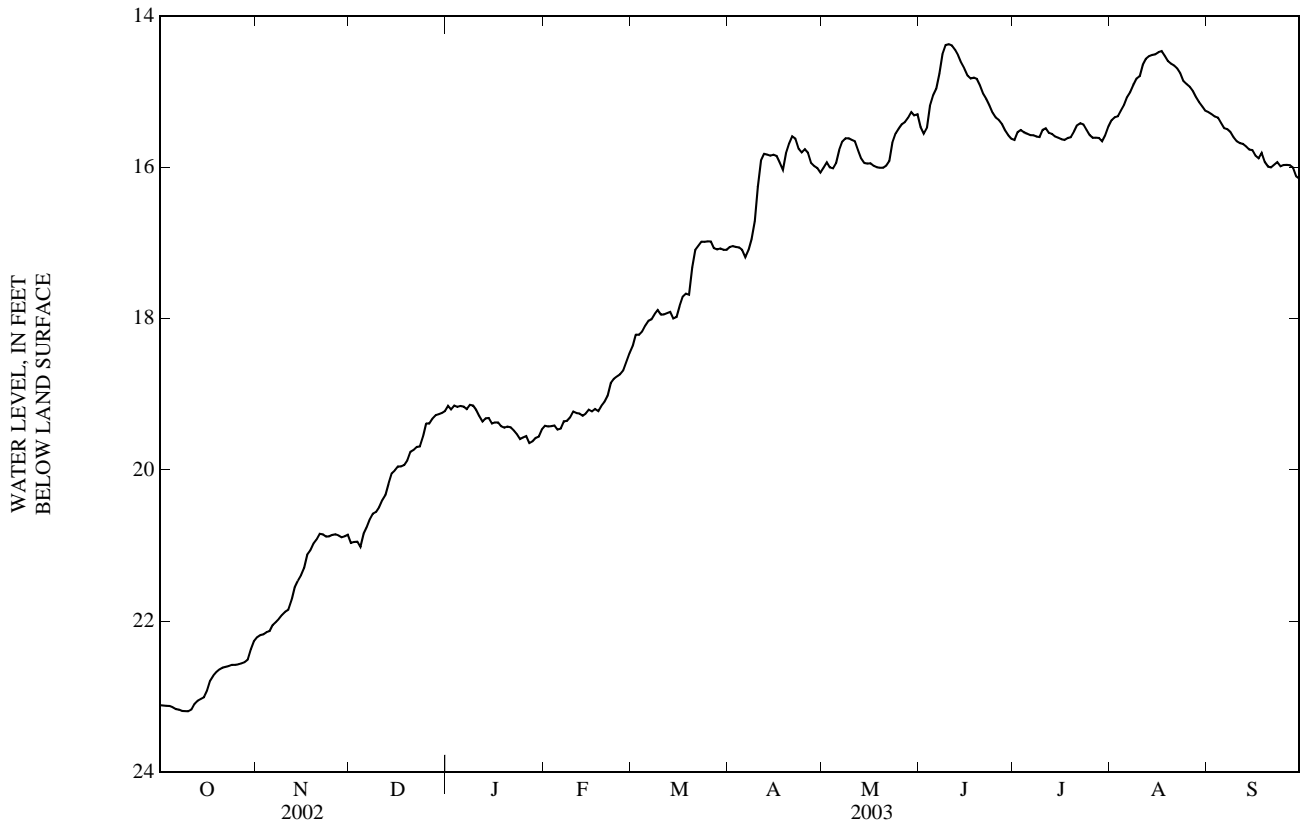
GROUND-WATER LEVELS
CRAVEN COUNTY—Continued

345602076532405. County number, CR-552; DENR Cherry Point Research Station well U18q5.



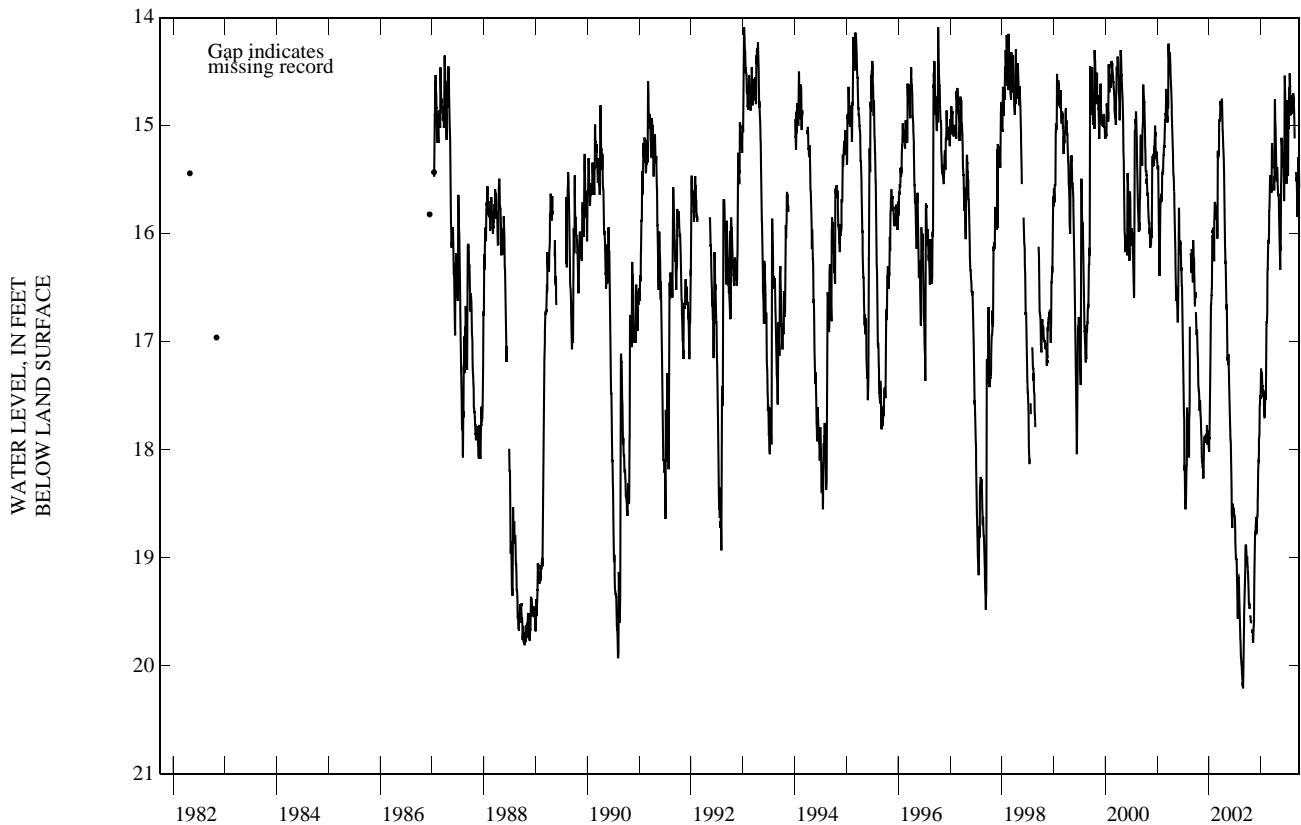
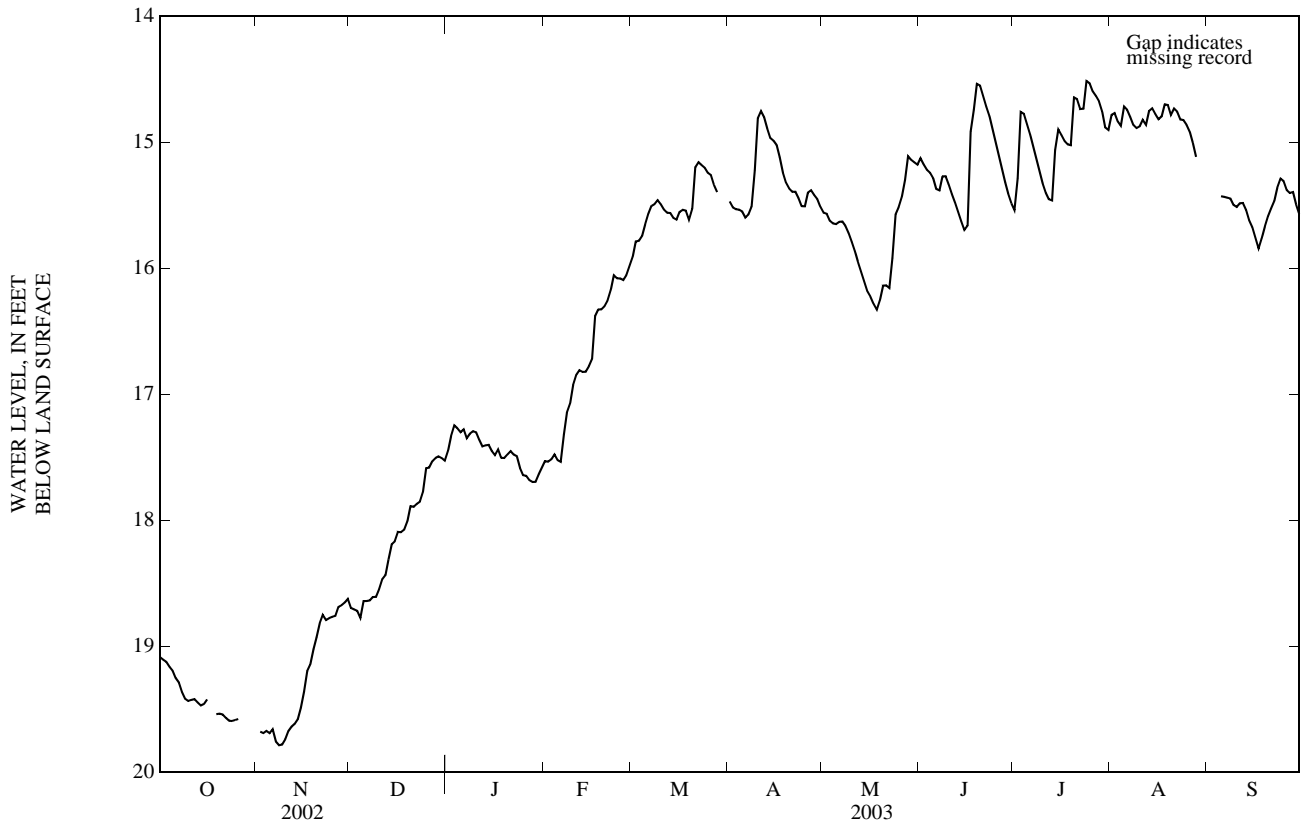
DAVIE COUNTY—Continued

355359080331701. Local number, NC-142; County number, DV-025.



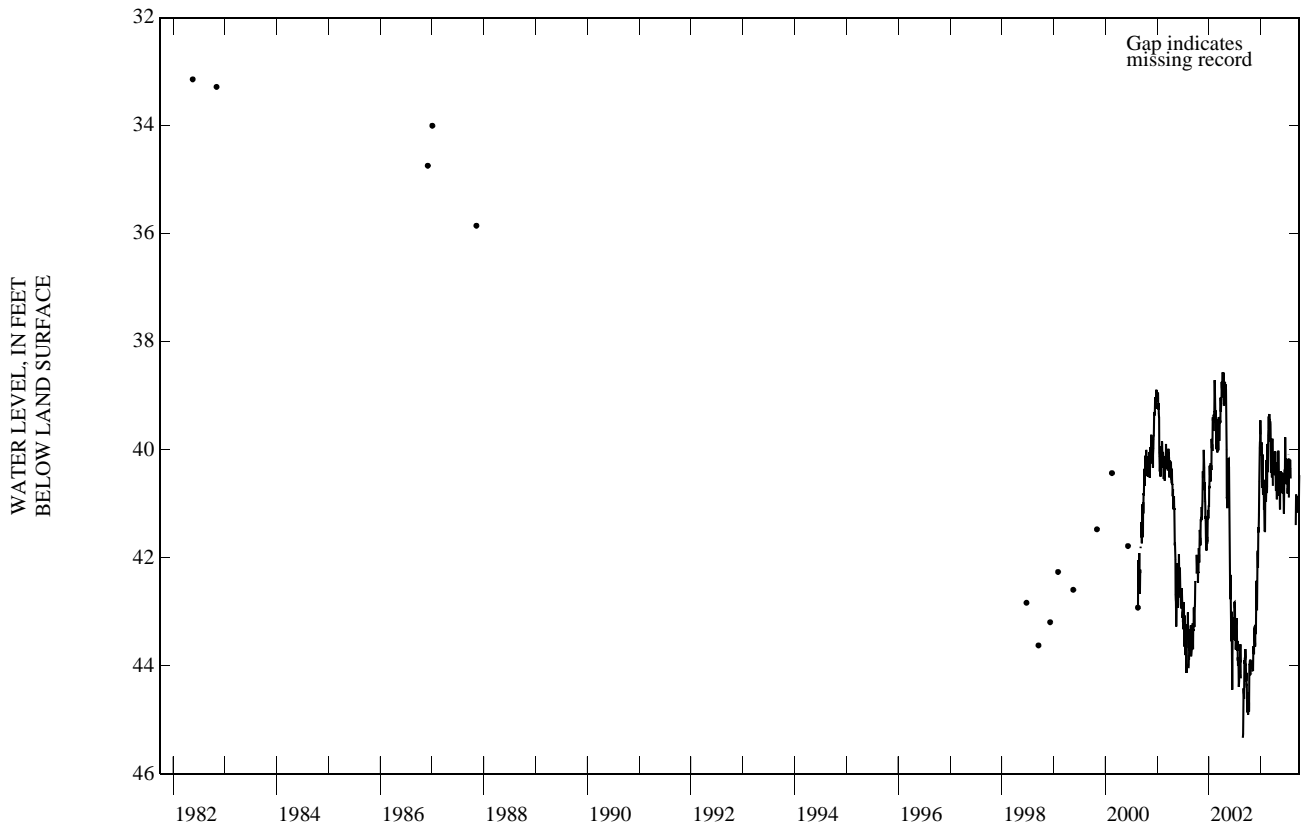
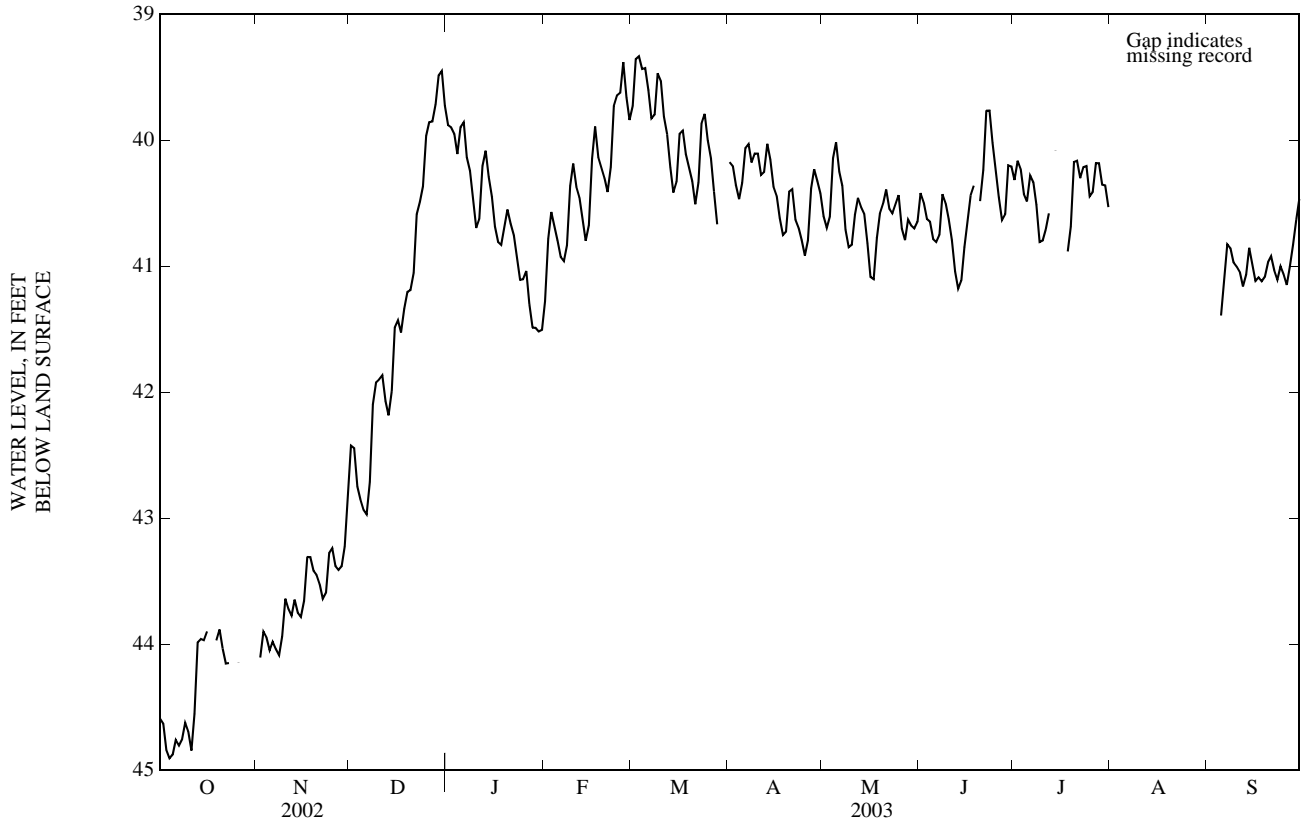
DUPLIN COUNTY—Continued

345051078012101. Local number, NC-174; DENR Rose Hill Research Station well V32v1; County number, DU-126.



DUPLIN COUNTY—Continued

345051078012106. Local number, NC-218; DENR Rose Hill Research Station well V32v6; County number, DU-135.



GROUND-WATER LEVELS

DUPLIN COUNTY—Continued

345051078012108. Local number, NC-222; DENR Rose Hill Research Station well V32v8; County number, DU-136.

LOCATION.--Lat 34°50'52", long 78°01'20", Hydrologic Unit 03030007, 1.5 mi north of Rose Hill at Rose Hill-Magnolia Elementary School, east of U.S. Highway 117 on Secondary Road 1911. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 14 ft, diameter 4 in., screened interval from 10 to 14 ft.

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

DATUM.--Land-surface datum is 86 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 4 in. casing collar, 1.21 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--October 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.62 ft below land-surface datum, June 18, 2003; lowest water level recorded occurred during period when well was dry, Sept. 1 to Sept. 30, 2002.

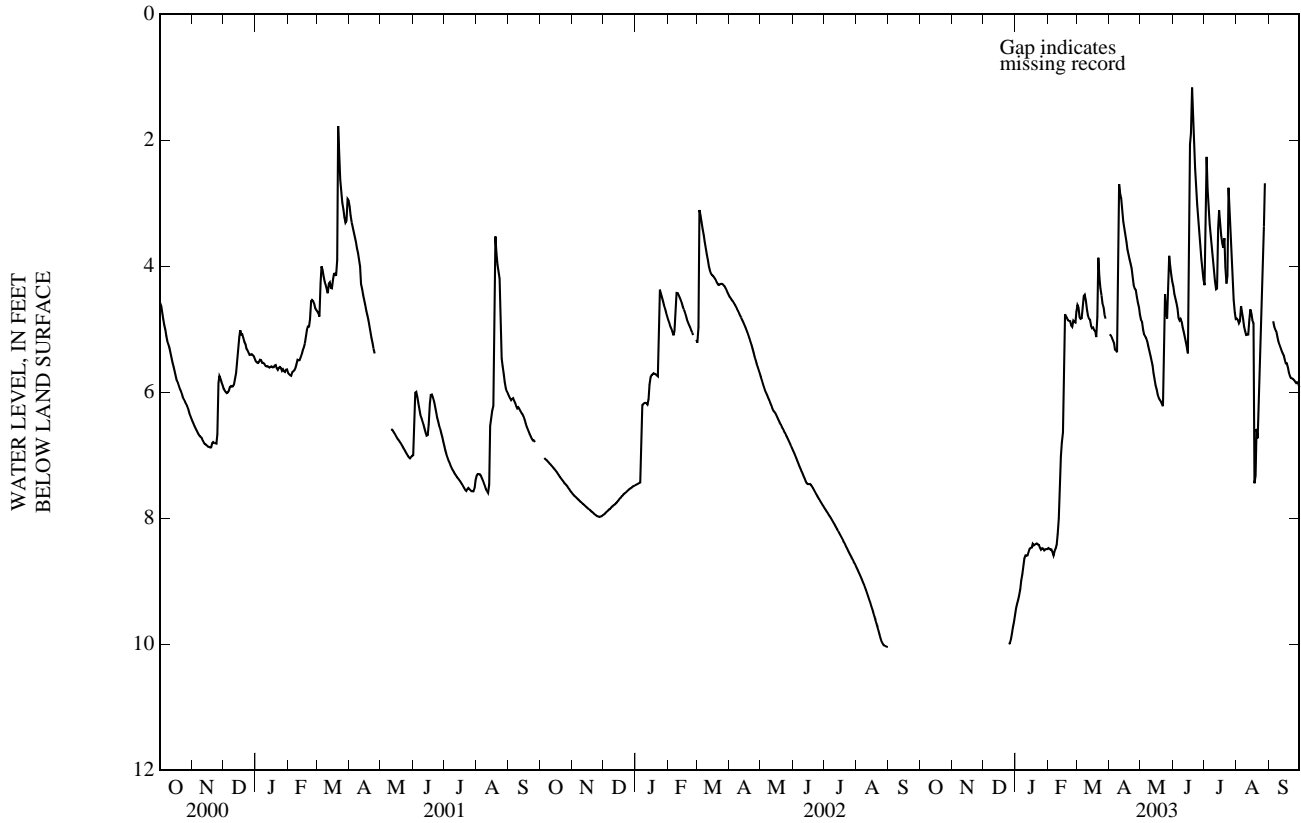
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	9.43	8.47	4.61	5.08	4.85	4.32	4.30	4.83	---
2	---	---	---	9.36	8.48	4.65	5.10	4.88	4.44	3.37	4.85	---
3	---	---	---	9.29	8.50	4.81	5.13	5.01	4.52	2.27	4.91	---
4	---	---	---	9.23	8.49	4.84	5.17	5.08	4.58	2.77	4.87	---
5	---	---	---	9.13	8.54	4.83	5.22	5.12	4.67	3.09	4.64	4.88
6	---	---	---	8.99	8.59	4.68	5.32	5.14	4.82	3.33	4.73	4.96
7	---	---	---	8.89	8.52	4.47	5.34	5.20	4.86	3.54	4.84	5.00
8	---	---	---	8.75	8.48	4.46	5.37	5.27	4.84	3.72	4.96	5.04
9	---	---	---	8.64	8.42	4.54	4.09	5.35	4.88	3.91	5.03	5.12
10	---	---	---	8.59	8.25	4.69	2.70	5.42	4.97	4.07	5.09	5.20
11	---	---	---	8.60	8.00	4.78	2.86	5.49	5.04	4.23	5.09	5.25
12	---	---	---	8.59	7.44	4.83	2.92	5.57	5.12	4.37	5.08	5.29
13	---	---	---	8.54	7.02	4.85	3.11	5.70	5.20	4.36	4.85	5.34
14	---	---	---	8.48	6.80	4.95	3.29	5.80	5.29	3.40	4.69	5.38
15	---	---	---	8.47	6.64	4.98	3.41	5.89	5.38	3.12	4.75	5.42
16	---	---	---	8.47	6.14	4.97	3.51	5.96	4.56	3.33	4.86	5.48
17	---	---	---	8.40	4.76	5.01	3.62	6.04	2.07	3.52	4.90	5.54
18	---	---	---	8.43	4.79	5.03	3.73	6.09	1.89	3.64	7.45	5.54
19	---	---	---	8.42	4.83	5.13	3.82	6.12	1.17	3.71	7.32	5.61
20	---	---	---	8.41	4.86	4.80	3.89	6.15	1.59	3.56	6.58	5.69
21	---	---	---	8.40	4.87	3.87	3.96	6.18	2.06	4.02	6.73	5.74
22	---	---	---	8.42	4.87	4.18	4.03	6.22	2.45	4.28	6.19	5.78
23	---	---	---	8.42	4.94	4.35	4.17	5.38	2.75	4.15	5.54	5.78
24	---	---	---	8.47	4.96	4.47	4.30	4.44	3.03	2.76	5.09	5.79
25	---	---	9.99	8.50	4.87	4.59	4.36	4.69	3.27	3.33	4.57	5.81
26	---	---	9.99	8.48	4.89	4.65	4.38	4.83	3.48	3.75	3.97	5.83
27	---	---	9.93	8.48	4.89	4.77	4.49	4.38	3.68	4.05	3.37	5.86
28	---	---	9.83	8.51	4.73	4.83	4.58	3.84	3.89	4.31	2.69	5.84
29	---	---	9.73	8.50	---	---	4.65	3.99	4.05	4.54	---	5.86
30	---	---	9.64	8.49	---	---	4.77	4.14	4.21	4.74	---	5.92
31	---	---	9.55	8.49	---	---	---	4.24	---	4.84	---	---

WTR YR 2003 MEAN 5.41 HIGH 1.17 LOW 9.99

DUPLIN COUNTY—Continued

345051078012108. Local number, NC-222; DENR Rose Hill Research Station well V32v8; County number, DU-136.



GROUND-WATER LEVELS

DUPLIN COUNTY—Continued

345051078012103. Local number, NC-224; DENR Rose Hill Research Station well V32v3; County number, DU-134.

LOCATION.--Lat 34°50'52", long 78°01'20", Hydrologic Unit 03030007, 1.5 mi north of Rose Hill at Rose Hill-Magnolia Elementary School, east of U.S. Highway 117 on Secondary Road 1911. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Castle Hayne aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 46 ft, diameter 4 in., screened interval from 36 to 46 ft.

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

DATUM.--Land-surface datum is 84.42 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 4 in. casing collar, 1.22 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--October 2000 to current year.

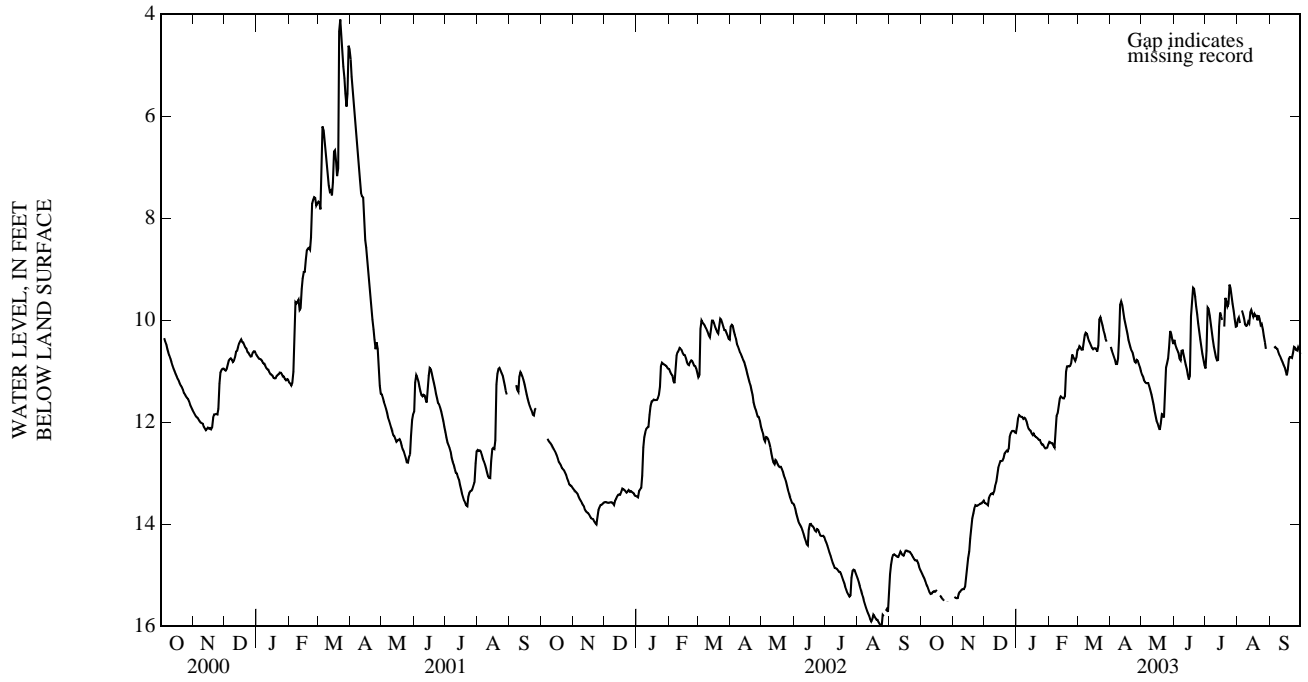
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.03 ft below land-surface datum, March 22, 2001; lowest water level recorded, 16.04 ft below land-surface datum, Aug. 24, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.93	---	13.58	12.08	12.39	10.57	10.52	11.06	10.38	10.95	9.99	---
2	14.97	15.43	13.59	11.93	12.40	10.51	10.59	11.10	10.48	10.60	9.95	---
3	15.02	15.44	13.61	11.86	12.41	10.54	10.65	11.18	10.54	9.75	10.05	---
4	15.06	15.45	13.63	11.88	12.41	10.58	10.71	11.21	10.58	9.78	---	---
5	15.11	15.45	13.49	11.90	12.46	10.58	10.78	11.23	10.64	9.91	9.81	10.55
6	15.18	15.37	13.43	11.89	12.50	10.45	10.86	11.23	10.75	10.06	9.88	10.53
7	15.22	15.32	13.40	11.93	12.17	10.29	10.86	11.23	10.79	10.22	9.97	10.55
8	15.28	15.30	13.39	11.91	11.88	10.25	10.75	11.29	10.60	10.37	10.08	10.56
9	15.33	15.28	13.41	11.93	11.82	10.27	10.31	11.37	10.59	10.52	10.11	10.62
10	15.37	15.27	13.36	11.98	11.69	10.34	9.71	11.46	10.68	10.63	10.10	10.69
11	15.36	15.27	13.25	12.06	11.54	10.40	9.63	11.55	10.78	10.73	10.03	10.73
12	15.33	15.23	13.18	12.12	11.49	10.45	9.69	11.65	10.87	10.79	10.06	10.77
13	15.31	15.05	13.05	12.15	11.52	10.49	9.83	11.77	10.96	10.78	9.84	10.82
14	15.32	14.84	12.89	12.17	11.53	10.54	9.97	11.88	11.07	10.12	9.80	10.87
15	15.32	14.67	12.83	12.21	11.53	10.57	10.07	11.97	11.16	9.85	9.88	10.92
16	15.29	14.53	12.76	12.25	11.49	10.55	10.16	12.03	11.10	9.93	9.94	10.99
17	---	14.28	12.76	12.22	11.01	10.55	10.27	12.09	9.92	10.0	9.88	11.08
18	---	14.06	12.76	12.27	10.91	10.56	10.39	12.15	9.64	---	9.92	10.97
19	15.40	13.89	12.71	12.29	10.90	10.62	10.47	12.03	9.36	10.12	9.92	10.76
20	15.42	13.78	12.61	12.30	10.91	10.50	10.54	11.84	9.38	9.56	10.00	10.72
21	15.45	13.69	12.59	12.32	10.90	9.99	10.60	11.86	9.54	9.62	9.91	10.73
22	15.47	13.63	12.56	12.35	10.85	9.95	10.64	11.91	9.73	9.73	9.98	10.74
23	15.50	13.64	12.57	12.35	10.67	10.02	10.73	11.52	9.89	9.69	10.10	10.64
24	---	13.64	12.52	12.41	10.72	10.10	10.81	10.93	10.07	9.30	10.08	10.52
25	---	13.62	12.29	12.44	10.76	10.19	10.83	10.85	10.23	9.37	10.18	10.54
26	15.51	13.61	12.21	12.44	10.80	10.27	10.78	10.75	10.38	9.54	10.31	10.58
27	---	13.59	12.18	12.48	10.74	10.36	10.80	10.53	10.52	9.68	10.43	10.59
28	---	13.59	12.17	12.51	10.59	10.42	10.86	10.21	10.66	9.82	10.57	10.53
29	---	13.56	12.17	12.51	---	---	10.92	10.26	10.78	9.97	---	10.58
30	---	13.54	12.20	12.50	---	---	11.00	10.38	10.88	10.13	---	10.66
31	---	---	12.21	12.44	---	---	---	10.47	---	10.12	---	---
WTR YR	2003	MEAN	11.59	HIGH	9.30	LOW	15.51					

DUPLIN COUNTY—Continued

345051078012103. Local number, NC-224; DENR Rose Hill Research Station well V32v3; County number, DU-134.



GROUND-WATER LEVELS

GREENE COUNTY

353103077333401. County number, GR-082; L2 Lizzie N26q2.

LOCATION.--Lat 35°31'03.64", long 77°33'32.66", Hydrologic Unit 03020203, near Lizzie, 20 ft north of Secondary Road 1335. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 18 ft, diameter 2 in., cased to 6 ft, screened interval from 6 to 16 ft.

INSTRUMENTATION.--Water-level recorder collecting data at 15-minute intervals. Satellite telemetry at station.

DATUM.--Land-surface datum is 76.96 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 2.71 ft above land surface datum.

REMARKS.--Well is part of multimedia integrated modeling system (MIMS) project.

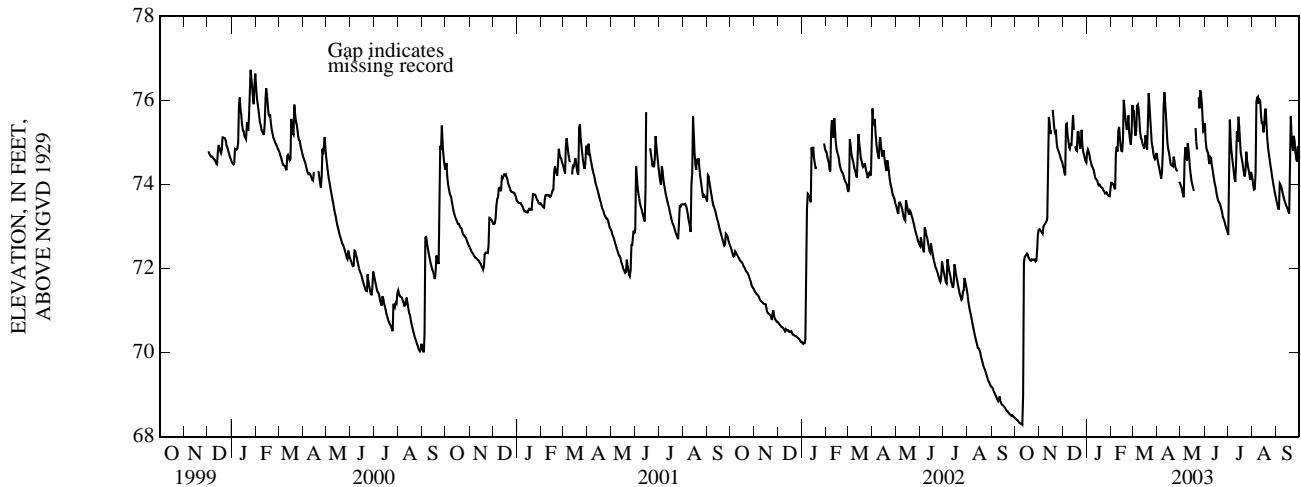
PERIOD OF RECORD.--December 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded 76.98 ft, above NGVD of 1929, Jan. 25, 2000; lowest water level recorded, 68.26 ft, above NGVD of 1929, Oct. 11, 2002.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68.43	72.94	74.44	74.76	74.04	75.67	74.63	73.99	75.45	72.80	74.12	73.59
2	68.42	72.92	74.41	74.83	74.03	75.77	74.53	73.94	75.03	73.58	73.99	73.51
3	68.39	72.88	74.28	74.79	74.00	75.41	74.44	73.83	74.86	75.54	73.88	73.43
4	68.38	72.86	74.22	74.71	74.01	75.16	74.34	73.76	74.79	75.07	73.89	73.42
5	68.36	72.83	75.43	74.60	73.93	75.28	74.25	73.70	74.75	74.79	74.30	74.03
6	68.34	73.00	75.45	74.54	73.89	75.87	74.14	74.59	74.59	74.63	75.97	74.00
7	68.32	73.03	75.18	74.44	74.77	75.90	74.30	74.88	74.48	74.45	76.07	73.94
8	68.31	73.06	75.03	74.41	74.90	75.78	74.76	74.70	74.65	74.29	76.09	73.85
9	68.30	73.08	74.89	74.37	74.79	75.60	75.84	74.57	74.62	74.15	75.92	73.77
10	68.28	73.12	74.85	74.29	75.27	75.25	76.19	74.98	74.45	74.06	76.01	73.68
11	68.98	73.20	74.96	74.20	75.37	75.11	75.98	74.82	74.31	74.50	75.98	73.62
12	72.14	74.15	74.95	74.14	75.14	75.07	75.70	74.59	74.19	75.26	75.64	73.57
13	72.28	75.61	75.35	74.12	74.92	74.98	75.29	74.39	74.08	75.01	75.44	73.51
14	72.30	75.44	75.65	74.10	74.80	74.93	74.98	74.21	74.01	75.61	75.49	73.47
15	72.33	75.20	75.30	74.02	74.79	74.85	74.84	74.08	73.91	75.36	75.24	73.43
16	72.36	75.29	---	73.98	75.06	74.95	74.75	73.99	73.79	74.98	75.43	73.36
17	72.33	---	74.91	73.99	76.01	75.17	74.61	73.91	73.70	74.75	75.76	73.30
18	72.26	75.78	74.81	73.96	75.78	75.03	74.48	73.85	73.62	74.65	75.80	74.48
19	72.23	75.54	74.80	73.94	75.59	74.83	74.46	---	73.58	74.53	75.45	75.62
20	72.20	75.33	75.25	73.93	75.44	75.46	74.45	75.34	73.55	74.40	75.09	75.22
21	72.18	75.23	75.25	73.91	75.29	76.17	74.44	75.03	73.49	74.27	74.87	74.95
22	72.21	75.26	75.03	73.86	75.41	75.82	74.66	74.84	73.43	74.19	74.72	74.80
23	72.22	74.98	74.85	73.84	75.65	75.52	74.55	---	73.35	74.34	74.59	75.16
24	72.21	74.88	74.95	73.79	75.25	75.21	74.42	76.08	73.24	74.78	74.45	75.02
25	72.21	74.82	75.30	73.79	75.05	74.99	74.36	75.81	73.19	74.59	74.33	74.78
26	72.22	74.77	74.94	73.81	74.95	74.88	74.34	76.24	73.13	74.45	74.22	74.61
27	72.17	74.71	74.79	73.76	75.24	74.74	74.31	76.14	73.06	74.36	74.10	74.54
28	72.19	74.63	74.72	73.74	75.89	74.65	---	75.93	72.98	74.25	73.98	74.89
29	72.47	74.58	74.64	73.73	---	74.60	74.07	75.59	72.93	74.11	73.87	74.90
30	72.80	74.54	74.56	73.72	---	74.63	74.03	75.25	72.86	74.30	73.78	74.62
31	72.92	---	74.52	73.90	---	74.75	---	75.28	---	74.22	73.68	---

WTR YR 2003 MEAN 74.28 MAX 76.24 MIN 68.28



GREENE COUNTY—Continued

353111077334402. County number, GR-085; L6 Lizzie N26q6.

LOCATION.--Lat 35°31'11.78", long 77°33'43.09", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345.
 Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 8 ft, diameter 2 in., screened interval from 4 to 7 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 73.38 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 3.38 ft above land surface datum.

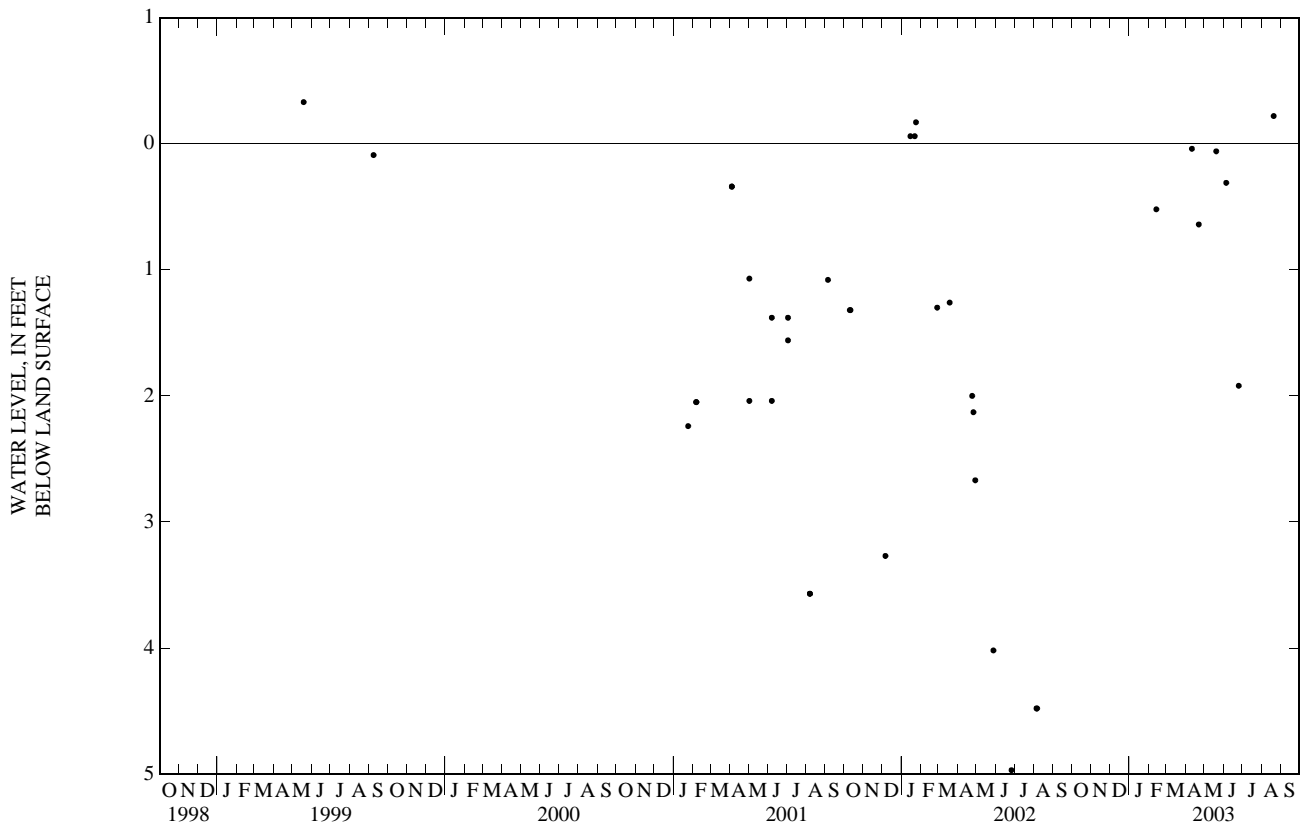
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--May 1999 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, -0.33 ft below land-surface datum, May 19, 1999; lowest water level measured, 4.97 ft below land-surface datum, June 26, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM (READINGS ABOVE LAND-SURFACE INDICATED BY "+"),
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 13	.52	APR 22	.64	JUN 05	.31	AUG 20	+.22
APR 11	.04	MAY 20	.06	JUN 25	1.92		



353111077334402. County number, GR-085; L6 Lizzie N26q6—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1995 to current year.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB 13...	1345	0.52	775	2.8	24	4.3	777	--	8.9	170	43.2	15.9	12.7
APR 11...	1425	0.04	756	0.8	8	3.5	705	9.5	12.6	160	38.9	14.6	14.1
APR 22...	1000	0.64	756	0.9	9	4.2	743	22.0	16.9	160	39.7	14.9	13.0
JUN 05...	1405	0.31	763	0.6	5	4.4	822	31.0	13.4	150	36.6	13.2	12.5
AUG 20...	1410	-0.22	772	0.7	8	4.3	671	31.0	23.2	120	28.6	12.0	9.75

Date	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
FEB 13...	48.7	110	21.4	0.38	<0.04	41.9	<0.008	--	0.02	0.022	42	2.3	E5
APR 11...	46.0	96.8	19.8	0.90	0.56	37.0	0.017	0.34	0.02	0.024	38	--	20
APR 22...	44.8	98.9	20.7	0.42	0.17	45.1	E.004	0.26	E.01	--	46	2.2	38
JUN 05...	42.3	98.4	18.6	0.40	0.08	38.2	0.014	0.32	--	0.025	39	2.0	39
AUG 20...	35.1	85.7	15.0	0.47	0.12	32.4	0.013	0.35	<0.18	0.030	33	--	37

GREENE COUNTY—Continued

353103077333404. County number, GR-087; L2S.

LOCATION.--Lat 35°31'04", long 77°33'32.66", Hydrologic Unit 03020203, near Lizzie, 20 ft north of Secondary Road 1335. Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 5 ft, diameter 2 in., screened interval from 2 to 5 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 77.42 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 1.58 ft above land surface datum.

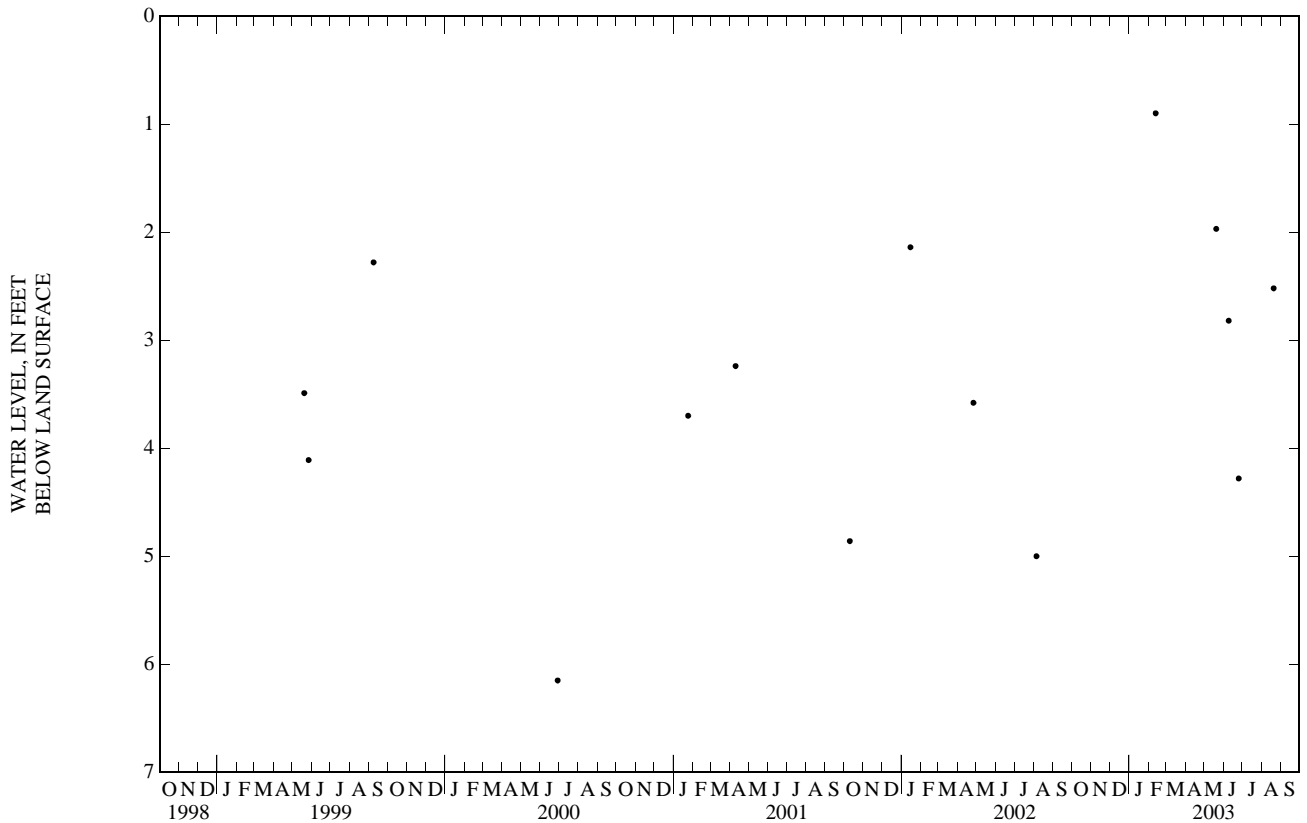
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--May 1999 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.90 ft below land-surface datum, Feb. 12, 2003; lowest water level measured, 6.15 ft below land-surface datum, June 29, 2000.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 12	.90	MAY 20	1.97	JUN 09	2.82	JUN 25	4.28	AUG 20	2.52



353103077333404. County number, GR-087; L2S—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1999 to June 2000, February 2003 to current year.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB 12...	1725	2.19	766	6.8	58	5.1	302	--	8.9	32	5.20	4.68	0.52
APR 09...	1145	0.90	767	9.5	89	5.4	218	8.0	12.8	22	4.04	2.97	1.04
JUN 09...	1450	2.82	758	1.7	19	6.0	275	29.5	20.4	24	4.56	3.15	0.92
AUG 20...	1850	2.52	770	3.9	45	5.8	229	30.5	22.4	29	4.81	4.13	0.80

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	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)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)
FEB 12...	34.3	<10	34.6	59.2	--	0.16	<0.04	E.04	<0.008	<0.09	E.002	--	2.5
APR 09...	27.2	8	14.4	49.4	105	0.33	<0.04	0.37	<0.008	<0.04	E.004	0.70	--
JUN 09...	35.2	<2	30.9	53.1	--	0.24	<0.04	E.05	<0.008	<0.02	0.006	--	3.3
AUG 20...	26.9	--	27.4	47.1	--	0.26	<0.04	0.34	E.005	<0.18	0.012	0.60	--

Date	Iron, water, fltrd, ug/L (01046)
FEB 12...	3,130
APR 09...	53
JUN 09...	11,200
AUG 20...	19,400

GREENE COUNTY—Continued

353103077333402. County number, GR-088; L2D.

LOCATION.--Lat 35°31'04", long 77°33'32.66", Hydrologic Unit 03020203, near Lizzie, 20 ft north of Secondary Road 1335. Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 20 ft, diameter 2 in., screened interval from 18 to 20 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 77.42 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 1.58 ft above land surface datum.

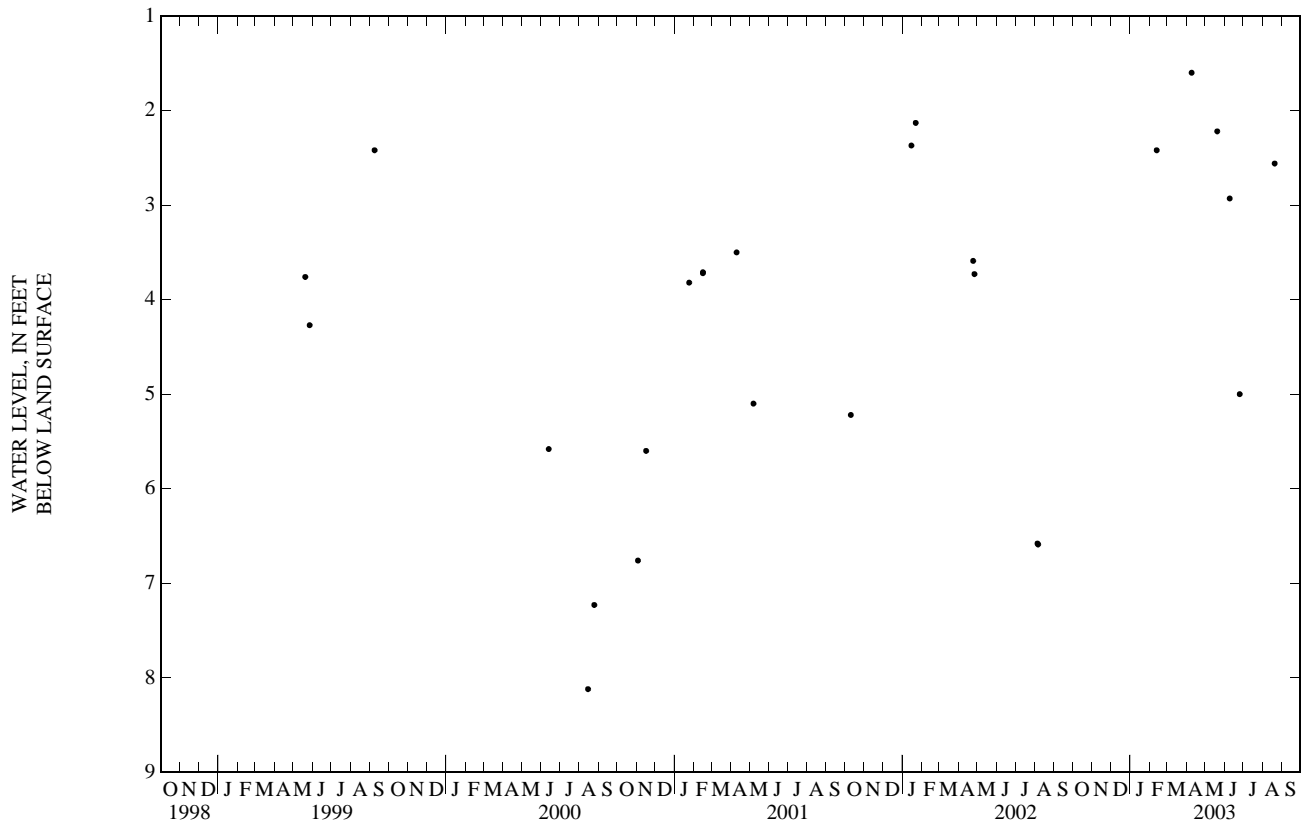
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--May 1999 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.60 ft below land-surface datum, Apr. 9, 2003; lowest water level measured, 8.12 ft below land-surface datum, Aug. 15, 2000.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 12	2.42	APR 09	1.60	MAY 20	2.22	JUN 09	2.93	JUN 25	5.00	AUG 20	2.56



353103077333402. County number, GR-088; L2D—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1999 to current year.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB 12...	1700	2.42	766	0.9	9	4.9	154	--	16.0	15	4.05	1.28	3.70
APR 09...	1350	1.60	767	0.5	5	4.9	156	8.5	15.2	15	3.97	1.32	3.84
JUN 09...	1435	2.93	758	0.3	3	5.5	150	29.5	16.9	15	3.94	1.28	3.65
AUG 20...	1655	2.56	769	0.4	4	5.5	142	32.0	18.7	13	3.34	1.09	3.59

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	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)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
FEB 12...	16.6	7	27.4	10.6	72	E.09	<0.04	0.82	<0.008	E.01	0.018	0.4	533
APR 09...	18.2	7	31.8	11.0	80	E.05	<0.04	1.20	E.004	<0.04	0.014	--	231
JUN 09...	17.9	7	28.8	10.4	75	<0.10	<0.04	1.05	<0.008	<0.02	0.020	0.5	232
AUG 20...	18.3	6	28.0	10.5	74	<0.10	<0.04	1.13	E.005	<0.18	0.021	--	170

GREENE COUNTY—Continued

353122077334903. County number, GR-092; L4D.

LOCATION.--Lat 35°31'22.43", long 77°33'47.89", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345.
 Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 12 ft, diameter 2 in., screened interval from 10 to 12 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 64.47 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 1.50 ft above land surface datum.

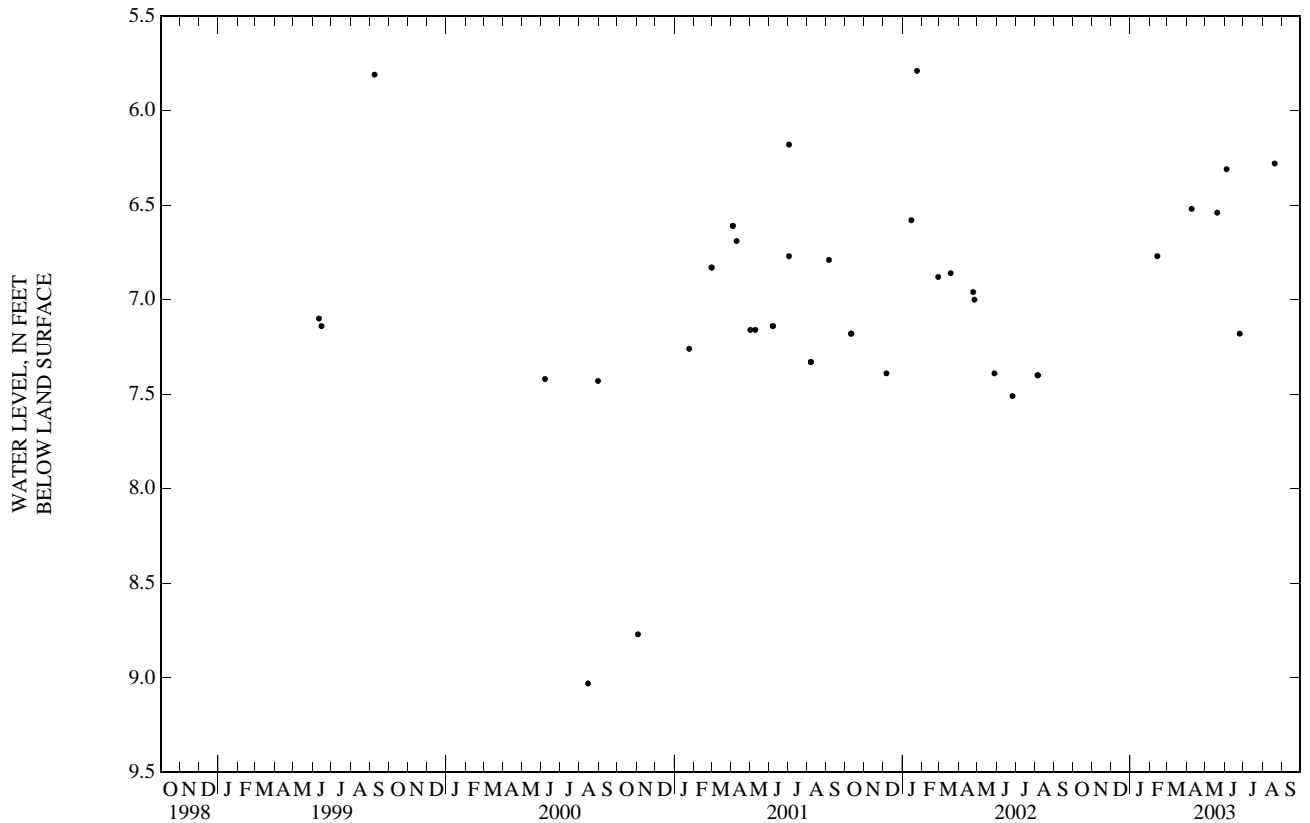
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--June 1999 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.79 ft below land-surface datum, June 24, 2003; lowest water level measured, 9.03 ft below land-surface datum, Aug. 15, 2000.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 13	6.77	APR 09	6.52	MAY 20	6.54	JUN 04	6.31	JUN 25	7.18	AUG 20	6.28



353122077334903. County number, GR-092; L4D—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1999 to current year.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB 13...	1750	6.77	775	3.3	31	5.2	473	--	12.5	150	46.0	9.47	7.18
APR 09...	1710	6.52	766	3.5	33	5.1	477	7.5	13.0	160	46.1	9.69	7.74
JUN 04...	1005	6.31	764	3.0	30	5.2	454	24.5	16.4	160	49.0	10.3	8.07
AUG 20...	1505	6.28	769	2.9	32	5.4	459	36.0	20.6	160	48.2	10.2	8.46

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)
FEB 13...	11.8	<10	41.1	43.0	--	0.16	E.03	24.4	0.023	--	<0.09	0.012	25
APR 09...	12.6	2	41.0	43.0	277	0.12	<0.04	26.1	0.023	--	<0.04	0.027	26
JUN 04...	11.9	2	40.7	40.2	283	0.16	<0.04	27.4	0.019	--	--	0.026	28
AUG 20...	12.1	2	42.5	45.0	275	0.21	0.05	24.2	0.027	0.16	<0.18	0.040	24

Date	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
FEB 13...	0.7	98
APR 09...	--	30
JUN 04...	0.8	21
AUG 20...	--	45

GREENE COUNTY—Continued

353127077333703. County number, GR-108; L15S Lizzie.

LOCATION.--Lat 35°31'27.28", long 77°33'35.59", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345. Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 5.4 ft, diameter 2 in., screened interval from 2 to 5 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 73.65 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 1.33 ft above land surface datum.

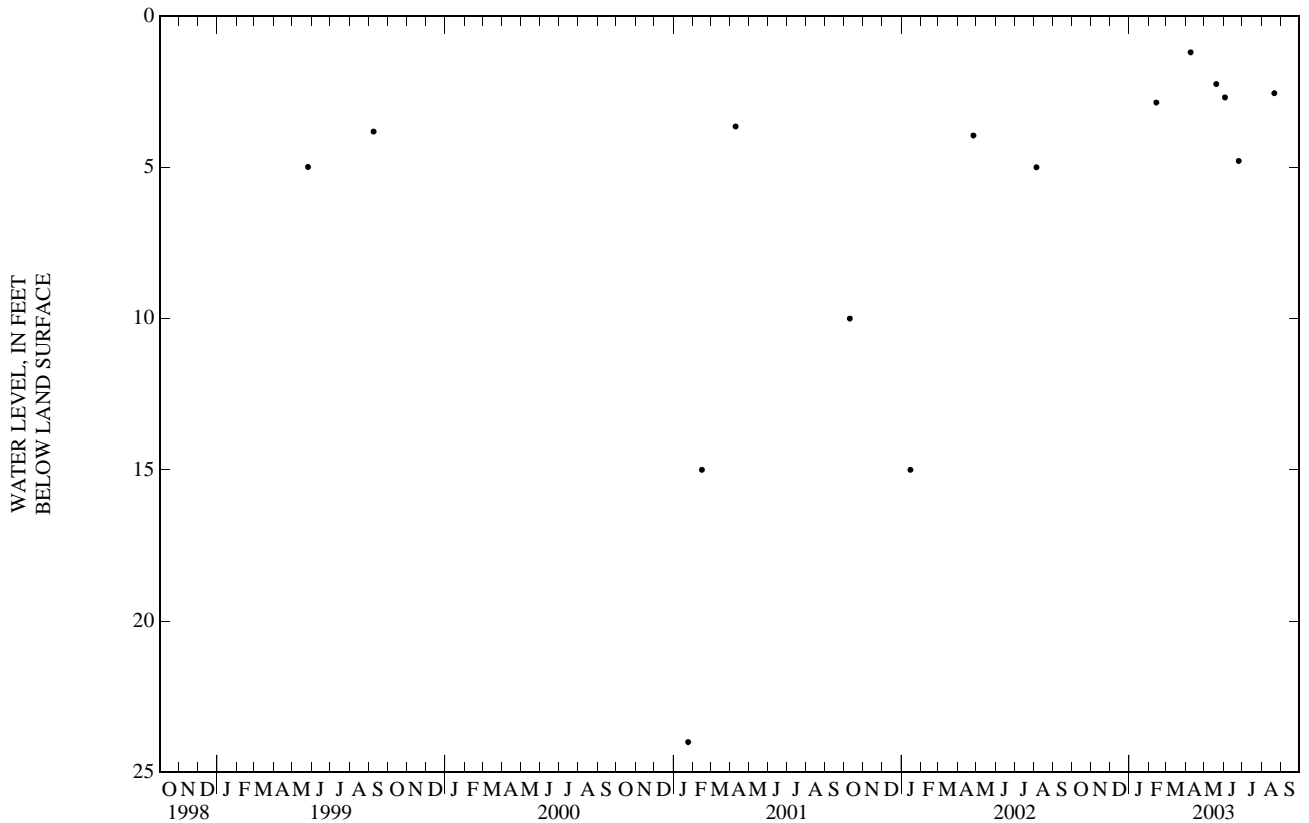
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--May 1999 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.20 ft below land-surface datum, Apr. 9, 2003; lowest water level measured, 4.99 ft below land-surface datum, May 26, 1999.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 13	2.86	APR 09	1.20	MAY 20	2.25	JUN 03	2.69	JUN 25	4.79	AUG 21	2.55



WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 2003.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, FOR PERIOD FEBRUARY TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfiltered uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB 13...	1715	2.86	775	4.1	37	5.5	878	--	10.6	400	145	8.18	7.50
APR 09...	1445	1.20	766	2.3	22	5.8	255	9.5	14.2	81	26.3	3.59	20.8
JUN 03...	1605	2.69	765	1.0	11	6.8	421	29.0	19.0	190	70.4	4.57	15.5
AUG 21...	1615	2.55	770	2.4	26	6.5	528	32.0	17.4	190	70.4	4.63	18.6

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)
FEB 13...	14.0	133	82.2	150	523	0.44	<0.04	8.07	<0.008	--	<0.02	0.005	8.5
APR 09...	7.96	47	8.41	24.3	151	1.5	0.04	6.90	E.006	1.5	0.07	0.102	8.4
JUN 03...	4.95	160	9.86	40.0	244	0.74	0.12	0.22	E.005	0.62	--	0.035	0.96
AUG 21...	7.10	171	9.16	32.5	249	1.2	0.37	0.20	0.009	0.82	<0.18	0.035	1.4

Date	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
FEB 13...	4.0	113
APR 09...	--	87
JUN 03...	8.2	1,710
AUG 21...	--	3,300

GREENE COUNTY—Continued

353127077333704. County number, GR-109; L15D.

LOCATION.--Lat 35°31'27.28", long 77°33'35.59", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345.
 Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 23 ft, diameter 2 in., screened interval from 21 to 23 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 73.59 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 1.38 ft above land surface datum.

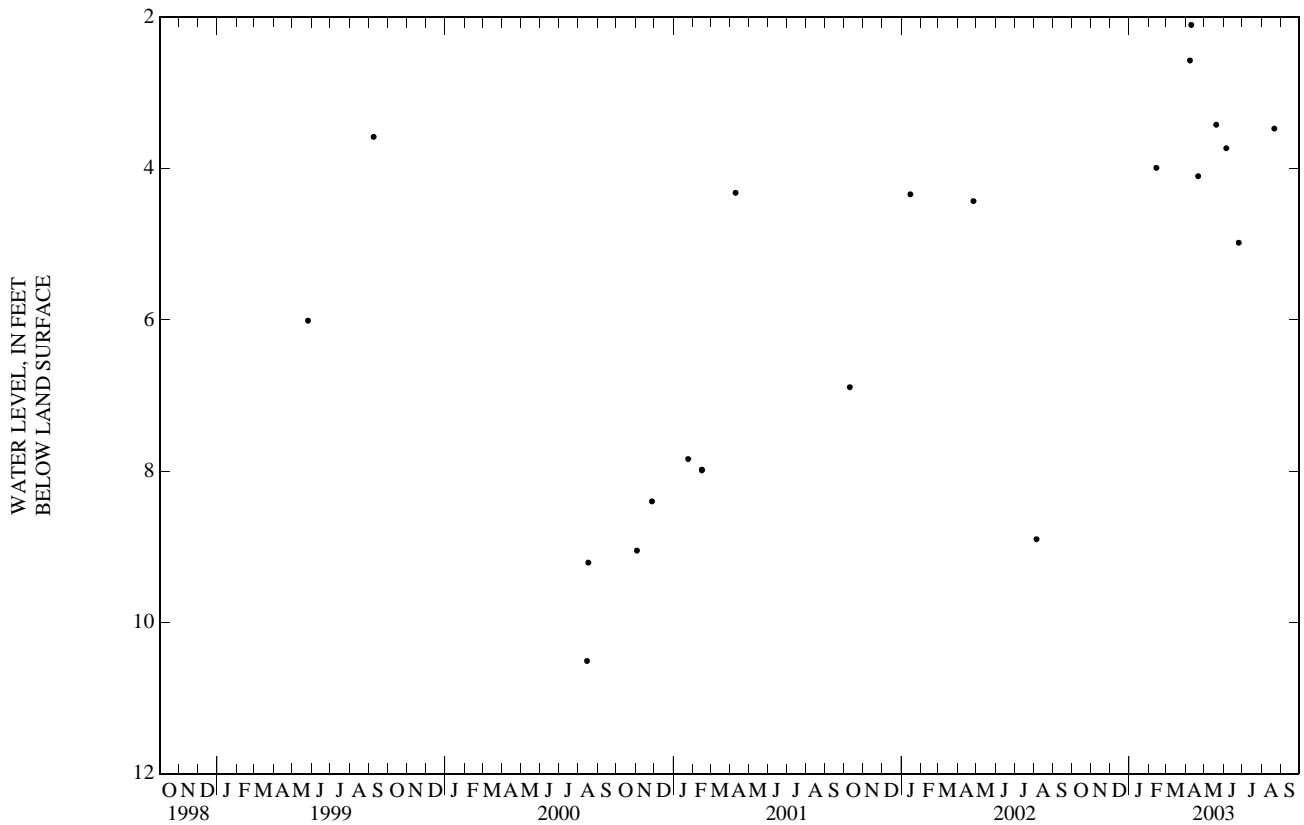
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--May 1999 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.10 ft below land-surface datum, Apr. 10, 2003; lowest water level measured, 10.51 ft below land-surface datum, Aug. 15, 2000.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 13	3.99	APR 10	2.10	MAY 20	3.42	JUN 25	4.98
APR 08	2.57	21	4.10	JUN 05	3.73	AUG 21	3.47



WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1999 to current year.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB 13...	1845	3.99	775	2.3	23	5.2	228	--	16.2	76	21.2	5.62	1.70
APR 10...	1235	2.10	759	1.1	11	6.0	244	11.0	15.3	81	22.0	6.21	1.81
APR 21...	1400	4.10	760	0.6	6	5.2	222	28.0	15.9	77	21.4	5.80	1.73
JUN 05...	1305	3.73	763	0.6	6	5.7	246	31.0	11.2	70	19.8	5.00	1.74
AUG 21...	1520	3.47	769	1.8	19	5.5	250	32.0	17.8	80	22.7	5.67	2.09

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	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-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)
FEB 13...	4.86	3	25.3	43.0	119	E.08	<0.04	3.45	E.007	<0.02	0.006	--	0.4
APR 10...	5.25	2	28.5	43.3	127	0.10	<0.04	4.17	0.009	<0.04	0.010	4.3	--
APR 21...	5.07	--	24.7	47.7	136	E.06	<0.04	3.26	E.006	0.06	--	--	0.5
JUN 05...	4.64	4	23.4	48.7	112	<0.10	<0.04	1.49	E.005	--	0.009	--	E.3
AUG 21...	5.66	3	31.6	42.5	127	E.05	<0.04	3.30	E.006	<0.18	0.007	--	--

Date	Iron, water, fltrd, ug/L (01046)
FEB 13...	63
APR 10...	43
APR 21...	21
JUN 05...	28
AUG 21...	19

GROUND-WATER LEVELS

GREENE COUNTY—Continued

353135077332701. County number, GR-110; L17.

LOCATION.--Lat 35°31'35.99", long 77°33'26.29", Hydrologic Unit 03020203, near Lizzie, 200 ft west of Secondary Road 1345. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Yorktown.

WELL CHARACTERISTICS.--Drilled observation well, depth 68 ft, diameter 2 in., screened interval from 41 to 61 ft.

INSTRUMENTATION.--Water-level recorder collecting data at 15-minute intervals. Satellite telemetry at station.

DATUM.--Land-surface datum is 72.50 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 2.74 ft above land surface datum.

REMARKS.--Well is part of multimedia integrated modeling system (MIMS) project.

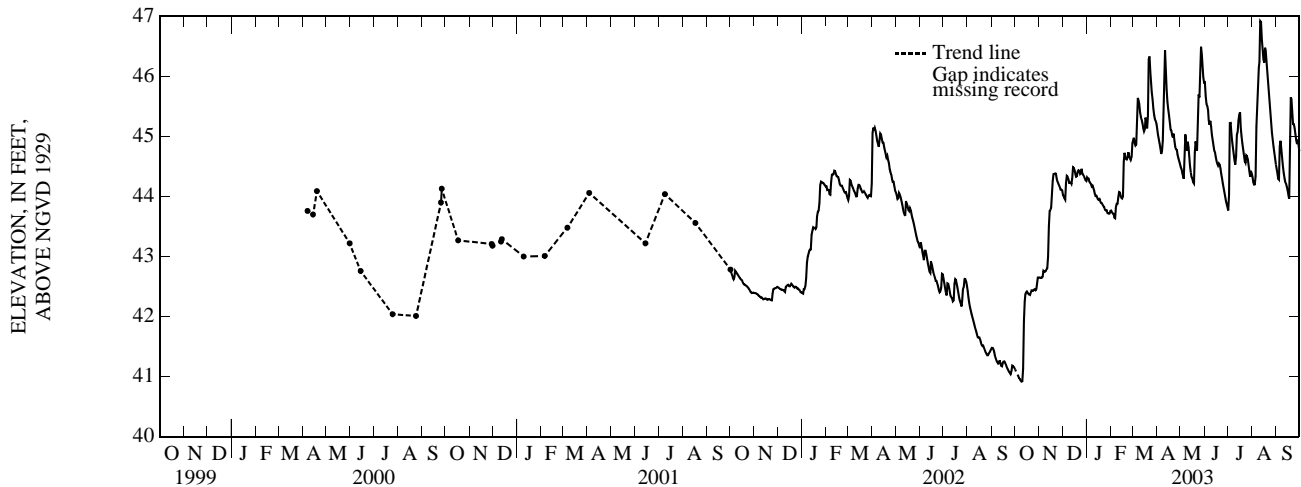
PERIOD OF RECORD.--April 2000 to current year. Continuous record began December 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded 46.97 ft above NGVD of 1929, Aug. 11, 12, 2003; lowest water level recorded 40.91 ft above NGVD of 1929, Oct. 9, 2002.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.12	42.65	44.03	44.32	43.77	44.93	45.10	44.49	45.90	43.77	44.32	44.46
2	41.09	42.65	44.01	44.30	43.73	44.98	45.03	44.46	45.68	44.02	44.25	44.38
3	---	42.64	43.97	44.30	43.72	44.89	44.95	44.39	45.54	45.22	44.20	44.30
4	41.03	42.65	43.95	44.25	43.71	44.85	44.88	44.34	45.51	45.23	44.20	44.28
5	41.00	42.67	44.22	44.23	43.65	44.87	44.80	44.30	45.43	45.04	44.34	44.84
6	40.97	42.76	44.34	44.21	43.64	45.20	44.71	44.74	45.27	44.91	45.16	44.93
7	40.96	42.74	44.33	44.17	43.82	45.64	44.76	45.04	45.19	44.80	45.54	44.78
8	40.93	42.75	44.29	44.18	43.88	45.59	44.93	44.91	45.26	44.70	45.85	44.63
9	40.92	42.76	44.23	44.15	43.88	45.54	45.35	44.77	45.16	44.60	46.14	44.50
10	40.92	42.79	44.23	44.10	43.99	45.40	46.07	44.91	45.02	44.53	46.24	44.39
11	41.13	42.81	44.23	44.05	44.07	45.33	46.43	44.82	44.93	44.67	46.92	44.30
12	41.92	43.00	44.21	44.01	44.07	45.28	46.07	44.66	44.84	45.03	46.90	44.25
13	42.25	43.51	44.30	44.01	44.02	45.22	45.78	44.51	44.76	45.08	46.62	44.22
14	42.37	43.76	44.49	43.99	43.98	45.14	45.58	44.40	44.74	45.27	46.46	44.17
15	42.40	43.78	44.48	43.95	43.97	45.08	45.45	44.32	44.66	45.36	46.28	44.10
16	42.42	43.81	44.44	43.94	44.00	45.12	45.35	44.30	44.59	45.40	46.23	44.03
17	42.40	44.01	44.37	43.96	44.58	45.31	45.23	44.24	44.55	45.15	46.48	43.96
18	42.37	44.26	44.33	43.92	44.73	45.26	45.11	44.22	44.51	45.01	46.43	44.46
19	42.37	44.37	44.34	43.89	44.66	45.14	45.10	44.73	44.55	44.89	46.25	45.65
20	42.36	44.38	44.41	43.89	44.62	45.33	45.03	44.92	44.53	44.79	46.07	45.63
21	42.41	44.38	44.44	43.86	44.62	46.29	44.98	44.84	44.46	44.69	45.86	45.39
22	42.43	44.38	44.43	43.84	44.65	46.34	45.05	44.77	44.38	44.59	45.68	45.21
23	42.43	44.30	44.38	43.82	44.74	46.08	44.92	45.17	44.31	44.56	45.51	45.21
24	42.43	44.26	44.40	43.78	44.67	45.90	44.82	45.70	44.22	44.69	45.33	45.14
25	42.45	44.23	44.46	43.77	44.64	45.74	44.79	45.65	44.15	44.67	45.19	45.03
26	42.46	44.19	44.38	43.77	44.61	45.62	44.78	46.16	44.08	44.63	45.07	44.94
27	42.44	44.16	44.36	43.73	44.65	45.46	44.70	46.49	44.00	44.53	44.95	44.87
28	42.46	44.12	44.34	43.72	44.89	45.36	44.64	46.36	43.92	44.42	44.83	44.91
29	42.57	44.11	44.31	43.71	---	45.29	44.59	46.17	43.87	44.33	44.73	44.87
30	42.65	44.10	44.27	43.72	---	45.26	44.55	45.99	43.82	44.43	44.63	44.76
31	42.65	---	44.26	43.76	---	45.21	---	45.90	---	44.38	44.53	---

WTR YR 2003 MEAN 44.44 MAX 46.92 MIN 40.92



GREENE COUNTY—Continued

353135077332702. County number, GR-111; L18 Lizzie.

LOCATION.--Lat 35°31'35.95", long 77°33'26.25", Hydrologic Unit 03020203, near Lizzie, 200 ft west of Secondary Road 1345. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 20 ft, diameter 2 in., screened interval from 10 to 20 ft.

INSTRUMENTATION.--Water-level recorder collecting data at 15-minute intervals. Satellite telemetry at station.

DATUM.--Land-surface datum is 72.83 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 3.26 ft above land-surface datum.

REMARKS.--Well is part of multimedia integrated modeling system (MIMS) project.

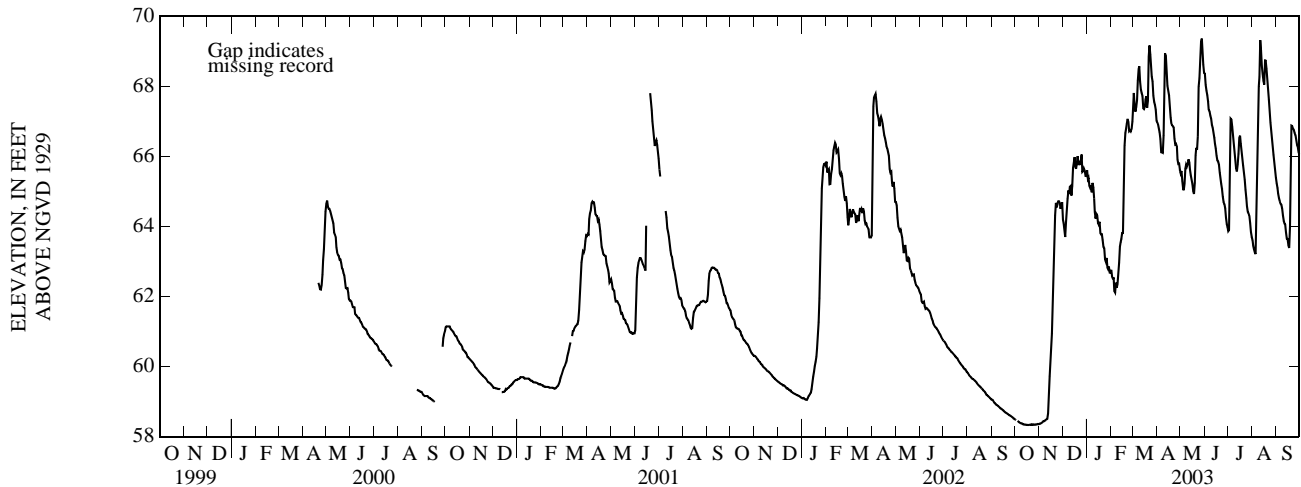
PERIOD OF RECORD.--April 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 69.41 ft above NGVD of 1929, Aug. 11, 2003; lowest water level recorded, 58.33 ft above NGVD of 1929, Oct. 17, 2002.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58.49	58.37	64.20	65.61	62.76	67.39	66.97	65.52	68.37	63.87	63.61	65.23
2	58.47	58.37	64.10	65.35	62.57	67.82	66.92	65.58	68.04	63.91	63.46	65.09
3	---	58.38	63.91	65.39	62.52	67.43	66.80	65.30	67.88	66.04	63.35	64.93
4	58.45	58.40	63.70	65.17	62.52	67.28	66.69	65.08	67.75	67.08	63.27	64.81
5	58.43	58.42	64.12	65.11	62.15	67.41	66.49	65.03	67.57	67.06	63.21	64.73
6	58.41	58.44	64.43	65.16	62.11	67.61	66.12	65.22	67.34	66.84	64.00	64.65
7	58.40	58.44	64.80	64.98	62.39	68.17	66.12	65.65	67.29	66.58	65.80	64.63
8	58.38	58.46	65.03	65.25	62.25	68.49	66.10	65.77	67.17	66.33	67.10	64.51
9	58.38	58.48	64.93	65.11	62.36	68.58	66.60	65.71	67.08	66.13	68.01	64.31
10	58.38	58.50	65.14	64.79	62.68	68.14	68.03	65.78	66.91	65.88	68.27	64.16
11	58.35	58.51	65.16	64.41	62.97	67.92	68.95	65.92	66.82	65.66	69.32	64.08
12	58.35	58.66	64.88	64.23	63.43	67.81	68.88	65.82	66.68	65.57	69.03	64.06
13	58.35	59.25	65.16	64.36	63.54	67.73	68.40	65.62	66.53	65.77	68.59	63.83
14	58.34	59.73	65.67	64.32	63.65	67.37	68.01	65.46	66.36	66.07	68.35	63.66
15	58.34	60.07	65.82	64.11	63.82	67.35	67.87	65.33	66.23	66.53	68.17	63.64
16	58.34	60.41	65.98	64.06	63.82	67.42	67.75	65.22	66.02	66.59	68.05	63.47
17	58.33	60.94	65.70	64.13	65.14	67.63	67.45	65.01	65.89	66.38	68.74	63.39
18	58.33	61.95	65.65	63.81	66.31	67.32	67.12	64.93	65.85	66.20	68.73	64.00
19	58.34	62.99	65.81	63.78	66.66	67.79	66.96	65.24	65.77	65.98	68.51	66.04
20	58.34	63.68	66.01	63.78	66.80	67.59	66.89	66.03	65.54	65.74	68.17	66.88
21	58.35	64.32	65.75	63.62	66.93	68.85	66.87	66.25	65.37	65.55	67.87	66.87
22	58.34	64.68	65.87	63.42	67.07	69.17	66.83	66.19	65.22	65.34	67.63	66.80
23	58.35	64.55	65.76	63.38	66.98	68.91	66.51	66.58	65.07	65.05	67.30	66.76
24	58.34	64.63	65.90	63.07	66.72	68.57	66.34	67.99	64.85	64.81	66.96	66.67
25	58.35	64.72	66.06	63.00	66.74	68.28	66.36	68.24	64.70	64.58	66.76	66.62
26	58.35	64.72	65.56	63.11	66.71	68.14	66.29	68.75	64.64	64.43	66.58	66.47
27	58.35	64.67	65.58	62.83	66.78	67.73	65.91	69.27	64.52	64.38	66.32	66.33
28	58.35	64.51	65.66	62.79	67.00	67.56	65.79	69.37	64.25	64.31	66.04	66.29
29	58.35	64.60	65.60	62.86	---	67.47	65.79	69.09	64.07	64.10	65.82	66.14
30	58.36	64.69	65.45	62.69	---	67.33	65.62	68.62	63.97	63.84	65.61	66.06
31	58.36	---	65.44	62.68	---	67.02	---	68.39	---	63.70	65.39	---

WTR YR 2003 MEAN 64.86 MAX 69.37 MIN 58.33



GREENE COUNTY—Continued

353103077333406. County number, GR-147; L55.

LOCATION.--Lat 35°31'04", long 77°33'33", Hydrologic Unit 03020203, near Lizzie, 20 ft north of Secondary Road 1335. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Yorktown.

WELL CHARACTERISTICS.--Drilled observation well, depth 70 ft, diameter 2 in., screened interval from 50 to 70 ft.

INSTRUMENTATION.--Water-level recorder collecting data at 15-minute intervals. Satellite telemetry at station.

DATUM.--Land-surface datum is 77.46 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 1.41 ft above land-surface datum.

REMARKS.--Well is part of multimedia integrated modeling system (MIMS) project. Minimum for period of record affected by pumping. Records good except for period Oct. 17 to Nov. 26, which is poor and period Nov. 27 to Dec. 16 which is fair.

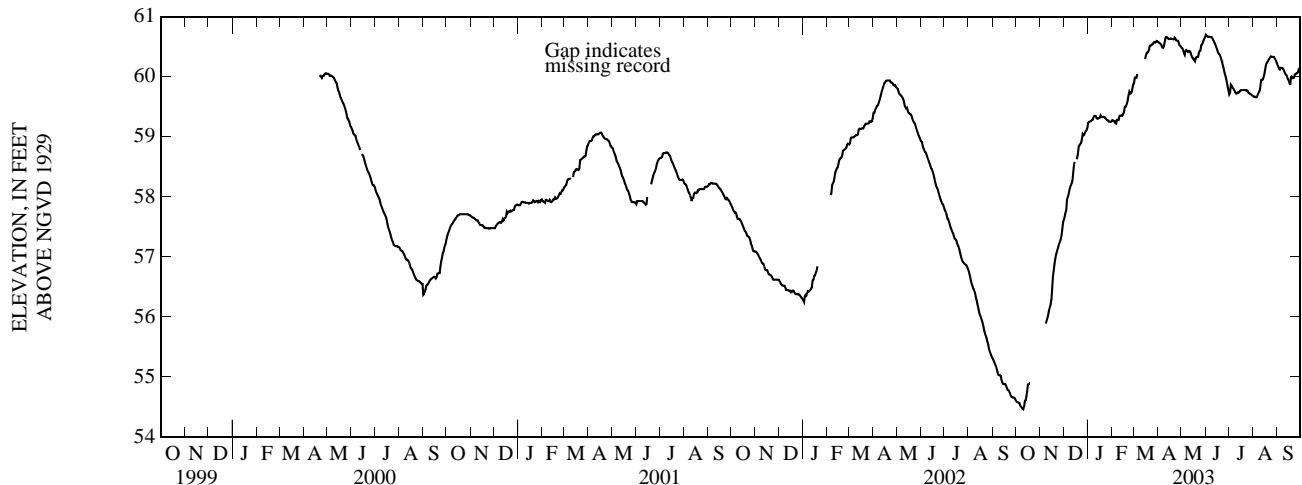
PERIOD OF RECORD.--April 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded 60.70 ft, above NGVD of 1929, May 31, 2003; lowest water level recorded 54.46 ft, above NGVD of 1929, Oct. 10, 2002.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54.60	---	57.62	59.23	59.28	59.90	60.58	60.48	60.70	59.71	59.67	60.19
2	54.58	---	57.67	59.24	59.27	59.98	60.57	60.47	60.68	59.74	59.67	60.16
3	54.58	---	57.73	59.25	59.26	59.99	60.56	60.44	60.67	59.87	59.67	60.13
4	54.57	---	57.77	59.26	59.26	59.98	60.55	60.39	60.67	59.85	59.66	60.12
5	54.56	---	57.95	59.26	59.23	60.04	60.53	60.37	60.67	59.82	59.66	60.15
6	54.52	---	57.99	59.28	59.22	---	60.49	60.43	60.66	59.81	59.68	60.15
7	54.51	---	58.04	59.28	59.28	---	60.48	60.44	60.66	59.78	59.72	60.14
8	54.49	55.89	58.11	59.33	59.28	---	60.50	60.43	60.66	59.76	59.74	60.13
9	54.47	55.93	58.16	59.35	59.28	---	60.57	60.42	60.66	59.74	59.77	60.11
10	54.46	55.98	58.19	59.35	59.34	---	60.64	60.43	60.62	59.72	59.85	60.07
11	54.51	56.05	58.22	59.35	59.35	---	60.66	60.43	60.60	59.72	59.95	60.04
12	54.60	56.11	58.27	59.31	59.36	---	60.66	60.42	60.57	59.74	59.95	60.03
13	54.61	56.16	58.41	59.30	59.35	---	60.65	60.38	60.54	59.74	59.95	60.01
14	54.67	56.21	58.54	59.31	59.35	---	60.63	60.35	60.51	59.75	59.99	59.97
15	54.76	56.29	58.58	59.31	59.38	60.30	60.63	60.31	60.48	59.77	60.05	59.95
16	54.88	56.46	---	59.32	59.41	60.35	60.63	60.30	60.43	59.78	60.13	59.90
17	54.88	56.66	58.63	59.35	59.50	60.38	60.64	60.28	60.40	59.78	60.20	59.86
18	54.88	56.77	58.65	59.33	59.50	60.41	60.63	60.26	60.38	59.78	60.23	59.99
19	---	56.88	58.71	59.33	59.52	60.41	60.63	60.32	60.36	59.78	60.24	60.00
20	---	56.97	58.83	59.33	59.56	60.44	60.63	60.33	60.32	59.78	60.27	59.98
21	---	57.04	58.86	59.33	59.62	60.51	60.62	60.33	60.28	59.78	60.30	59.98
22	---	57.09	58.88	59.32	59.70	60.52	60.65	60.33	60.23	59.78	60.32	59.99
23	---	57.13	58.89	59.32	59.75	60.52	60.64	60.40	60.19	59.77	60.34	60.04
24	---	57.17	58.96	59.30	59.72	60.54	60.61	60.43	60.13	59.77	60.34	60.05
25	---	57.21	59.04	59.28	59.72	60.54	60.60	60.44	60.06	59.75	60.33	60.05
26	---	57.25	59.02	59.28	59.75	60.57	60.60	60.53	60.02	59.73	60.33	60.06
27	---	57.29	59.03	59.26	59.83	60.58	60.58	60.53	59.97	59.72	60.33	60.08
28	---	57.36	59.06	59.25	59.88	60.57	60.53	60.56	59.90	59.72	60.31	60.12
29	---	57.47	59.09	59.25	---	60.58	60.51	60.61	59.82	59.70	60.29	60.14
30	---	57.58	59.10	59.25	---	60.60	60.50	60.63	59.76	59.69	60.26	60.12
31	---	---	59.14	59.25	---	60.59	---	60.66	---	59.68	60.23	---

WTR YR 2003 MEAN 59.38 MAX 60.70 MIN 54.46



GROUND-WATER LEVELS
 GREENE COUNTY—Continued

353103077333407. County number, GR-166; LWQ2M.

LOCATION.--Lat 35°31'03", long 77°33'33.77", Hydrologic Unit 03020203, near Lizzie, 30 ft north of Secondary Road 1335. Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 11.4 ft, diameter 2 in., screened interval from 7.2 to 11.2 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 77.49 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 2.26 ft above land surface datum.

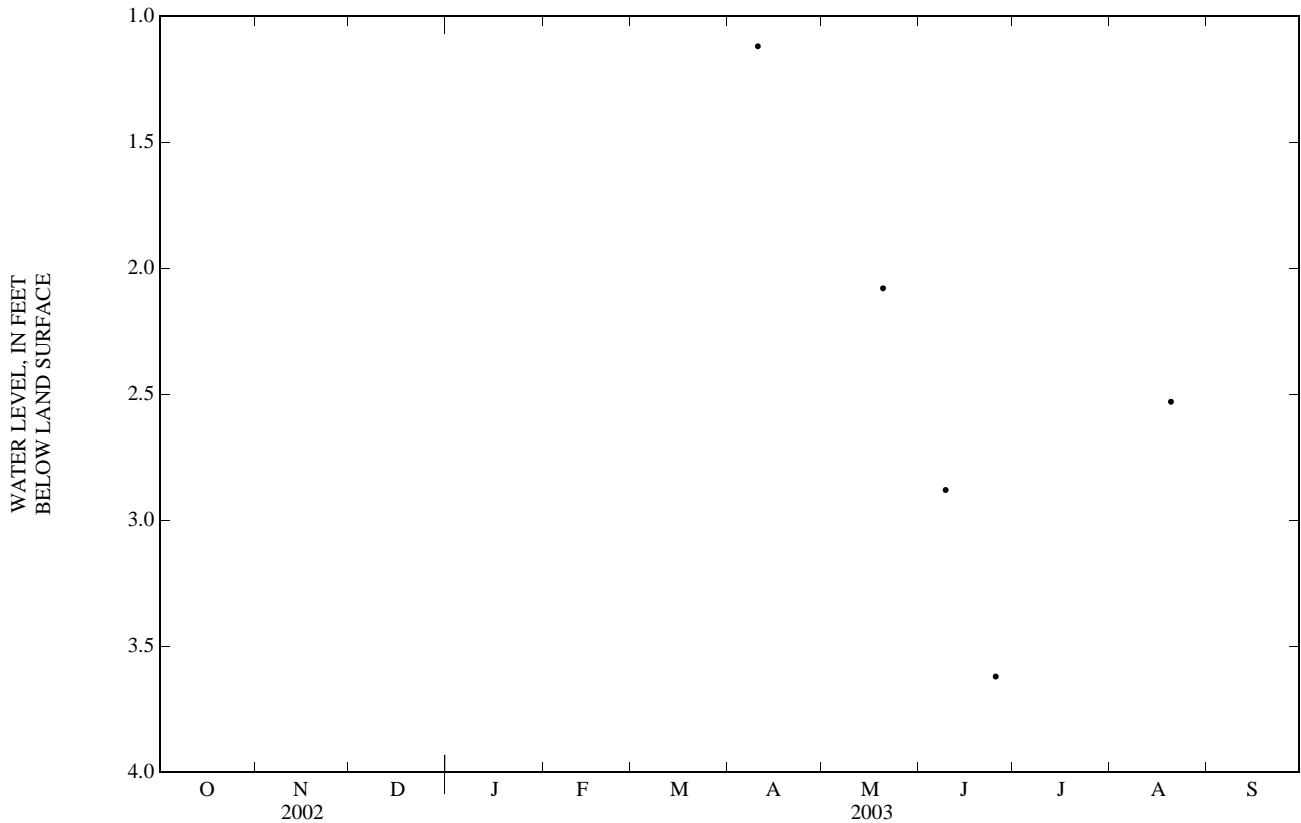
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--April to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.12 ft below land-surface datum, Apr. 10, 2003; lowest water level measured, 3.62 ft below land-surface datum, June 25, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD APRIL TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 10	1.12	MAY 20	2.08	JUN 09	2.88	JUN 25	3.62	AUG 20	2.53



353103077333407. County number, GR-166; LWQ2M—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 2003.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, FOR PERIOD APRIL TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
APR 10...	1345	1.12	760	7.2	70	5.5	145	11.0	13.4	15	2.23	2.35	0.77
JUN 09...	1305	2.88	759	5.3	56	5.0	144	29.5	17.7	15	2.27	2.18	0.89
AUG 20...	1830	2.53	770	5.5	62	4.9	162	30.5	20.3	15	2.35	2.19	0.99

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)
APR 10...	15.2	<2	22.2	3.7	0.16	0.06	5.56	<0.008	0.10	<0.04	<0.004	5.7	--
JUN 09...	16.5	<2	22.0	4.1	0.14	E.04	6.23	<0.008	--	<0.02	E.003	6.4	0.8
AUG 20...	18.3	<2	25.6	3.3	0.11	<0.04	6.25	E.005	--	<0.18	<0.004	6.4	--

Date	Iron, water, fltrd, ug/L (01046)
APR 10...	27
JUN 09...	14
AUG 20...	26

GROUND-WATER LEVELS
 GREENE COUNTY—Continued

353127077333705. County number, GR-167; LWQ15M.

LOCATION.--Lat 35°31'26.7", long 77°33'36.7", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345.
 Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 11.6 ft, diameter 2 in., screened interval from 7.4 to 11.4 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 73.72 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 2.05 ft above land surface datum.

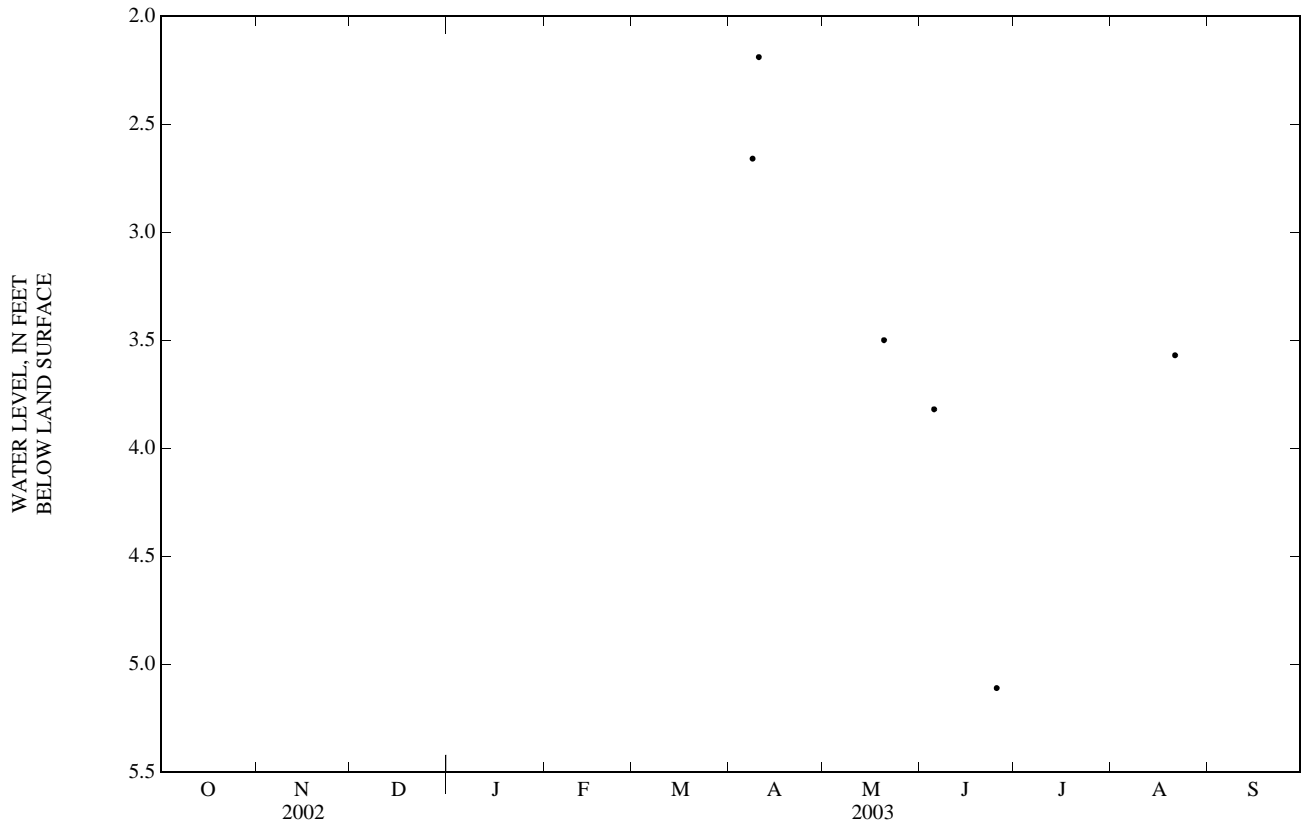
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--April to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.19 ft below land-surface datum, Apr. 10, 2003; lowest water level measured, 5.11 ft below land-surface datum, June 25, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD APRIL TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 09	2.66	APR 10	2.19	MAY 20	3.50	JUN 05	3.82	JUN 25	5.11	AUG 21	3.57



353127077333705. County number, GR-167; LWQ15M—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 2003.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, FOR PERIOD APRIL TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
Date	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
APR 10...	1120	2.19	760	2.4	23	4.3	225	11.0	14.0	59	14.0	5.81	3.52
JUN 05...	1155	3.82	763	1.9	20	4.8	222	31.0	16.9	61	15.5	5.48	4.70
AUG 21...	1555	3.57	769	1.8	20	4.7	250	32.0	20.9	67	16.8	6.06	5.82
APR 10...	3.94	29.9	4.7	0.22	0.06	9.94	0.052	0.16	<0.04	<0.004	10	--	35
JUN 05...	4.68	32.2	7.1	0.18	<0.04	9.28	<0.008	--	--	<0.004	9.5	1.1	159
AUG 21...	4.26	29.7	6.3	0.21	<0.04	12.6	<0.008	--	<0.18	E.002	13	--	21

GROUND-WATER LEVELS
 GREENE COUNTY—Continued

353114077333101. County number, GR-168; LWQ70S.

LOCATION.--Lat 35°31'13.9", long 77°33'31.3", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345.
 Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 7.8 ft, diameter 2 in., screened interval from 3.6 to 7.6 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 79.00 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 1.87 ft above land surface datum.

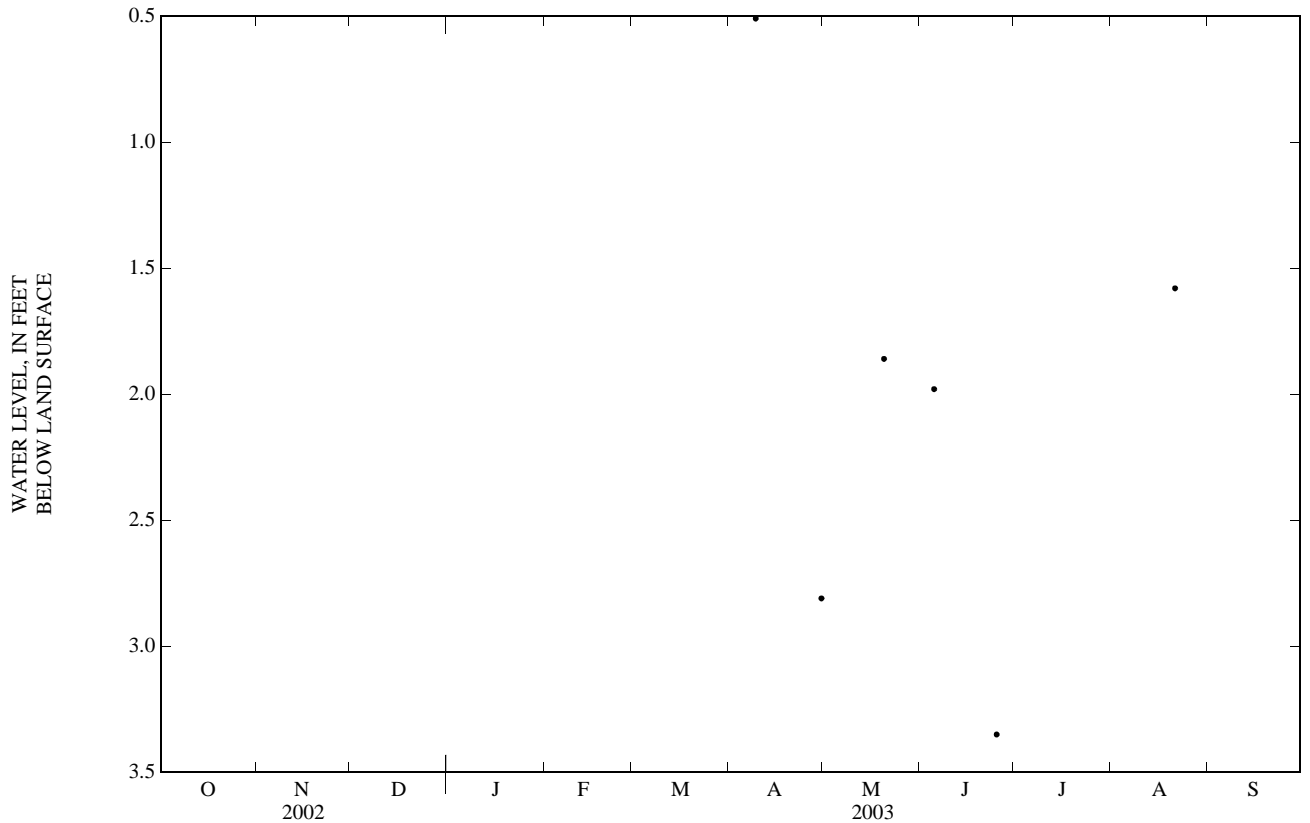
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--April to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.51 ft below land-surface datum, Apr. 9, 2003; lowest water level measured, 3.35 ft below land-surface datum, June 25, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD APRIL TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 09	.51	APR 30	2.81	MAY 20	1.86	JUN 05	1.98	JUN 25	3.35	AUG 21	1.58



353114077333101. County number, GR-168; LWQ70S—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 2003.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, FOR PERIOD APRIL TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
APR 09...	1820	0.51	766	11.0	102	4.5	1,320	8.5	12.5	380	105	27.8	26.1
APR 30...	0830	2.81	763	6.7	67	4.2	1,210	26.5	15.8	360	99.5	27.0	20.1
JUN 05...	0945	1.98	763	7.0	75	4.3	1,200	23.5	18.5	300	83.9	23.1	23.5
AUG 21...	1825	1.58	757	3.8	45	4.2	1,180	30.0	23.9	320	90.2	22.8	19.8

Date	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
APR 09...	55.3	125	64.7	0.45	0.06	89.1	0.008	0.39	<0.04	0.007	90	2.6	100
APR 30...	51.1	122	60.6	0.38	<0.04	90.5	<0.008	--	<0.02	--	91	2.5	52
JUN 05...	46.6	127	57.2	0.41	E.02	96.3	<0.008	--	--	E.003	97	2.6	40
AUG 21...	40.6	119	53.3	0.52	<0.04	80.5	<0.008	--	<0.18	0.004	81	--	41

GROUND-WATER LEVELS
 GREENE COUNTY—Continued

353114077333102. County number, GR-169; LWQ70D.

LOCATION.--Lat 35°31'13.9", long 77°33'31.3", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345.
 Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 14.6 ft, diameter 2 in., screened interval from 10.4 to 14.4 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 78.97 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 2.07 ft above land surface datum.

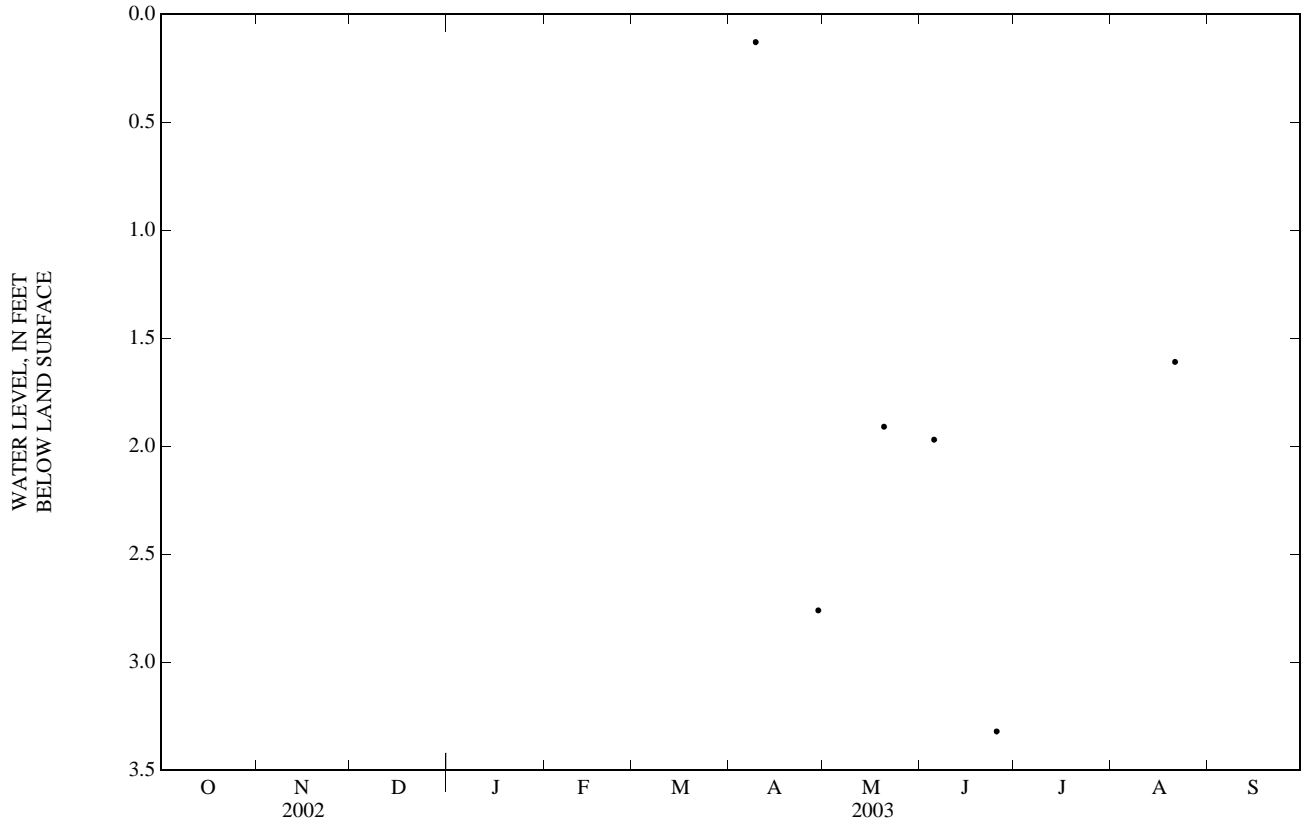
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--April to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.13 ft below land-surface datum, Apr. 9, 2003; lowest water level measured, 3.32 ft below land-surface datum, June 25, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD APRIL TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 09	.13	APR 29	2.76	MAY 20	1.91	JUN 05	1.97	JUN 25	3.32	AUG 21	1.61



353114077333102. County number, GR-169; LWQ70D—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 2003.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, FOR PERIOD APRIL TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
APR 09...	1740	0.13	766	0.8	8	4.6	361	8.5	12.7	92	26.4	6.46	2.50
APR 29...	1330	2.76	763	0.6	6	4.3	363	26.5	16.4	94	26.7	6.68	2.52
JUN 05...	1040	1.97	763	0.5	6	4.6	388	24.5	16.4	98	27.6	6.94	2.78
AUG 21...	1755	1.61	757	0.8	9	4.5	432	30.0	18.0	100	28.3	7.51	3.32

Date	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
APR 09...	16.4	50.0	9.4	0.11	0.04	16.2	E.007	0.07	<0.04	E.003	16	0.7	112
APR 29...	17.3	53.2	9.7	0.12	E.04	19.8	<0.008	--	<0.02	--	20	0.7	102
JUN 05...	17.2	53.4	10.2	0.15	E.02	19.1	E.005	--	--	<0.004	19	0.7	119
AUG 21...	18.0	56.1	12.2	0.13	<0.04	19.9	<0.008	--	<0.18	<0.004	20	--	211

GROUND-WATER LEVELS
 GREENE COUNTY—Continued

353126077332102. County number, GR-171; LWQ71D.

LOCATION.--Lat 35°31'25.7", long 77°33'21.3", Hydrologic Unit 03020203, near Lizzie, north of Secondary Road 1335 and west of Secondary Road 1345.
 Owner: DENR (North Carolina Department of Environment and Natural Resources).

WATER-LEVEL RECORDS

AQUIFER.--Surficial.

WELL CHARACTERISTICS.--Drilled observation well, depth 14.2 ft, diameter 2 in., screened interval from 10.0 to 14.0 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 73.31 ft above NGVD of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 2.47 ft above land surface datum.

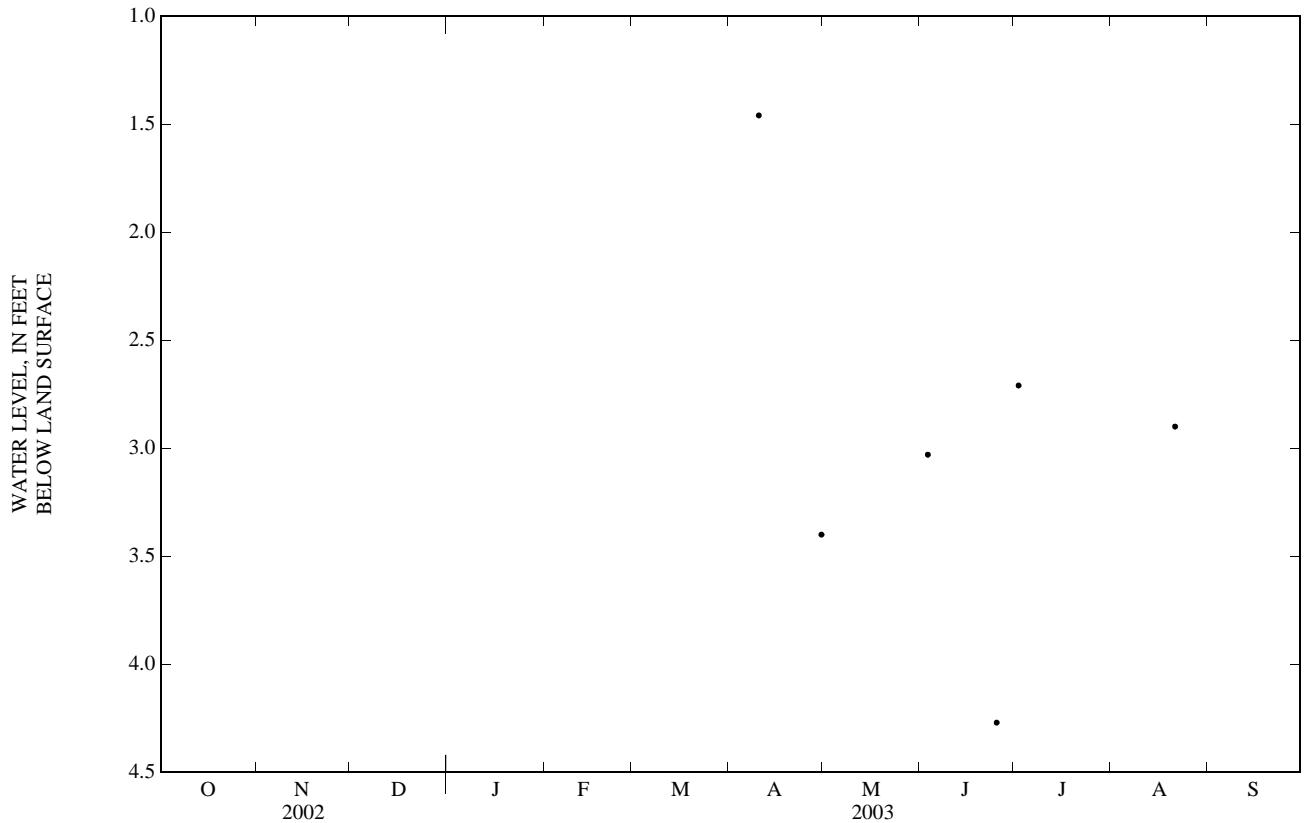
REMARKS.--Station operated in cooperation with DENR as part of the Lizzie research site water-quality monitoring project.

PERIOD OF RECORD.--April to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.46 ft below land-surface datum, Apr. 10, 2003; lowest water level measured, 4.27 ft below land-surface datum, June 25, 2003.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD APRIL TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 10	1.46	APR 30	3.40	JUN 03	3.03	JUN 25	4.27	JUL 02	2.71	AUG 21	2.90



353126077332102. County number, GR-171; LWQ71D—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 2003.

REMARKS.--Station operated in cooperation with the North Carolina Department of Environment and Natural Resources as part of the Lizzie Research site water-quality monitoring project.

WATER-QUALITY DATA, FOR PERIOD APRIL TO SEPTEMBER 2003

Date	Time	Depth to water level, feet below LSD (72019)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
APR													
10...	0930	1.46	760	4.8	46	4.3	179	9.5	13.2	35	6.90	4.28	2.28
30...	1100	3.40	762	5.0	54	4.5	138	25.5	17.6	30	6.14	3.59	2.12
JUN													
03...	1230	3.03	765	0.9	10	4.8	154	29.0	16.6	27	5.82	3.14	2.17
AUG													
21...	1950	2.90	768	0.5	6	5.0	131	29.0	20.2	23	5.23	2.48	2.17

Date	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	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-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)
APR											
10...	9.51	24.9	8.5	E.07	<0.04	7.18	E.006	<0.04	<0.004	0.4	93
30...	7.89	21.9	8.9	<0.10	<0.04	5.01	0.020	<0.02	--	0.5	169
JUN											
03...	7.48	21.5	11.0	<0.10	<0.04	3.65	E.004	--	<0.004	E.3	225
AUG											
21...	7.43	21.1	10.9	<0.10	<0.04	2.60	<0.008	<0.18	<0.004	--	217

GROUND-WATER LEVELS

HAYWOOD COUNTY

352419082451901. County number, HW-066; Mt. Pisgah Campground USGS Well 1.

LOCATION.--Lat 35°24'19.19", long 82°45'18.68", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 400 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.- Regolith.

WELL CHARACTERISTICS.--Drilled observation well, depth 3.3 ft, diameter 1.5 in., cased to 1.3 ft, screened interval from 1.3 ft to 3.3 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,873.4 ft above NGVD of 1929. Measuring point: Top of 1.5-inch casing, 3.65 ft above land-surface datum.

REMARKS.--Well is part of Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

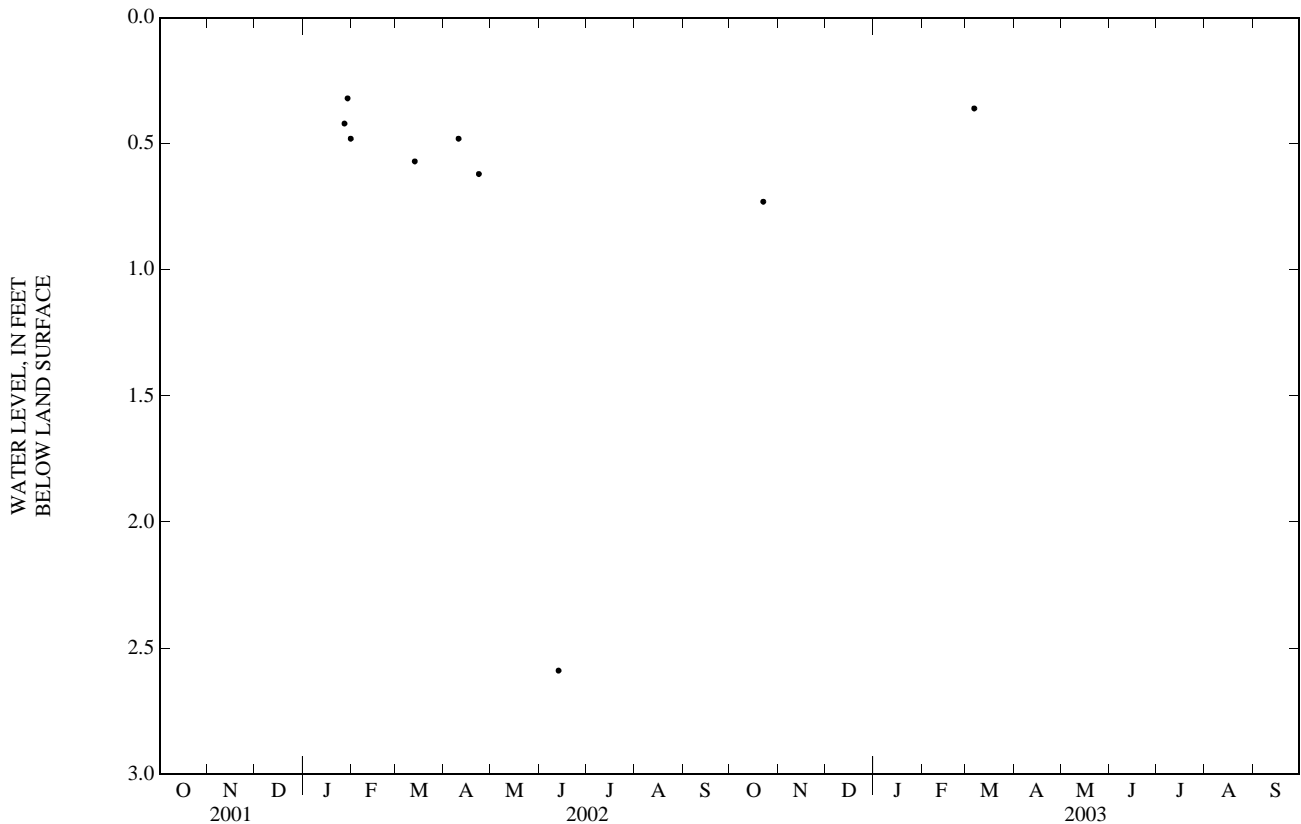
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.32 ft below land-surface datum, Jan. 30, 2002; lowest water level not determined; well was found dry twice in September 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 28	.42	JAN 31	.48	APR 10	.48	JUN 13	2.59	SEP 24	DRY
30	.32	MAR 13	.57	23	.62	SEP 11	DRY		

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	.73	MAR 06	.36



HAYWOOD COUNTY—Continued

352421082452301. County number, HW-067; Mt. Pisgah Campground USGS Well 2.

LOCATION.--Lat 35°24'21.40", long 82°45'22.61", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 800 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.- Regolith.

WELL CHARACTERISTICS.--Drilled observation well, depth 5.1 ft, diameter 1.5 in., cased to 3.1 ft, screened interval from 3.1 ft to 5.1 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,857.0 ft above NGVD of 1929. Measuring point: Top of 1.5-inch casing, 2.00 ft above land-surface datum.

REMARKS.--Well is part of Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

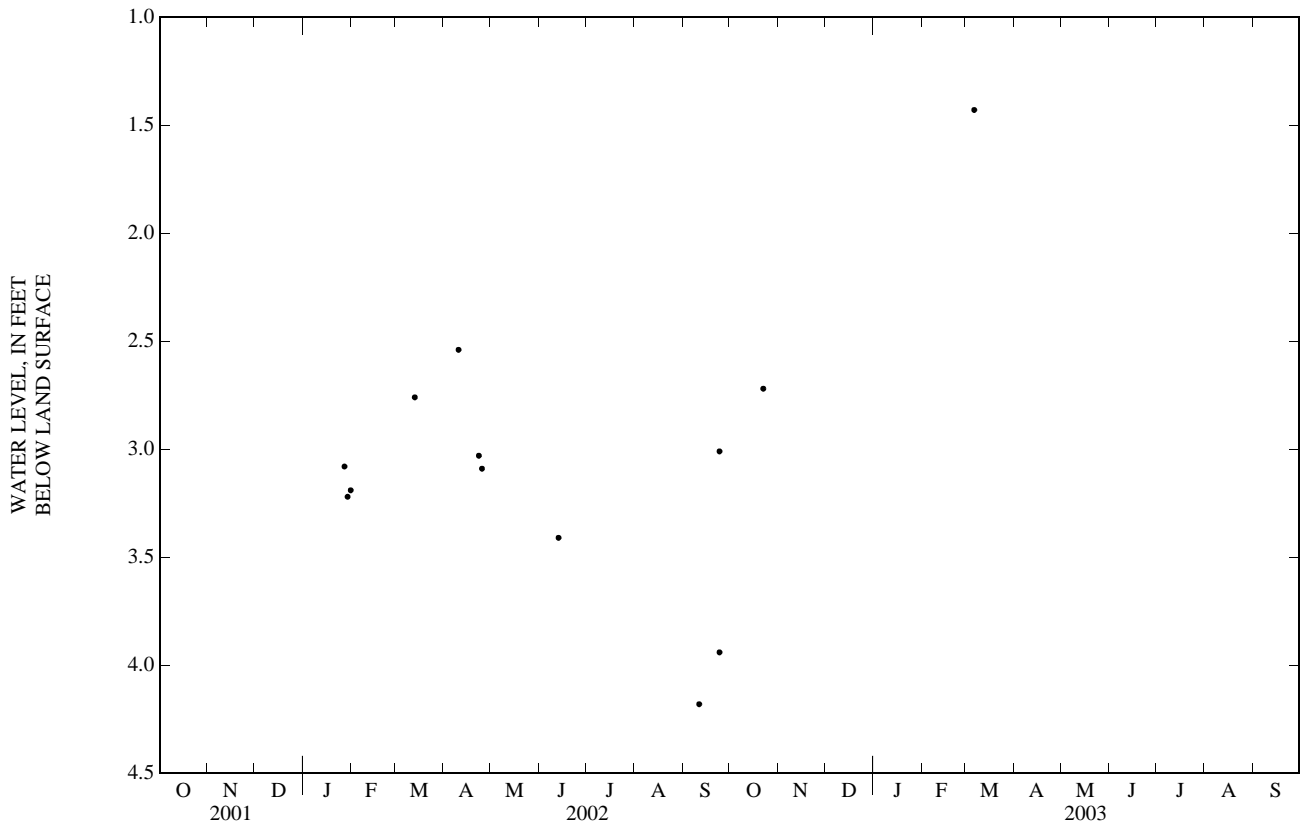
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.43 ft below land-surface datum, Mar. 06, 2003; lowest water level measured, 4.18 ft below land-surface datum, Sept. 11, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 29	3.08	JAN 31	3.19	APR 10	2.54	APR 24	3.09	SEP 11	4.18
30	3.22	MAR 13	2.76	23	3.03	JUN 13	3.41	24	3.01

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	2.72	MAR 06	1.43



GROUND-WATER LEVELS

HAYWOOD COUNTY—Continued

352422082452001. County number, HW-068; Mt. Pisgah Campground USGS Well 3.

LOCATION.--Lat 35°24'22.41", long 82°45'20.41", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 725 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.- Regolith.

WELL CHARACTERISTICS.--Drilled observation well, depth 2.7 ft, diameter 1.5 in., cased to 0.7 ft, screened interval from 0.7 ft to 2.7 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4854.2 ft above NGVD of 1929. Measuring point: Top of 1.5-inch casing, 2.05 ft above land-surface datum.

REMARKS.--Well is part of Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

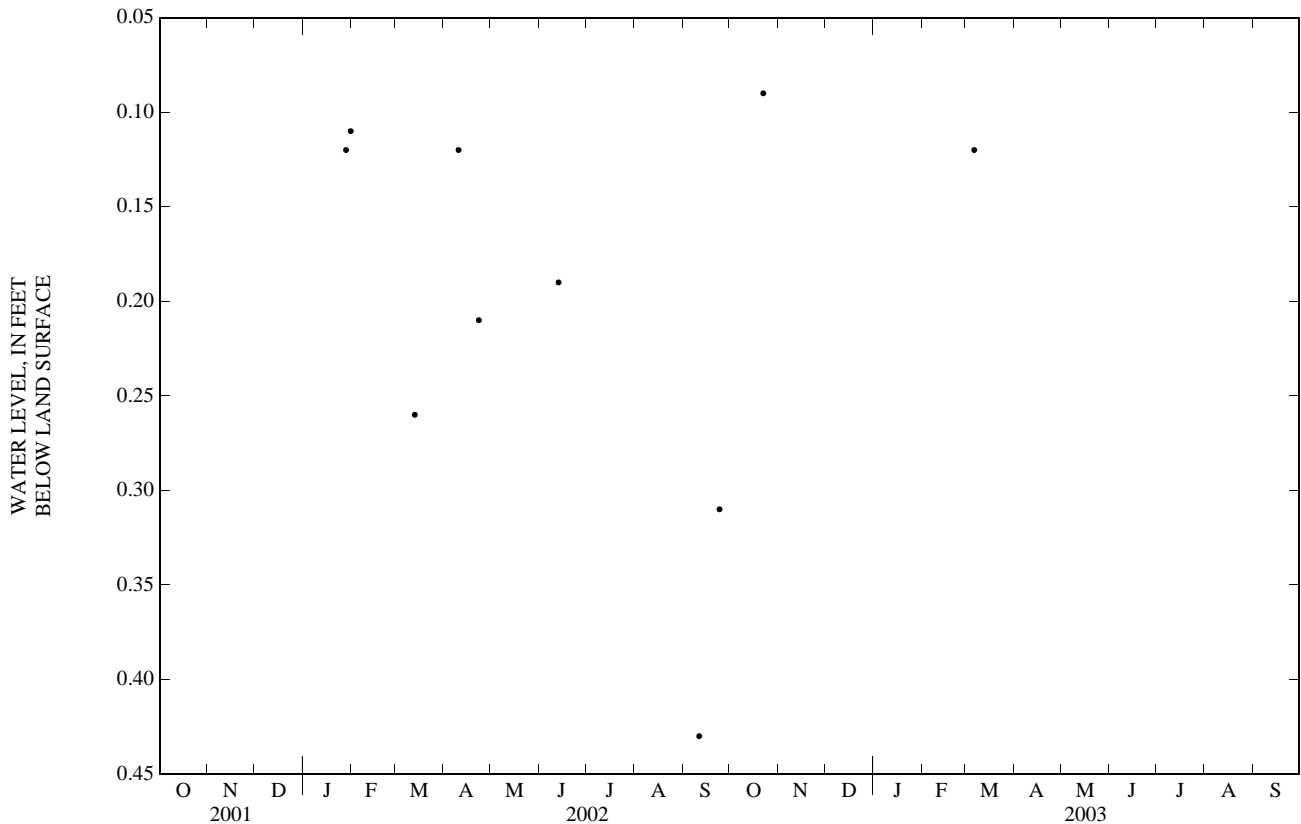
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.09 ft below land-surface datum, Oct. 22, 2002; lowest water level measured, 0.43 ft below land-surface datum, Sept. 11, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 30	.12	MAR 13	.26	APR 23	.21	SEP 11	.43
31	.11	APR 10	.12	JUN 13	.19	24	.31

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	.09	MAR 06	.12



HAYWOOD COUNTY—Continued

352423082452001. County number, HW-069; Mt. Pisgah Campground USGS Well 4.

LOCATION.--Lat 35°24'22.74", long 82°45'19.83", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 725 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.--Regolith.

WELL CHARACTERISTICS.--Drilled observation well, depth 3.9 ft, diameter 1.5 in., cased to 1.9 ft, screened interval from 1.9 ft to 3.9 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,856.2 ft above NGVD of 1929. Measuring point: Top of 1.5-inch casing, 3.10 ft above land-surface datum.

REMARKS.--Well is part of Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

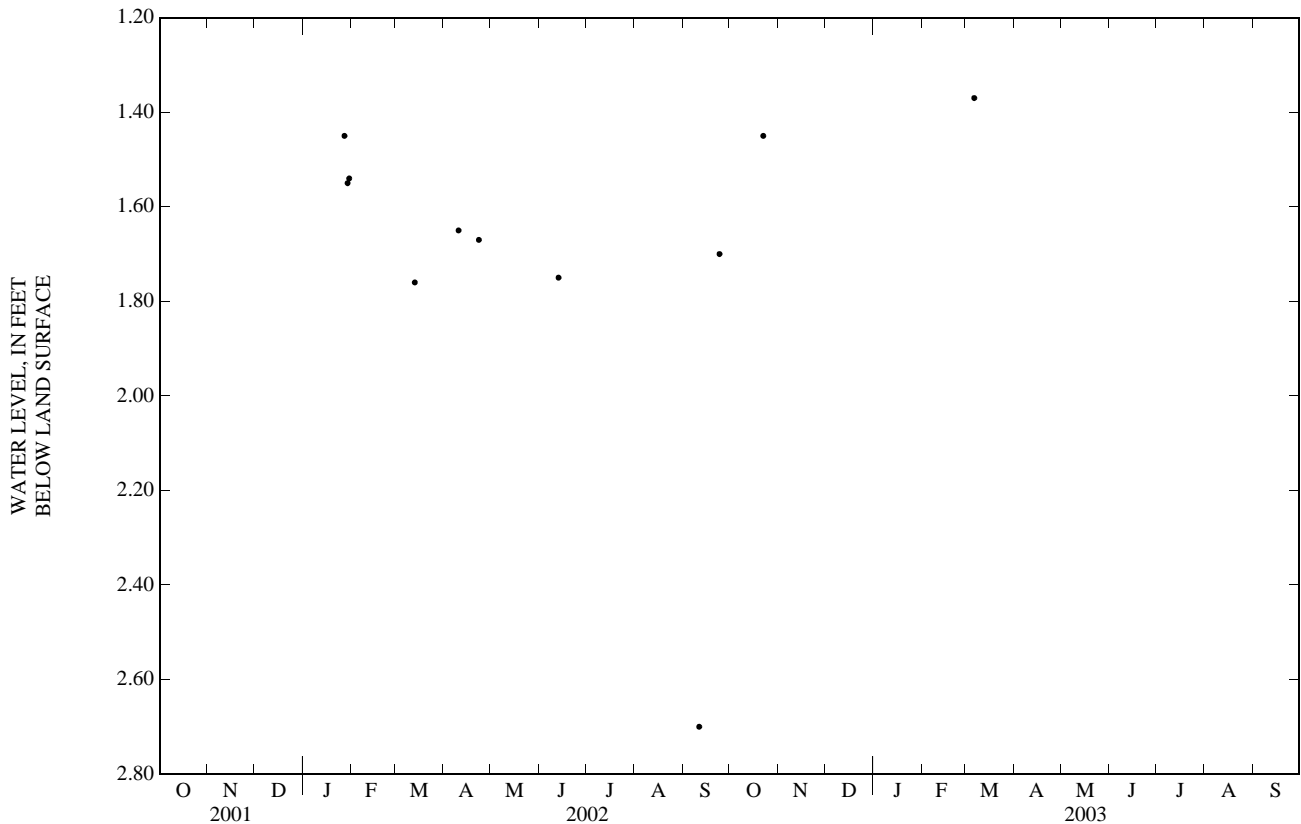
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.37 ft below land-surface datum, Mar. 06, 2003; lowest water level measured, 2.70 ft below land-surface datum, Sept. 11, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 29	1.45	JAN 31	1.54	APR 10	1.65	JUN 13	1.75	SEP 24	1.70
30	1.55	MAR 13	1.76	23	1.67	SEP 11	2.70		

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	1.45	MAR 06	1.37



GROUND-WATER LEVELS

HAYWOOD COUNTY—Continued

352423082452501. County number, HW-070; Mt. Pisgah Campground USGS Well 5.

LOCATION.--Lat 35°24'22.68", long 82°45'24.46", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 1,000 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.- Regolith.

WELL CHARACTERISTICS.--Drilled observation well, depth 2.8 ft, diameter 1.5 in., cased to 0.8 ft, screened interval from 0.8 ft to 2.8 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,851.9 ft above NGVD of 1929. Measuring point: Top of 1.5-inch casing, 2.40 ft above land-surface datum.

REMARKS.--Well is part of Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

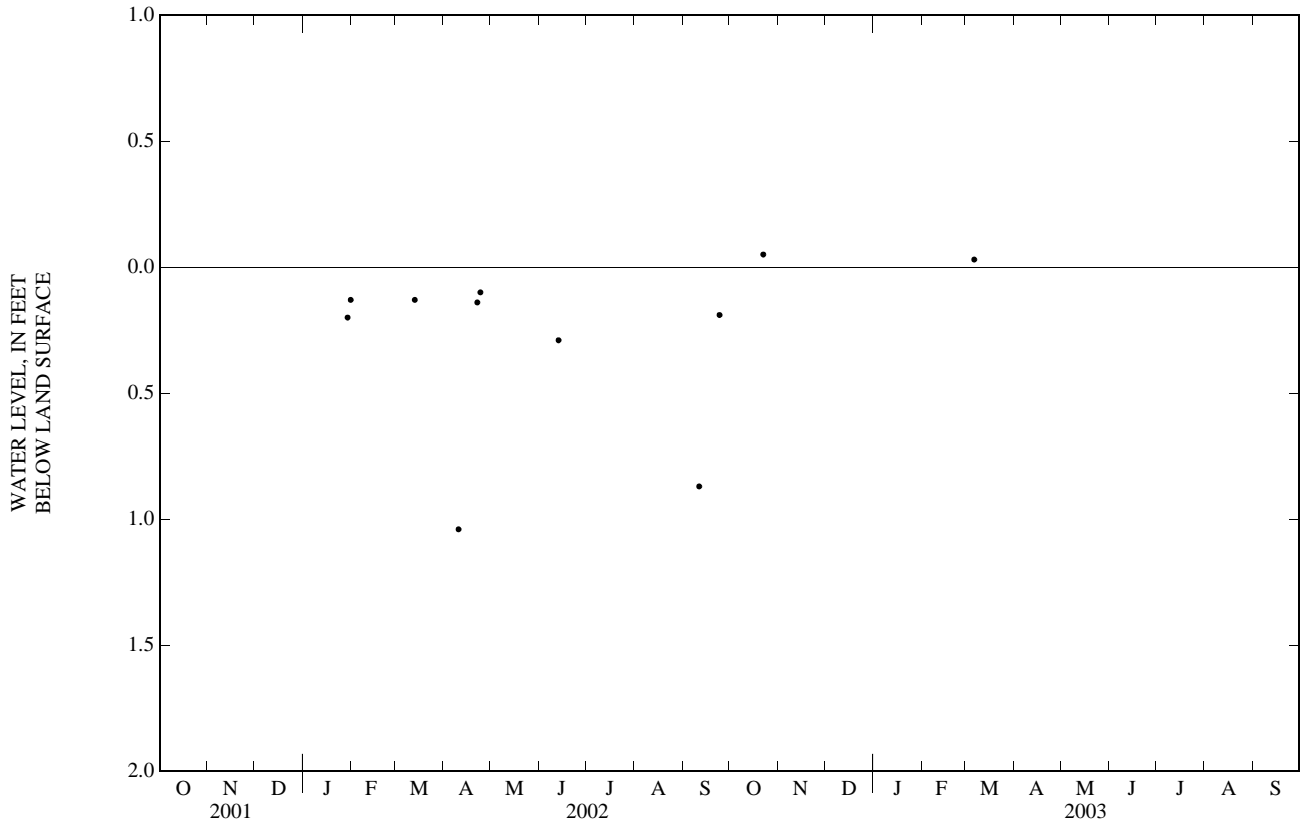
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.05 ft above land-surface datum, Oct. 22, 2002; lowest water level measured, 1.04 ft below land-surface datum, Apr. 10, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 30	.20	MAR 13	.13	APR 23	.14	JUN 13	.29	SEP 24	.19
31	.13	APR 10	1.04	24	.10	SEP 11	.87		

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM (READINGS ABOVE LAND-SURFACE INDICATED BY "+"), FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	+0.05	MAR 06	+0.03



HAYWOOD COUNTY—Continued

352426082452001. County number, HW-071; Mt. Pisgah Campground USGS Well 6.

LOCATION.--Lat 35°24'25.66", long 82°45'20.20", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 1,025 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.--Regolith.

WELL CHARACTERISTICS.--Drilled observation well, depth 3.8 ft, diameter 1.5 in., cased to 1.8 ft, screened interval from 1.8 ft to 3.8 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,851.0 ft above NGVD of 1929. Measuring point: Top of 1.5-inch casing, 1.30 ft above land-surface datum.

REMARKS.--Well is part of Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

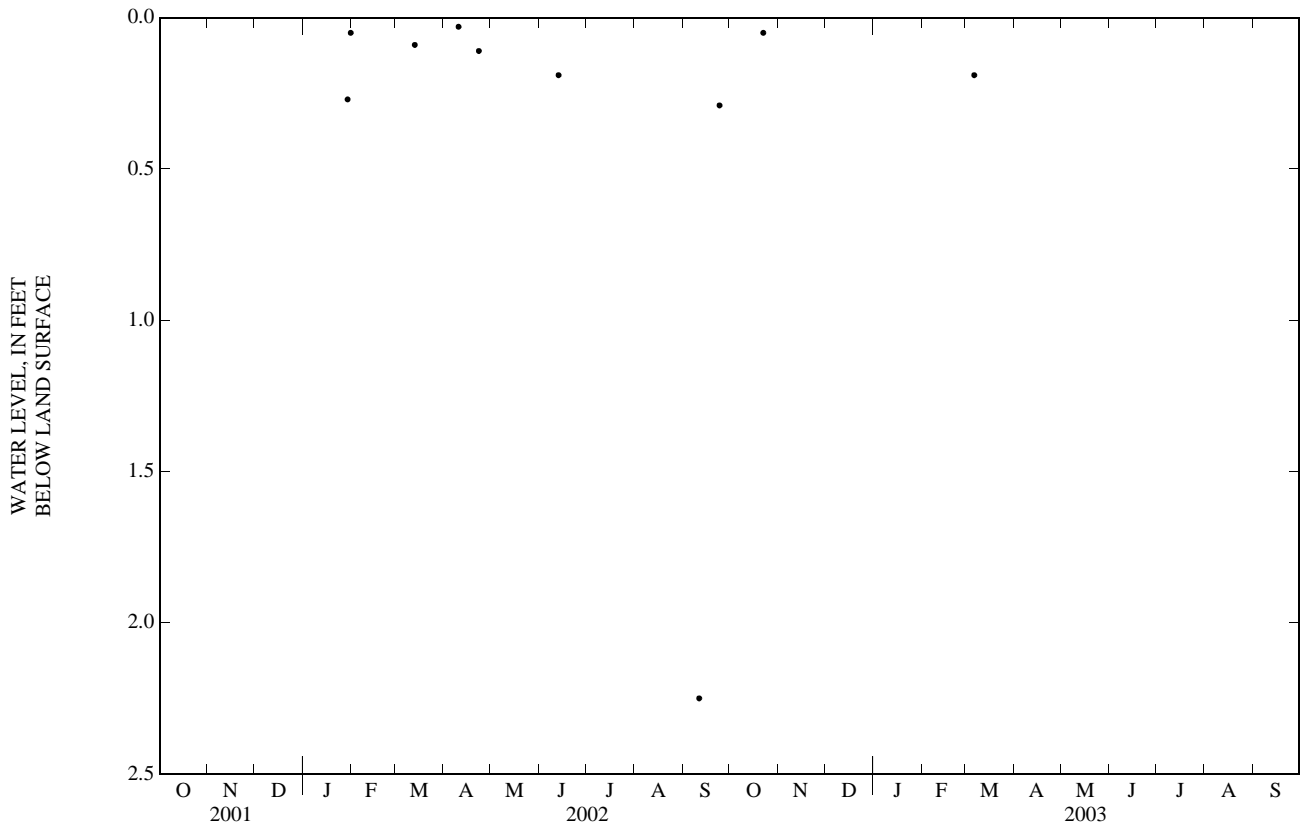
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.00 ft below land-surface datum, Jan. 30, 2002; lowest water level measured, 2.25 ft below land-surface datum, Sept. 11, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 30	.27	MAR 13	.09	APR 23	.11	SEP 11	2.25
31	.05	APR 10	.03	JUN 13	.19	24	.29

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	.05	MAR 06	.19



GROUND-WATER LEVELS

HAYWOOD COUNTY—Continued

352428082452601. County number, HW-072; Mt. Pisgah Campground USGS Well 7.

LOCATION.--Lat 35°24'27.53", long 82°45'25.52", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 1,400 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.--Regolith.

WELL CHARACTERISTICS.--Drilled observation well, depth 6.4 ft, diameter 1.5 in., cased to 4.4 ft, screened interval from 4.4 ft to 6.4 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,845.7 ft above NGVD of 1929. Measuring point: Top of 1.5-inch casing, 2.60 ft above land-surface datum.

REMARKS.--Well is part of Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

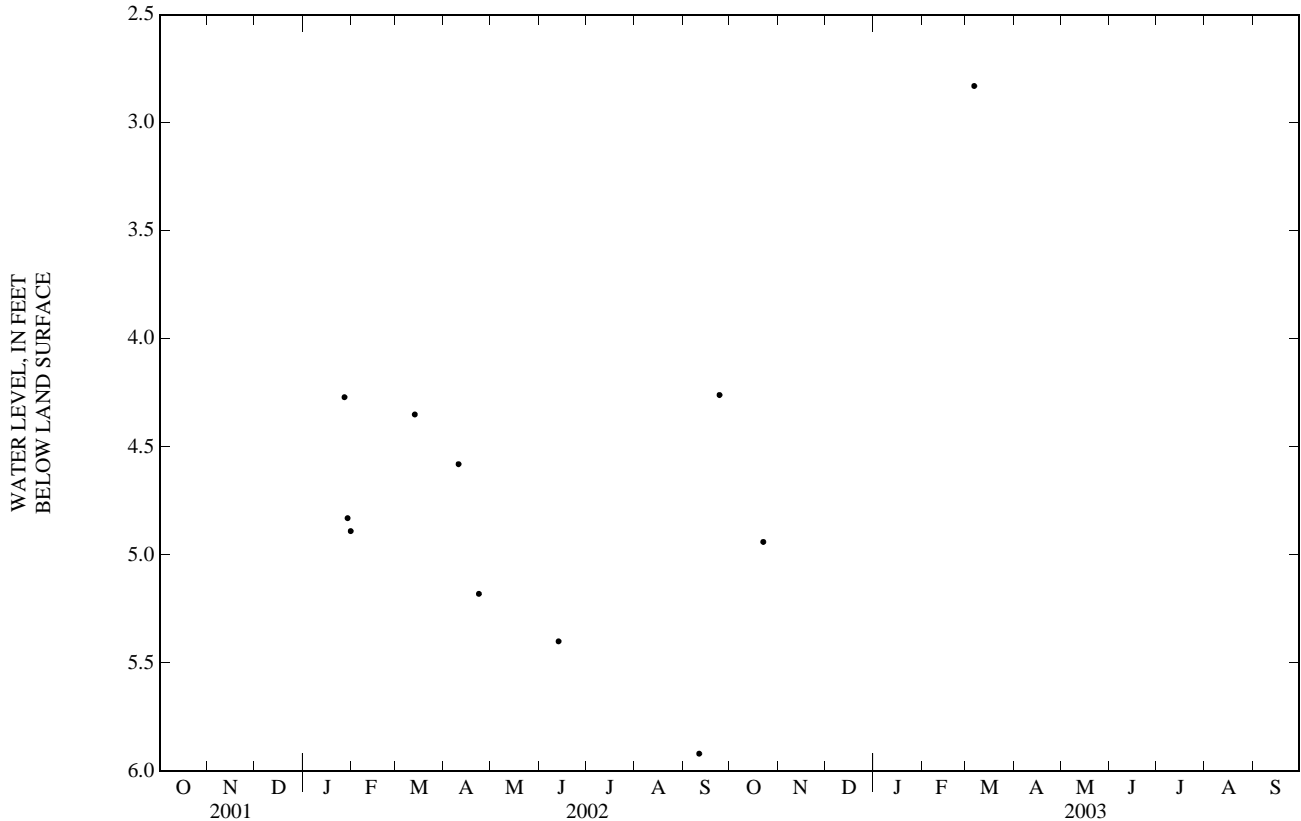
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.83 ft below land-surface datum, Mar. 06, 2003; lowest water level measured, 5.92 ft below land-surface datum, Sept. 11, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 28	4.27	JAN 31	4.89	APR 10	4.58	JUN 13	5.40	SEP 24	4.26
30	4.83	MAR 13	4.35	23	5.18	SEP 11	5.92		

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	4.94	MAR 06	2.83



HAYWOOD COUNTY—Continued

352425082452401. County number, HW-073; Mt. Pisgah Campground Piezometer A.

LOCATION.--Lat 35°24'24.96", long 82°45'23.64", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 1,125 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.--Regolith.

WELL CHARACTERISTICS.--Hand-driven piezometer, depth 1.2 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,848.5 ft above NGVD of 1929. Measuring point: Top of 0.75-inch casing, 0.75 ft above land-surface datum.

REMARKS.--Existing piezometer used during Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

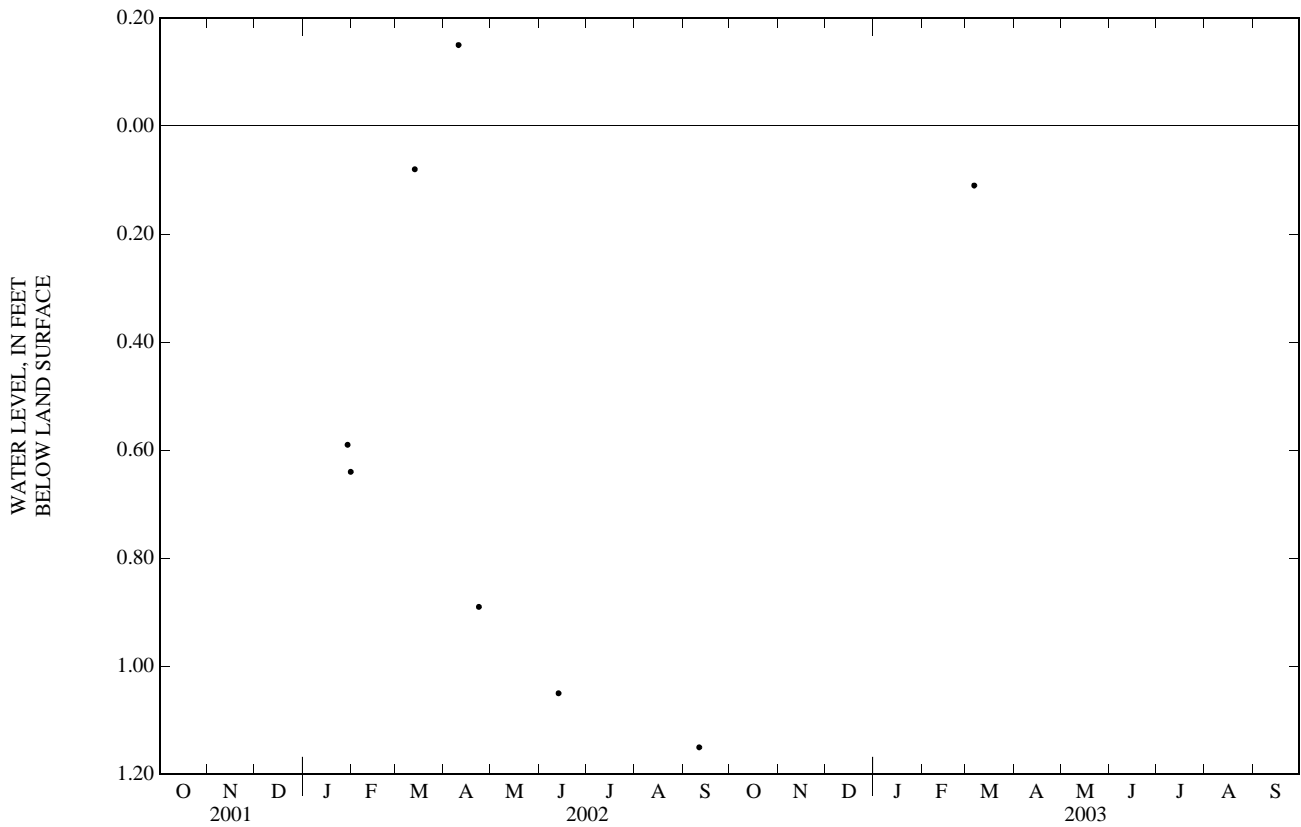
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.15 ft above land-surface datum, Apr. 10, 2002; lowest water level measured, 1.15 ft below land-surface datum, Sept. 11, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM (READINGS ABOVE LAND-SURFACE INDICATED BY "+"),
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 30	.59	MAR 13	.08	APR 23	.89	SEP 11	1.15
31	.64	APR 10	+.15	JUN 13	1.05		

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL
MAR 06	.11



GROUND-WATER LEVELS

HAYWOOD COUNTY—Continued

352425082452301. County number, HW-074; Mt. Pisgah Campground Piezometer B.

LOCATION.--Lat 35°24'24.97", long 82°45'23.20", Hydrologic Unit 06010106, at Mt. Pisgah Campground, approximately 1,100 ft northeast of Pisgah Inn Lodge at Flat Laurel Gap. Owner: National Park Service.

AQUIFER.--Regolith.

WELL CHARACTERISTICS.--Hand-driven piezometer, depth unknown.

INSTRUMENTATION.--Measured periodically with steel and electric tape.

DATUM.--Land-surface datum is 4,847.9 ft above NGVD of 1929. Measuring point: Top of 0.75-inch casing, 0.75 ft above land-surface datum.

REMARKS.--Existing piezometer used during Mt. Pisgah Campground baseline hydrologic study.

PERIOD OF RECORD.--January 2002 to March 2003 (discontinued).

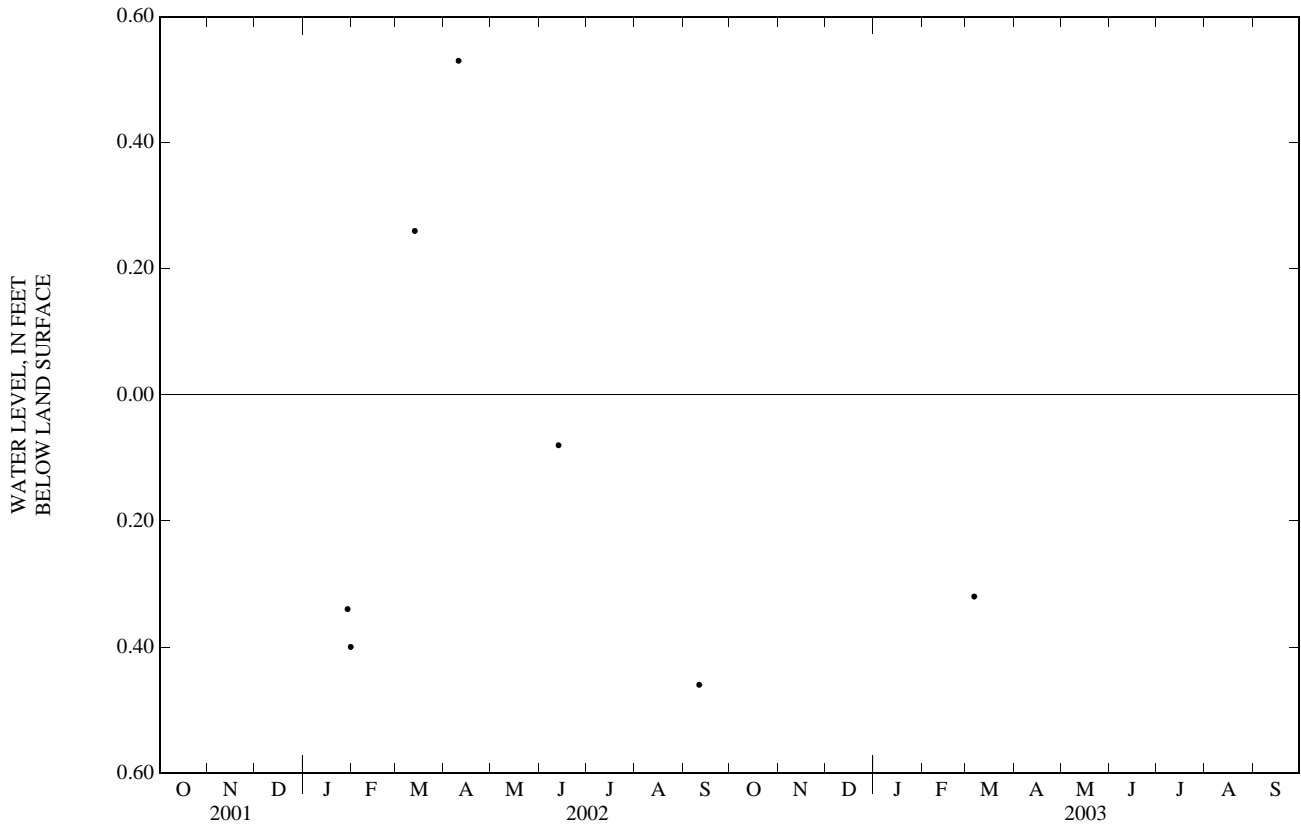
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.53 ft above land-surface datum, Apr. 10, 2002; lowest water level measured, 0.46 ft below land-surface datum, Sept. 11, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM (READINGS ABOVE LAND-SURFACE INDICATED BY "+"),
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 30	.34	JAN 31	.40	MAR 13	+.26	APR 10	+.53	JUN 13	.08	SEP 11	.46

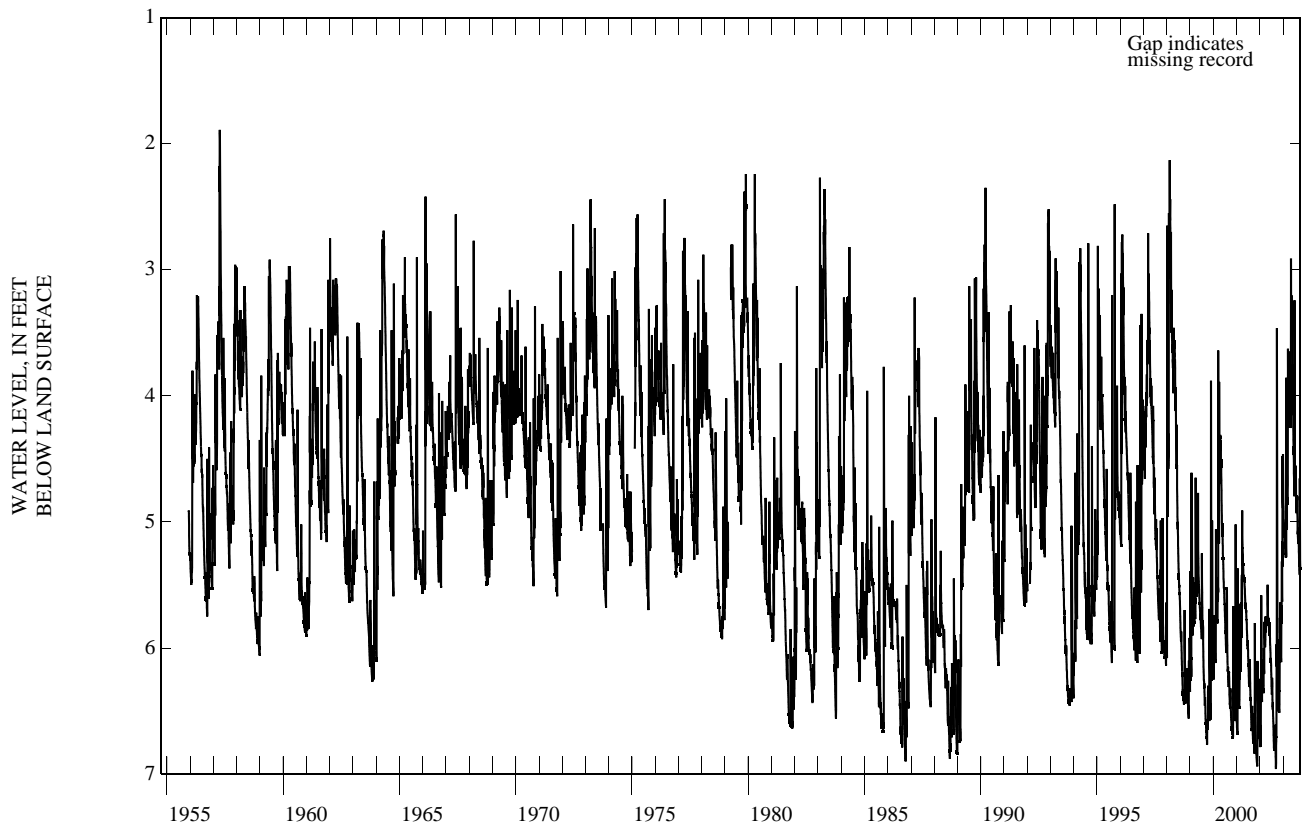
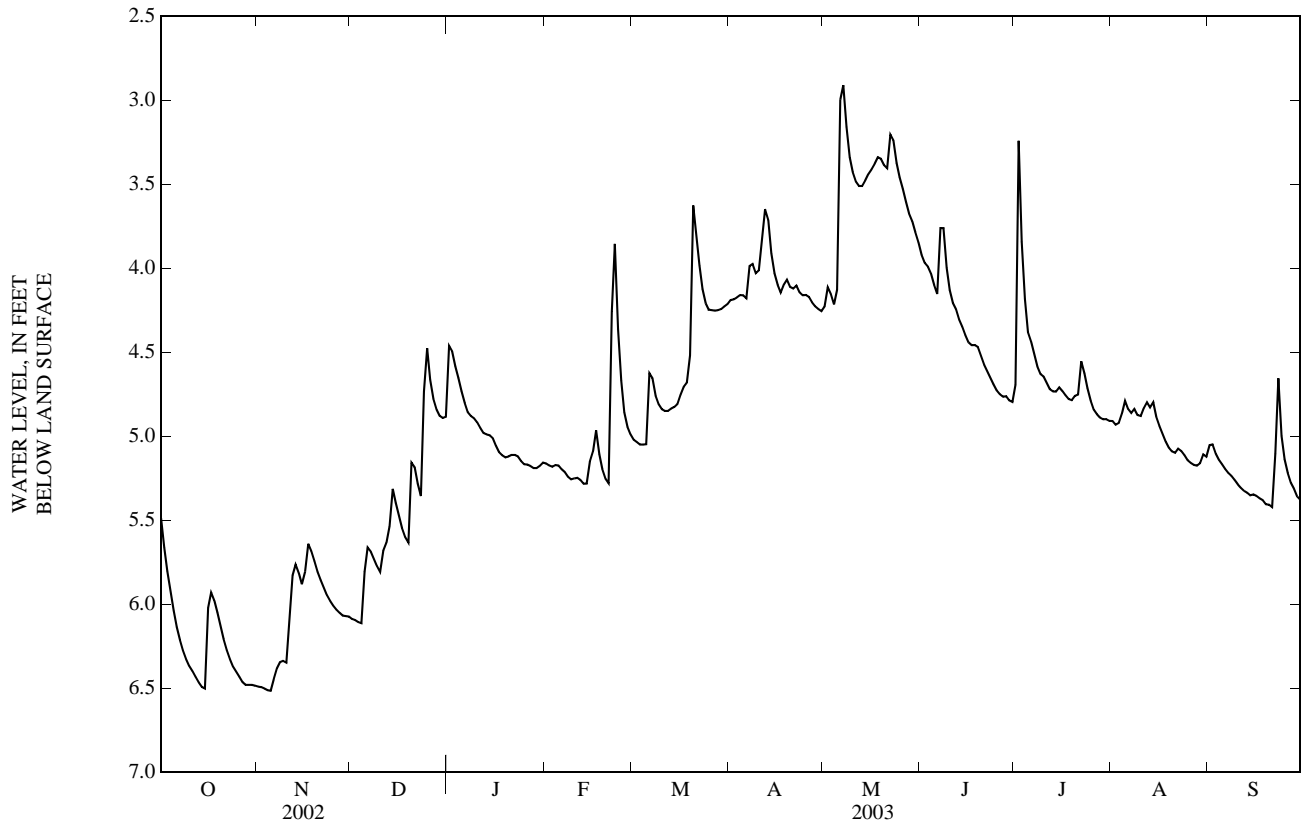
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 2002 TO MARCH 2003

DATE	WATER LEVEL
MAR 06	.32



HAYWOOD COUNTY—Continued

352315082484401. Local number, NC-40; County name, HW-047.



GROUND-WATER LEVELS

HERTFORD COUNTY

363026077001906. Local number, NC-155; DENR Como Research Station well B20u6; County number, HF-085.

LOCATION.--Lat 36°30'26.5", long 77°00'19.8", Hydrologic Unit 03010203, 0.5 mi northeast of Como, and northwest of U.S. Highway 258 on Secondary Road 1316. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Lower Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 570 ft, diameter 4 in. to 211 ft, diameter 2.5 in. from 211 to 570 ft, screened interval from 560 to 570 ft.

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

DATUM.--Land-surface datum is 68.83 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 3.00 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--September 1981 to current year. Continuous record began June 2000. Records from September 1981 to October 1986 are from the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 143.04 ft below land-surface datum, Feb. 9, 1983; lowest water level recorded, 162.39 ft below land-surface datum, Aug. 21-22, 2002.

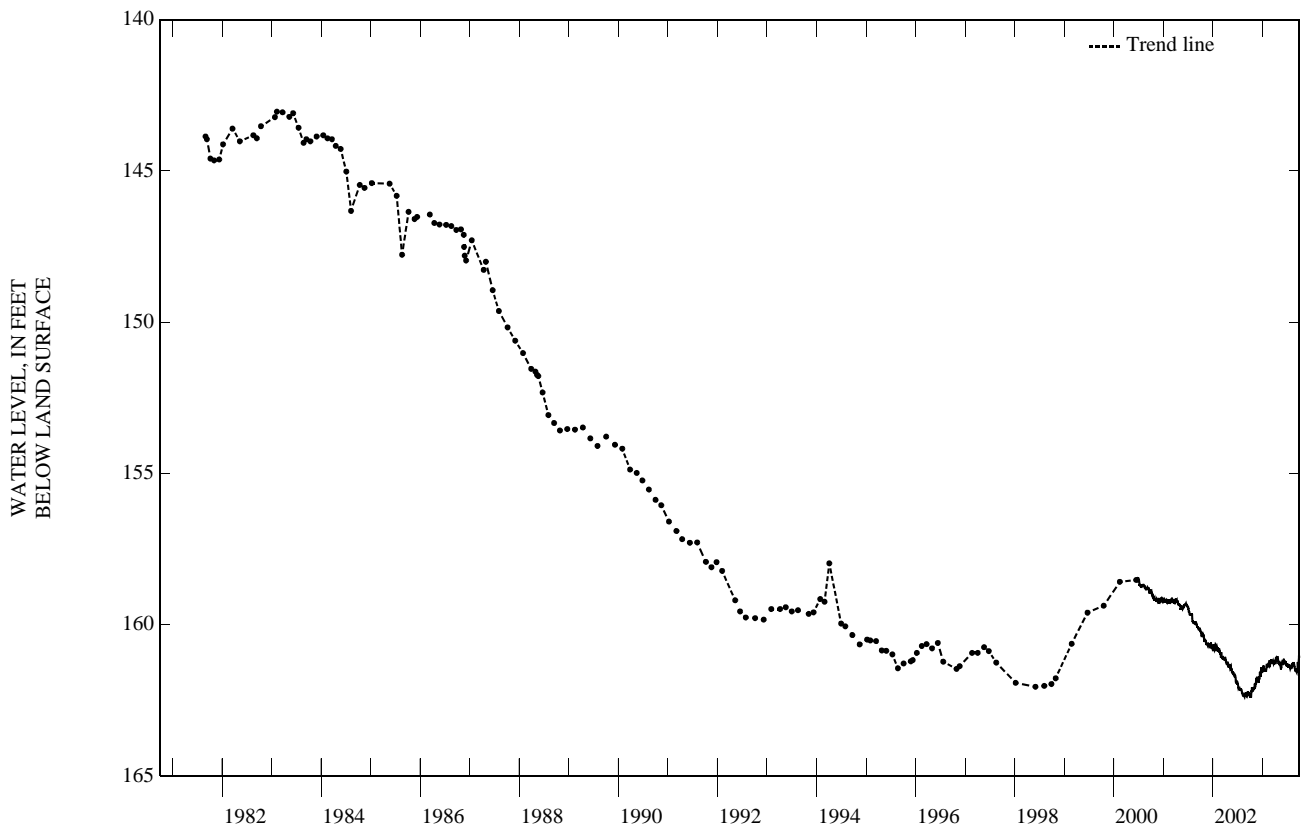
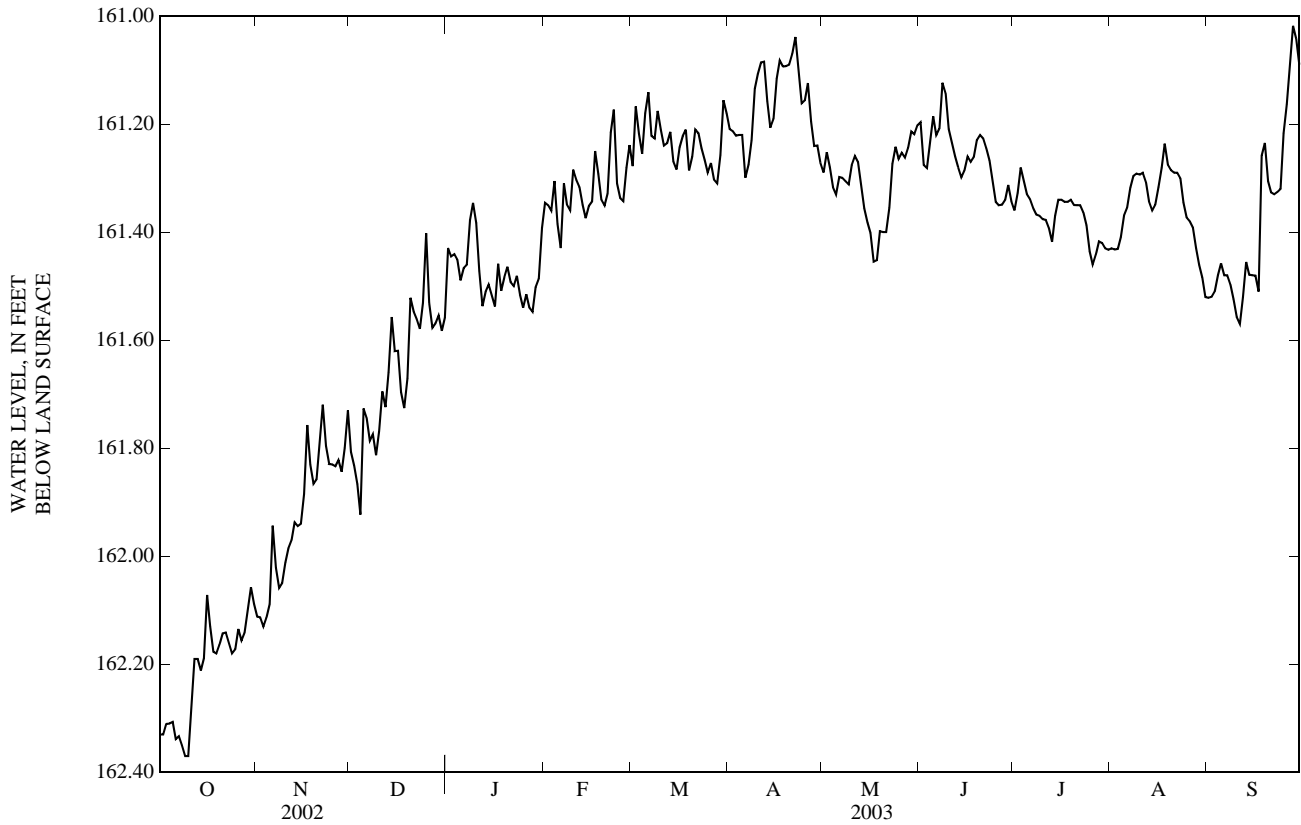
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162.33	162.11	161.81	161.43	161.35	161.28	161.21	161.29	161.20	161.36	161.43	161.52
2	162.33	162.11	161.83	161.44	161.35	161.17	161.21	161.25	161.28	161.33	161.43	161.52
3	162.31	162.13	161.87	161.44	161.36	161.22	161.22	161.28	161.28	161.28	161.43	161.51
4	162.31	162.11	161.92	161.45	161.31	161.25	161.22	161.32	161.23	161.31	161.41	161.48
5	162.31	162.09	161.73	161.49	161.39	161.18	161.22	161.33	161.19	161.33	161.37	161.46
6	162.34	161.94	161.74	161.47	161.43	161.14	161.30	161.30	161.22	161.34	161.35	161.48
7	162.33	162.02	161.79	161.46	161.31	161.22	161.28	161.30	161.21	161.36	161.32	161.48
8	162.35	162.06	161.77	161.38	161.35	161.23	161.23	161.31	161.12	161.37	161.30	161.50
9	162.37	162.05	161.81	161.35	161.36	161.18	161.13	161.31	161.14	161.37	161.29	161.52
10	162.37	162.01	161.77	161.38	161.28	161.21	161.11	161.28	161.21	161.38	161.29	161.56
11	162.28	161.99	161.69	161.47	161.30	161.24	161.09	161.26	161.23	161.38	161.29	161.57
12	162.19	161.97	161.72	161.54	161.32	161.24	161.08	161.27	161.26	161.39	161.31	161.52
13	162.19	161.94	161.66	161.51	161.35	161.21	161.16	161.31	161.28	161.42	161.34	161.46
14	162.21	161.94	161.56	161.50	161.37	161.27	161.21	161.36	161.30	161.37	161.36	161.48
15	162.19	161.94	161.62	161.52	161.35	161.28	161.19	161.38	161.29	161.34	161.35	161.48
16	162.07	161.88	161.62	161.54	161.34	161.24	161.12	161.40	161.26	161.34	161.32	161.48
17	162.13	161.76	161.70	161.46	161.25	161.22	161.08	161.45	161.27	161.34	161.28	161.51
18	162.18	161.83	161.73	161.51	161.29	161.21	161.09	161.45	161.26	161.34	161.24	161.26
19	162.18	161.87	161.67	161.48	161.34	161.29	161.09	161.40	161.23	161.34	161.28	161.24
20	162.16	161.86	161.52	161.46	161.35	161.26	161.09	161.40	161.22	161.35	161.29	161.31
21	162.14	161.79	161.55	161.49	161.33	161.21	161.07	161.40	161.23	161.35	161.29	161.33
22	162.14	161.72	161.56	161.50	161.22	161.22	161.04	161.35	161.24	161.35	161.29	161.33
23	162.16	161.80	161.58	161.48	161.17	161.24	161.10	161.27	161.27	161.36	161.30	161.33
24	162.18	161.83	161.53	161.52	161.31	161.27	161.16	161.24	161.31	161.39	161.35	161.32
25	162.17	161.83	161.40	161.54	161.34	161.29	161.16	161.26	161.34	161.44	161.37	161.22
26	162.13	161.83	161.53	161.51	161.34	161.27	161.12	161.25	161.35	161.46	161.38	161.16
27	162.16	161.82	161.58	161.54	161.28	161.30	161.20	161.26	161.35	161.44	161.39	161.10
28	162.14	161.84	161.57	161.55	161.24	161.31	161.24	161.24	161.34	161.42	161.43	161.02
29	162.10	161.80	161.55	161.50	---	161.26	161.24	161.21	161.31	161.42	161.46	161.04
30	162.06	161.73	161.58	161.49	---	161.16	161.27	161.22	161.34	161.43	161.48	161.09
31	162.09	---	161.56	161.39	---	161.18	---	161.20	---	161.43	161.52	---

WTR YR 2003 MEAN 161.47 HIGH 161.02 LOW 162.37

HERTFORD COUNTY—Continued

363026077001906. Local number, NC-155; DENR Como Research Station well B20u6; County number, HF-085.



GROUND-WATER LEVELS

HOKE COUNTY

350314079213301. County number, HO-032; DENR McCain Research Station well T48i2.

LOCATION.--Lat 35°03'18", long 79°21'34", Hydrologic Unit 03040203, near McCain, 0.6 mi west of State Highway 211 off Hill Drive. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 110 ft, diameter 4 in. to 82 ft, diameter 2.5 in. from 82 to 110 ft, screened interval from 82 to 92 ft.

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

DATUM.--Land-surface datum is 350 ft above NGVD of 1929 (from topographic map). Measuring point: Top of coupling plate attached to instrument shelf, 2.01 ft above land-surface datum (since November 2000).

REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study. Negative values of water levels measured in feet below land surface indicate ground-water levels that are above land surface. Well redeveloped by injecting air into well on July 31, 2001.

PERIOD OF RECORD.--February 1972 to current year. Records from February 1972 to December 1987 are from the files of the Groundwater Section, DENR. Water levels measured periodically by USGS personnel since July 1981. Continuous record began November 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.51 ft above land-surface datum, April 28, 1998; lowest water level recorded, 4.94 ft below land-surface datum, Oct. 7, 2002.

REVISIONS.--Water-level values and extremes for period of record published in Water Resources Data, North Carolina, NC-96-2 and NC-97-2, should be adjusted by -0.7 ft.

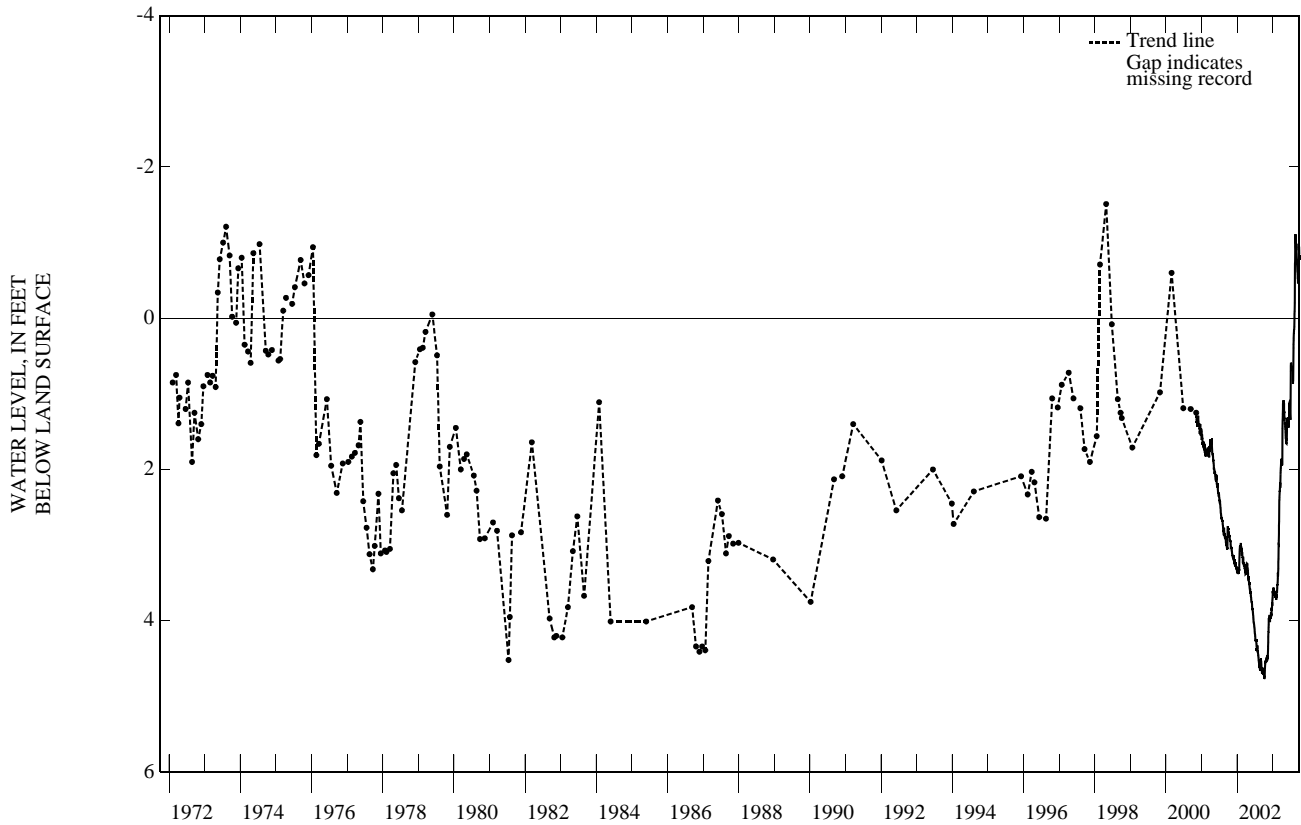
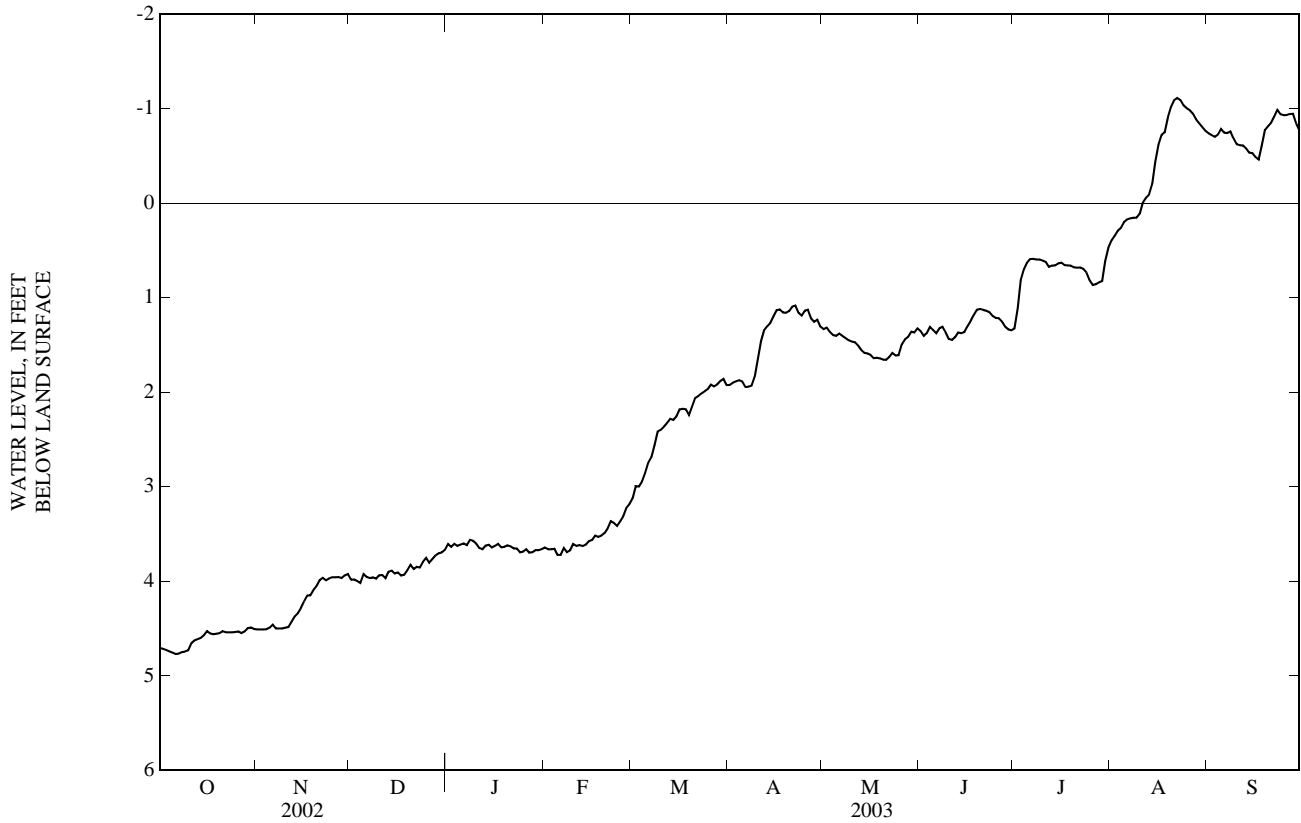
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.71	4.51	3.98	3.61	3.64	3.12	1.92	1.33	1.35	1.33	0.39	-0.74
2	4.72	4.51	3.98	3.64	3.66	3.00	1.90	1.32	1.40	1.12	0.35	-0.72
3	4.73	4.51	4.00	3.60	3.66	3.00	1.89	1.36	1.37	0.82	0.29	-0.70
4	4.74	4.51	4.02	3.63	3.66	2.94	1.87	1.40	1.31	0.70	0.26	-0.73
5	4.76	4.49	3.93	3.61	3.72	2.85	1.89	1.40	1.34	0.63	0.20	-0.78
6	4.77	4.46	3.96	3.60	3.72	2.74	1.95	1.38	1.38	0.59	0.17	-0.74
7	4.77	4.50	3.97	3.62	3.65	2.69	1.94	1.40	1.32	0.59	0.16	-0.74
8	4.75	4.50	3.96	3.56	3.69	2.56	1.93	1.43	1.31	0.60	0.16	-0.76
9	4.74	4.50	3.97	3.57	3.67	2.42	1.83	1.45	1.37	0.60	0.15	-0.69
10	4.73	4.49	3.94	3.60	3.61	2.40	1.66	1.47	1.44	0.61	0.11	-0.62
11	4.66	4.48	3.93	3.65	3.63	2.37	1.46	1.47	1.45	0.62	0.00	-0.61
12	4.63	4.43	3.97	3.66	3.62	2.33	1.35	1.51	1.42	0.67	-0.06	-0.61
13	4.61	4.37	3.90	3.62	3.63	2.28	1.30	1.55	1.37	0.66	-0.09	-0.58
14	4.60	4.34	3.89	3.61	3.61	2.29	1.27	1.58	1.38	0.66	-0.20	-0.53
15	4.57	4.28	3.92	3.64	3.58	2.25	1.20	1.59	1.37	0.64	-0.44	-0.53
16	4.53	4.21	3.91	3.63	3.56	2.18	1.13	1.61	1.30	0.63	-0.62	-0.49
17	4.55	4.15	3.94	3.60	3.52	2.18	1.13	1.64	1.25	0.66	-0.72	-0.46
18	4.56	4.15	3.93	3.64	3.53	2.18	1.16	1.64	1.18	0.66	-0.75	-0.61
19	4.56	4.09	3.88	3.64	3.52	2.24	1.16	1.64	1.13	0.66	-0.91	-0.77
20	4.55	4.05	3.83	3.62	3.49	2.15	1.14	1.66	1.12	0.68	-1.01	-0.81
21	4.53	3.99	3.87	3.63	3.44	2.06	1.10	1.66	1.13	0.68	-1.09	-0.85
22	4.54	3.96	3.85	3.65	3.37	2.04	1.08	1.63	1.14	0.68	-1.11	-0.92
23	4.54	3.99	3.85	3.65	3.38	2.01	1.16	1.58	1.16	0.70	-1.09	-0.99
24	4.54	3.97	3.79	3.69	3.41	1.99	1.19	1.61	1.19	0.73	-1.04	-0.94
25	4.54	3.96	3.75	3.69	3.36	1.97	1.14	1.61	1.21	0.82	-1.00	-0.93
26	4.53	3.96	3.80	3.66	3.31	1.92	1.13	1.49	1.22	0.87	-0.98	-0.93
27	4.55	3.96	3.76	3.70	3.22	1.94	1.22	1.44	1.25	0.86	-0.95	-0.94
28	4.53	3.97	3.73	3.69	3.18	1.92	1.25	1.42	1.31	0.84	-0.89	-0.95
29	4.50	3.94	3.70	3.67	---	1.88	1.23	1.36	1.34	0.82	-0.85	-0.84
30	4.49	3.92	3.70	3.67	---	1.86	1.31	1.37	1.34	0.61	-0.81	-0.77
31	4.50	---	3.67	3.66	---	1.93	---	1.33	---	0.47	-0.77	---

WTR YR 2003 MEAN 2.16 HIGH -1.11 LOW 4.77

HOKE COUNTY—Continued

350314079213301. County number, HO-032; DENR McCain Research Station well T48i2.



GROUND-WATER LEVELS
HOKE COUNTY—Continued

345807079134201. County number, HO-037; Raeford well 8.

LOCATION.--Lat 34°58'08", long 79°13'41", Hydrologic Unit 03030004, in Raeford, 0.1 mi south of Covington Avenue on Oak Street. Owner: Town of Raeford.

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 108 ft, diameter 8 in., screened intervals from 71 to 91 ft and 95 to 100 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 248 ft above NGVD of 1929 (from topographic map). Measuring point: Top of well vent pipe in pump pedestal, 1.0 ft above land-surface datum.

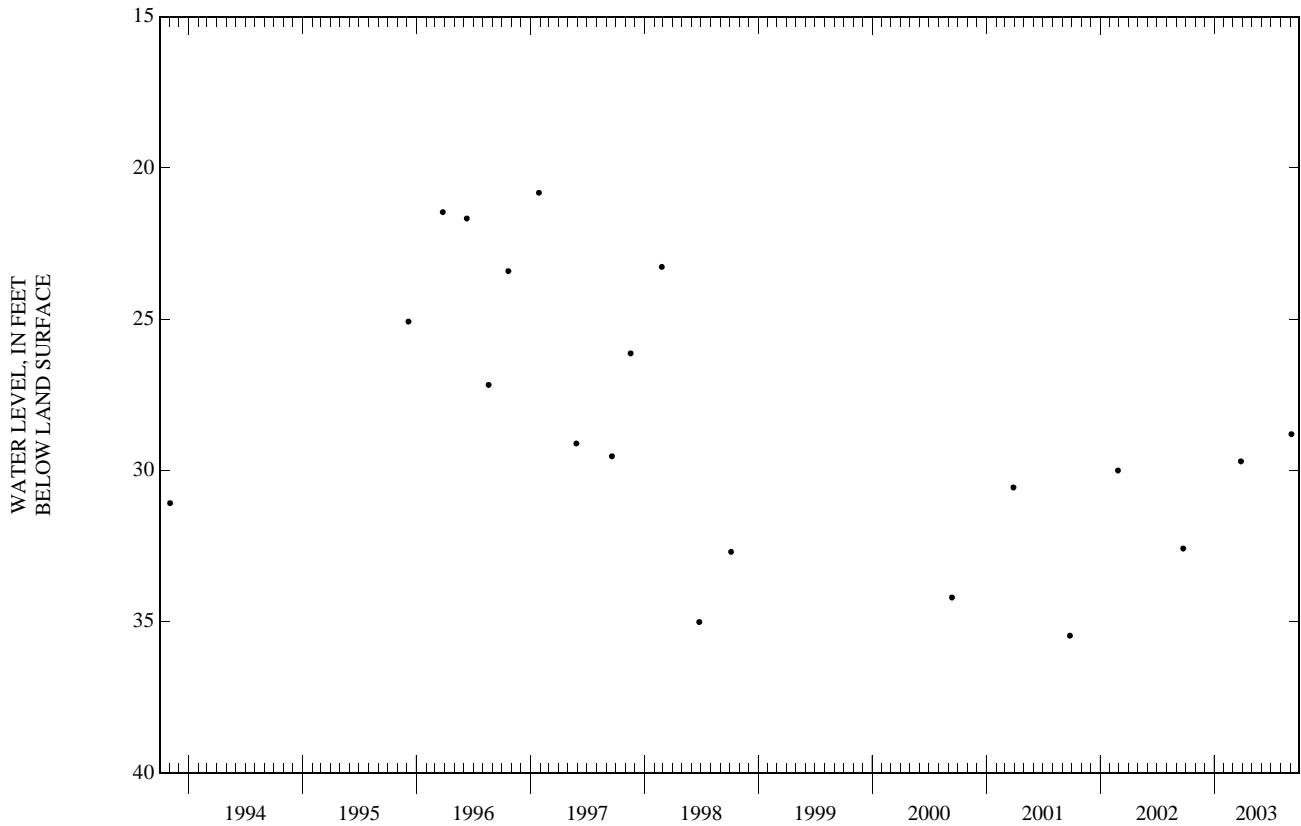
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--August 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.82 ft below land-surface datum, Jan. 27, 1997; lowest water level measured, 35.46 ft below land-surface datum, Sept. 25, 2001.

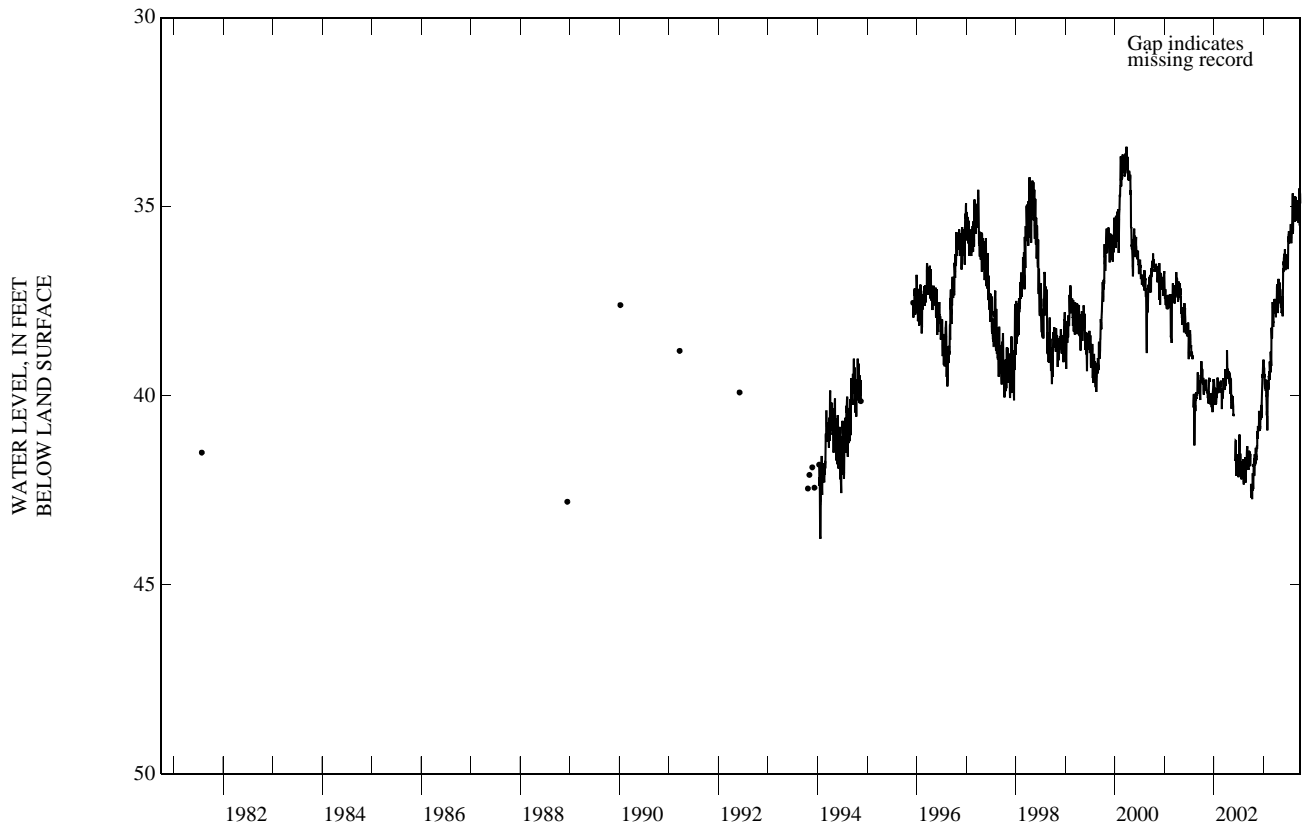
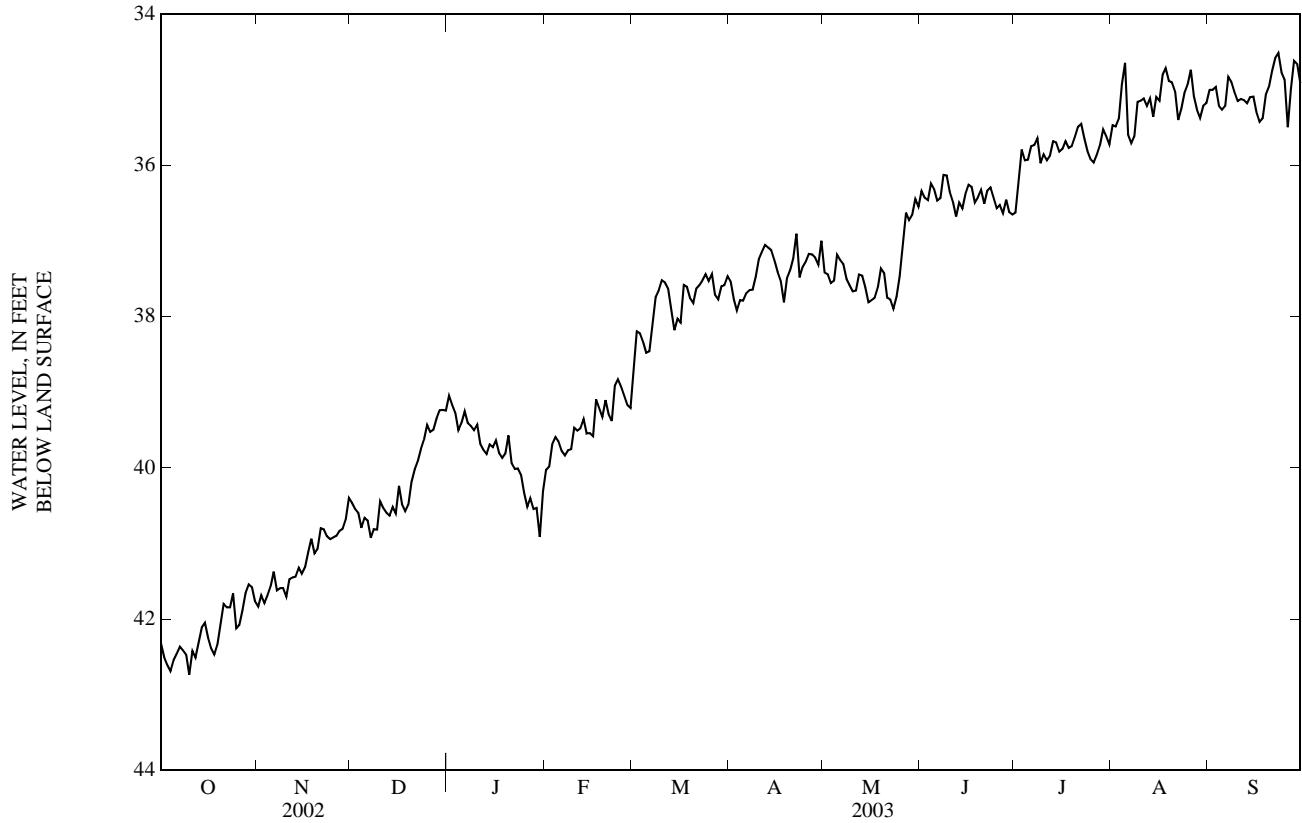
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 27	29.7	SEP 05	28.80



GROUND-WATER LEVELS
HOKE COUNTY—Continued

345933079144406. County number, HO-047; DENR Raeford Research Station well U46e6.



GROUND-WATER LEVELS

IREDELL COUNTY

353135080524201. County number, IR-130; DENR Langtree Research Station MW-2 (Regolith well).

LOCATION.--Lat 35°31'35.47", long 80°52'42.23", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .1 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER.--Regolith (saprolitic quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 28 ft, diameter 4 in., cased to 13 ft, screened interval from 13 ft to 28 ft, sand filter packed from 10 ft to 28 ft.

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

DATUM.--Land-surface datum is 802.48 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelter floor, 1.34 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains ground-water project.

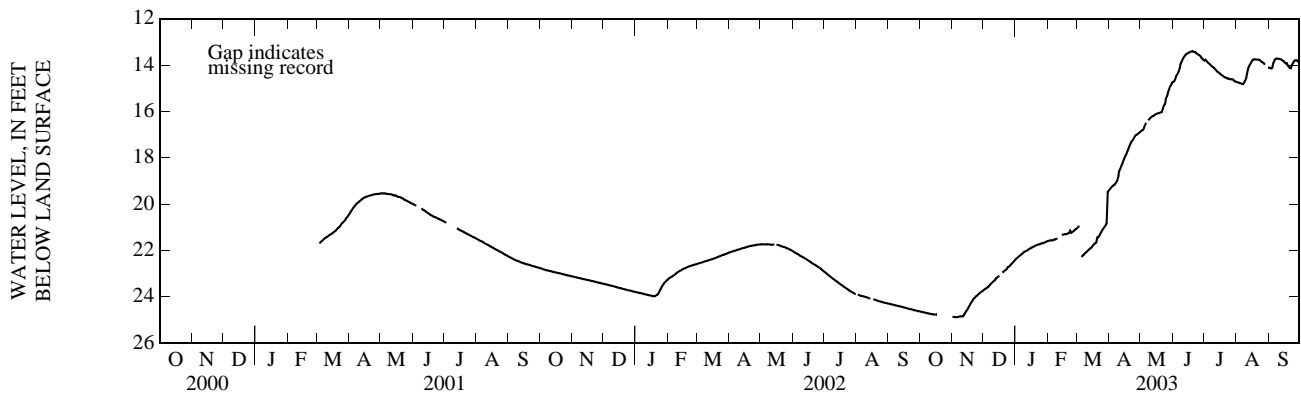
PERIOD OF RECORD.--March 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.39 ft below land-surface datum, June 19, 2003; lowest water level recorded 24.91 ft below land-surface datum, Nov. 5, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.64	24.87	23.72	22.37	21.59	21.02	19.36	16.86	14.74	13.80	14.73	14.11
2	24.65	24.87	23.68	22.34	21.58	20.97	19.31	16.82	14.70	13.77	14.75	14.12
3	24.66	24.88	23.65	22.29	21.57	20.97	19.26	16.80	14.59	13.82	14.77	14.15
4	24.67	24.88	23.62	22.26	21.56	---	19.22	16.71	14.46	13.88	14.78	14.12
5	24.68	24.88	23.58	22.21	21.57	22.28	19.18	16.58	14.39	13.92	14.79	13.93
6	24.69	24.88	23.54	22.18	21.55	22.22	19.16	16.50	14.31	13.96	14.81	13.83
7	24.70	24.86	23.49	22.14	21.53	22.20	19.07	---	14.17	14.01	14.83	13.74
8	24.71	24.85	23.44	22.09	21.52	22.14	19.01	16.38	13.94	14.05	14.77	13.72
9	24.72	24.85	23.40	22.06	21.50	22.09	18.87	16.33	13.86	14.08	14.67	13.72
10	24.73	24.85	23.35	22.04	21.49	22.06	18.57	16.29	13.76	14.11	14.59	13.73
11	24.74	24.85	23.32	22.02	---	22.01	18.49	16.24	13.67	14.16	14.31	13.73
12	24.75	24.80	23.28	22.00	---	21.97	18.38	16.21	13.60	14.22	14.14	13.75
13	24.76	24.71	23.20	21.96	---	21.92	18.26	16.19	13.55	14.27	14.04	13.77
14	24.77	24.63	23.18	21.93	21.33	21.90	18.15	16.15	13.52	14.31	13.95	13.81
15	24.77	24.57	23.13	21.91	21.32	21.85	18.03	16.13	13.48	14.34	13.87	13.84
16	24.77	24.50	23.09	21.88	21.31	21.77	17.92	16.10	13.47	14.37	13.79	13.89
17	24.77	24.41	---	21.86	21.30	21.73	17.84	16.09	13.45	14.42	13.75	13.94
18	---	24.32	---	21.84	21.30	21.69	17.73	16.08	13.42	14.45	13.75	13.92
19	---	24.25	22.96	21.82	21.28	21.66	17.61	16.06	13.40	14.48	13.76	14.02
20	---	24.18	22.92	21.79	21.27	21.44	17.50	16.05	13.42	14.52	13.76	14.08
21	---	24.11	22.89	21.77	21.25	21.44	17.38	16.03	13.44	14.54	13.76	14.13
22	---	24.06	22.85	21.76	21.16	21.36	17.30	15.89	13.44	14.55	13.76	14.14
23	---	24.01	22.82	21.74	21.25	21.27	17.24	15.75	13.47	14.58	13.78	13.98
24	---	23.98	22.73	21.73	21.21	21.20	17.17	15.69	13.52	14.58	13.83	13.91
25	---	23.93	22.72	21.71	21.18	21.11	17.08	15.44	13.55	14.61	13.86	13.84
26	---	23.89	22.68	21.69	21.15	21.04	17.03	15.34	13.57	14.62	13.88	13.80
27	---	23.85	22.61	21.69	21.09	20.99	17.01	15.17	13.61	14.62	13.92	13.79
28	---	23.82	22.56	21.66	21.07	20.93	16.97	15.05	13.67	14.61	13.98	13.80
29	---	23.78	22.52	21.65	---	20.84	16.93	14.92	13.73	14.64	---	13.87
30	---	23.75	22.47	21.64	---	19.47	16.90	14.85	13.77	14.70	---	13.91
31	---	---	22.42	21.61	---	19.43	---	14.75	---	14.72	14.11	---

WTR YR 2003 MEAN 18.68 HIGH 13.40 LOW 24.88



353135080524201 IR-130 DENR Langtree Research Station MW-2 (Regolith well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2002 to July 2003 (discontinued)

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 2002 to July 2003.

pH: August 2002 to July 2003.

WATER TEMPERATURE: August 2002 to July 2003.

DISSOLVED OXYGEN: August 2002 to July 2003.

DISSOLVED OXYGEN, PERCENT SATURATION: August 2002 to July 2003.

INSTRUMENTATION.-- Water-quality monitor with satellite telemetry from August 2002 to July 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, computed using barometric pressure of 740 mm Hg.

EXTREMES FOR PERIOD OF DAILY RECORD.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	88, October 22, 2002	31, July 6-10, 2003
pH, standard units	6.4, on many days during the period	5.6, on several days during the period
WATER TEMPERATURE, °C	16.8, on many days during the period	16.2, on many days during the period
DISSOLVED OXYGEN, mg/L	7.4, on several days during the period	5.7, on several days during the period
DISSOLVED OXYGEN, PERCENT SATURATION,%	78, on several days during the period	60, on several days during the period

EXTREMES FOR CURRENT YEAR.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	88, October 22	31, July 6-10
pH, standard units	6.4, on many days during the year	5.6, on several days during the year
WATER TEMPERATURE, °C	16.8, on many days during the year	16.2, on many days during the year
DISSOLVED OXYGEN, mg/L	7.4, on several days during the year	5.7, on several days during the year
DISSOLVED OXYGEN, PERCENT SATURATION,%	78, on several days during the year	60, on several days during the year

353135080524201 IR-130 DENR Langtree Research Station MW-2 (Regolith well)—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
FOR PERIOD OCTOBER 2002 TO JULY 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	80	76	79	78	78	78	73	71	34	---	---
2	78	79	76	79	78	78	78	72	71	34	---	---
3	78	79	76	79	79	78	77	72	71	34	---	---
4	78	79	76	79	79	---	77	71	71	33	---	---
5	78	78	76	79	78	78	77	71	71	32	---	---
6	78	78	75	79	78	78	76	71	71	32	---	---
7	78	78	75	79	78	78	76	---	71	31	---	---
8	78	78	75	79	78	78	76	72	72	31	---	---
9	78	78	75	79	79	78	76	72	71	31	---	---
10	78	78	75	79	79	78	77	72	71	32	---	---
11	78	79	76	79	78	78	77	72	71	32	---	---
12	78	78	75	79	82	78	77	72	71	32	---	---
13	78	78	75	79	84	78	76	72	71	33	---	---
14	78	78	75	79	84	78	76	72	71	34	---	---
15	78	78	75	79	83	78	76	72	71	35	---	---
16	79	78	75	79	82	78	76	72	70	36	---	---
17	78	78	---	79	81	78	75	72	68	36	---	---
18	78	78	---	79	80	78	75	72	66	37	---	---
19	79	78	80	79	80	78	74	72	64	37	---	---
20	---	77	80	79	80	78	74	71	60	39	---	---
21	---	76	79	79	80	78	74	71	56	---	---	---
22	---	76	79	79	79	78	74	71	52	---	---	---
23	---	76	79	79	79	78	74	71	48	---	---	---
24	---	77	79	79	79	78	74	71	45	---	---	---
25	82	77	79	79	79	78	74	72	43	---	---	---
26	81	76	79	79	79	78	73	72	41	---	---	---
27	80	76	79	78	78	78	73	72	39	---	---	---
28	80	76	79	78	78	77	73	72	37	---	---	---
29	79	76	79	78	---	78	73	72	36	---	---	---
30	79	76	79	78	---	78	73	71	34	---	---	---
31	79	---	79	78	---	78	---	71	---	---	---	---
MEAN	---	78	---	79	80	---	75	---	61	---	---	---
MAX	---	80	---	79	84	---	78	---	72	---	---	---
MIN	---	76	---	78	78	---	73	---	34	---	---	---

353135080524201 IR-130 DENR Langtree Research Station MW-2 (Regolith well)—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
 FOR PERIOD OCTOBER 2002 TO JULY 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	6.1	6.2	6.1	6.2	6.4	6.3	6.3	6.2	5.6	---	---
2	6.1	6.1	6.2	6.1	6.2	6.4	6.3	6.3	6.2	5.6	---	---
3	6.1	6.1	6.3	6.1	6.2	6.4	6.3	6.3	6.2	5.6	---	---
4	6.1	6.1	6.3	6.1	6.2	---	6.3	6.3	6.1	5.6	---	---
5	6.1	6.1	6.3	6.1	6.2	6.4	6.3	6.3	6.1	5.6	---	---
6	6.2	6.1	6.3	6.2	6.2	6.4	6.3	6.3	6.2	5.7	---	---
7	6.2	6.1	6.2	6.2	6.2	6.4	6.3	---	6.2	5.7	---	---
8	6.2	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.2	5.7	---	---
9	6.2	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.1	5.7	---	---
10	6.2	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.1	5.7	---	---
11	6.2	6.2	6.2	6.2	6.2	6.3	6.3	6.3	6.1	5.7	---	---
12	6.2	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.1	5.8	---	---
13	6.2	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.0	5.8	---	---
14	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.0	5.8	---	---
15	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.0	5.8	---	---
16	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.0	5.9	---	---
17	6.1	6.2	---	6.2	6.3	6.3	6.3	6.3	6.0	5.9	---	---
18	6.1	6.2	---	6.2	6.3	6.2	6.3	6.3	5.9	5.9	---	---
19	6.0	6.2	6.1	6.2	6.3	6.2	6.3	6.3	5.9	5.9	---	---
20	---	6.2	6.1	6.2	6.3	6.2	6.3	6.3	5.8	6.0	---	---
21	---	6.3	6.1	6.2	6.3	6.2	6.3	6.2	5.8	---	---	---
22	---	6.3	6.1	6.2	6.3	6.2	6.3	6.2	5.7	---	---	---
23	---	6.3	6.1	6.2	6.4	6.3	6.3	6.2	5.6	---	---	---
24	---	6.2	6.1	6.2	6.4	6.3	6.3	6.3	5.6	---	---	---
25	6.1	6.3	6.1	6.2	6.4	6.3	6.3	6.3	5.6	---	---	---
26	6.1	6.3	6.1	6.2	6.3	6.3	6.3	6.2	5.6	---	---	---
27	6.1	6.3	6.1	6.2	6.3	6.3	6.3	6.2	5.6	---	---	---
28	6.1	6.3	6.1	6.2	6.3	6.3	6.2	6.2	5.6	---	---	---
29	6.1	6.3	6.1	6.2	---	6.3	6.2	6.3	5.6	---	---	---
30	6.1	6.3	6.1	6.2	---	6.3	---	6.2	5.6	---	---	---
31	6.1	---	6.1	6.2	---	6.3	---	6.2	---	---	---	---
MEAN	---	6.2	---	6.2	6.3	---	---	---	5.9	---	---	---
MAX	---	6.3	---	6.2	6.4	---	---	---	6.2	---	---	---
MIN	---	6.1	---	6.1	6.2	---	---	---	5.6	---	---	---

353135080524201 IR-130 DENR Langtree Research Station MW-2 (Regolith well)—Continued

 TEMPERATURE, WATER, DEGREES CELSIUS
 FOR PERIOD OCTOBER 2002 TO JULY 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.3	16.4	16.5	16.6	16.7	16.8	16.7	16.5	16.3	16.2	---	---
2	16.3	16.4	16.5	16.6	16.7	16.8	16.7	16.5	16.3	16.2	---	---
3	16.3	16.4	16.5	16.6	16.7	16.8	16.7	16.5	16.3	16.2	---	---
4	16.3	16.4	16.5	16.6	16.7	---	16.7	16.5	16.3	16.2	---	---
5	16.3	16.4	16.5	16.7	16.7	16.7	16.7	16.5	16.3	16.2	---	---
6	16.3	16.4	16.5	16.7	16.8	16.7	16.7	16.5	16.3	16.2	---	---
7	16.3	16.4	16.5	16.7	16.8	16.7	16.7	---	16.3	16.2	---	---
8	16.3	16.4	16.5	16.7	16.8	16.8	16.7	16.5	16.3	16.2	---	---
9	16.3	16.4	16.5	16.7	16.8	16.8	16.7	---	16.3	16.2	---	---
10	16.4	16.4	16.5	16.7	16.8	16.8	16.7	16.5	16.3	16.2	---	---
11	16.3	16.4	16.5	16.7	16.8	16.8	16.7	16.5	16.3	16.2	---	---
12	16.4	16.4	16.5	16.7	16.8	16.8	16.7	16.4	16.3	16.2	---	---
13	16.4	16.4	16.5	16.7	16.8	16.7	16.7	16.4	16.2	16.2	---	---
14	16.4	16.4	16.6	16.7	16.8	16.7	16.7	16.4	16.2	16.2	---	---
15	16.4	16.4	16.6	16.7	16.8	16.7	16.7	16.4	16.2	16.2	---	---
16	16.4	16.4	16.6	16.7	16.8	16.7	16.7	16.4	16.2	16.2	---	---
17	16.4	16.4	---	16.7	16.8	16.7	16.6	16.4	16.2	16.2	---	---
18	16.4	16.4	---	16.7	16.8	16.7	16.6	16.4	16.2	16.2	---	---
19	16.4	16.4	16.6	16.7	16.7	16.7	16.6	16.4	16.2	16.2	---	---
20	---	16.4	16.6	16.7	16.7	16.7	16.6	16.4	16.2	16.2	---	---
21	---	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
22	---	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
23	---	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
24	---	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
25	16.4	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
26	16.4	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
27	16.4	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
28	16.4	16.5	16.6	16.7	16.8	16.7	16.6	16.4	16.2	---	---	---
29	16.4	16.5	16.6	16.7	---	16.7	16.6	16.3	16.2	---	---	---
30	16.4	16.5	16.6	16.7	---	16.7	16.6	16.3	16.2	---	---	---
31	16.4	---	16.6	16.7	---	16.7	---	16.3	---	---	---	---
MEAN	---	16.4	---	16.7	16.8	---	16.7	---	16.2	---	---	---
MAX	---	16.5	---	16.7	16.8	---	16.7	---	16.3	---	---	---
MIN	---	16.4	---	16.6	16.7	---	16.6	---	16.2	---	---	---

353135080524201 IR-130 DENR Langtree Research Station MW-2 (Regolith well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
FOR PERIOD OCTOBER 2002 TO JULY 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	6.4	6.7	6.5	6.6	6.5	6.2	5.9	5.8	7.2	---	---
2	7.0	6.2	6.7	6.5	6.5	6.5	6.2	5.9	5.8	7.2	---	---
3	7.0	6.1	6.7	6.5	6.6	6.5	6.2	5.9	5.8	7.2	---	---
4	7.0	6.2	6.7	6.5	6.5	---	6.2	5.9	5.8	7.2	---	---
5	7.0	6.2	6.7	6.5	6.6	6.6	6.2	5.9	5.7	7.3	---	---
6	7.1	6.3	6.7	6.4	6.6	6.6	6.2	5.9	5.7	7.3	---	---
7	7.1	6.4	6.7	6.5	6.6	6.6	6.2	---	5.7	7.4	---	---
8	7.0	6.5	6.7	6.4	6.5	6.6	6.2	5.8	5.7	7.4	---	---
9	7.1	6.5	6.7	6.5	6.5	6.6	6.2	5.8	5.8	7.4	---	---
10	7.1	6.5	6.7	6.4	6.5	6.5	6.1	5.8	5.8	7.4	---	---
11	7.0	6.6	6.7	6.5	6.4	6.5	6.0	5.8	5.8	7.4	---	---
12	7.1	6.6	6.7	6.5	6.4	6.5	6.0	5.9	5.8	7.3	---	---
13	7.1	6.6	6.7	6.5	6.4	6.5	6.0	5.9	5.8	7.3	---	---
14	7.1	6.6	6.7	6.5	6.4	6.5	6.1	5.9	5.7	7.3	---	---
15	7.1	6.6	6.7	6.5	6.4	6.5	6.1	5.9	5.7	7.2	---	---
16	7.1	6.6	6.7	6.5	6.4	6.5	6.1	5.9	5.7	7.2	---	---
17	7.1	6.7	---	6.5	6.5	6.5	6.1	5.9	5.8	7.2	---	---
18	7.0	6.7	---	6.5	6.5	6.5	6.1	6.0	5.8	7.1	---	---
19	6.8	6.7	6.6	6.5	6.5	6.5	6.0	6.0	5.8	7.1	---	---
20	---	6.7	6.5	6.5	6.5	6.5	6.1	6.0	5.9	7.0	---	---
21	---	6.7	6.6	6.5	6.5	6.3	6.1	6.0	6.1	---	---	---
22	---	6.7	6.6	6.5	6.5	6.3	6.1	6.0	6.2	---	---	---
23	---	6.7	6.6	6.5	6.5	6.3	6.0	6.0	6.3	---	---	---
24	---	6.6	6.6	6.5	6.5	6.2	6.0	5.9	6.5	---	---	---
25	6.6	6.7	6.6	6.5	6.5	6.2	6.0	5.9	6.6	---	---	---
26	6.7	6.7	6.6	6.5	6.5	6.2	6.0	5.9	6.7	---	---	---
27	6.7	6.7	6.6	6.5	6.5	6.3	6.0	5.9	6.8	---	---	---
28	6.7	6.7	6.5	6.6	6.5	6.3	6.0	5.9	7.0	---	---	---
29	6.7	6.7	6.5	6.6	---	6.2	6.0	5.9	7.1	---	---	---
30	6.7	6.7	6.5	6.6	---	6.2	6.0	5.9	7.1	---	---	---
31	6.7	---	6.5	6.6	---	6.2	---	5.9	---	---	---	---
MEAN	---	6.6	---	6.5	6.5	---	6.1	---	6.1	---	---	---
MAX	---	6.7	---	6.6	6.6	---	6.2	---	7.1	---	---	---
MIN	---	6.1	---	6.4	6.4	---	6.0	---	5.7	---	---	---

353135080524201 IR-130 DENR Langtree Research Station MW-2 (Regolith well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION
FOR PERIOD OCTOBER 2002 TO JULY 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	67	71	69	70	69	66	62	61	75	---	---
2	74	65	71	69	69	69	66	62	61	75	---	---
3	73	64	71	69	70	69	66	62	61	75	---	---
4	74	65	71	69	69	---	66	62	61	75	---	---
5	74	65	71	69	70	70	66	62	60	76	---	---
6	74	66	71	68	70	70	66	62	60	76	---	---
7	74	67	71	69	70	70	66	---	60	77	---	---
8	74	68	71	68	70	70	66	61	60	78	---	---
9	75	68	71	69	69	70	66	---	61	78	---	---
10	75	68	71	68	69	69	65	61	61	78	---	---
11	74	69	71	68	68	69	64	61	61	78	---	---
12	74	69	71	69	68	69	64	62	61	77	---	---
13	75	69	71	69	68	69	64	62	61	76	---	---
14	75	69	71	69	68	69	65	62	60	76	---	---
15	75	69	71	69	68	69	65	62	60	75	---	---
16	75	69	71	69	68	69	65	62	60	75	---	---
17	75	70	---	69	69	69	64	62	61	75	---	---
18	74	70	---	69	69	69	64	63	61	74	---	---
19	71	70	70	69	69	69	63	63	61	74	---	---
20	---	71	69	69	69	69	64	63	62	73	---	---
21	---	71	70	69	69	67	64	63	64	---	---	---
22	---	71	70	69	69	67	64	63	65	---	---	---
23	---	71	70	69	69	67	64	63	66	---	---	---
24	---	70	70	69	69	66	64	62	68	---	---	---
25	69	71	70	69	69	66	63	62	69	---	---	---
26	70	71	70	69	69	66	63	62	70	---	---	---
27	70	71	70	69	69	67	63	62	71	---	---	---
28	70	71	70	70	69	67	63	62	73	---	---	---
29	70	71	69	70	---	66	63	62	74	---	---	---
30	70	71	69	70	---	66	63	62	74	---	---	---
31	70	---	69	70	---	66	---	62	---	---	---	---
MEAN	---	69	---	69	69	---	64	---	64	---	---	---
MAX	---	71	---	70	70	---	66	---	74	---	---	---
MIN	---	64	---	68	68	---	63	---	60	---	---	---

353135080524201 IR-130 DENR Langtree Research Station MW-2 (Regolith well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 2002, March 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.

WATER-QUALITY DATA, MARCH 2003

Date	Time	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfiltered uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfiltered mg/L as CaCO3 (00900)	Calcium water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, wat unfiltered, titr., field, mg/L as CaCO3 (00419)	Bicarbonate, wat unfiltered, titr., field, mg/L (00450)	Bromide water, filtered, mg/L (71870)	Chloride, water, filtered, mg/L (00940)
MAR 04...	1225	6.3	76	16.8	27	5.71	3.06	0.64	3.55	27	33	0.03	2.01
Date	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L (00955)	Sulfate water, filtered, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, filtered, mg/L as N (00623)	Ammonia water, filtered, mg/L as N (00608)	Nitrite + nitrate water, filtered, mg/L as N (00631)	Nitrite water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Arsenic water, filtered, ug/L (01000)	Boron, water, filtered, ug/L (01020)	Iron, water, filtered, ug/L (01046)	Manganese, water, filtered, ug/L (01056)
MAR 04...	0.06	27.1	0.3	69	<0.10	<0.04	1.44	<0.008	0.06	<2	<13	<10	E.2
Date	Alpha radioactivity water, filtered, Th-230, pCi/L (04126)	Gross beta radioac water, filtered, Cs-137, pCi/L (03515)	Rn-222, water, unfiltered, pCi/L (82303)										
MAR 04...	0.1	1.0	230										

GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353135080524202. County number, IR-131; DENR Langtree Research Station MW-2I (Transition zone well).

LOCATION.--Lat 35°31'35.62", long 80°52'42.25", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .1 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER.--Transition zone (weathered and competent quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 48 ft, diameter 4 in., cased to 33 ft, screened interval from 33 ft to 48 ft.

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

DATUM.--Land-surface datum is 802.67 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelter floor, 0.67 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains ground-water project.

PERIOD OF RECORD.--March 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.85 ft below land-surface datum, June 19, 2003; lowest water level recorded 25.38 ft below land-surface datum, Nov. 3, 5, 6, 2002.

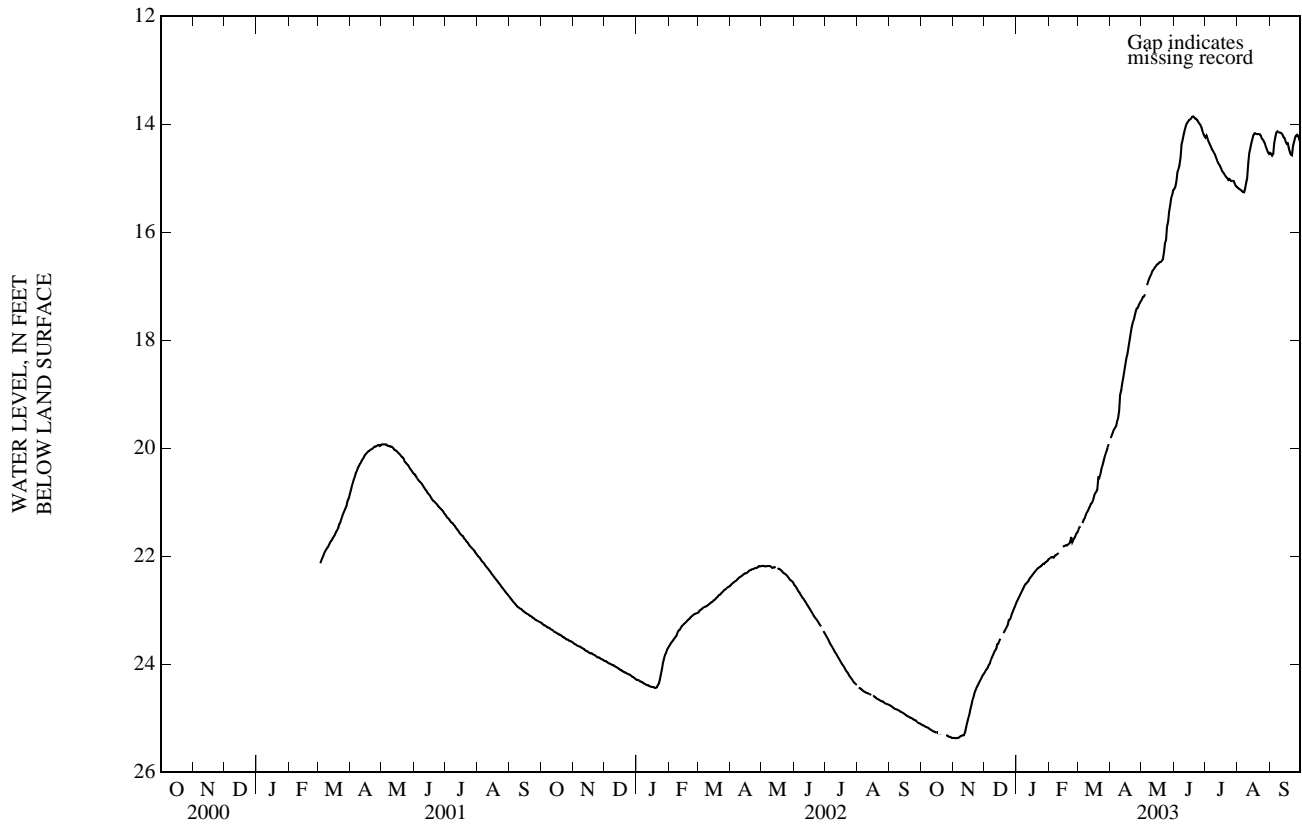
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.11	25.36	24.15	22.83	22.04	21.51	19.81	17.24	15.20	14.25	15.17	14.53
2	25.12	25.37	24.11	22.80	22.03	21.46	19.76	17.20	15.17	14.21	15.20	14.55
3	25.13	25.37	24.09	22.75	22.02	21.45	19.71	17.19	15.06	14.27	15.21	14.58
4	25.14	25.37	24.06	22.72	22.01	---	19.66	17.15	14.90	14.33	15.22	14.55
5	25.16	25.36	24.01	22.67	22.03	21.39	19.62	---	14.84	14.37	15.24	14.36
6	25.17	25.36	23.98	22.64	22.00	21.33	19.60	16.98	14.76	14.40	15.26	14.24
7	25.17	25.34	23.92	22.60	21.98	21.30	19.51	16.91	14.61	14.45	15.27	14.16
8	25.18	25.33	23.87	22.55	21.97	21.24	19.45	16.86	14.37	14.49	15.20	14.14
9	25.20	25.32	23.83	22.52	21.96	21.19	19.31	16.81	14.29	14.53	15.08	14.14
10	25.21	25.31	23.78	22.50	21.94	21.16	19.01	16.77	14.20	14.56	15.00	14.16
11	25.22	25.31	23.75	22.48	---	21.12	18.93	16.72	14.11	14.61	14.72	14.16
12	25.23	25.26	23.71	22.45	---	21.08	18.80	16.70	14.04	14.67	14.54	14.17
13	25.25	25.17	23.63	22.41	---	21.03	18.69	16.67	13.99	14.71	14.44	14.20
14	25.25	25.08	23.62	22.39	21.82	21.01	18.57	16.64	13.96	14.75	14.36	14.24
15	25.26	25.02	23.57	22.37	21.82	20.96	18.45	16.61	13.93	14.78	14.28	14.27
16	25.26	24.94	23.53	22.33	21.81	20.88	18.34	16.59	13.92	14.82	14.20	14.33
17	25.26	24.85	---	22.32	21.79	20.84	18.25	16.58	13.90	14.87	14.17	14.37
18	---	24.76	---	22.29	21.80	20.80	18.14	16.56	13.87	14.90	14.17	14.36
19	25.29	24.68	23.42	22.27	21.78	20.77	18.01	16.55	13.86	14.92	14.18	14.45
20	---	24.62	23.39	22.24	21.77	20.54	17.89	16.53	13.87	14.96	14.19	14.52
21	---	24.54	23.35	22.22	21.74	20.55	17.77	16.51	13.90	14.98	14.18	14.57
22	---	24.49	23.31	22.21	21.65	20.48	17.69	16.37	13.90	15.00	14.19	14.58
23	---	24.44	23.28	22.19	21.74	20.39	17.63	16.22	13.92	15.04	14.21	14.40
24	---	24.40	23.18	22.19	21.70	20.32	17.55	16.15	13.96	15.02	14.26	14.33
25	25.31	24.36	23.18	22.16	21.67	20.24	17.46	15.90	13.99	15.04	14.29	14.25
26	25.32	24.32	23.14	22.14	21.64	20.17	17.41	15.81	14.01	15.06	14.32	14.22
27	25.34	24.28	23.07	22.14	21.58	20.11	17.40	15.63	14.05	15.05	14.36	14.20
28	25.34	24.25	23.02	22.12	21.56	20.05	17.35	15.51	14.12	15.05	14.42	14.22
29	25.34	24.21	22.98	22.10	---	19.99	17.31	15.38	14.18	15.10	14.47	14.29
30	25.36	24.18	22.93	22.09	---	19.93	17.28	15.31	14.22	15.14	14.52	14.34
31	25.36	---	22.88	22.06	---	---	---	15.22	---	15.16	14.55	---

WTR YR 2003 MEAN 19.14 HIGH 13.86 LOW 25.37

GROUND-WATER LEVELS
IREDELL COUNTY—Continued

353135080524202. County number, IR-131; DENR Langtree Research Station MW-2I (Transition zone well).



353135080524202 IR-131 DENR Langtree Research Station MW-2I (Transition zone well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 2002, March 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.

WATER-QUALITY DATA, MARCH 2003

Date	Time	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, 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)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Bicar- bonate, wat unf incrm. titr., field, mg/L (00450)	Bromide water, fltrd, mg/L (71870)	Chlor- ide, water, fltrd, mg/L (00940)
MAR 04...	1200	7.3	118	17.9	43	9.10	4.98	2.57	6.63	54	66	0.03	1.42
Date	Fluor- ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	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)	Arsenic water, fltrd, ug/L (01000)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Mangan- ese, water, fltrd, ug/L (01056)
MAR 04...	0.17	28.6	1.8	95	<0.10	<0.04	1.18	0.015	0.03	<2	<13	<10	6.0
Date	Alpha radio- activty water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)										
MAR 04...	0.1	2.8	270										

IREDELL COUNTY—Continued

353135080524203. County number, IR-132; DENR Langtree Research Station MW-2D (Bedrock well).

LOCATION.--Lat 35°31'35.62", long 80°52'42.29", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .1 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER.--Quartz diorite bedrock.

WELL CHARACTERISTICS.--Drilled observation well, depth 400 ft, diameter 6 in., cased to 53 ft, open hole from 53 ft to 400 ft.

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

DATUM.--Land-surface datum is 802.27 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelter floor, 1.39 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains ground-water project.

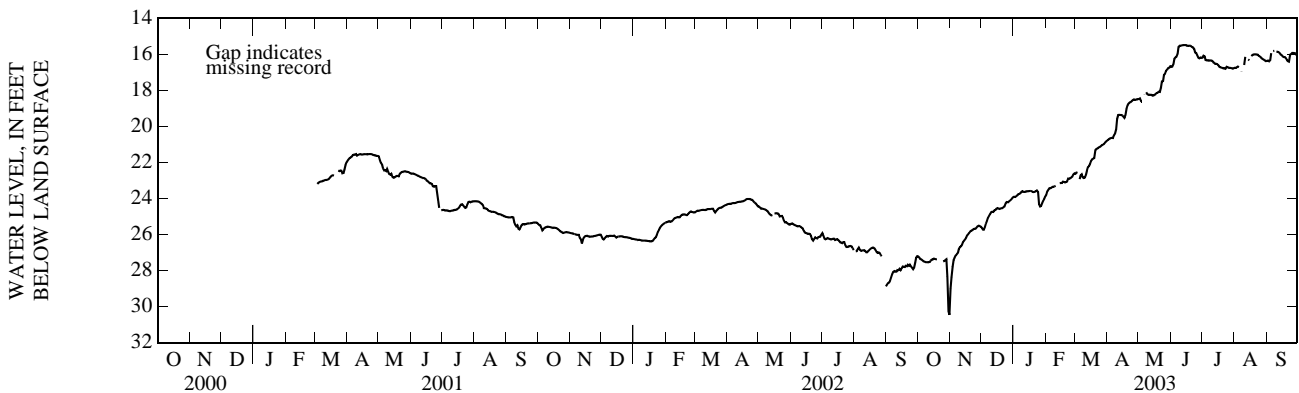
PERIOD OF RECORD.--March 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.46 ft below land-surface datum, June 12, 13, 14, 2003; lowest water level recorded 31.72 ft below land-surface datum, Oct. 30, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.21	29.00	25.62	23.90	23.78	22.63	20.75	18.47	16.69	16.18	16.74	16.36
2	27.28	28.37	25.72	23.92	23.60	22.56	20.71	18.44	16.68	16.07	16.75	16.34
3	27.36	27.79	25.73	23.88	23.50	22.57	20.67	18.59	16.55	16.10	16.71	16.38
4	27.38	27.42	25.59	23.83	23.42	---	20.65	18.59	16.24	16.32	16.67	16.31
5	27.42	27.28	25.41	23.77	23.43	22.92	20.63	---	16.16	16.33	16.70	15.93
6	27.49	27.16	25.24	23.75	23.40	22.71	20.64	18.25	16.13	16.32	---	---
7	27.51	27.10	25.07	23.71	23.35	22.65	20.48	---	15.98	16.35	16.97	15.81
8	27.53	27.01	24.95	23.62	23.34	22.82	20.39	18.10	15.58	16.33	---	15.80
9	27.53	26.79	24.86	23.59	23.32	22.86	20.15	18.21	15.52	16.33	---	---
10	27.53	26.69	24.76	23.62	23.30	22.83	19.59	18.24	15.51	16.35	16.59	15.84
11	27.54	26.65	24.73	23.63	---	22.69	19.36	18.23	15.50	16.39	16.14	15.86
12	27.52	26.57	24.74	23.62	---	22.43	19.35	18.24	15.49	16.46	---	15.87
13	27.44	26.42	24.66	23.60	---	22.25	19.36	18.24	15.48	16.51	---	15.92
14	27.39	26.34	24.64	23.60	23.14	22.19	19.36	18.29	15.48	16.52	16.28	16.00
15	27.38	26.27	24.56	23.59	23.13	22.09	19.38	18.27	15.48	16.54	16.33	16.04
16	27.34	26.17	24.53	23.58	23.14	21.90	19.45	18.23	15.51	16.59	---	16.11
17	27.36	26.04	24.56	23.58	23.07	21.82	19.52	18.20	15.53	16.67	16.10	16.15
18	27.37	25.98	24.58	23.60	23.07	21.78	19.37	18.14	15.52	16.71	16.03	16.14
19	27.36	25.90	24.56	23.63	23.10	21.75	19.01	18.12	15.52	16.74	16.00	16.21
20	---	25.82	24.54	23.64	23.09	21.33	18.84	18.08	15.54	16.75	15.99	16.30
21	---	25.78	24.53	23.62	23.05	21.25	18.72	18.08	15.59	16.78	16.00	16.38
22	---	25.76	24.48	23.59	22.89	21.23	18.66	17.84	15.61	16.77	16.00	16.41
23	---	25.70	24.43	23.55	22.90	21.17	18.65	17.51	15.70	16.79	16.01	16.04
24	---	25.68	24.26	23.63	22.87	21.15	18.60	17.48	15.90	16.69	16.07	15.98
25	27.50	25.68	24.19	24.30	22.83	21.11	18.53	17.14	15.92	16.71	16.11	15.91
26	27.47	25.62	24.21	24.44	22.79	21.05	18.50	17.07	16.04	16.74	16.16	15.91
27	27.41	25.54	24.17	24.41	22.65	21.02	18.53	16.92	16.18	16.74	16.22	15.92
28	27.37	25.51	24.12	24.25	22.61	20.98	18.51	16.84	16.21	16.75	16.26	15.93
29	28.33	25.53	24.07	24.13	---	20.93	18.49	16.76	16.18	16.77	16.30	16.02
30	30.25	25.56	24.00	24.01	---	20.85	18.49	16.74	16.19	16.79	16.33	16.09
31	30.45	---	23.94	23.88	---	20.81	---	16.66	---	16.77	16.38	---

WTR YR 2003 MEAN 20.80 HIGH 15.48 LOW 30.45



353135080524203 IR-132 DENR Langtree Research Station MW-2D (Bedrock well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2002 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 2002 to current year.

pH: August 2002 to current year.

WATER TEMPERATURE: August 2002 to current year.

DISSOLVED OXYGEN: August 2002 to current year.

DISSOLVED OXYGEN, PERCENT SATURATION: August 2002 to current year.

INSTRUMENTATION.-- Water-quality monitor with satellite telemetry from August 2002 to current year.

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, computed using barometric pressure of 740 mm Hg.

EXTREMES FOR PERIOD OF DAILY RECORD.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	97, December 17, 20, 2002	83, August 23, 31, 2002, September 1, 2, 2002
pH, standard units	7.5, December 15, 16, 17, 2002	6.5, September 19-23, 2003
WATER TEMPERATURE, °C	16.2, June 23, 2003	16.0, on many days during the period
DISSOLVED OXYGEN, mg/L	7.5, August 28, 2002	4.8, on several days during the period
DISSOLVED OXYGEN, PERCENT SATURATION,%	78, August 28, 2002	50, on several days during the period

EXTREMES FOR CURRENT YEAR.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	97, December 17, 20	89, October 12, September 8, 23
pH, standard units	7.5, Decmeber 15, 16, 17	6.5, September 19-23
WATER TEMPERATURE, °C	16.2, June 23	16.0, on many days during the year
DISSOLVED OXYGEN, mg/L	5.9, February 7-11	4.8, on several days during the year
DISSOLVED OXYGEN, PERCENT SATURATION,%	62, February 7-11	50, on several days during the year

353135080524203 IR-132 DENR Langtree Research Station MW-2D (Bedrock well)—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	94	94	96	95	94	92	93	92	92	91	90
2	90	94	94	96	95	94	92	92	92	91	91	90
3	90	94	94	96	95	94	92	93	92	91	---	90
4	90	94	94	96	94	---	92	93	92	91	91	90
5	90	94	94	96	94	95	92	92	92	91	---	90
6	90	94	94	96	94	95	92	92	92	91	---	---
7	91	94	94	96	94	94	92	---	92	91	91	90
8	91	94	94	96	94	95	92	92	92	91	---	90
9	91	94	94	96	94	95	92	92	92	90	90	90
10	91	94	94	96	94	95	93	92	92	90	90	90
11	91	94	94	96	94	94	93	92	92	90	90	90
12	92	94	94	96	95	94	93	92	92	90	---	90
13	92	94	94	96	95	94	93	92	92	90	---	90
14	92	94	94	96	95	94	93	92	92	90	90	90
15	92	94	94	96	95	94	93	92	92	90	90	90
16	93	94	94	95	95	94	93	92	92	90	90	90
17	93	94	95	95	95	94	93	92	92	90	90	90
18	93	94	96	95	95	94	93	92	92	90	90	90
19	94	94	96	96	95	94	93	92	92	90	90	90
20	---	94	96	96	96	94	93	92	91	90	90	90
21	---	94	96	95	96	94	93	92	91	90	90	90
22	---	94	96	95	95	93	93	92	91	90	90	90
23	---	94	96	95	95	93	93	92	91	90	90	90
24	---	94	96	95	95	93	93	92	92	90	90	90
25	94	94	96	96	95	93	93	92	92	90	90	90
26	94	94	96	96	95	93	93	92	92	91	90	90
27	94	94	96	96	95	93	93	92	92	91	90	90
28	94	94	96	96	94	92	93	92	92	91	90	90
29	94	94	96	96	---	92	93	92	92	---	---	90
30	94	94	96	95	---	92	93	92	92	---	---	90
31	94	---	96	95	---	92	---	92	---	---	90	---
MEAN	---	94	95	96	95	---	93	---	92	---	---	---
MAX	---	94	96	96	96	---	93	---	92	---	---	---
MIN	---	94	94	95	94	---	92	---	91	---	---	---

353135080524203 IR-132 DENR Langtree Research Station MW-2D (Bedrock well)—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	7.3	7.3	7.3	7.0	7.2	7.1	6.8	6.9	6.9	6.8	6.7
2	7.0	7.3	7.3	7.3	7.0	7.3	7.2	6.8	6.8	6.9	6.8	6.7
3	7.0	7.3	7.4	7.2	7.0	7.3	7.2	6.8	6.8	6.9	---	6.6
4	7.0	7.3	7.4	7.2	7.0	---	7.2	6.8	6.8	6.9	6.8	6.6
5	7.0	7.3	7.4	7.2	7.0	7.3	7.2	6.8	6.8	6.9	---	6.6
6	7.0	7.3	7.4	7.2	7.0	7.3	7.2	6.9	6.8	6.8	---	---
7	7.0	7.3	7.4	7.2	7.0	7.3	7.2	---	6.9	6.8	6.8	6.6
8	7.0	7.3	7.4	7.2	7.0	7.3	7.1	7.0	6.8	6.9	---	6.6
9	7.0	7.3	7.4	7.2	7.0	7.3	7.1	7.0	6.8	6.9	6.7	6.6
10	7.0	7.3	7.4	7.2	7.0	7.3	7.1	7.0	6.8	6.9	6.7	6.6
11	7.0	7.3	7.4	7.2	7.0	7.3	7.1	7.0	6.8	6.9	6.7	6.6
12	7.0	7.3	7.4	7.2	7.0	7.3	7.1	7.0	6.8	6.9	---	6.6
13	7.0	7.3	7.4	7.2	7.1	7.3	7.1	7.0	6.8	6.9	---	6.6
14	6.9	7.3	7.4	7.1	7.1	7.3	7.1	7.0	6.7	6.8	6.8	6.6
15	6.9	7.3	7.4	7.1	7.1	7.3	7.0	7.0	6.7	6.8	6.8	6.6
16	6.9	7.3	7.5	7.1	7.1	7.3	7.0	7.0	6.7	6.8	6.8	6.6
17	6.9	7.3	7.4	7.1	7.1	7.3	7.0	7.0	6.7	6.8	6.7	6.6
18	6.9	7.3	7.3	7.1	7.1	7.3	7.0	7.0	6.7	6.8	6.7	6.6
19	7.1	7.3	7.3	7.1	7.2	7.3	7.0	7.0	6.8	6.8	6.7	6.5
20	---	7.2	7.3	7.1	7.2	7.3	7.0	7.0	6.7	6.9	6.7	6.5
21	---	7.2	7.3	7.1	7.2	7.3	7.0	6.9	6.7	6.9	6.7	6.5
22	---	7.2	7.3	7.1	7.2	7.3	7.0	6.9	6.7	6.9	6.7	6.5
23	---	7.2	7.2	7.1	7.2	7.3	6.9	6.9	6.8	6.8	6.7	6.6
24	---	7.3	7.2	7.1	7.2	7.3	6.9	6.9	6.9	6.8	6.7	6.7
25	7.2	7.3	7.2	7.1	7.2	7.3	6.9	7.0	6.9	6.8	6.6	6.6
26	7.2	7.3	7.2	7.0	7.2	7.3	6.9	7.0	6.9	6.8	6.6	6.6
27	7.2	7.3	7.2	7.0	7.2	7.3	6.9	6.9	6.9	6.8	6.6	6.6
28	7.2	7.3	7.3	7.0	7.2	7.2	6.9	6.9	6.8	6.8	6.6	6.6
29	7.2	7.3	7.3	7.0	---	7.2	6.9	6.9	6.8	---	6.7	6.6
30	7.2	7.3	7.3	7.0	---	7.2	6.8	6.9	6.9	---	6.7	6.6
31	7.3	---	7.3	7.0	---	7.1	---	6.9	---	---	6.7	---
MEAN	---	7.3	7.3	7.1	7.1	---	7.0	---	6.8	---	---	---
MAX	---	7.3	7.5	7.3	7.2	---	7.2	---	6.9	---	---	---
MIN	---	7.2	7.2	7.0	7.0	---	6.8	---	6.7	---	---	---

353135080524203 IR-132 DENR Langtree Research Station MW-2D (Bedrock well)—Continued

 TEMPERATURE, WATER, DEGREES CELSIUS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.1	16.1	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
2	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
3	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1
4	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1	16.1	16.1	16.1	16.1
5	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1
6	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	---
7	16.1	16.1	16.1	16.0	16.1	16.1	16.1	---	16.1	16.1	16.1	16.1
8	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1
9	16.1	16.1	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
10	16.1	16.0	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
11	16.1	16.0	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
12	16.1	16.0	16.1	16.0	16.1	16.1	16.0	16.1	16.1	16.1	---	16.1
13	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1
14	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
15	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
16	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
17	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
18	16.1	16.0	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
19	16.1	16.0	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
20	---	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
21	---	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
22	---	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
23	---	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
24	---	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
25	16.1	16.1	16.0	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
26	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
27	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
28	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
29	16.1	16.1	16.1	16.1	---	16.1	16.1	16.1	16.1	---	16.1	16.1
30	16.1	16.1	16.1	16.1	---	16.1	16.1	16.1	16.1	---	16.1	16.1
31	16.1	---	16.1	16.1	---	---	---	16.1	---	---	16.1	---
MEAN	---	16.1	16.1	16.1	16.1	---	16.1	---	16.1	---	---	---
MAX	---	16.1	16.1	16.1	16.1	---	16.1	---	16.1	---	---	---
MIN	---	16.0	16.0	16.0	16.1	---	16.0	---	16.1	---	---	---

353135080524203 IR-132 DENR Langtree Research Station MW-2D (Bedrock well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	4.9	5.1	5.1	5.7	5.3	5.2	5.5	5.3	5.4	5.4	5.4
2	5.3	4.9	5.1	5.1	5.7	5.3	5.3	5.5	5.3	5.4	5.4	5.4
3	5.2	4.9	5.1	5.1	5.7	5.3	5.3	5.5	5.3	5.4	---	5.4
4	5.2	5.0	5.1	5.2	5.7	---	5.3	5.6	5.3	5.4	5.4	5.4
5	5.2	5.0	5.1	5.2	5.8	5.4	5.3	5.5	5.3	5.4	---	5.3
6	5.2	5.0	5.1	5.2	5.8	5.5	5.3	5.4	5.3	5.4	---	---
7	5.2	5.0	5.1	5.2	5.8	5.3	5.2	---	5.3	5.4	5.4	5.3
8	5.1	5.0	5.1	5.2	5.9	5.4	5.3	5.4	5.3	5.4	---	5.4
9	5.1	5.0	5.0	5.2	5.9	5.3	5.3	5.4	5.3	5.5	5.5	5.4
10	5.1	5.0	5.0	5.2	5.9	5.3	5.2	5.4	5.3	5.5	5.5	5.4
11	5.1	5.1	5.0	5.3	5.8	5.3	5.2	5.4	5.3	5.5	5.5	5.4
12	5.1	5.1	5.0	5.3	5.7	5.3	5.3	5.4	5.3	5.5	---	5.4
13	5.1	5.1	5.0	5.3	5.6	5.2	5.4	5.4	5.3	5.5	---	5.4
14	5.0	5.1	5.0	5.3	5.6	5.2	5.3	5.4	5.3	5.5	5.5	5.4
15	4.9	5.1	5.0	5.3	5.6	5.2	5.3	5.4	5.3	5.5	5.5	5.4
16	4.9	5.1	4.9	5.3	5.6	5.2	5.3	5.4	5.3	5.5	5.4	5.4
17	4.9	5.2	4.9	5.3	5.5	5.2	5.3	5.4	5.3	5.5	5.4	5.4
18	4.9	5.2	4.8	5.4	5.6	5.2	5.3	5.4	5.3	5.5	5.4	5.4
19	4.9	5.2	4.8	5.4	5.5	5.2	5.3	5.4	5.3	5.5	5.4	5.4
20	---	5.3	4.8	5.4	5.5	5.1	5.4	5.4	5.3	5.5	5.4	5.4
21	---	5.4	4.9	5.5	5.5	5.1	5.3	5.4	5.3	5.5	5.4	5.4
22	---	5.3	4.9	5.5	5.4	5.1	5.4	5.3	5.3	5.5	5.4	5.4
23	---	5.3	4.9	5.5	5.4	5.1	5.4	5.4	5.4	5.5	5.4	5.5
24	---	5.2	4.9	5.5	5.4	5.1	5.5	5.3	5.5	5.5	5.4	5.5
25	4.9	5.2	4.9	5.5	5.4	5.1	5.5	5.3	5.5	5.4	5.4	5.5
26	4.9	5.2	5.0	5.5	5.4	5.0	5.5	5.3	5.5	5.4	5.4	5.5
27	4.9	5.2	4.9	5.5	5.3	5.1	5.5	5.3	5.5	5.4	5.4	5.5
28	4.9	5.2	5.0	5.6	5.3	5.2	5.5	5.3	5.4	5.4	5.4	5.5
29	5.0	5.2	5.1	5.6	---	5.2	5.5	5.3	5.4	---	5.4	5.5
30	4.9	5.2	5.0	5.6	---	5.2	5.5	5.3	5.4	---	5.4	5.4
31	4.9	---	5.0	5.6	---	5.2	---	5.3	---	---	5.4	---
MEAN	---	5.1	5.0	5.4	5.6	---	5.3	---	5.3	---	---	---
MAX	---	5.4	5.1	5.6	5.9	---	5.5	---	5.5	---	---	---
MIN	---	4.9	4.8	5.1	5.3	---	5.2	---	5.3	---	---	---

353135080524203 IR-132 DENR Langtree Research Station MW-2D (Bedrock well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	51	53	53	60	55	54	57	55	56	56	56
2	55	51	53	53	60	55	55	57	55	56	56	56
3	54	51	53	53	60	55	55	57	55	56	---	56
4	54	52	53	54	60	---	55	58	55	56	---	56
5	54	52	53	54	61	56	55	58	55	56	---	55
6	54	52	53	54	61	56	55	56	55	56	---	---
7	54	52	53	54	61	55	55	---	55	56	56	55
8	53	52	53	54	62	56	55	56	55	56	---	56
9	53	52	52	54	62	55	55	56	55	57	57	56
10	53	52	52	54	62	55	54	56	55	57	57	56
11	53	53	52	55	61	55	54	56	55	57	57	56
12	53	53	52	55	60	55	55	56	55	57	---	56
13	53	53	52	55	59	54	56	56	55	57	---	56
14	52	53	52	55	59	54	56	56	55	57	57	56
15	51	53	52	55	59	54	55	56	55	57	57	56
16	51	53	51	55	58	54	55	56	55	57	56	56
17	51	54	51	55	58	54	55	56	55	57	56	56
18	51	54	50	56	58	54	55	56	55	57	56	56
19	51	54	50	56	57	54	55	56	55	57	56	56
20	---	55	50	56	57	53	56	56	55	57	56	56
21	---	56	51	57	57	53	55	56	55	57	56	56
22	---	55	51	57	56	53	56	56	55	57	56	56
23	---	55	51	57	56	53	56	56	56	57	56	57
24	---	54	51	57	56	53	57	55	57	57	56	57
25	51	54	51	57	56	53	57	55	57	56	56	57
26	51	54	52	57	56	52	57	55	57	56	56	57
27	51	54	51	58	55	53	57	55	57	56	56	57
28	51	54	52	58	55	54	57	55	56	56	56	57
29	52	54	53	58	---	54	57	55	56	---	56	57
30	51	54	52	58	---	54	57	55	56	---	56	56
31	51	---	52	59	---	---	---	55	---	---	56	---
MEAN	---	53	52	56	59	---	56	---	55	---	---	---
MAX	---	56	53	59	62	---	57	---	57	---	---	---
MIN	---	51	50	53	55	---	54	---	55	---	---	---

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 2002, March 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.

WATER-QUALITY DATA, MARCH 2003

Date	Time	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, 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)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Bicar-bonate, wat unf incrm. titr., field, mg/L (00450)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, water, fltrd, mg/L (00940)
MAR 04...	1245	6.9	95	17.6	34	9.39	2.60	1.88	4.67	110	133	0.02	1.37
Date	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	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)	Arsenic water, fltrd, ug/L (01000)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Mangan-ese, water, fltrd, ug/L (01056)
MAR 04...	0.08	37.7	1.0	91	<0.10	<0.04	1.26	<0.008	0.04	<2	<13	<10	0.4
Date	Alpha radio-activty water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)										
MAR 04...	M	1.5	440										

IREDELL COUNTY—Continued

353141080524701. County number, IR-145; DENR Langtree Research Station MW-1 (Regolith well).

LOCATION.--Lat 35°31'41.01", long 80°52'46.82", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .2 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 38 ft, diameter 4 in., cased to 28 ft, screened interval from 28 to 38 ft, sand filter packed from 26 to 38 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 812.17 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 2.43 ft above land surface datum.

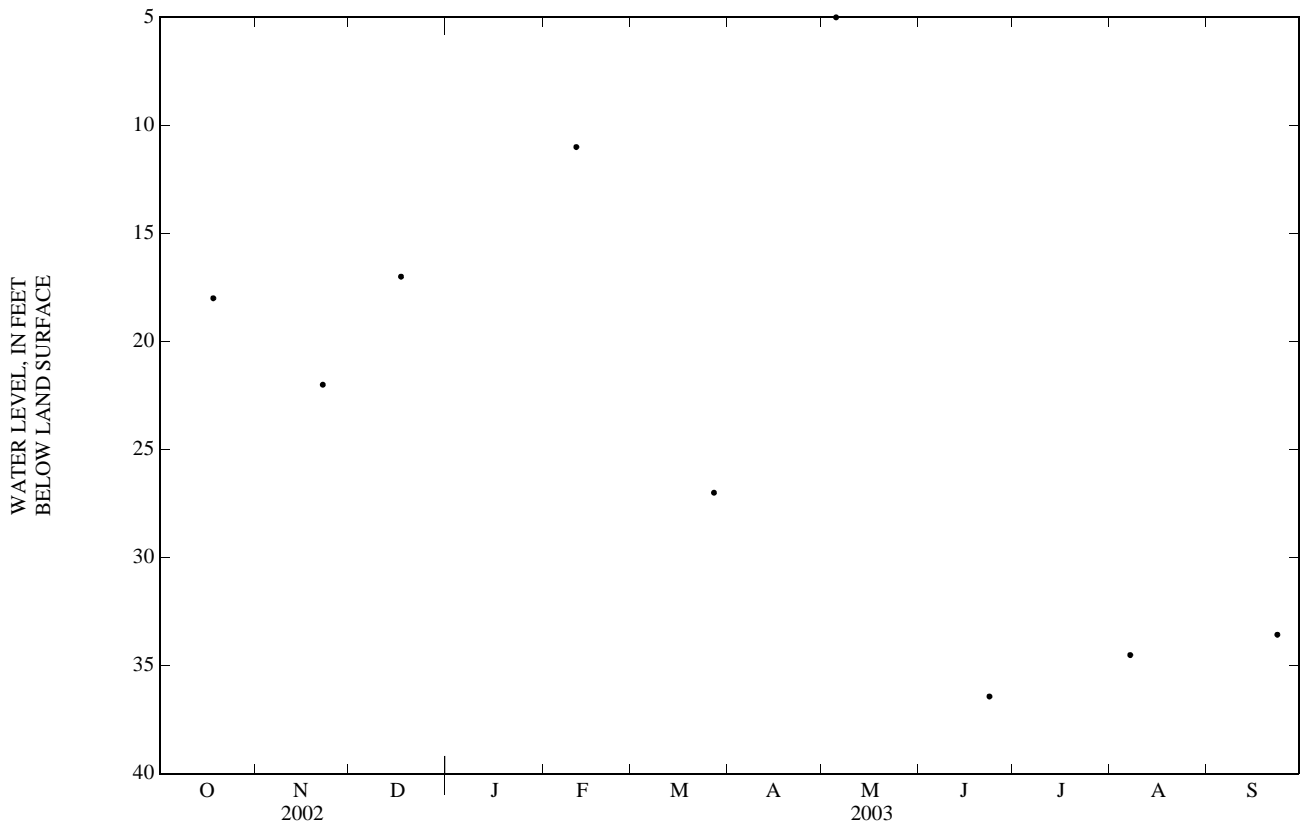
REMARKS.--Well is part of Piedmont/Mountains ground-water project.

PERIOD OF RECORD.--January 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Well dry during periodic water-level measurements January 2001 to June 2003. Highest water level measured, 33.57 ft below land-surface datum, Sept. 23, 2003; lowest water level measured, 36.43 ft below land-surface datum, June 23, 2003.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	DRY	DEC 17	DRY	MAR 27	DRY	JUN 23	36.43	SEP 23	33.57
NOV 22	DRY	FEB 11	DRY	MAY 05	DRY	AUG 07	34.51		



GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353141080524702. County number, IR-146; DENR Langtree Research Station MW-II (Transition zone well).

LOCATION.--Lat 35°31'40.85", long 80°52'46.76", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .2 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (weathered and competent quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 53 ft, diameter 4 in., cased to 38 ft, screened interval from 38 to 53 ft, sand filter packed from 34 to 53 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 812.18 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 2.42 ft above land surface datum.

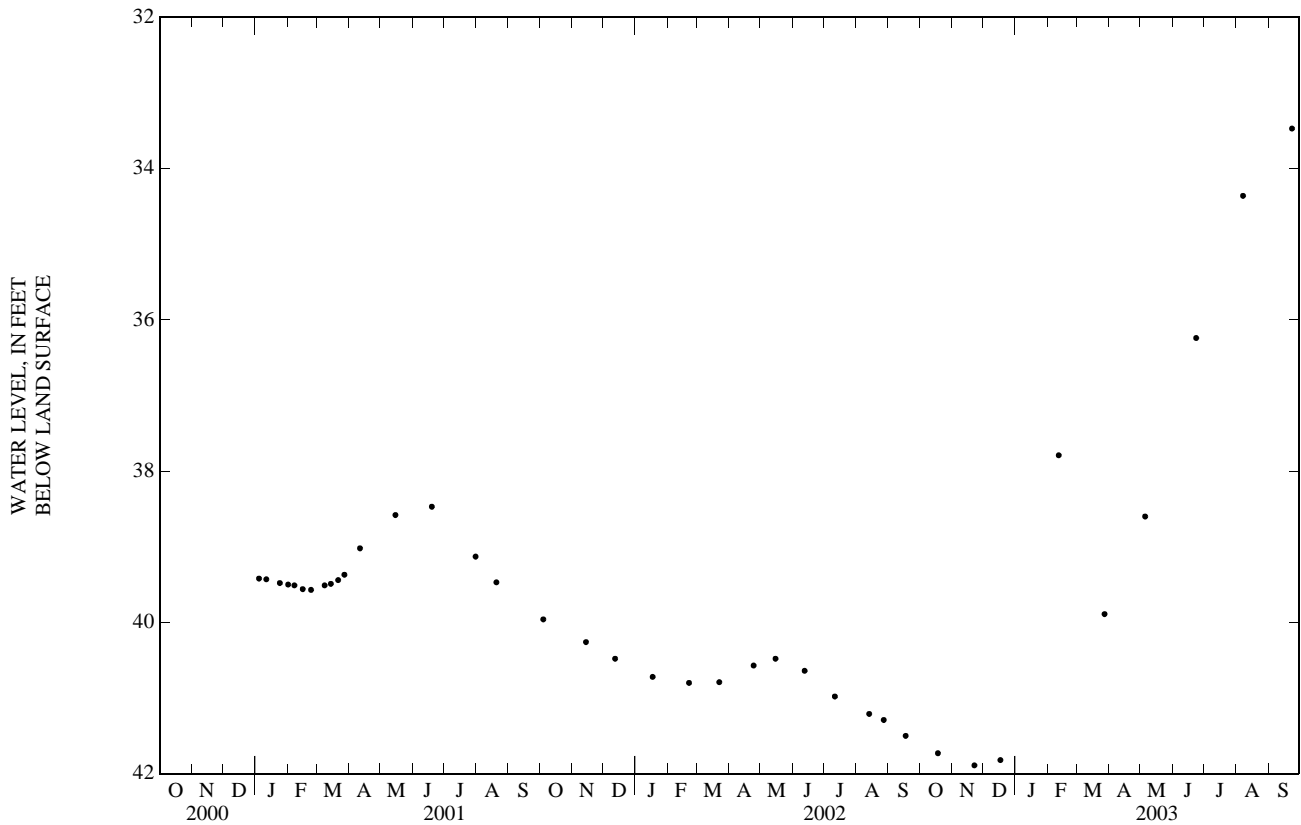
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--January 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.47 ft below land-surface datum, Sept. 23, 2003; lowest water level measured 41.89 ft below land surface datum, Nov. 22, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	41.73	DEC 17	41.82	MAR 27	39.89	JUN 23	36.24	SEP 23	33.47
NOV 22	41.89	FEB 11	37.79	MAY 05	38.60	AUG 07	34.36		



IREDELL COUNTY—Continued

353141080524703. County number, IR-147; DENR Langtree Research Station MW-1D (Bedrock well).

LOCATION.--Lat 35°31'40.9", long 80°52'46.87", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .2 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Quartz diorite bedrock.

WELL CHARACTERISTICS.--Drilled observation well, depth 602 ft, diameter 6.25 in., steel cased to 55 ft, initially open hole from 55 to 602 ft. Well modified in December 2001, 4 in. PVC liner installed to 76 ft, open hole from 76 to 602 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 812.04 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of steel protective casing, 2.15 ft above land surface datum (revised).

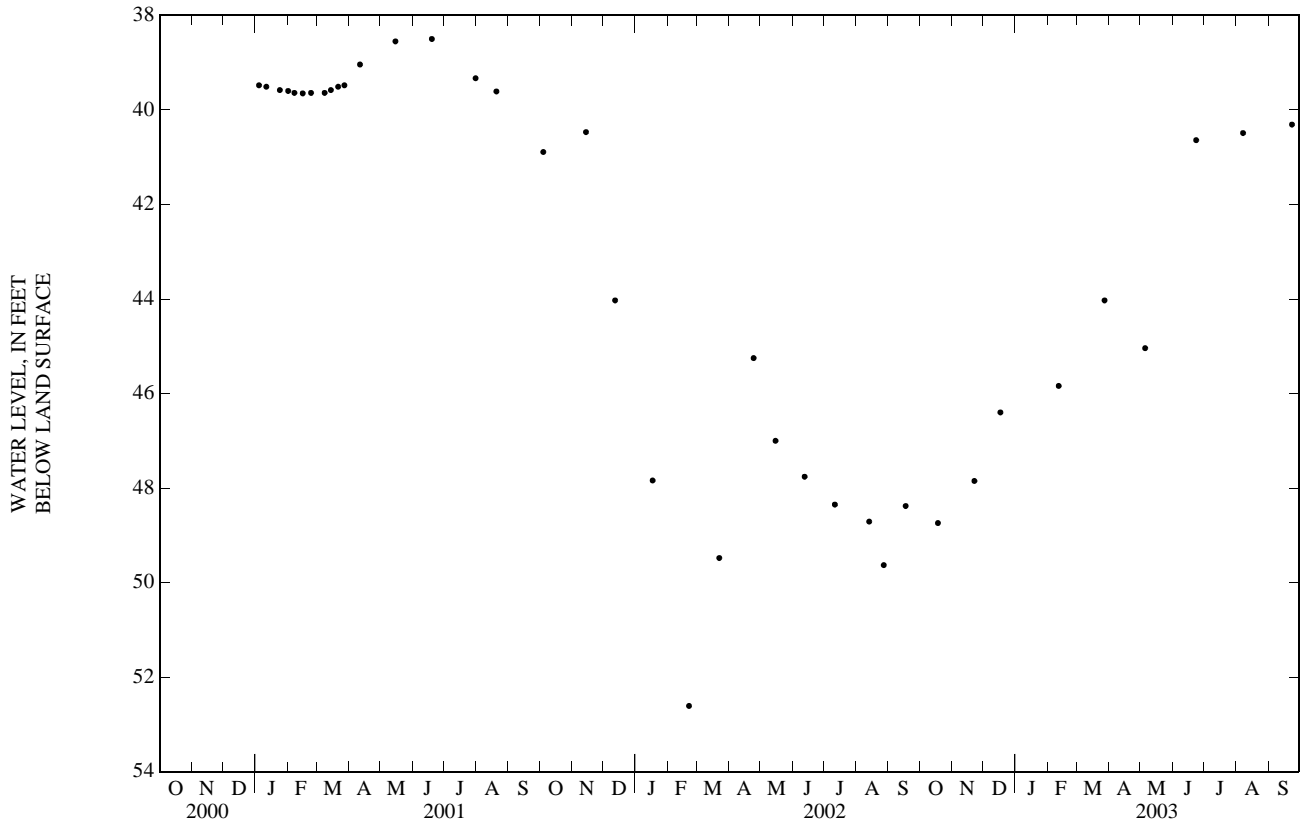
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--January 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 38.50 ft below land-surface datum, June 19, 2001; lowest water level measured 52.61 ft below land surface datum, Feb. 21, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	48.74	DEC 17	46.40	MAR 27	44.03	JUN 23	40.64	SEP 23	40.31
NOV 22	47.85	FEB 11	45.84	MAY 05	45.04	AUG 07	40.49		



GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353157080525301. County number, IR-148; DENR Langtree Research Station MW-3 (Regolith well).

LOCATION.--Lat 35°31'57", long 80°52'53", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .5 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 20 ft, diameter 4 in., cased to 5 ft, screened interval from 5 to 15 ft, sand filter packed from 4 to 20 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 761.42 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 0.37 ft below land surface datum.

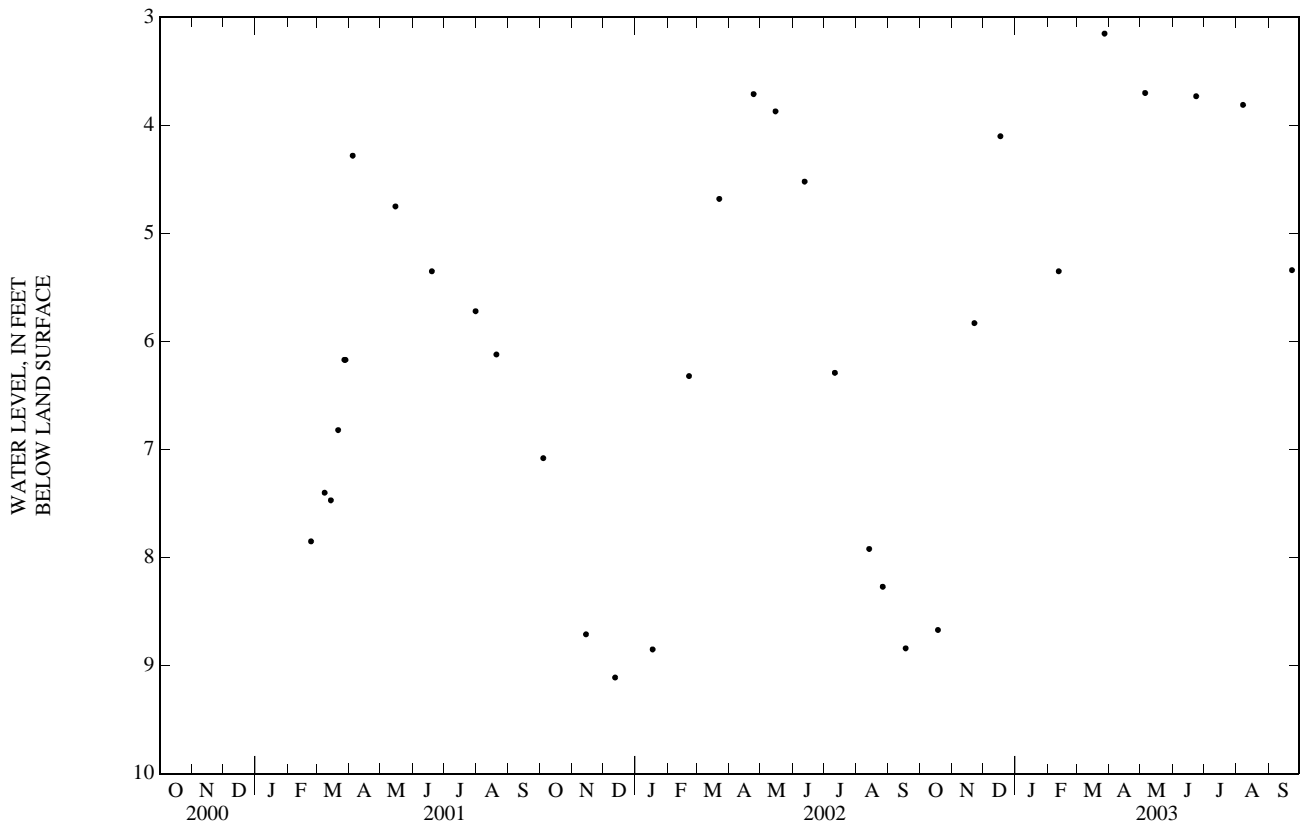
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--February 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.15 ft below land-surface datum, Mar. 27, 2003; lowest water level measured 9.11 ft below land surface datum, Dec. 12, 2001.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	8.67	DEC 17	4.10	MAR 27	3.15	JUN 23	3.73	SEP 23	5.34
NOV 22	5.83	FEB 11	5.35	MAY 05	3.70	AUG 07	3.81		



IREDELL COUNTY—Continued

353157080525302. County number, IR-149; DENR Langtree Research Station MW-3I (Transition zone well).

LOCATION.--Lat 35°31'57.13", long 80°52'53.34", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .5 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (weathered and competent quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 73 ft, diameter 4 in., cased to 43 ft, screened interval from 43 to 73 ft, native fill from 10 to 73 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 762.45 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 0.29 ft below land surface datum.

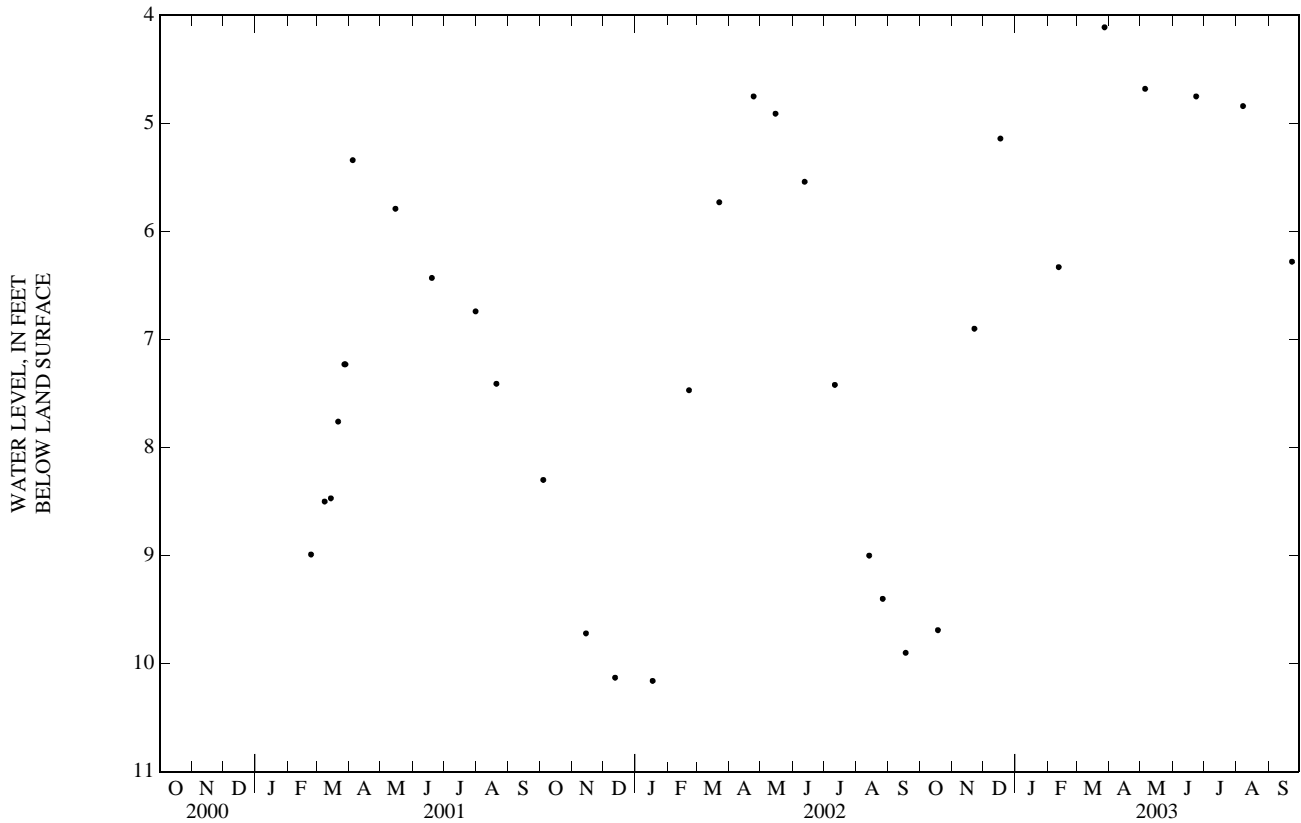
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Possible well construction problems. Monitored zone may be connected to overlying regolith. Well also sampled for water quality.

PERIOD OF RECORD.--February 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.11 ft below land-surface datum, Mar. 27, 2003; lowest water level measured 10.16 ft below land surface datum, Jan. 17, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	9.69	DEC 17	5.14	MAR 27	4.11	JUN 23	4.75	SEP 23	6.28
NOV 22	6.90	FEB 11	6.33	MAY 05	4.68	AUG 07	4.84		



GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353145080524701. County number, IR-151; DENR Langtree Research Station MW-4 (Transition zone well).

LOCATION.--Lat 35°31'44.81", long 80°52'47.33", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .3 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (bedrock quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 53 ft, diameter 4 in., cased to 38 ft, screened interval from 38 to 53 ft, sand filter packed with native fill 35 to 53 ft (revised).

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 802.19 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 0.00 ft below land surface datum.

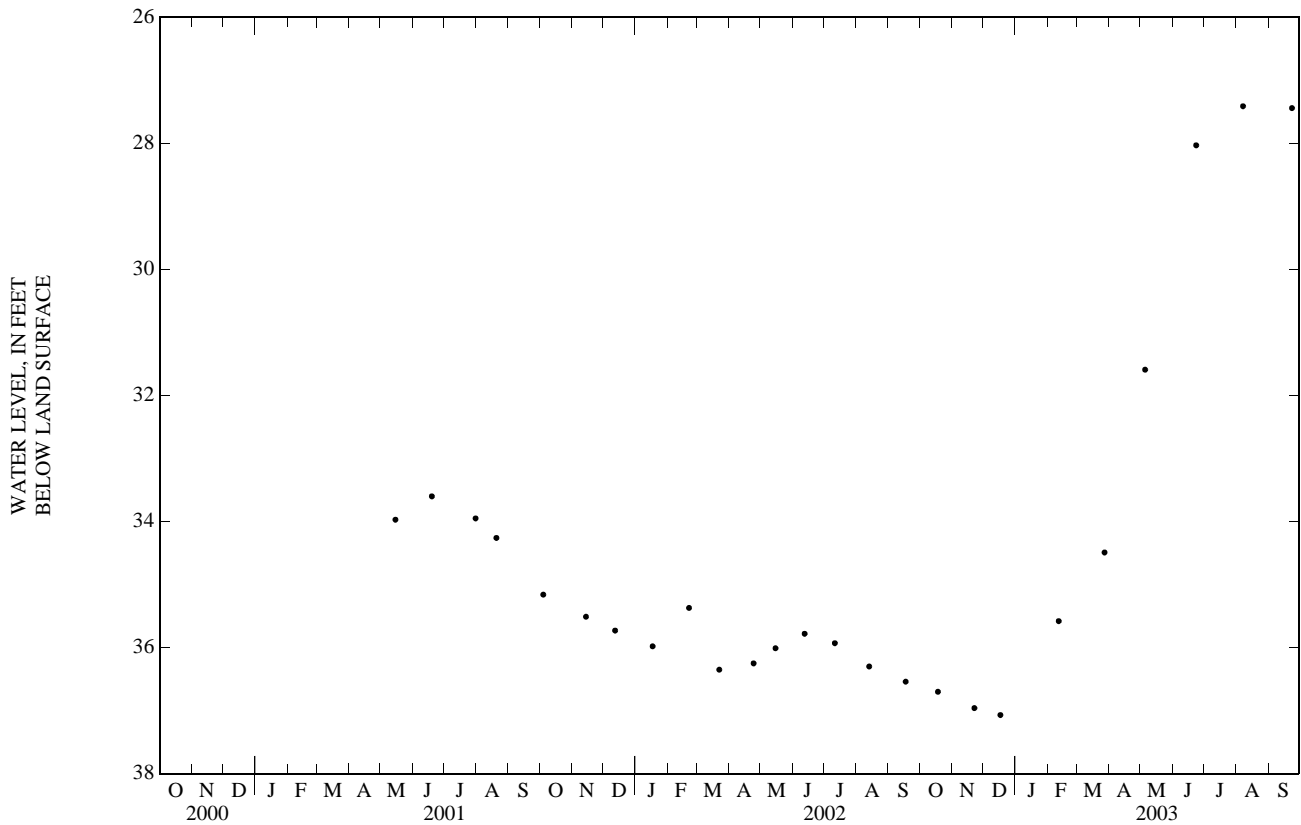
REMARKS.--Well is part of Piedmont/Mountains ground-water project.

PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.41 ft below land-surface datum, Aug. 7, 2003; lowest water level measured 37.07 ft below land surface datum, Dec. 17, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	36.70	DEC 17	37.07	MAR 27	34.49	JUN 23	28.03	SEP 23	27.44
NOV 22	36.96	FEB 11	35.58	MAY 05	31.59	AUG 07	27.41		



IREDELL COUNTY—Continued

353145080524704. County number, IR-152A; DENR Langtree Research Station MW-4IA (Transition zone well).

LOCATION.--Lat 35°31'44.81", long 80°52'47.33", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .3 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (weathered and competent quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 55 ft, diameter 2 in., cased to 40 ft, screened interval from 40 to 55 ft, sand filter packed with native fill 35 ft to 55 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 801.69 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 2 in. PVC casing, 0.70 ft above land surface datum.

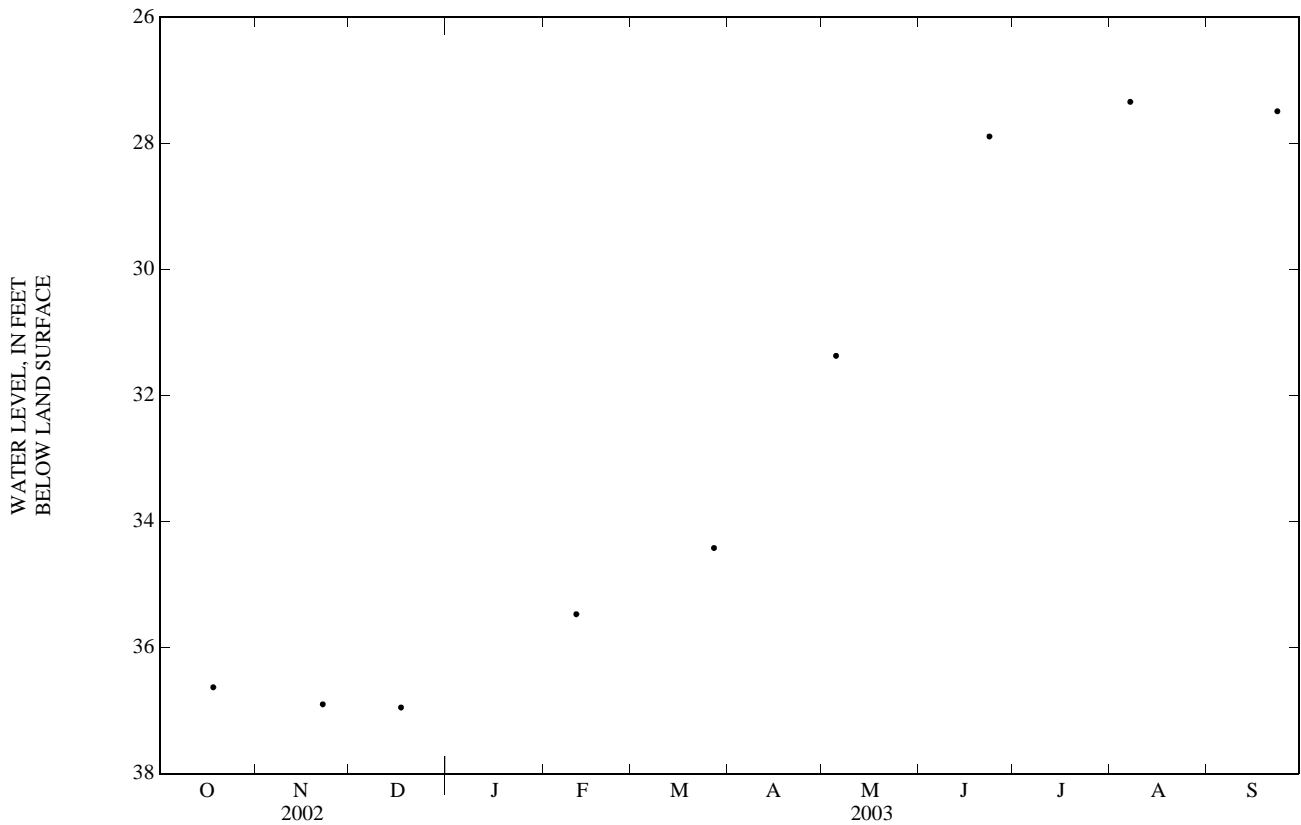
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--March 2002 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.34 ft below land-surface datum, Aug. 7, 2003; lowest water level measured 36.95 ft below land surface datum, Dec. 17, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	36.63	DEC 17	36.95	MAR 27	34.42	JUN 23	27.89	SEP 23	27.49
NOV 22	36.90	FEB 11	35.47	MAY 05	31.37	AUG 07	27.34		



GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353145080524703. County number, IR-153; DENR Langtree Research Station MW-4D (Bedrock well).

LOCATION.--Lat 35°31'45.15", long 80°52'47.31", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .3 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Quartz diorite bedrock.

WELL CHARACTERISTICS.--Drilled observation well, depth 400 ft, diameter 6.25 in., steel cased to 61 ft, initially open hole from 61 to 400 ft. Well modified in December 2001, 4 in. PVC liner installed to 69 ft, open hole from 69 to 400 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 801.09 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 1.32 ft above land surface datum (revised).

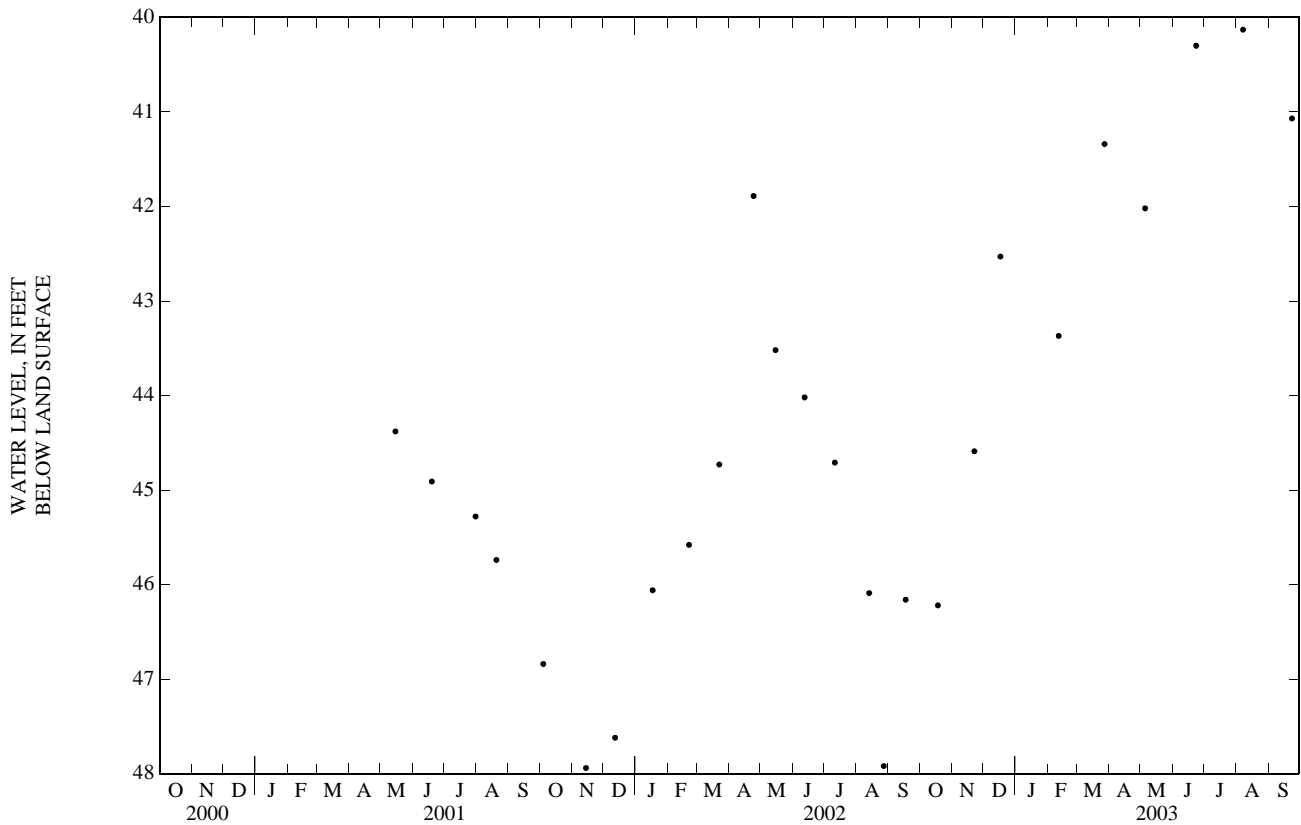
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.13 ft below land-surface datum, Aug. 7, 2003; lowest water level measured 47.94 ft below land surface datum, Nov. 14, 2001.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	46.22	DEC 17	42.53	MAR 27	41.34	JUN 23	40.30	SEP 23	41.07
NOV 22	44.59	FEB 11	43.37	MAY 05	42.02	AUG 07	40.13		



IREDELL COUNTY—Continued

353148080524701. County number, IR-154; DENR Langtree Research Station MW-5S (Regolith well).

LOCATION.--Lat 35°31'47.94", long 80°52'47.06", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .3 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 20 ft, diameter 4 in., cased to 10 ft, screened interval from 10 to 20 ft, sand filter packed from 8 to 20 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 785.49 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 0.00 ft above land surface datum.

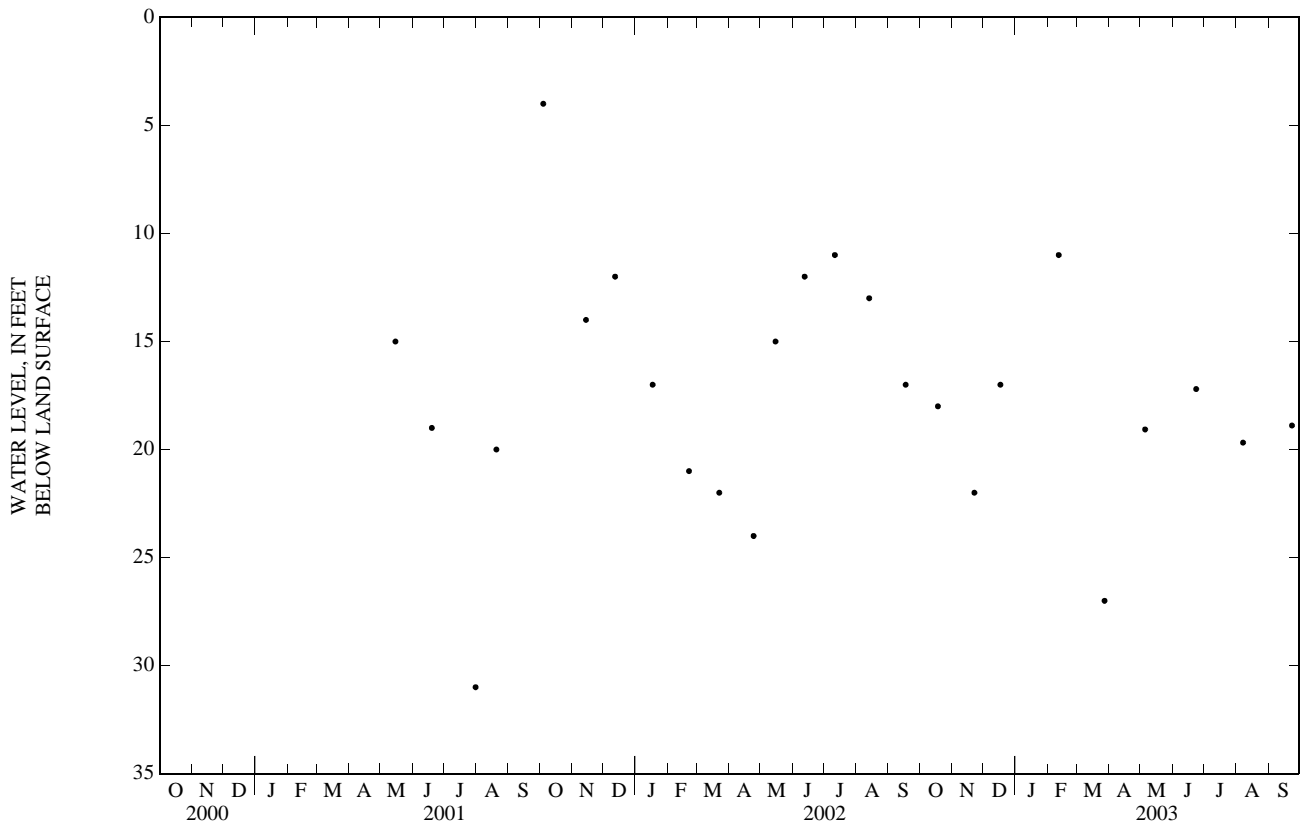
REMARKS.--Well is part of Piedmont/Mountains ground-water project.

PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Well dry during periodic water-level measurements May 2001 to May 2003. Highest water level measured, 17.20 ft below land-surface datum, June 23, 2003; lowest water level measured 19.68 ft below land-surface datum, Aug. 7, 2003.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	DRY	DEC 17	DRY	MAR 27	DRY	JUN 23	17.20	SEP 23	18.89
NOV 22	DRY	FEB 11	DRY	MAY 05	19.07	AUG 07	19.68		



GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353148080524702. County number, IR-155; DENR Langtree Research Station MW-5I (Transition zone well).

LOCATION.--Lat 35°31'48.32", long 80°52'46.96", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .3 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (weathered and competent quartz diorite bedrock).

WELL CHARACTERISTICS.--Drilled observation well, depth 35 ft, diameter 4 in., cased to 20 ft, screened interval from 20 to 35 ft, sand filter packed from 18 to 35 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 784.49 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 0.20 ft above land surface datum.

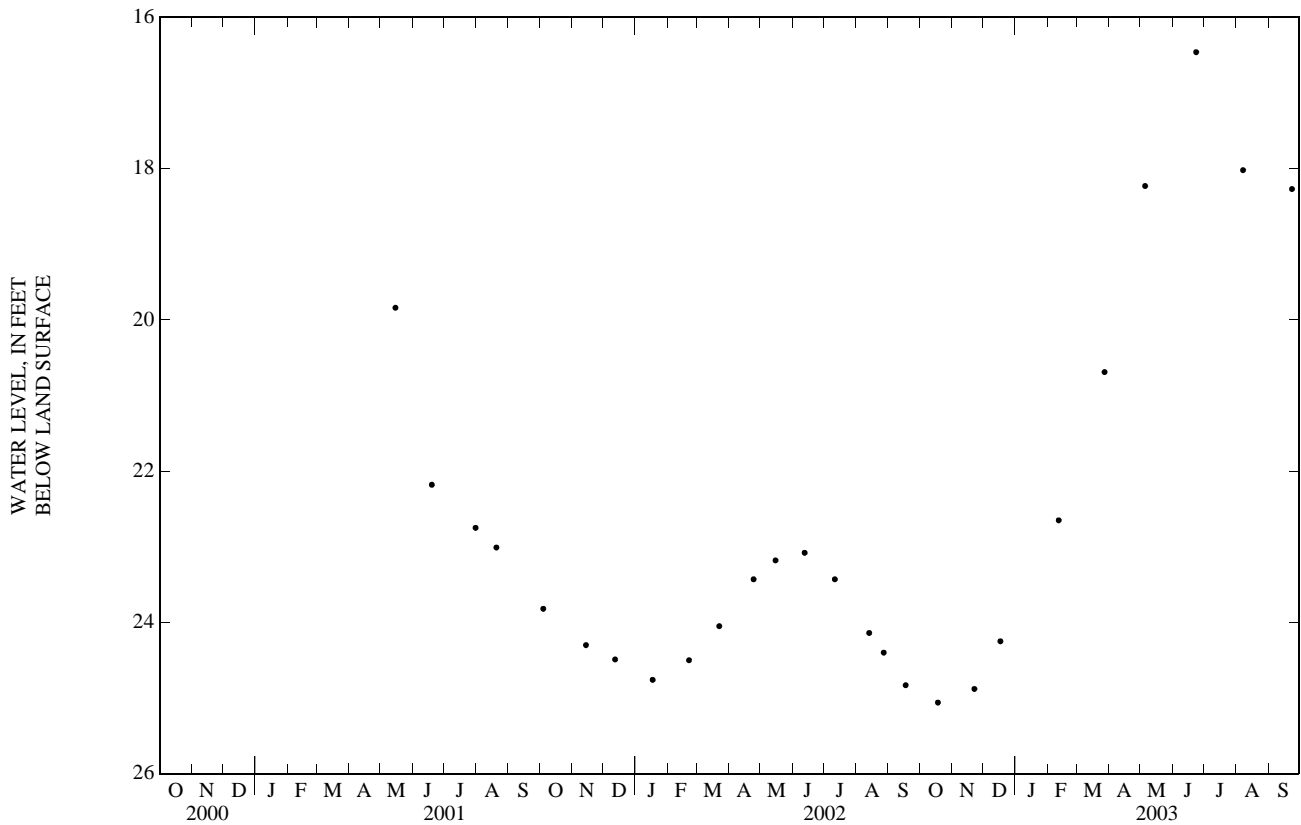
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.46 ft below land-surface datum, June 23, 2003; lowest water level measured 25.06 ft below land surface datum, Oct. 18, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	25.06	DEC 17	24.25	MAR 27	20.69	JUN 23	16.46	SEP 23	18.27
NOV 22	24.88	FEB 11	22.65	MAY 05	18.23	AUG 07	18.02		



IREDELL COUNTY—Continued

353148080524703. County number, IR-156; DENR Langtree Research Station MW-5D (Bedrock well).

LOCATION.--Lat 35°31'48.13", long 80°52'46.98", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .3 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Quartz diorite bedrock.

WELL CHARACTERISTICS.--Drilled observation well, depth 400 ft, diameter 6.25 in., cased to 40 ft, open hole from 40 to 400 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 784.09 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of steel protective casing, 1.40 ft above land surface datum.

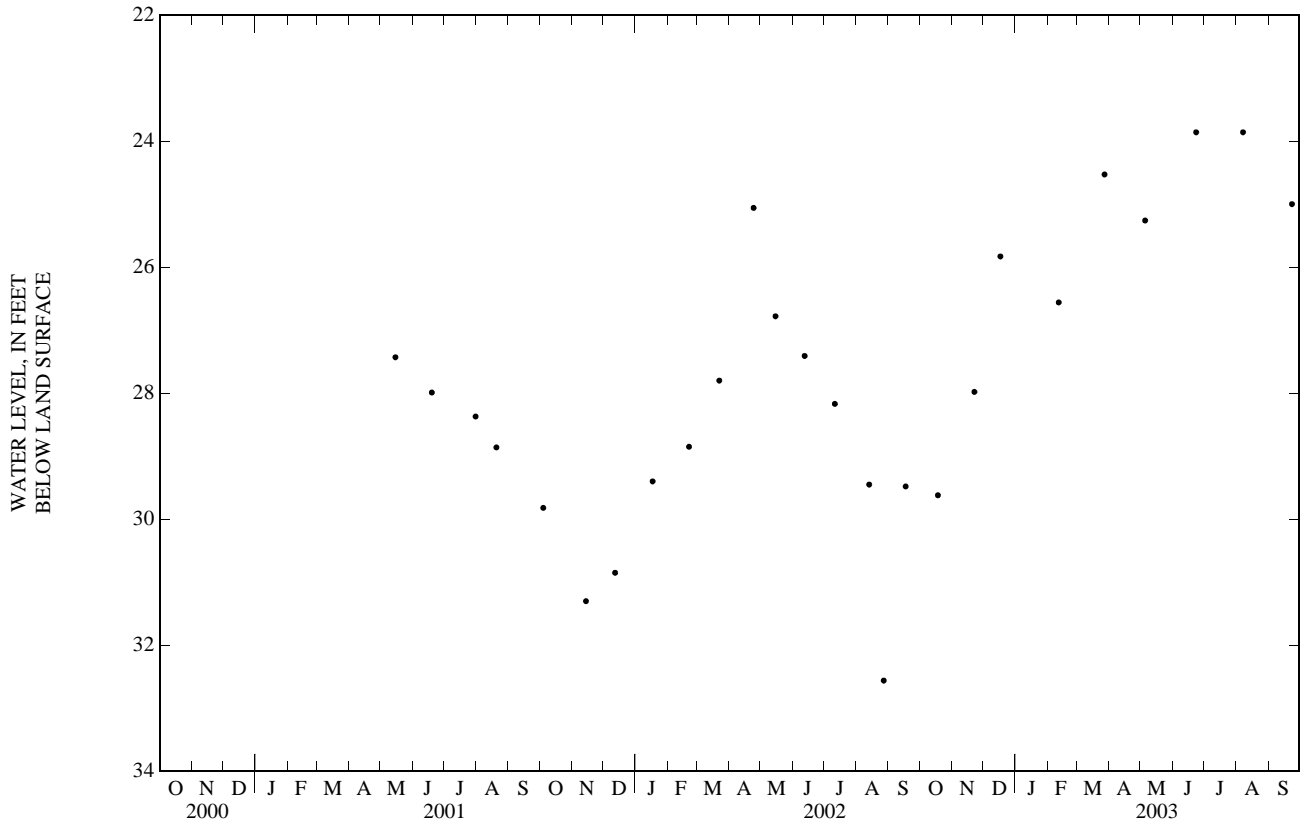
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.86 ft below land-surface datum, June 23, Aug. 7, 2003; lowest water level measured 32.56 ft below land surface datum, Aug. 27, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	29.62	DEC 17	25.83	MAR 27	24.53	JUN 23	23.86	SEP 23	25.00
NOV 22	27.98	FEB 11	26.56	MAY 05	25.26	AUG 07	23.86		



GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353151080524601. County number, IR-157; DENR Langtree Research Station MW-6S (Regolith well).

LOCATION.--Lat 35°31'51.37", long 80°52'45.90", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .4 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 18 ft, diameter 4 in., cased to 8 ft, screened interval from 8 to 18 ft, sand filter packed from 6 to 18 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 764.59 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 4 in. PVC casing, 0.16 ft below land surface datum.

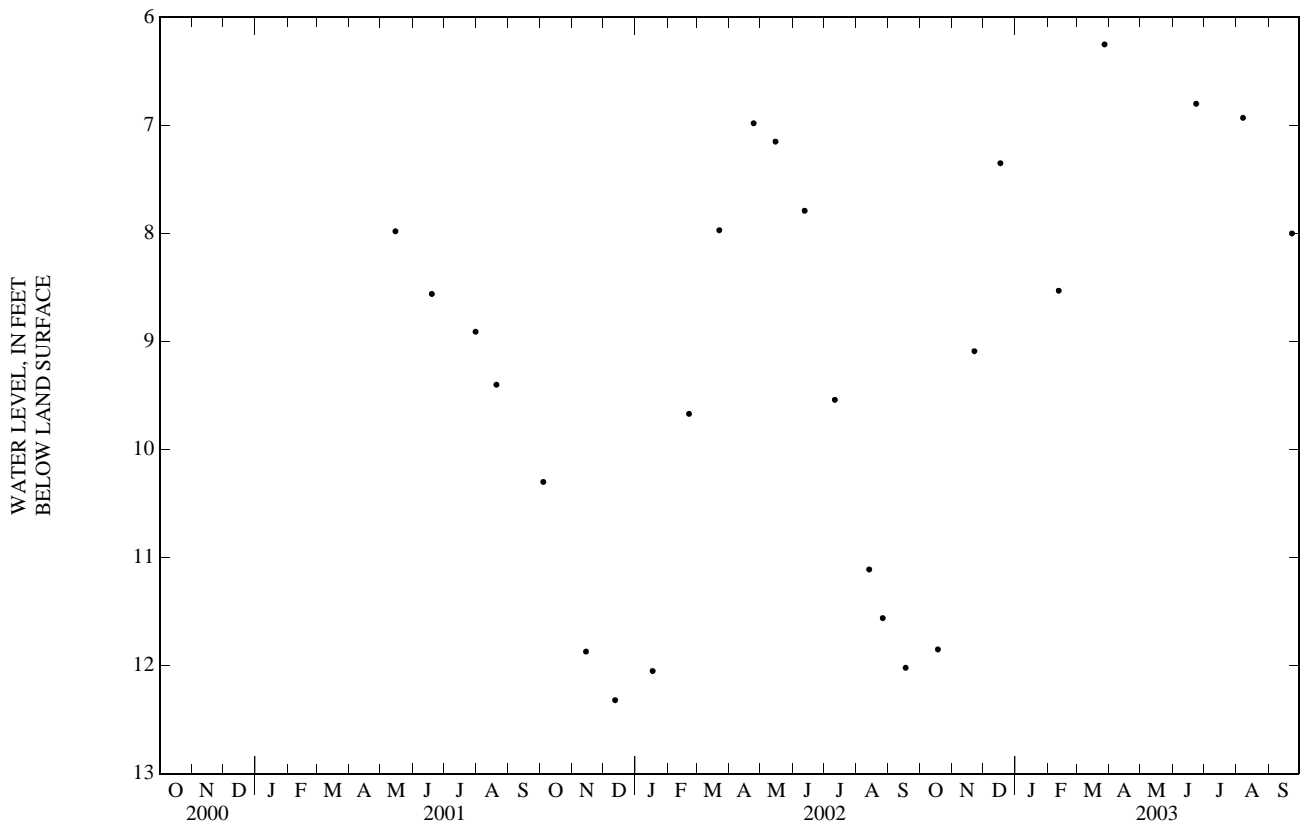
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.25 ft below land surface datum, Mar. 27, 2003; lowest water level measured, 12.32 ft below land surface datum, Dec. 12, 2001.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	11.85	DEC 17	7.35	MAR 27	6.25	AUG 07	6.93
NOV 22	9.09	FEB 11	8.53	JUN 23	6.80	SEP 23	8.00



IREDELL COUNTY—Continued

353151080524603. County number, IR-159; DENR Langtree Research Station MW-6D (Bedrock well).

LOCATION.--Lat 35°31'51.58", long 80°52'45.91", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .4 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Quartz diorite bedrock.

WELL CHARACTERISTICS.--Drilled observation well, depth 400 ft, diameter 6.25 in., steel cased to 43 ft, initially open hole from 43 to 400 ft. Well modified in December 2001, 4 in. PVC liner installed to 69 ft, open hole from 69 to 400 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 765.09 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of 6.25 in. PVC casing, 0.10 ft below land surface datum (revised).

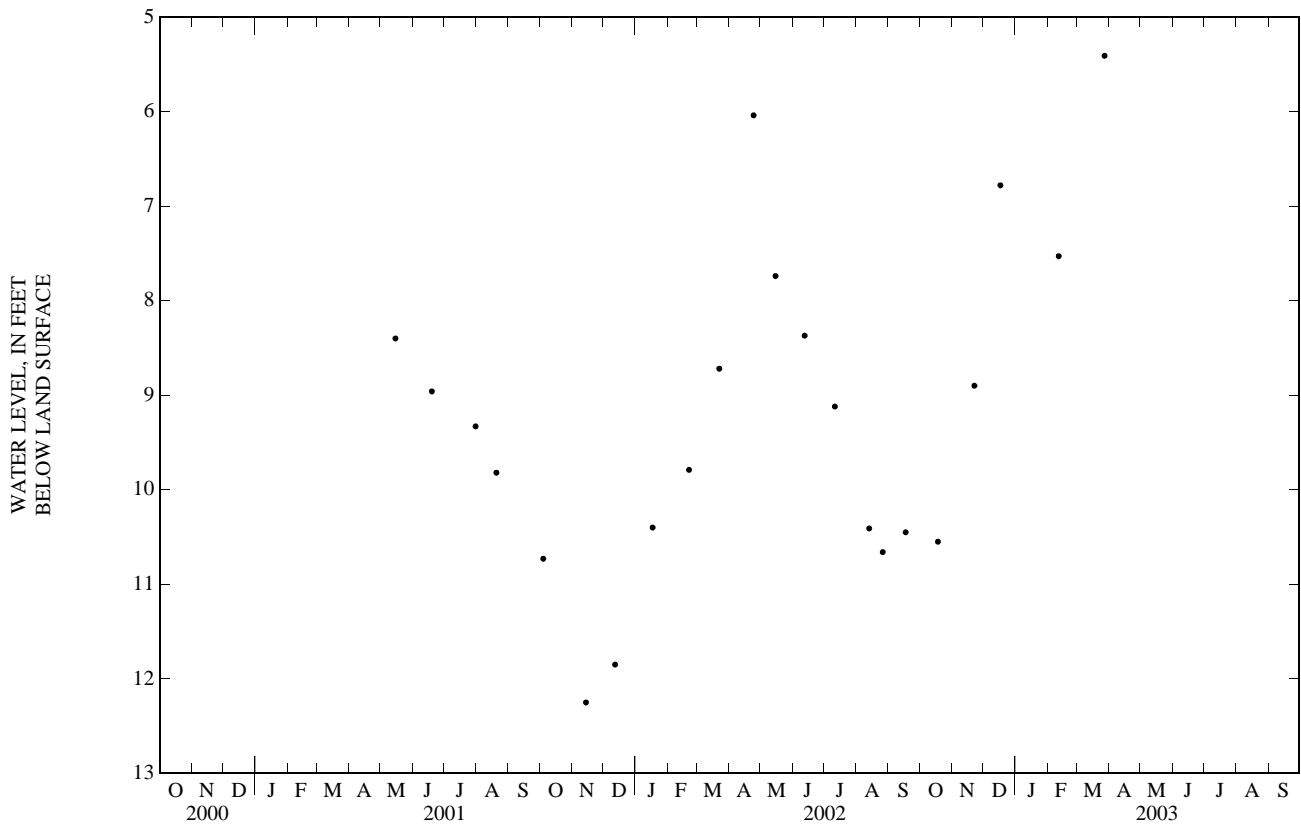
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.41 ft below land surface datum, Mar. 27, 2003; lowest water level measured, 12.25 ft below land surface datum, Nov. 14, 2001.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	10.55	NOV 22	8.90	DEC 17	6.78	FEB 11	7.53	MAR 27	5.41



GROUND-WATER LEVELS

IREDELL COUNTY—Continued

353151080524604. County number, IR-160; DENR Langtree Research Station MW-6IB (Transition zone well).

LOCATION.--Lat 35°31'51.5", long 80°52'45.8", Hydrologic Unit 03050101, 2.5 mi northwest of Davidson, .4 mi north of Langtree Road at Davidson College Lake Campus. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (weathered and competent quartz diorite).

WELL CHARACTERISTICS.--Drilled observation well, depth 30 ft, diameter 4 in., cased to 15 ft, screened interval from 15 to 30 ft, sand filter packed from 12 to 30 ft.

INSTRUMENTATION.--Measured periodically with steel and electric tape. (by DENR and USGS)

DATUM.--Land surface datum is 765 ft above NGVD of 1929, (from topographic map). Measuring point: Top of 4 in. PVC casing, 0.24 ft below land surface datum.

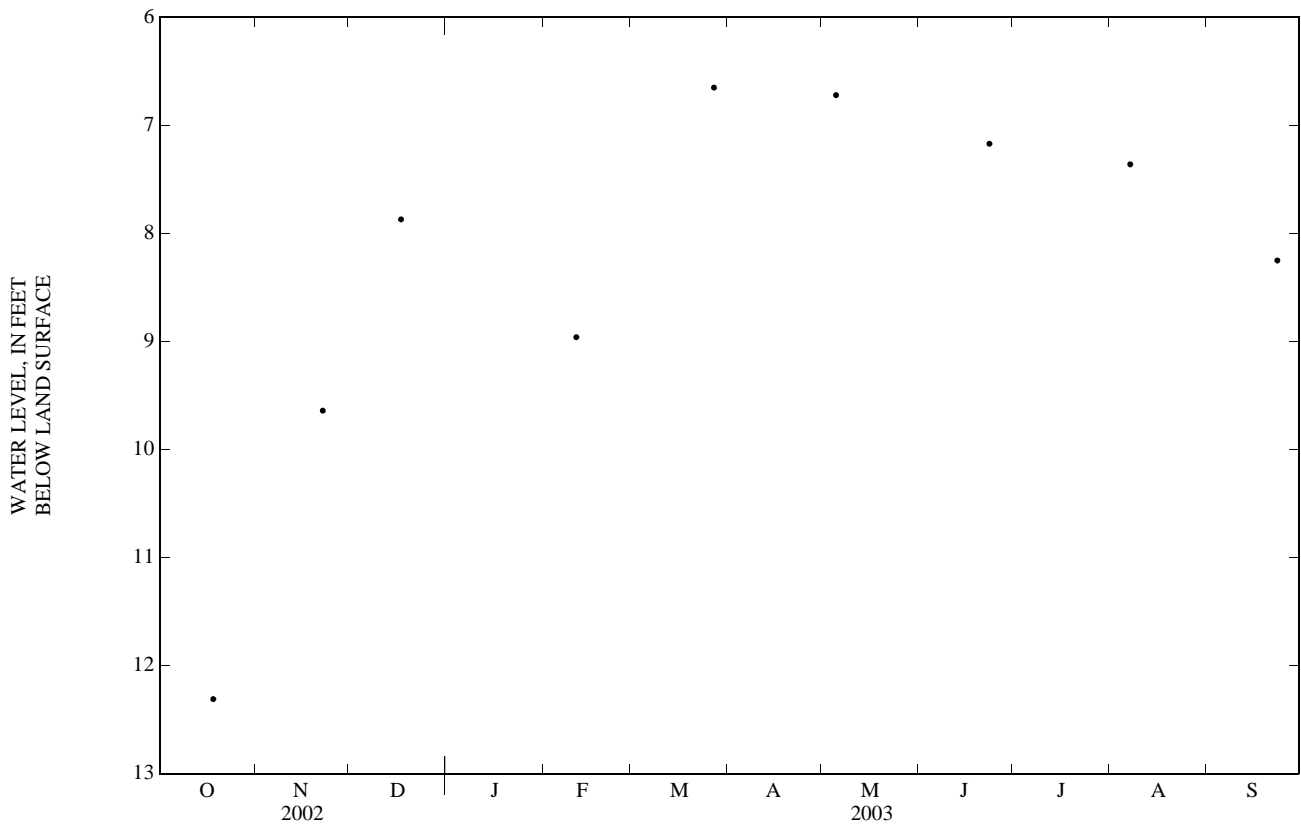
REMARKS.--Well is part of Piedmont/Mountains ground-water project. Well also sampled for water quality.

PERIOD OF RECORD.--March 2002 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.65 ft below land surface datum, Mar. 27, 2003; lowest water level measured, 12.46 ft below land surface datum, Sept. 17, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	12.31	DEC 17	7.87	MAR 27	6.65	JUN 23	7.17	SEP 23	8.25
NOV 22	9.64	FEB 11	8.96	MAY 05	6.72	AUG 07	7.36		



GROUND-WATER LEVELS

JONES COUNTY

345809077301408. Local number, NC-173; DENR Comfort Research Station well U26j8; County number, JO-035.

LOCATION.--Lat 34°58'09.9", long 77°30'12.0", Hydrologic Unit 03020204, 2.5 mi south of Comfort at North Carolina Division of Forest Resources Fire Tower on Secondary Road 1003. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, depth 15 ft, diameter 4 in., cased to 5 ft, screened interval from 5 to 15 ft.

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

DATUM.--Land-surface datum is 68 ft above NGVD of 1929 (from topographic map). Measuring point: Top of collar on casing, 2.35 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--January 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.06 ft above land-surface datum, Sept. 16, 1999; lowest water level recorded, 10.14 ft below land-surface datum, Nov. 6-13, 2002.

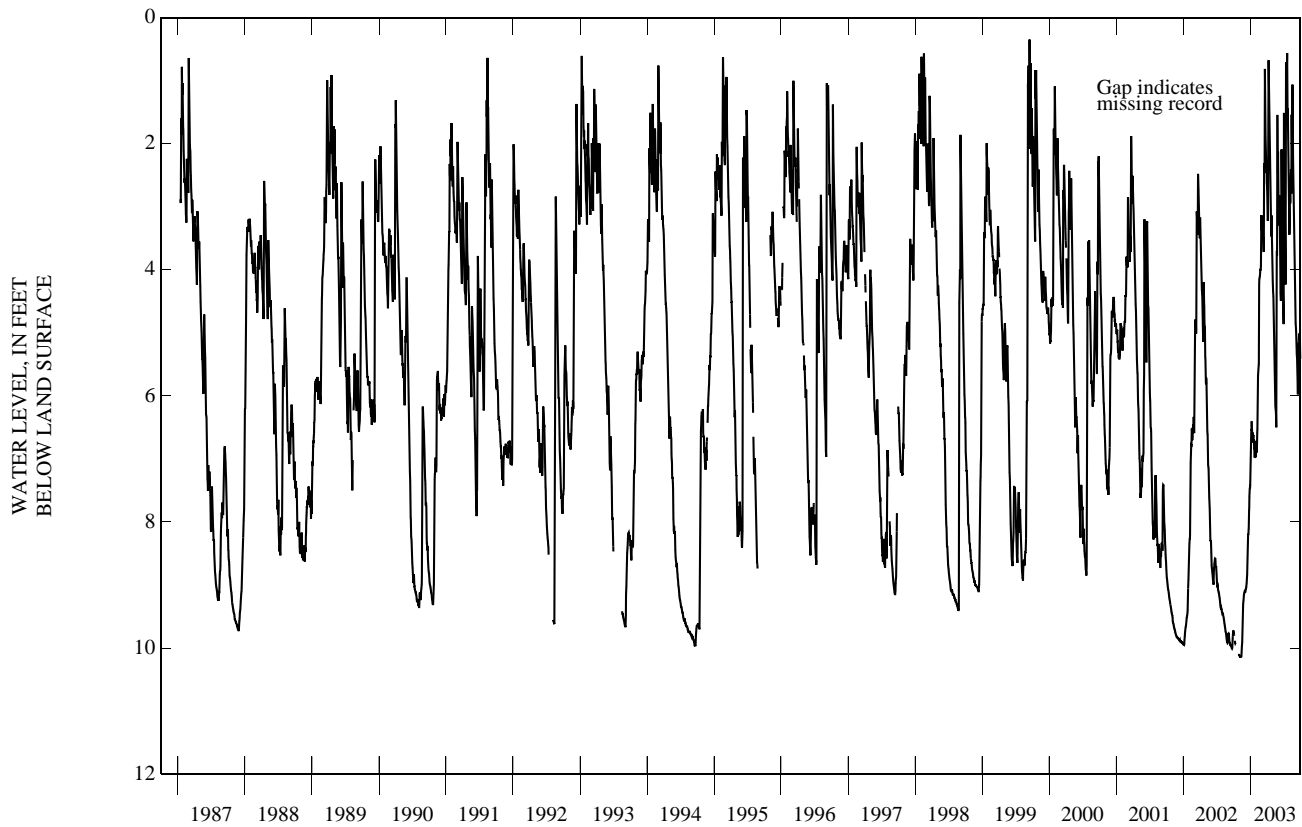
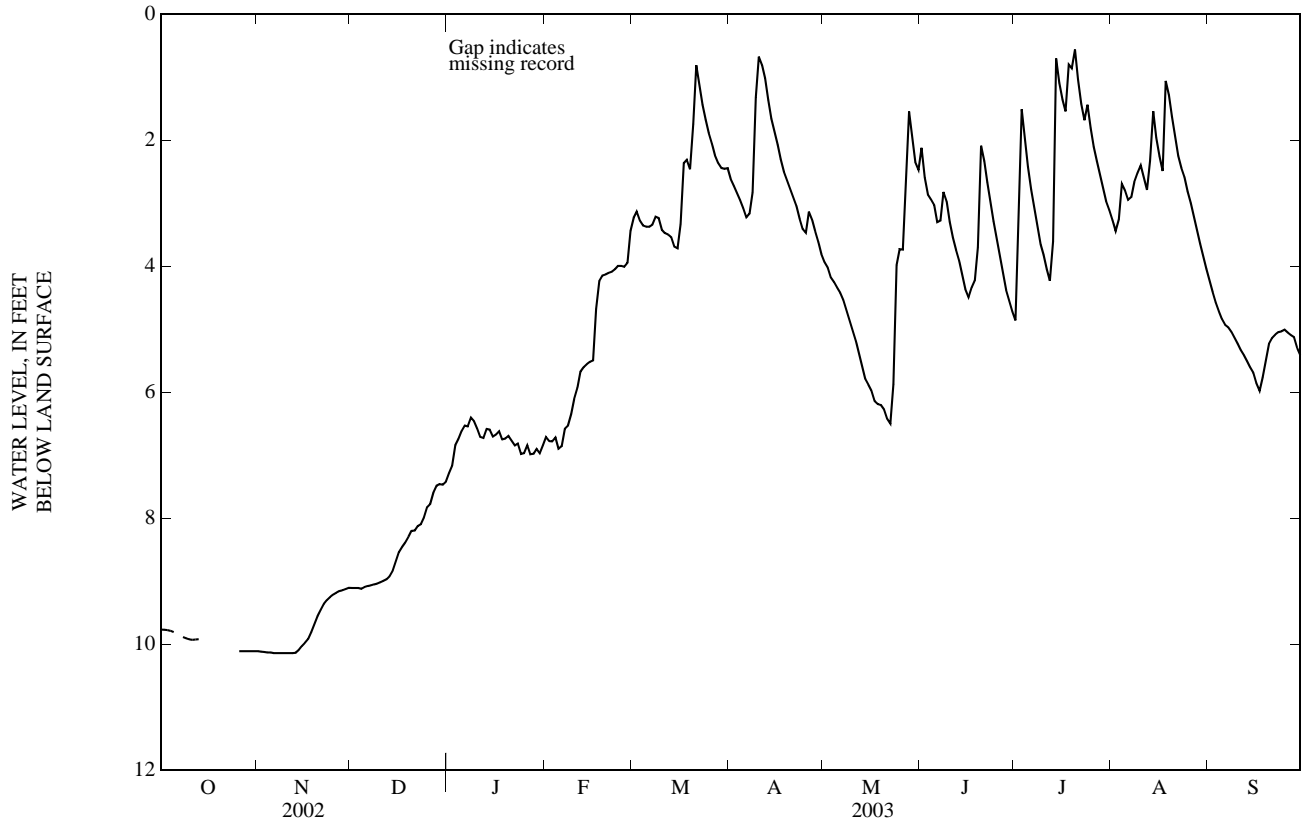
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.77	10.11	9.11	7.28	6.71	3.23	2.61	3.94	2.12	4.86	3.27	4.22
2	9.77	10.12	9.11	7.17	6.78	3.13	2.72	4.02	2.59	3.51	3.44	4.40
3	9.78	10.12	9.11	6.84	6.78	3.28	2.83	4.18	2.87	1.51	3.26	4.58
4	9.79	10.13	9.12	6.75	6.72	3.36	2.95	4.25	2.94	2.00	2.69	4.72
5	9.81	10.13	9.09	6.62	6.90	3.37	3.07	4.34	3.03	2.43	2.80	4.84
6	---	10.14	9.08	6.53	6.86	3.37	3.22	4.42	3.30	2.78	2.95	4.93
7	---	10.14	9.07	6.54	6.58	3.34	3.17	4.53	3.28	3.08	2.91	4.97
8	9.89	10.14	9.05	6.40	6.53	3.22	2.83	4.69	2.82	3.36	2.66	5.05
9	9.91	10.14	9.04	6.46	6.35	3.24	1.33	4.85	2.97	3.65	2.52	5.13
10	9.92	10.14	9.02	6.58	6.11	3.42	0.68	5.02	3.30	3.82	2.40	5.23
11	9.93	10.14	8.99	6.71	5.93	3.48	0.81	5.19	3.55	4.05	2.59	5.33
12	9.92	10.14	8.97	6.73	5.67	3.50	1.01	5.39	3.75	4.23	2.79	5.41
13	9.92	10.13	8.92	6.58	5.60	3.54	1.37	5.60	3.91	3.61	2.33	5.51
14	---	10.09	8.83	6.59	5.56	3.69	1.66	5.79	4.14	0.71	1.54	5.61
15	---	10.03	8.69	6.70	5.52	3.72	1.87	5.88	4.37	1.10	1.97	5.69
16	---	9.98	8.54	6.67	5.50	3.33	2.07	5.98	4.49	1.36	2.26	5.86
17	---	9.91	8.46	6.62	4.68	2.37	2.31	6.14	4.34	1.54	2.49	5.98
18	---	9.81	8.38	6.75	4.23	2.31	2.50	6.19	4.23	0.80	1.06	5.77
19	---	9.68	8.30	6.74	4.15	2.46	2.64	6.20	3.70	0.86	1.29	5.51
20	---	9.56	8.20	6.69	4.13	1.75	2.77	6.28	2.09	0.56	1.63	5.23
21	---	9.45	8.20	6.77	4.11	0.81	2.90	6.42	2.33	1.04	1.95	5.14
22	---	9.36	8.12	6.84	4.09	1.15	3.04	6.50	2.67	1.43	2.25	5.09
23	---	9.30	8.09	6.81	4.05	1.44	3.25	5.87	2.98	1.69	2.44	5.05
24	---	9.25	7.99	6.98	4.00	1.68	3.41	3.98	3.29	1.44	2.59	5.04
25	---	9.21	7.82	6.97	4.00	1.89	3.47	3.73	3.57	1.81	2.82	5.01
26	10.11	9.18	7.77	6.84	4.01	2.06	3.14	3.74	3.84	2.10	3.00	5.05
27	10.11	9.16	7.59	6.99	3.95	2.24	3.26	2.48	4.12	2.33	3.22	5.09
28	10.11	9.14	7.48	6.98	3.44	2.36	3.44	1.55	4.38	2.54	3.44	5.13
29	10.11	9.12	7.46	6.90	---	2.44	3.61	1.99	4.55	2.76	3.64	5.30
30	10.11	9.10	7.47	6.97	---	2.46	3.81	2.35	4.72	2.97	3.84	5.41
31	10.11	---	7.42	6.84	---	2.45	---	2.47	---	3.11	4.04	---

WTR YR 2003 MEAN 5.14 HIGH 0.56 LOW 10.14

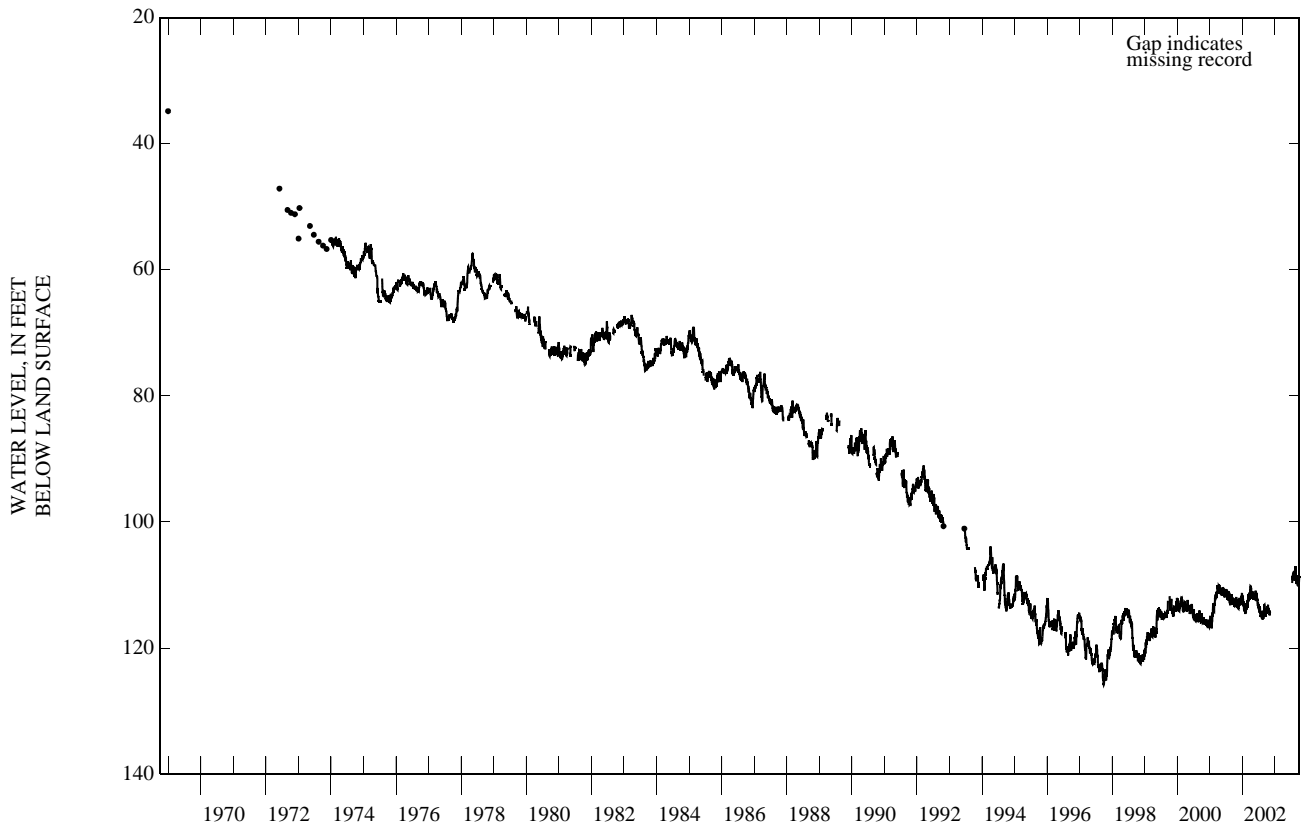
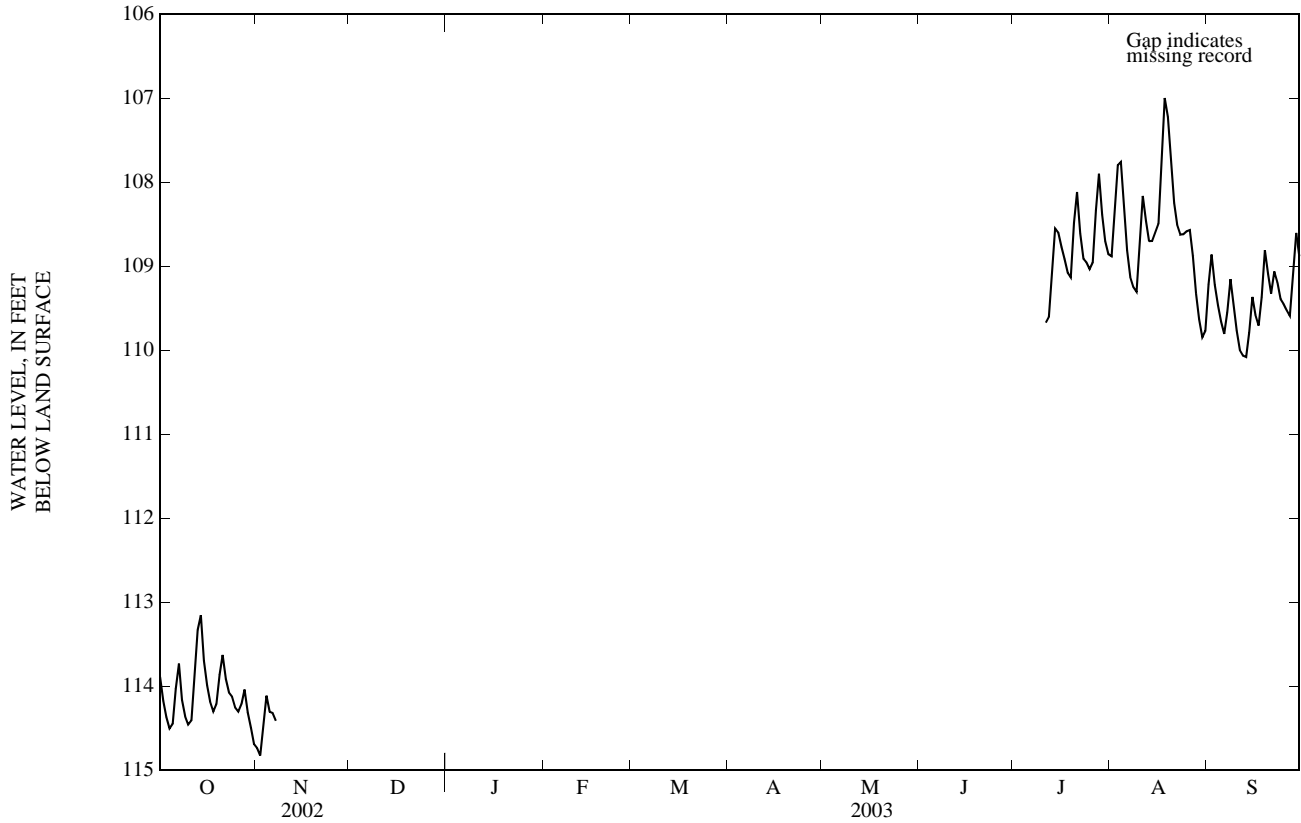
GROUND-WATER LEVELS
JONES COUNTY—Continued

345809077301408. Local number, NC-173; DENR Comfort Research Station well U26j8; County number, JO-035.



LENOIR COUNTY—Continued

351600077381001. Local number, NC-128; County number, LN-128.



GROUND-WATER LEVELS

LENOIR COUNTY—Continued

351937077284201. Local number, NC-185; DENR Graingers Research Station well Q25d12; County number, LN-110.

LOCATION.--Lat 35°19'37.8", long 77°28'41.1", Hydrologic Unit 03020202, 1.6 mi northeast of Graingers on N.C. Highway 11 at E. I. du Pont de Nemours and Company, Kinston Plant. Owner: DENR (North Carolina Department of Environment, and Natural Resources).

AQUIFER.--Peedee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 134 ft, diameter 4 in., screened interval from 124 to 134 ft.

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

DATUM.--Land-surface datum is 66 ft above NGVD of 1929 (from topographic map). Measuring point: Top of instrument shelf, 3.10 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--December 1985 to current year.

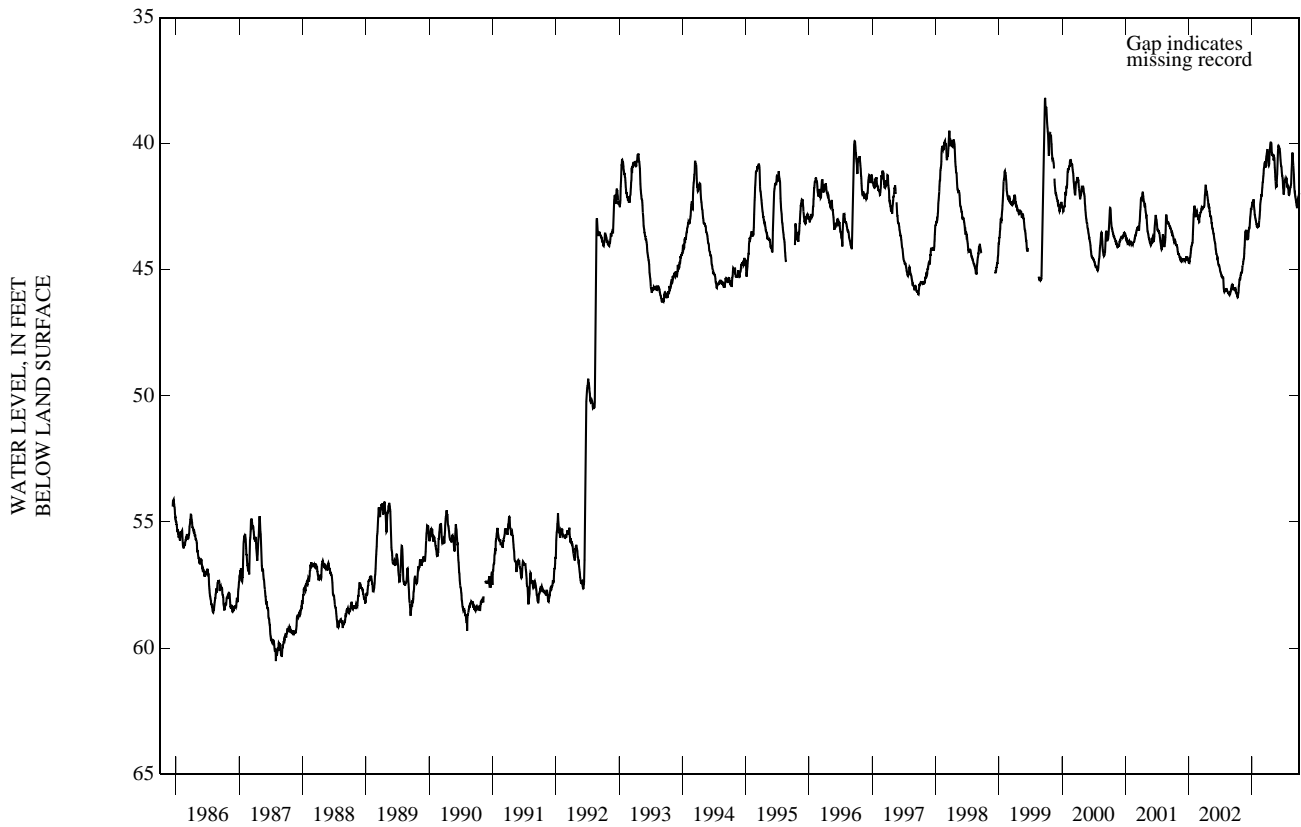
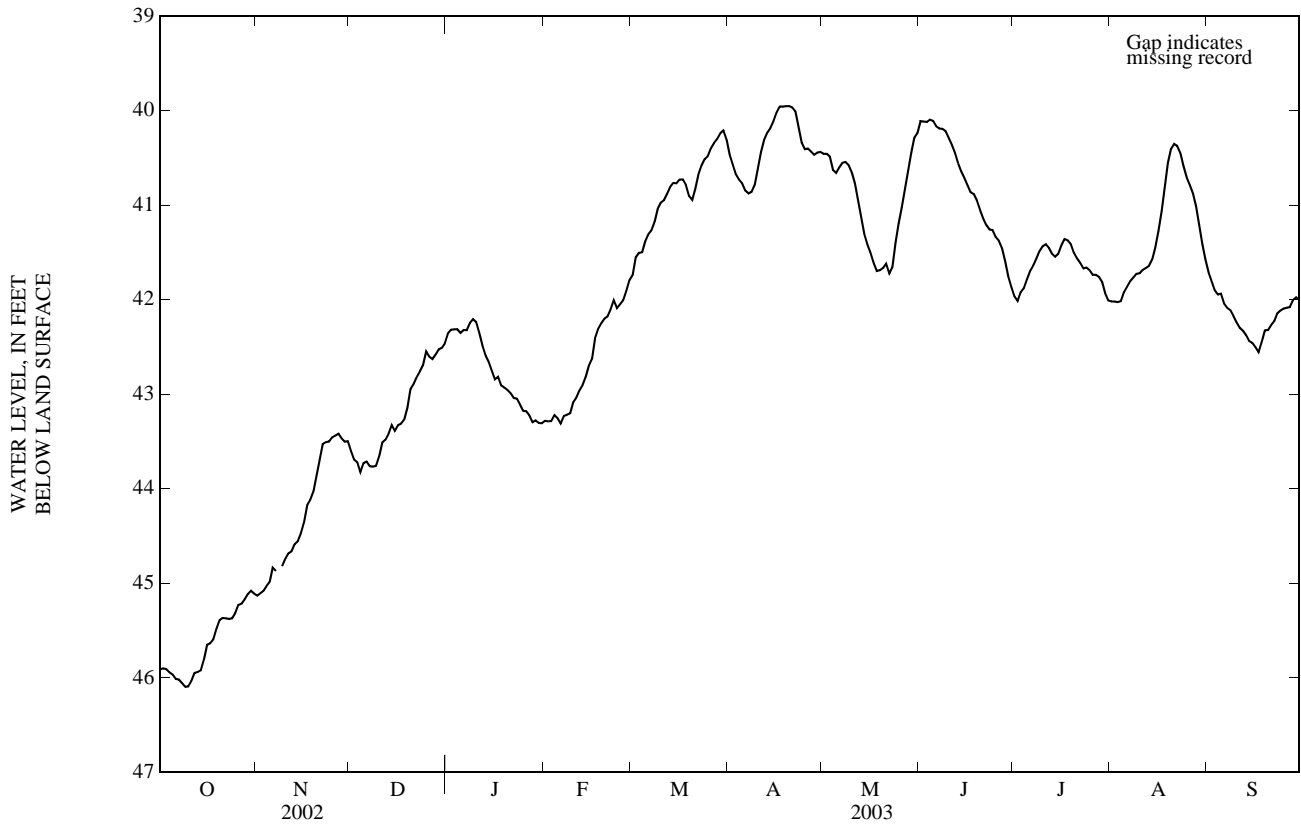
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 38.14 ft below land-surface datum, Sept. 24, 1999; lowest water level recorded, 60.61 ft below land-surface datum, July 31, 1987.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	45.91	45.13	43.60	42.36	43.28	41.74	40.47	40.46	40.11	41.97	42.02	41.71	
2	45.90	45.11	43.69	42.32	43.29	41.55	40.57	40.46	40.12	42.01	42.02	41.81	
3	45.91	45.08	43.72	42.31	43.28	41.51	40.67	40.49	40.12	41.92	42.03	41.90	
4	45.94	45.03	43.83	42.31	43.22	41.50	40.73	40.63	40.10	41.88	42.02	41.95	
5	45.97	44.99	43.73	42.35	43.25	41.39	40.77	40.66	40.11	41.79	41.92	41.94	
6	46.01	44.83	43.71	42.32	43.31	41.31	40.85	40.60	40.17	41.70	41.86	42.04	
7	46.02	44.87	43.76	42.32	43.23	41.27	40.88	40.55	40.19	41.64	41.80	42.09	
8	46.05	---	43.77	42.25	43.22	41.18	40.86	40.54	40.19	41.57	41.77	42.11	
9	46.09	44.82	43.76	42.21	43.20	41.04	40.78	40.58	40.22	41.48	41.73	42.17	
10	46.09	44.74	43.66	42.24	43.09	40.97	40.62	40.65	40.29	41.44	41.72	42.24	
11	46.03	44.68	43.51	42.35	43.03	40.95	40.44	40.77	40.36	41.41	41.68	42.30	
12	45.95	44.66	43.48	42.49	42.96	40.88	40.31	40.94	40.45	41.45	41.66	42.33	
13	45.94	44.59	43.42	42.59	42.90	40.81	40.23	41.13	40.56	41.52	41.64	42.38	
14	45.92	44.55	43.33	42.66	42.82	40.77	40.19	41.30	40.65	41.55	41.57	42.44	
15	45.81	44.47	43.39	42.75	42.70	40.77	40.11	41.42	40.71	41.51	41.45	42.46	
16	45.65	44.36	43.33	42.84	42.63	40.73	40.02	41.50	40.79	41.42	41.27	42.50	
17	45.64	44.17	43.31	42.82	42.41	40.73	39.96	41.61	40.86	41.36	41.06	42.56	
18	45.59	44.12	43.27	42.91	42.31	40.78	39.96	41.70	40.88	41.37	40.82	42.45	
19	45.49	44.03	43.14	42.93	42.25	40.90	39.95	41.69	40.95	41.41	40.55	42.32	
20	45.39	43.86	42.95	42.96	42.20	40.95	39.95	41.66	41.05	41.51	40.41	42.32	
21	45.37	43.69	42.89	42.99	42.18	40.83	39.97	41.62	41.14	41.56	40.35	42.27	
22	45.37	43.53	42.82	43.04	42.10	40.67	40.01	41.72	41.21	41.61	40.37	42.23	
23	45.38	43.51	42.76	43.05	42.01	40.58	40.18	41.66	41.26	41.67	40.45	42.14	
24	45.37	43.50	42.69	43.11	42.09	40.51	40.34	41.40	41.26	41.66	40.58	42.11	
25	45.32	43.46	42.55	43.18	42.05	40.48	40.41	41.19	41.34	41.69	40.70	42.09	
26	45.23	43.44	42.60	43.18	42.01	40.40	40.40	41.02	41.37	41.74	40.79	42.09	
27	45.22	43.42	42.63	43.22	41.90	40.34	40.43	40.83	41.45	41.74	40.87	42.08	
28	45.17	43.47	42.58	43.30	41.79	40.30	40.47	40.65	41.59	41.76	41.01	42.00	
29	45.12	43.50	42.53	43.28	---	40.24	40.44	40.45	41.75	41.81	41.21	41.98	
30	45.08	43.50	42.51	43.30	---	40.21	40.44	40.29	41.87	41.93	41.41	42.00	
31	45.11	---	42.46	43.31	---	40.31	---	40.24	---	42.01	41.57	---	
WTR YR	2003	MEAN	42.21	HIGH	39.95	LOW	46.09						

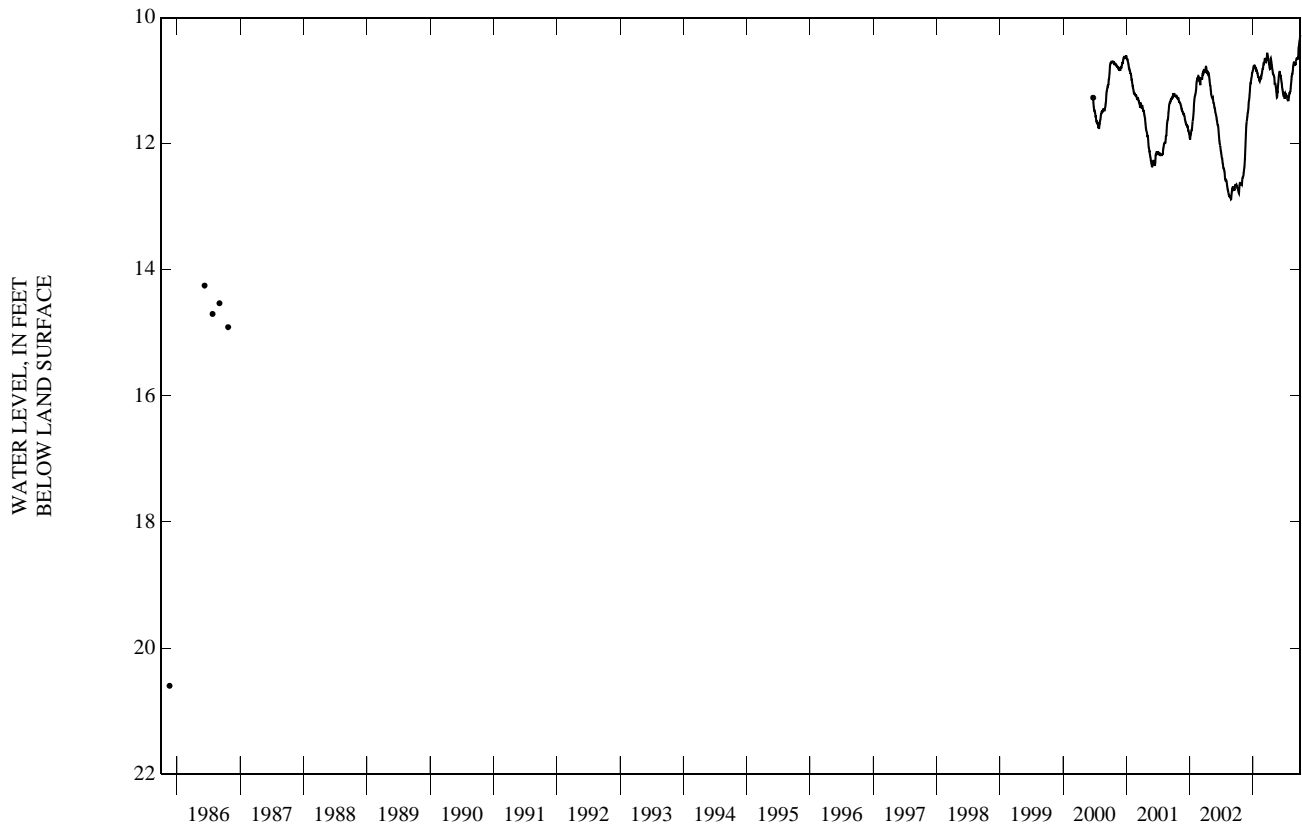
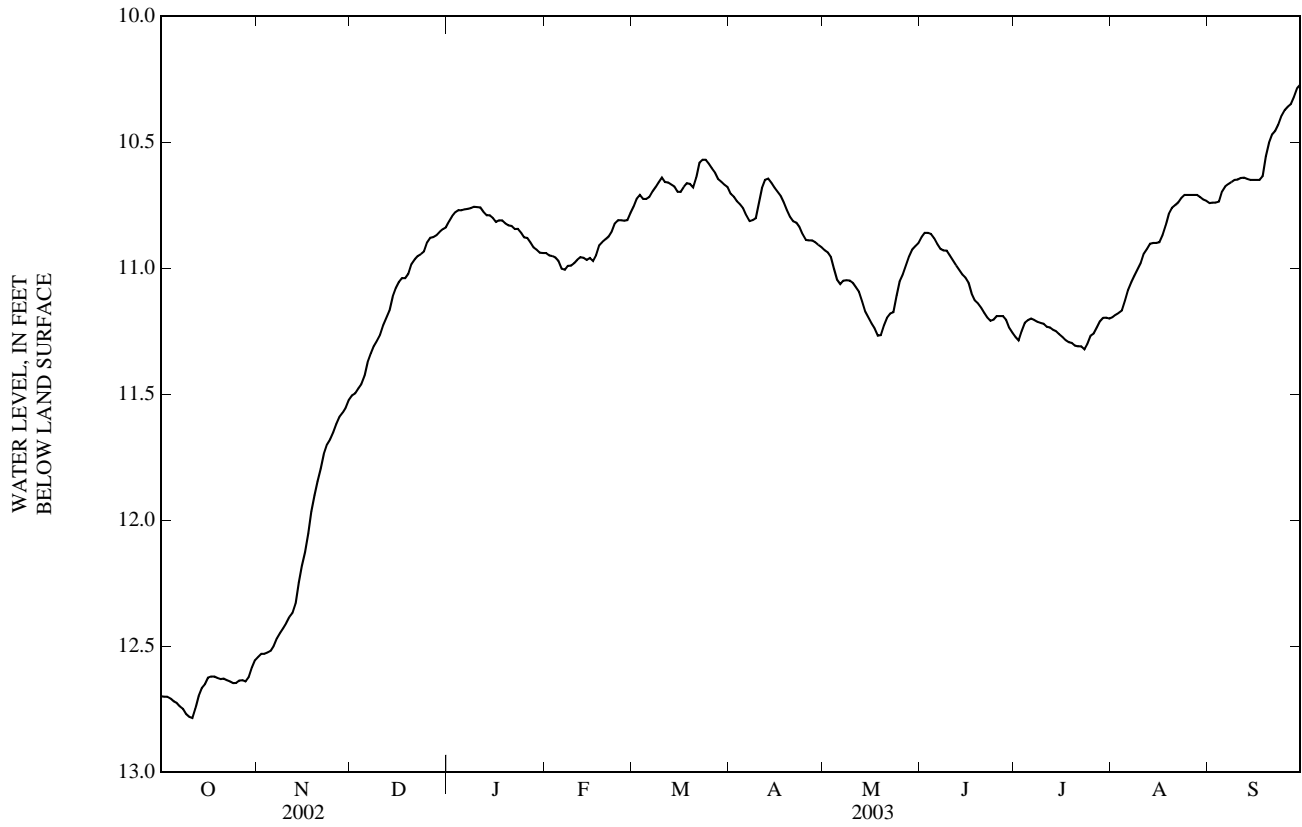
LENOIR COUNTY—Continued

351937077284201. Local number, NC-185; DENR Graingers Research Station well Q25d12; County number, LN-110.



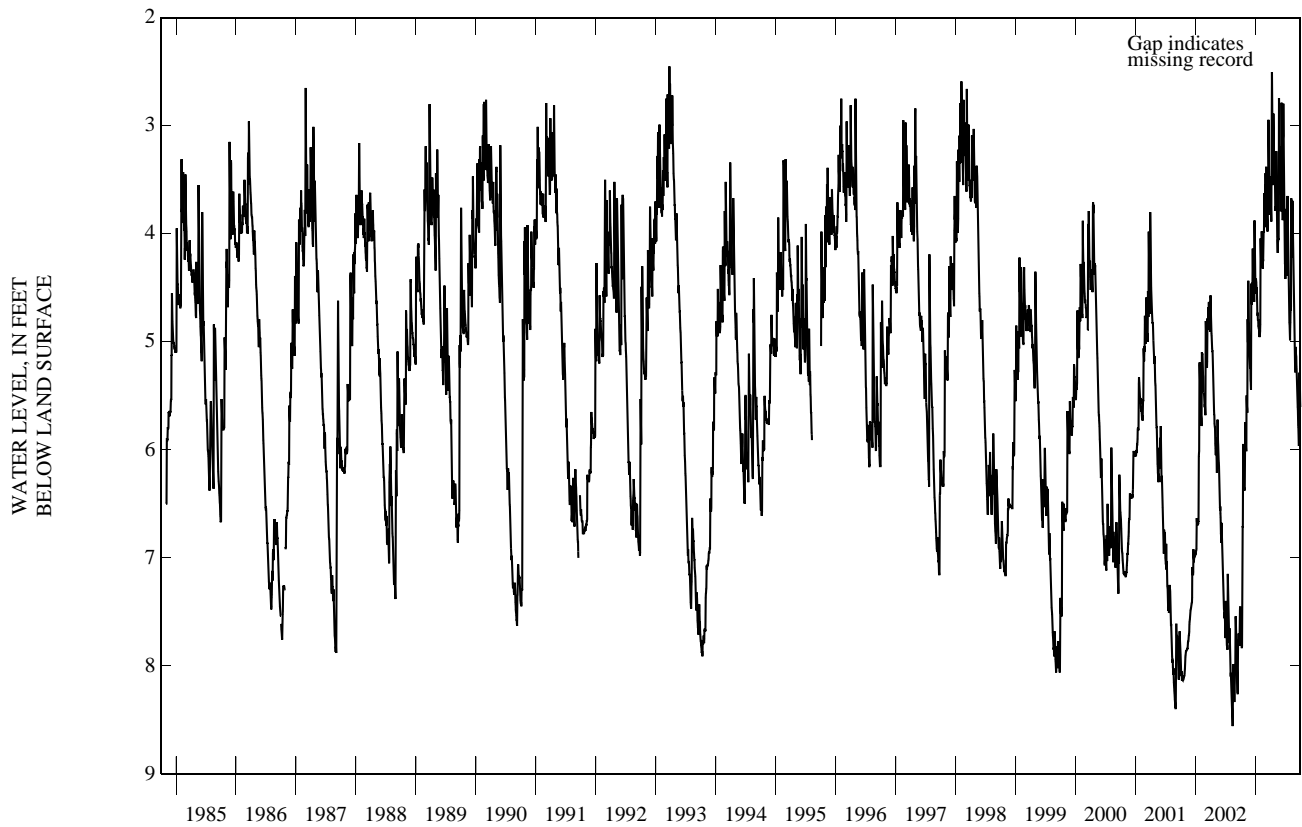
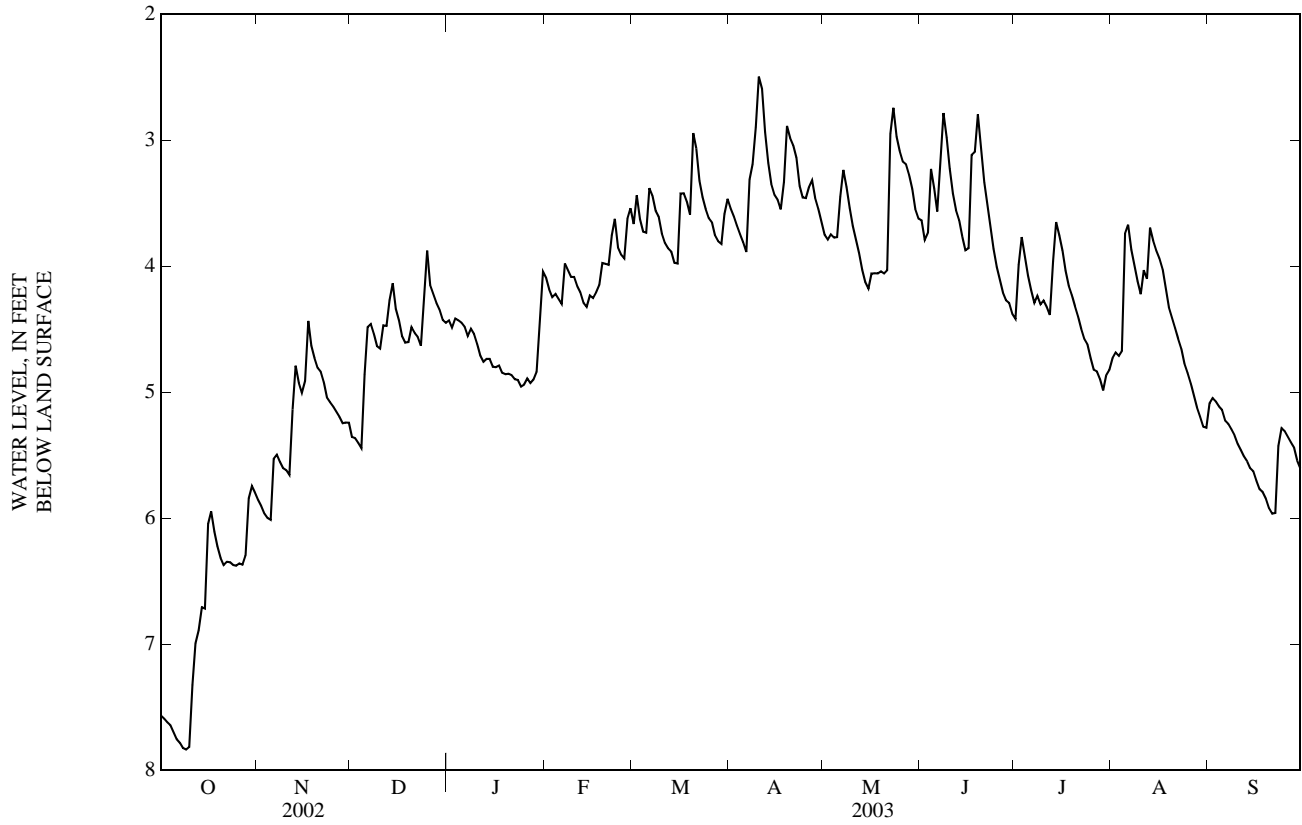
LENOIR COUNTY—Continued

351937077284211. Local number, NC-223; DENR Graingers Research Station well Q25d11; County number, LN-105.



MECKLENBURG COUNTY—Continued

351730080524203. Local number, NC-146; County number, ME-301.



GROUND-WATER LEVELS

NEW HANOVER COUNTY

335824077550001. County number, NH-525; Kure Beach Research Station well KB-1.

LOCATION.--Lat 33°58'24.2", long 77°54'59.6", Hydrologic Unit 03030005, 2 mi south of Kure Beach and 500 ft north of Fort Fisher Museum. Owner: U.S. Geological Survey.

AQUIFER.--Black Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 790 ft, diameter 2 in., cased to 760 ft, screened interval from 760 to 790 ft. Original corehole drilled to a depth of 1,386 ft.

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

DATUM.--Land-surface datum is 10 ft above NGVD of 1929 (from topographic map). Measuring point: 3 ft above land-surface datum.

REMARKS.--Water level is affected by tidal fluctuations.

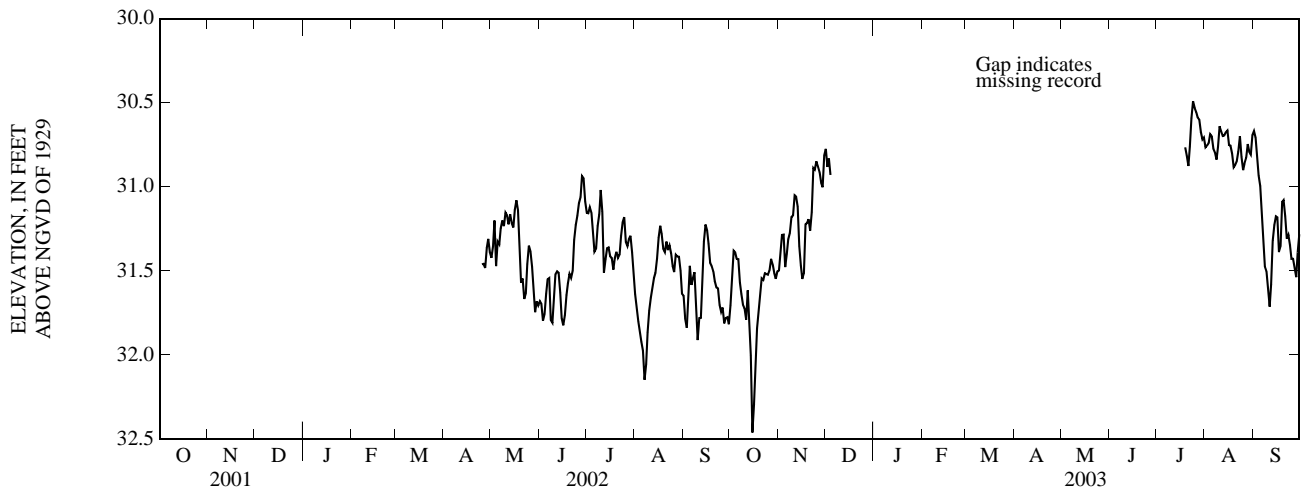
PERIOD OF RECORD.--April 2002 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 32.9 ft above NGVD, Aug. 7, 2002; lowest water level recorded, 30.0 ft above NGVD, July 24, Aug. 10, 11, 2003.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.7	31.5	30.8	---	---	---	---	---	---	---	30.8	30.7
2	31.5	31.4	30.9	---	---	---	---	---	---	---	30.8	30.7
3	31.4	31.3	30.8	---	---	---	---	---	---	---	30.7	30.8
4	31.4	31.3	30.9	---	---	---	---	---	---	---	30.7	30.9
5	31.4	31.5	---	---	---	---	---	---	---	---	30.7	31.0
6	31.4	31.4	---	---	---	---	---	---	---	---	30.8	31.1
7	31.6	31.3	---	---	---	---	---	---	---	---	30.8	31.3
8	31.6	31.3	---	---	---	---	---	---	---	---	30.8	31.5
9	31.7	31.2	---	---	---	---	---	---	---	---	30.8	31.5
10	31.7	31.2	---	---	---	---	---	---	---	---	30.6	31.6
11	31.8	31.1	---	---	---	---	---	---	---	---	30.7	31.7
12	31.6	31.1	---	---	---	---	---	---	---	---	30.7	31.6
13	31.8	31.1	---	---	---	---	---	---	---	---	30.7	31.3
14	32.0	31.4	---	---	---	---	---	---	---	---	30.7	31.2
15	32.5	31.5	---	---	---	---	---	---	---	---	30.7	31.2
16	32.3	31.5	---	---	---	---	---	---	---	---	30.8	31.2
17	32.0	31.5	---	---	---	---	---	---	---	---	30.8	31.4
18	31.8	31.2	---	---	---	---	---	---	---	---	30.8	31.4
19	31.7	31.2	---	---	---	---	---	---	---	30.8	30.9	31.1
20	31.6	31.2	---	---	---	---	---	---	---	30.8	30.9	31.1
21	31.5	31.3	---	---	---	---	---	---	---	30.9	30.8	31.2
22	31.6	31.2	---	---	---	---	---	---	---	30.8	30.8	31.3
23	31.5	30.9	---	---	---	---	---	---	---	30.6	30.7	31.3
24	31.5	30.9	---	---	---	---	---	---	---	30.5	30.8	31.3
25	31.5	30.8	---	---	---	---	---	---	---	30.5	30.9	31.4
26	31.5	30.9	---	---	---	---	---	---	---	30.6	30.9	31.4
27	31.4	30.9	---	---	---	---	---	---	---	30.6	30.8	31.5
28	31.5	31.0	---	---	---	---	---	---	---	30.6	30.7	31.5
29	31.5	31.0	---	---	---	---	---	---	---	30.7	30.8	31.4
30	31.5	30.8	---	---	---	---	---	---	---	30.7	30.8	31.3
31	31.5	---	---	---	---	---	---	---	---	30.7	30.7	---

WTR YR 2003 MEAN 31.2 MAX 32.5 MIN 30.5



GROUND-WATER LEVELS

ONslow COUNTY

344425077272501. Local number, NC-52; County number, ON-035.

LOCATION.--Lat 34°44'19", long 77°27'28", Hydrologic Unit 03030001, southwest of Jacksonville, 0.25 mi east of U.S. Highway 17 at U.S. Marine Corps Camp Geiger, and 2 mi south of U.S. Highway 258. Owner: U.S. Marine Corps.

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled abandoned supply well, depth 70 ft, diameter 18 in. to 23 ft, open hole from 23 to 70 ft; measured depth 68 ft, January 1974.

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

DATUM.--Land-surface datum is 17 ft above NGVD of 1929 (from topographic map). Measuring point: Top of instrument shelf, 1.83 ft above land-surface datum (since April 1993).

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--January 1963 to current year. Continuous record began December 1966.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.19 ft below land-surface datum, Sept. 16, 1999; lowest water level recorded, 10.44 ft below land-surface datum, Jan. 3, 1966.

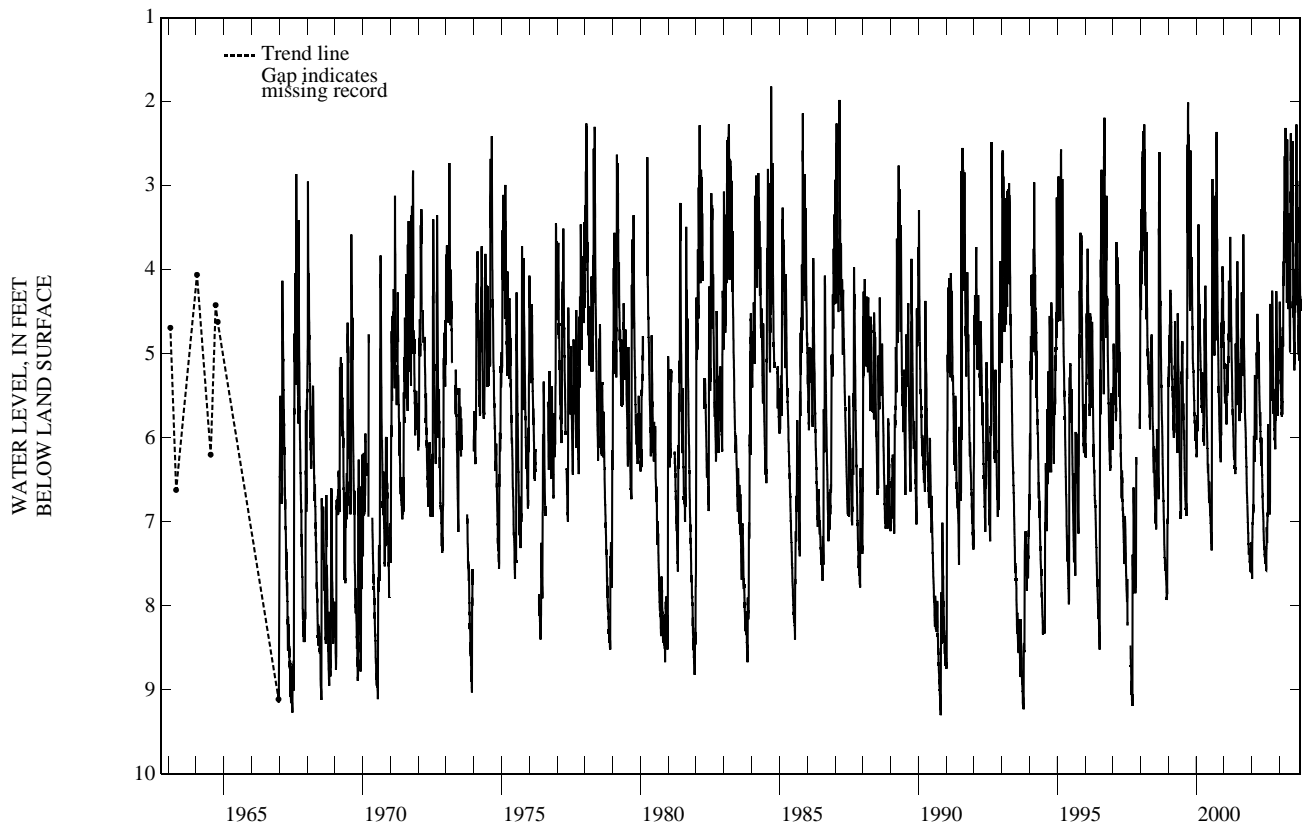
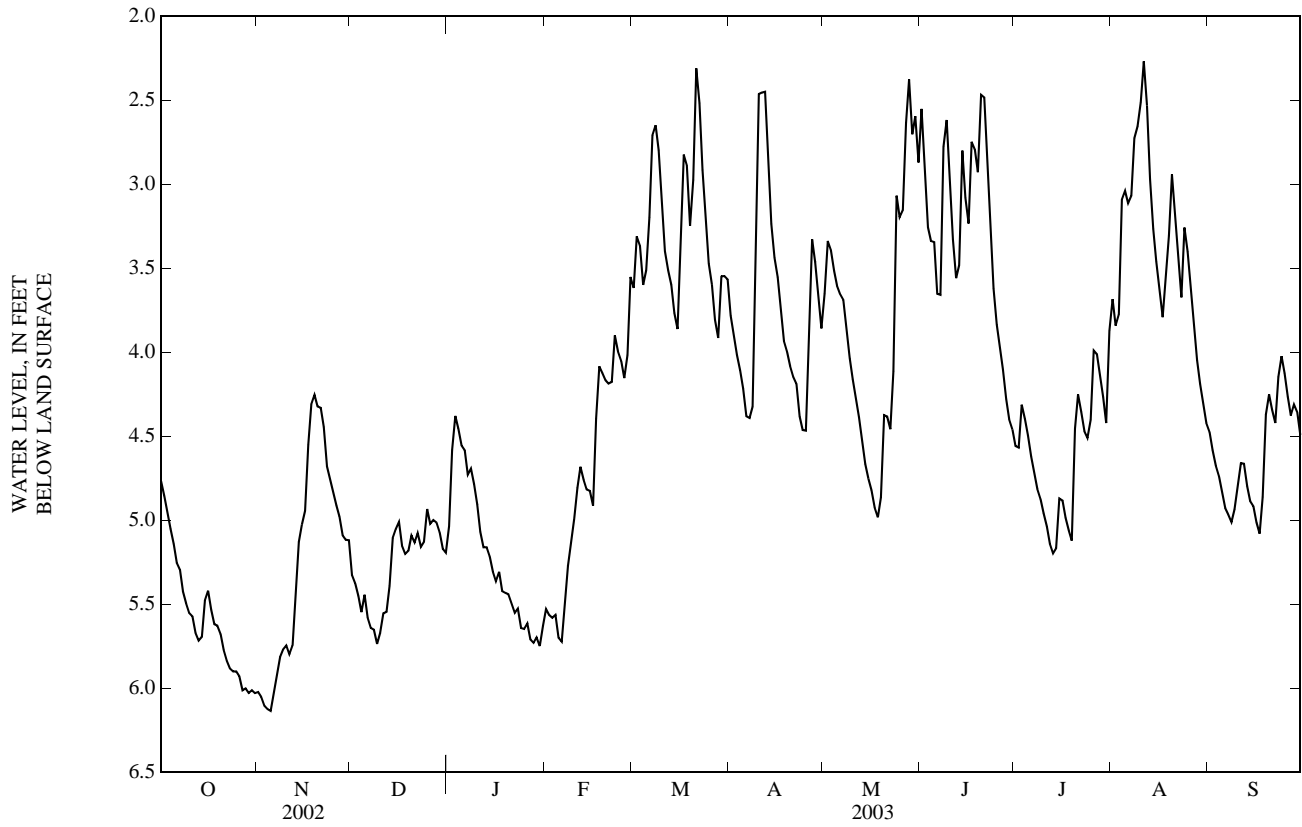
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.77	6.02	5.32	5.04	5.53	3.62	3.78	3.65	2.55	4.56	3.68	4.48
2	4.86	6.05	5.37	4.58	5.56	3.31	3.90	3.34	2.96	4.57	3.84	4.58
3	4.95	6.10	5.45	4.38	5.58	3.37	4.02	3.39	3.26	4.31	3.78	4.67
4	5.05	6.12	5.55	4.46	5.56	3.60	4.11	3.51	3.34	4.40	3.09	4.74
5	5.14	6.13	5.44	4.56	5.70	3.51	4.22	3.61	3.35	4.50	3.04	4.83
6	5.25	6.04	5.58	4.58	5.72	3.20	4.38	3.66	3.65	4.62	3.11	4.93
7	5.29	5.92	5.64	4.73	5.51	2.71	4.39	3.69	3.66	4.72	3.07	4.97
8	5.42	5.81	5.65	4.69	5.27	2.65	4.32	3.86	2.78	4.82	2.73	5.01
9	5.50	5.77	5.74	4.78	5.14	2.80	3.51	4.04	2.62	4.88	2.66	4.93
10	5.55	5.75	5.67	4.91	4.99	3.14	2.47	4.16	3.00	4.96	2.51	4.80
11	5.57	5.80	5.56	5.07	4.81	3.40	2.46	4.27	3.33	5.04	2.27	4.66
12	5.67	5.74	5.55	5.16	4.68	3.51	2.45	4.39	3.56	5.14	2.53	4.66
13	5.72	5.46	5.39	5.16	4.76	3.60	2.86	4.54	3.48	5.20	2.97	4.80
14	5.69	5.13	5.11	5.21	4.82	3.77	3.24	4.67	2.80	5.17	3.27	4.89
15	5.48	5.03	5.05	5.31	4.83	3.86	3.44	4.75	3.08	4.87	3.46	4.92
16	5.42	4.94	5.01	5.36	4.91	3.31	3.56	4.82	3.23	4.88	3.62	5.01
17	5.53	4.55	5.15	5.31	4.39	2.82	3.73	4.92	2.75	4.98	3.79	5.08
18	5.62	4.31	5.20	5.42	4.08	2.89	3.93	4.98	2.79	5.06	3.58	4.86
19	5.63	4.25	5.18	5.43	4.12	3.25	4.00	4.86	2.93	5.12	3.31	4.37
20	5.68	4.32	5.09	5.44	4.17	2.98	4.08	4.38	2.47	4.45	2.94	4.25
21	5.77	4.33	5.13	5.50	4.19	2.31	4.15	4.38	2.48	4.25	3.17	4.34
22	5.84	4.45	5.08	5.55	4.18	2.52	4.19	4.46	2.93	4.36	3.44	4.42
23	5.88	4.68	5.16	5.53	3.90	2.92	4.38	4.11	3.30	4.47	3.67	4.15
24	5.90	4.76	5.13	5.64	4.00	3.19	4.46	3.07	3.62	4.51	3.26	4.02
25	5.90	4.84	4.93	5.65	4.05	3.47	4.47	3.20	3.84	4.40	3.40	4.13
26	5.93	4.91	5.02	5.61	4.15	3.60	3.83	3.15	3.97	3.99	3.63	4.27
27	6.01	4.98	5.00	5.71	4.02	3.81	3.33	2.64	4.11	4.01	3.85	4.38
28	6.00	5.09	5.01	5.73	3.55	3.92	3.46	2.38	4.28	4.13	4.05	4.31
29	6.03	5.12	5.07	5.70	---	3.55	3.65	2.70	4.40	4.27	4.19	4.36
30	6.01	5.12	5.17	5.75	---	3.55	3.86	2.60	4.46	4.42	4.31	4.49
31	6.03	---	5.19	5.63	---	3.57	---	2.87	---	3.87	4.42	---

WTR YR 2003 MEAN 4.40 HIGH 2.27 LOW 6.13

GROUND-WATER LEVELS
ONSWLOW COUNTY—Continued

344425077272501. Local number, NC-52; County number, ON-035.



GROUND-WATER LEVELS
ONslow COUNTY—Continued

343512077265601. County number, ON-218; Rifle Range Well RR-97A.

LOCATION.--Lat 34°35'13", long 77°26'55", Hydrologic Unit 03030001, at U.S. Marine Corps Base, Camp Lejeune Rifle Range. Owner: U.S. Marine Corps.
AQUIFER.--Peedee aquifer.

WELL CHARACTERISTICS.--Drilled supply well, depth 437 ft, diameter 8 in., cased to 365 ft, screened interval from 365 to 395 ft and 415 to 425 ft.

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

DATUM.--Land-surface datum is 50 ft above NGVD of 1929 (from topographic map). Measuring point: Top of shelter floor, 1.97 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

PERIOD OF RECORD.--October 1994 to current year. Prior to October 1, 1997 published as ON-292, Rifle Range Well RR-97.

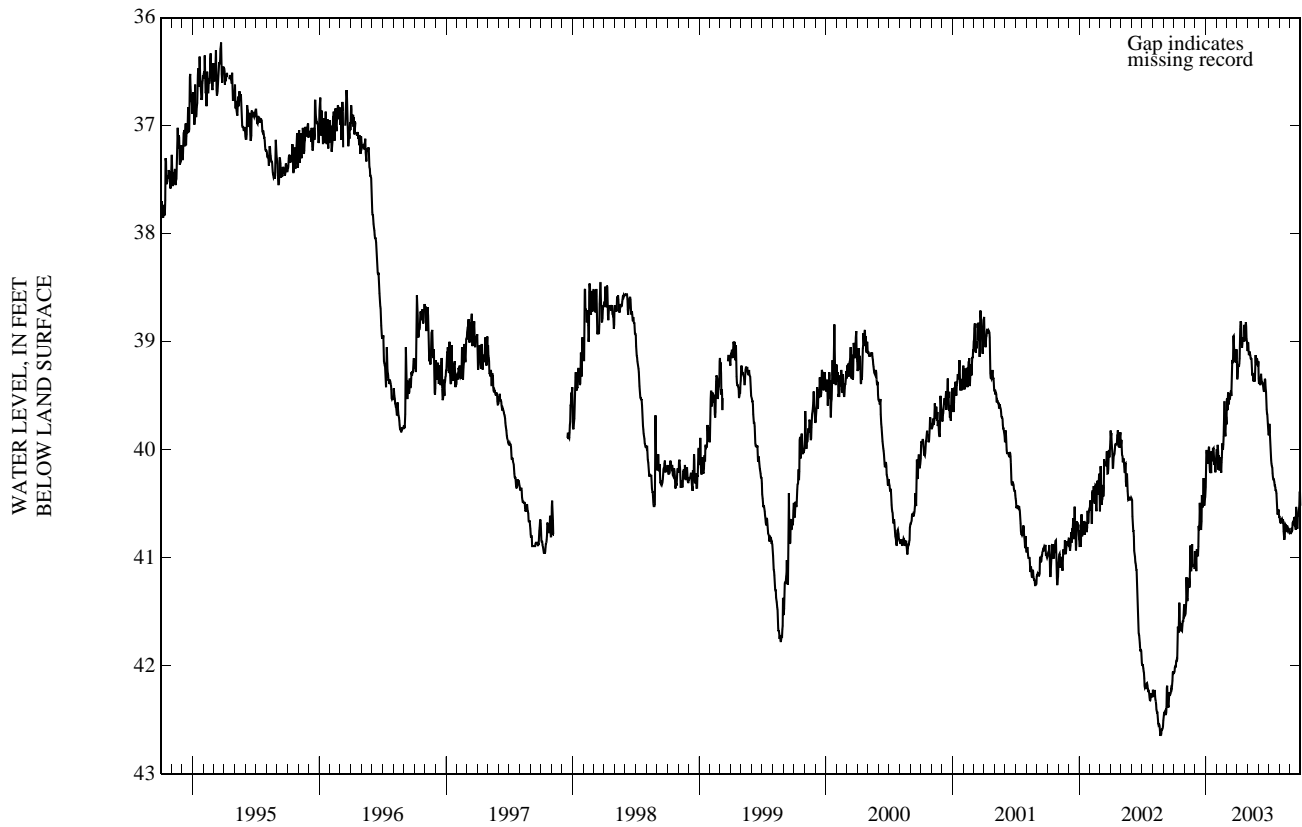
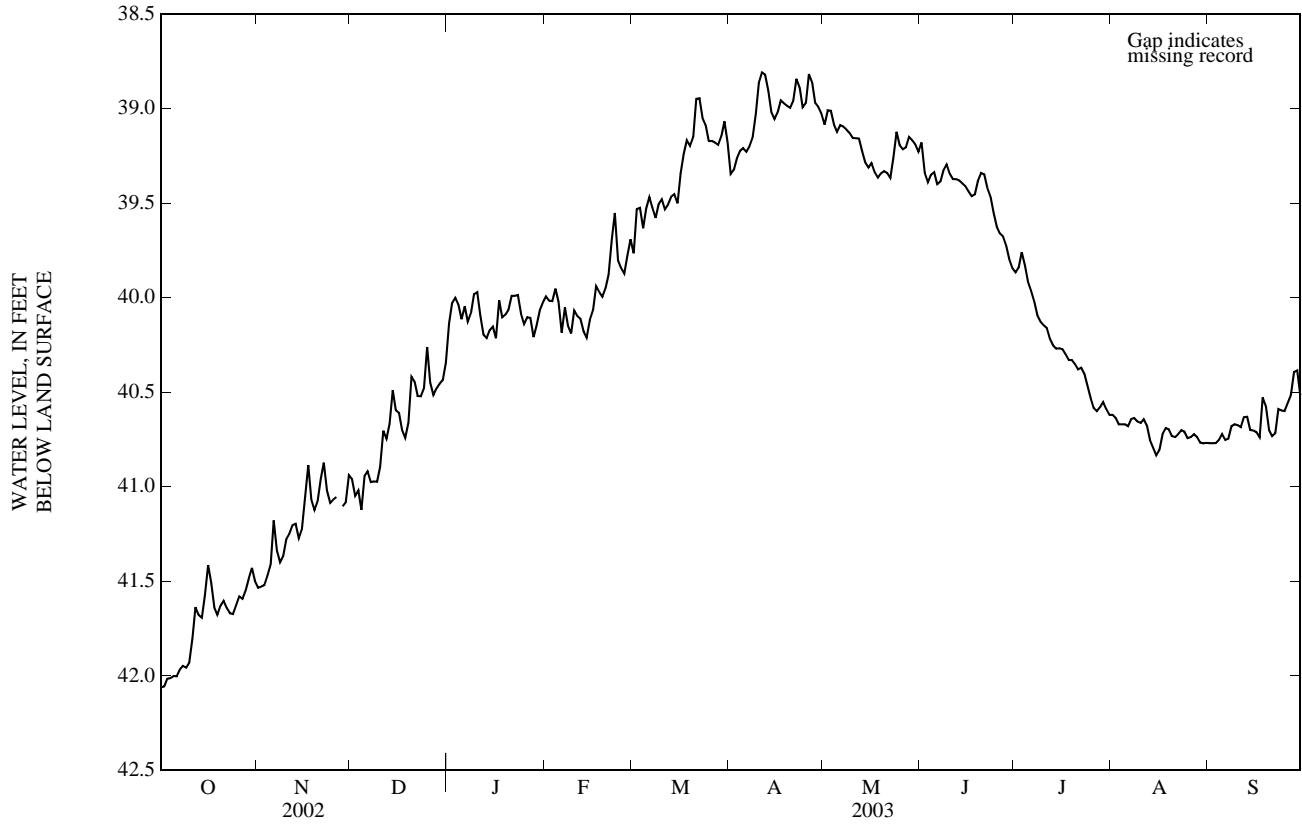
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.19 ft below land-surface datum, Mar. 23, 1995; lowest water level recorded, 42.69 ft below land-surface datum, Aug. 22, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42.06	41.53	40.96	40.14	39.99	39.77	39.35	39.09	39.18	39.87	40.62	40.77
2	42.06	41.53	41.05	40.03	40.02	39.53	39.32	39.01	39.34	39.84	40.64	40.77
3	42.02	41.52	41.02	40.00	40.02	39.52	39.26	39.01	39.39	39.76	40.67	40.77
4	42.01	41.47	41.12	40.04	39.95	39.63	39.22	39.08	39.35	39.83	40.67	40.75
5	42.00	41.41	40.94	40.11	40.02	39.53	39.21	39.12	39.34	39.92	40.67	40.72
6	42.00	41.18	40.92	40.05	40.19	39.47	39.23	39.09	39.40	39.96	40.68	40.75
7	41.97	41.34	40.98	40.13	40.05	39.52	39.20	39.09	39.39	40.02	40.64	40.75
8	41.95	41.40	40.97	40.08	40.15	39.58	39.15	39.11	39.33	40.09	40.64	40.68
9	41.96	41.37	40.97	39.98	40.19	39.51	39.03	39.13	39.30	40.13	40.66	40.67
10	41.93	41.28	40.90	39.97	40.07	39.48	38.87	39.15	39.34	40.15	40.66	40.67
11	41.80	41.25	40.70	40.09	40.10	39.53	38.81	39.16	39.37	40.16	40.64	40.69
12	41.64	41.20	40.75	40.20	40.11	39.51	38.82	39.16	39.37	40.22	40.68	40.63
13	41.68	41.20	40.67	40.21	40.18	39.47	38.90	39.23	39.38	40.25	40.75	40.63
14	41.69	41.27	40.49	40.17	40.21	39.45	39.02	39.28	39.40	40.27	40.79	40.70
15	41.57	41.23	40.60	40.15	40.12	39.50	39.06	39.31	39.41	40.27	40.83	40.70
16	41.41	41.06	40.61	40.21	40.07	39.34	39.02	39.29	39.44	40.27	40.80	40.71
17	41.51	40.89	40.70	40.01	39.94	39.24	38.96	39.34	39.46	40.30	40.72	40.74
18	41.64	41.07	40.74	40.10	39.97	39.17	38.97	39.37	39.45	40.33	40.69	40.53
19	41.68	41.12	40.66	40.09	40.00	39.20	38.98	39.34	39.38	40.33	40.70	40.57
20	41.63	41.08	40.42	40.06	39.95	39.15	39.00	39.33	39.34	40.35	40.73	40.70
21	41.60	40.96	40.45	39.99	39.88	38.95	38.96	39.34	39.35	40.38	40.74	40.73
22	41.64	40.87	40.52	39.99	39.69	38.95	38.84	39.37	39.42	40.37	40.72	40.72
23	41.67	41.02	40.52	39.99	39.55	39.05	38.89	39.26	39.47	40.40	40.70	40.59
24	41.67	41.09	40.48	40.09	39.80	39.09	38.99	39.12	39.55	40.47	40.71	40.60
25	41.63	41.07	40.26	40.14	39.84	39.17	38.97	39.19	39.62	40.53	40.74	40.60
26	41.58	41.05	40.45	40.10	39.87	39.17	38.82	39.22	39.66	40.58	40.74	40.56
27	41.59	---	40.52	40.11	39.78	39.18	38.86	39.20	39.68	40.60	40.72	40.52
28	41.55	41.10	40.48	40.21	39.69	39.19	38.97	39.15	39.72	40.58	40.74	40.39
29	41.49	41.08	40.45	40.15	---	39.15	38.99	39.17	39.80	40.55	40.77	40.39
30	41.43	40.94	40.44	40.07	---	39.07	39.03	39.19	39.84	40.59	40.77	40.52
31	41.50	---	40.34	40.02	---	39.18	---	39.23	---	40.62	40.77	---
WTR YR	2003	MEAN 40.19	HIGH 38.81	LOW 42.06								

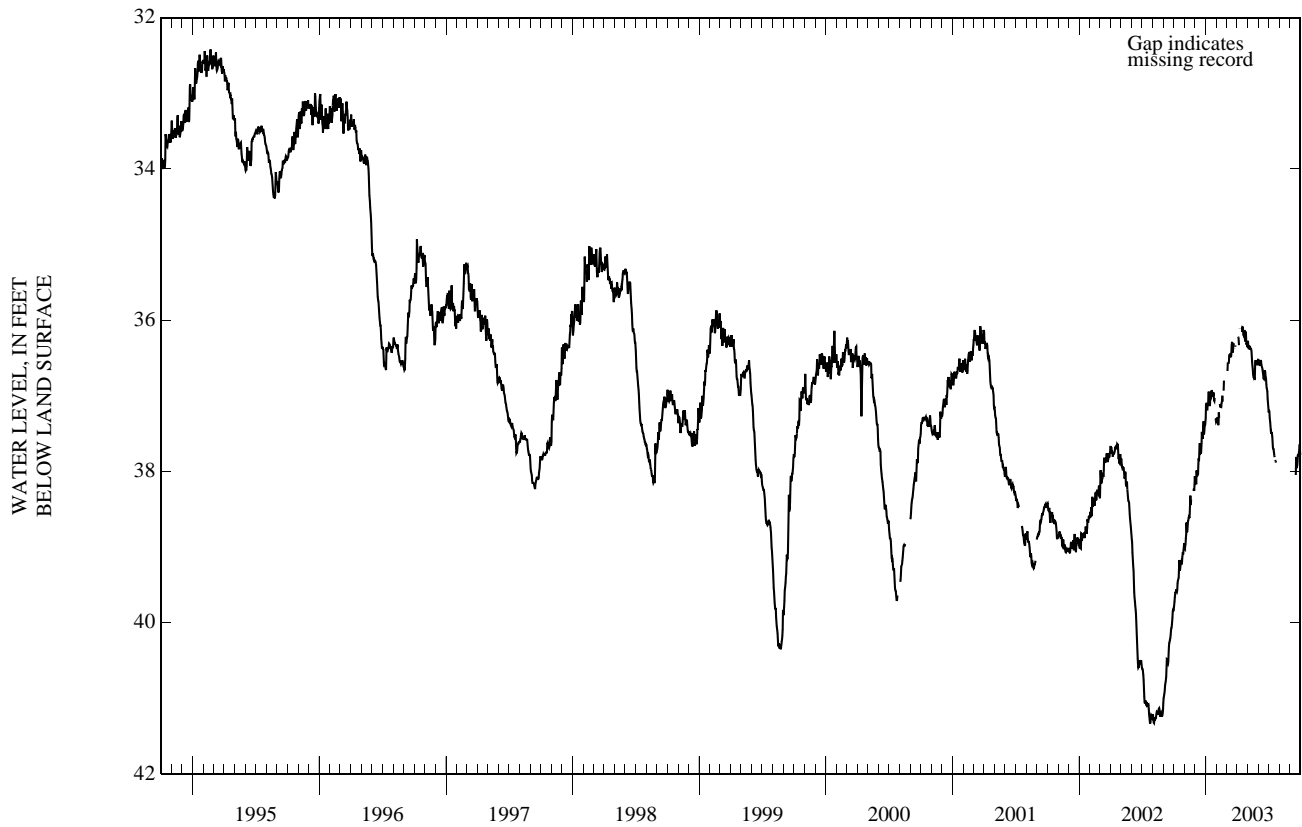
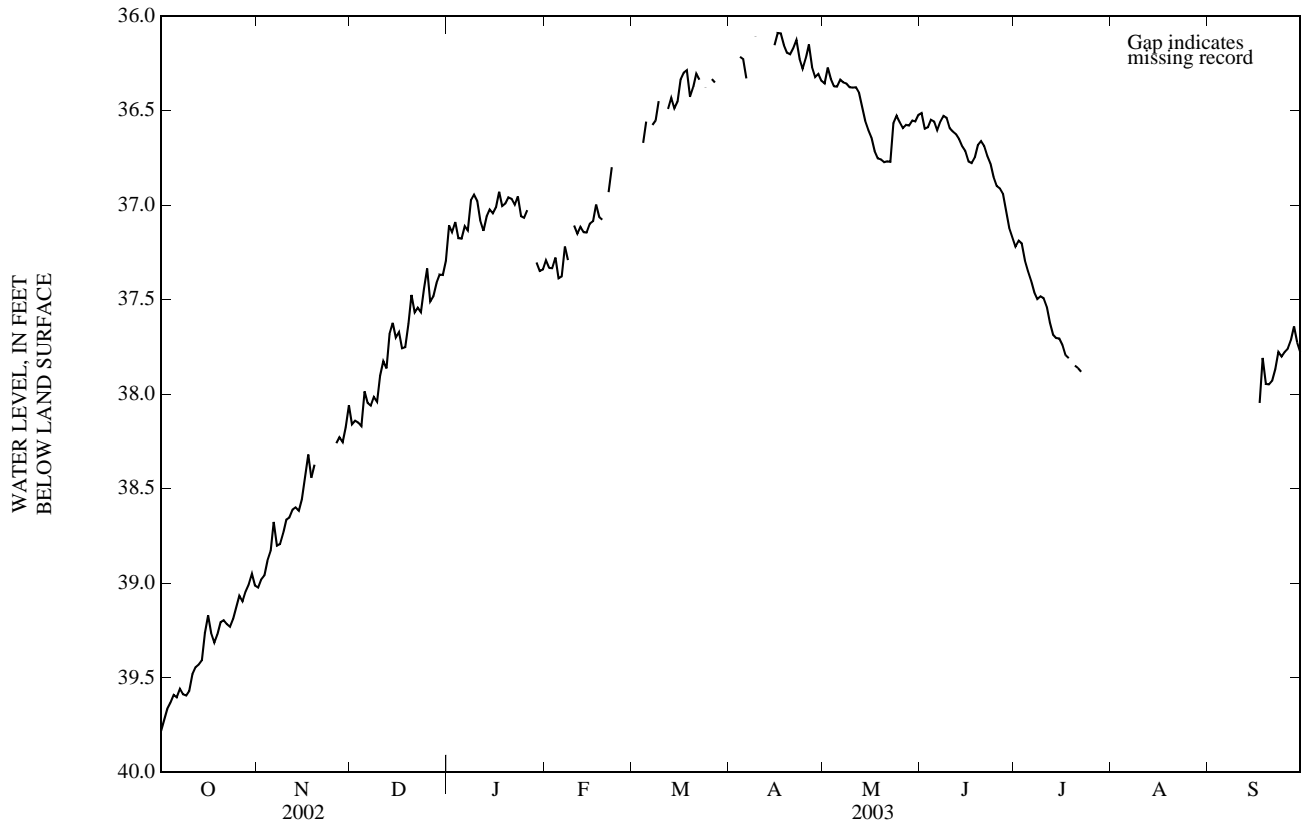
GROUND-WATER LEVELS
ONslow COUNTY—Continued

343512077265601. County number, ON-218; Rifle Range Well RR-97A.



GROUND-WATER LEVELS
ONslow COUNTY—Continued

343641077290103. County number, ON-227; DENR Dixon Tower Research Station well Y25q3.



GROUND-WATER LEVELS

ONslow COUNTY—Continued

343641077290106. County number, ON-230; DENR Dixon Tower Research Station well Y25q6.

LOCATION.--Lat 34°36'40.5", long 77°28'58.9", Hydrologic Unit 03030001, 1.5 mi. north of Dixon on U.S. Highway 17. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 22.0 ft, diameter 4 in., cased to 18.4 ft, screened interval from 18.4 to 22.0 ft.

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

DATUM.--Land-surface datum is 68 ft above NGVD of 1929, (levels by DENR). Measuring point: Top of shelter floor, 2.52 ft above land-surface datum; revised from 2.10 ft above land-surface datum July 21, 1999.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.37 ft below land-surface datum, Jan. 22, 1995; lowest water level recorded, 12.44 ft below land-surface datum, Aug. 25, 26, 2002.

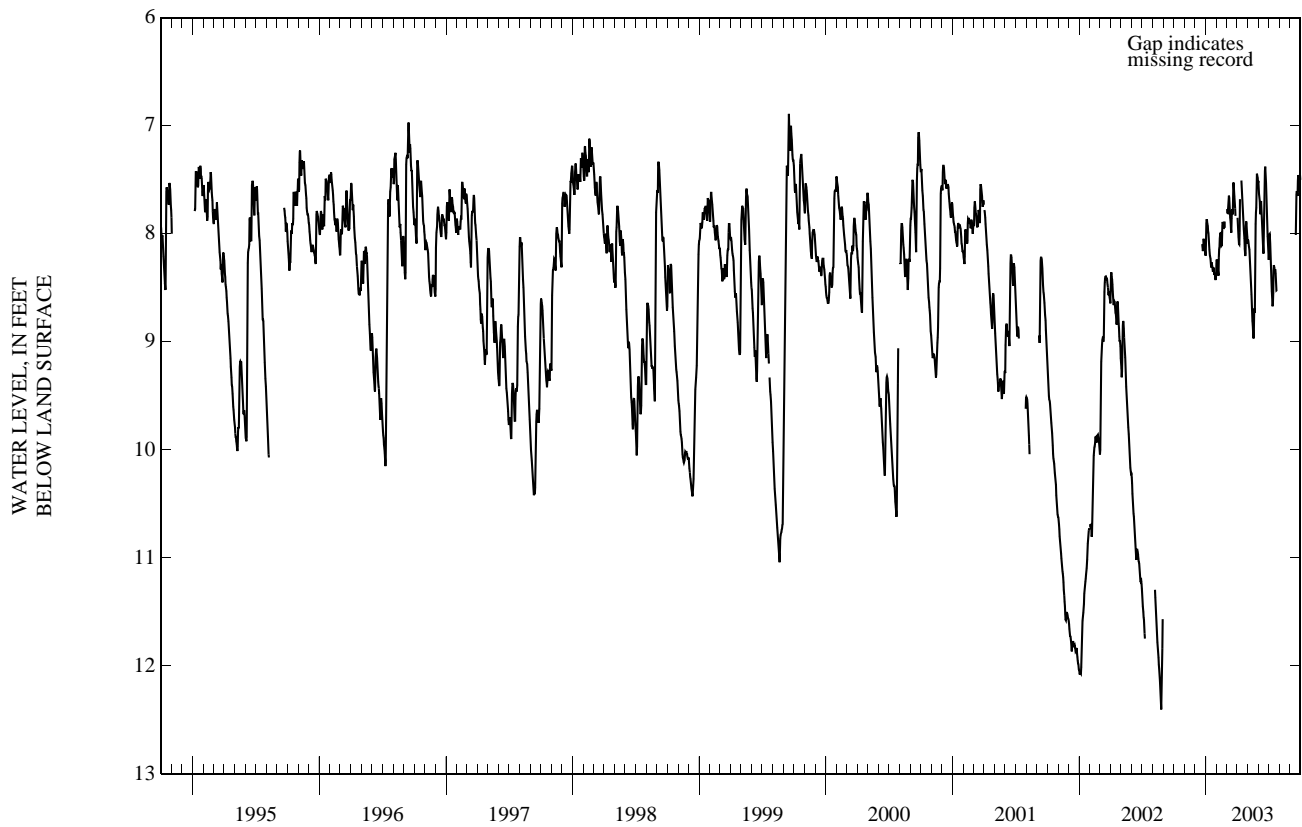
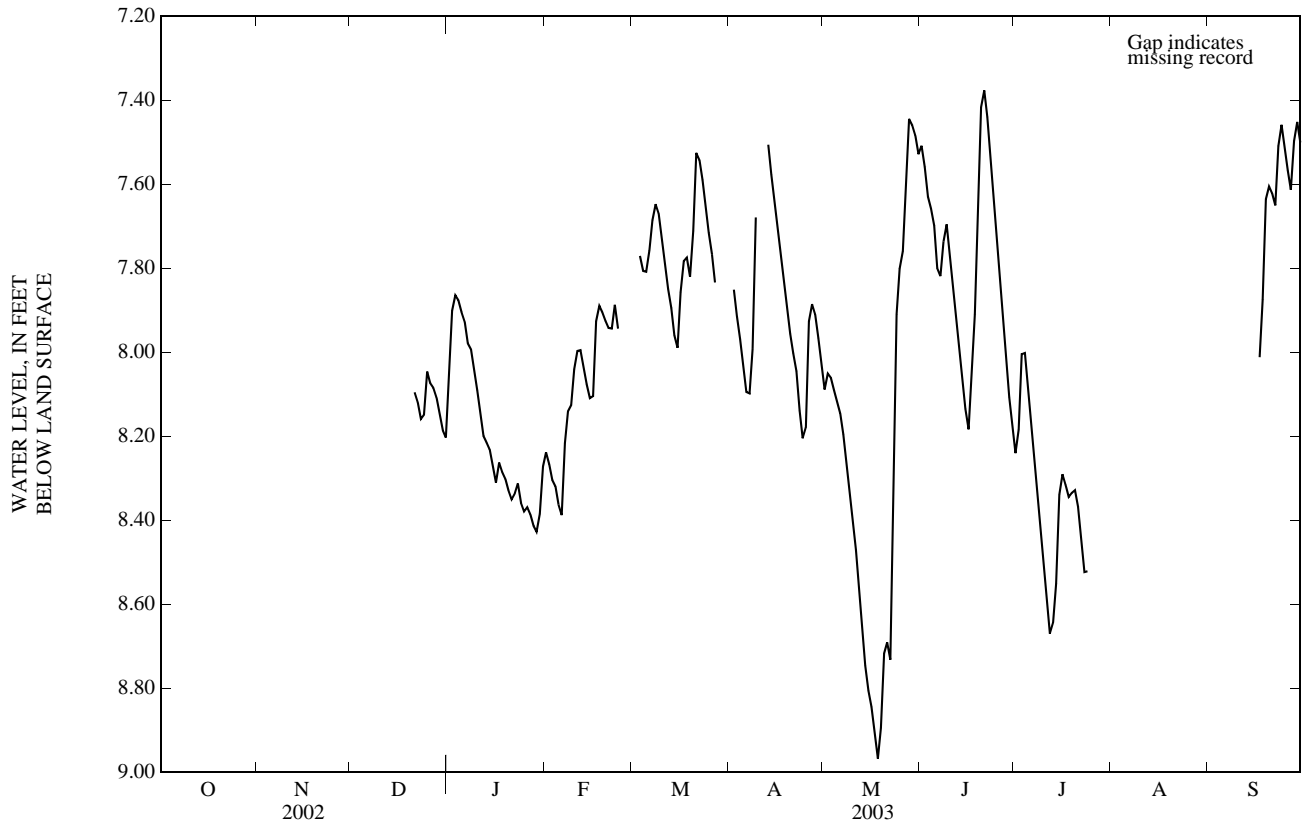
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	8.04	8.24	---	---	8.09	7.51	8.24	---	---
2	---	---	---	7.90	8.27	---	7.85	8.05	7.56	8.18	---	---
3	---	---	---	7.86	8.30	7.77	7.91	8.06	7.63	8.01	---	---
4	---	---	---	7.88	8.32	7.81	7.97	8.09	7.66	8.00	---	---
5	---	---	---	7.91	8.36	7.81	8.03	8.12	7.70	8.09	---	---
6	---	---	---	7.93	8.39	7.76	8.10	8.15	7.80	8.17	---	---
7	---	---	---	7.98	8.22	7.69	8.10	8.20	7.82	8.26	---	---
8	---	---	---	7.99	8.14	7.65	7.99	8.26	7.74	8.36	---	---
9	---	---	---	8.04	8.13	7.67	7.68	8.33	7.70	8.44	---	---
10	---	---	---	8.09	8.04	7.74	---	8.40	7.76	8.53	---	---
11	---	---	---	8.15	8.00	7.80	---	8.47	7.84	8.60	---	---
12	---	---	---	8.20	8.00	7.85	---	8.56	7.92	8.67	---	---
13	---	---	---	8.22	8.04	7.90	7.51	8.66	7.99	8.64	---	---
14	---	---	---	8.23	8.08	7.96	7.58	8.75	8.07	8.55	---	---
15	---	---	---	8.27	8.11	7.99	7.64	8.81	8.14	8.34	---	---
16	---	---	---	8.31	8.10	7.86	7.69	8.84	8.18	8.29	---	---
17	---	---	---	8.26	7.93	7.78	7.76	8.91	8.06	8.32	---	8.01
18	---	---	---	8.28	7.89	7.78	7.83	8.97	7.91	8.34	---	7.88
19	---	---	---	8.30	7.91	7.82	7.89	8.89	7.67	8.34	---	7.64
20	---	---	---	8.33	7.93	7.71	7.96	8.72	7.42	8.33	---	7.61
21	---	---	8.10	8.35	7.94	7.53	8.00	8.69	7.38	8.37	---	7.62
22	---	---	8.12	8.34	7.94	7.54	8.05	8.73	7.44	8.44	---	7.65
23	---	---	8.16	8.31	7.89	7.59	8.14	8.36	7.53	8.52	---	7.51
24	---	---	8.15	8.36	7.94	7.65	8.21	7.91	7.64	8.52	---	7.46
25	---	---	8.05	8.38	---	7.72	8.18	7.80	7.74	---	---	7.51
26	---	---	8.07	8.37	---	7.77	7.93	7.76	7.83	---	---	7.57
27	---	---	8.09	8.39	---	7.83	7.89	7.58	7.93	---	---	7.61
28	---	---	8.11	8.41	---	---	7.91	7.44	8.02	---	---	7.50
29	---	---	8.15	8.43	---	---	7.97	7.46	8.11	---	---	7.45
30	---	---	8.19	8.38	---	---	8.03	7.48	8.18	---	---	7.50
31	---	---	8.20	8.27	---	---	---	7.53	---	---	---	---

WTR YR 2003 MEAN 8.03 HIGH 7.38 LOW 8.97

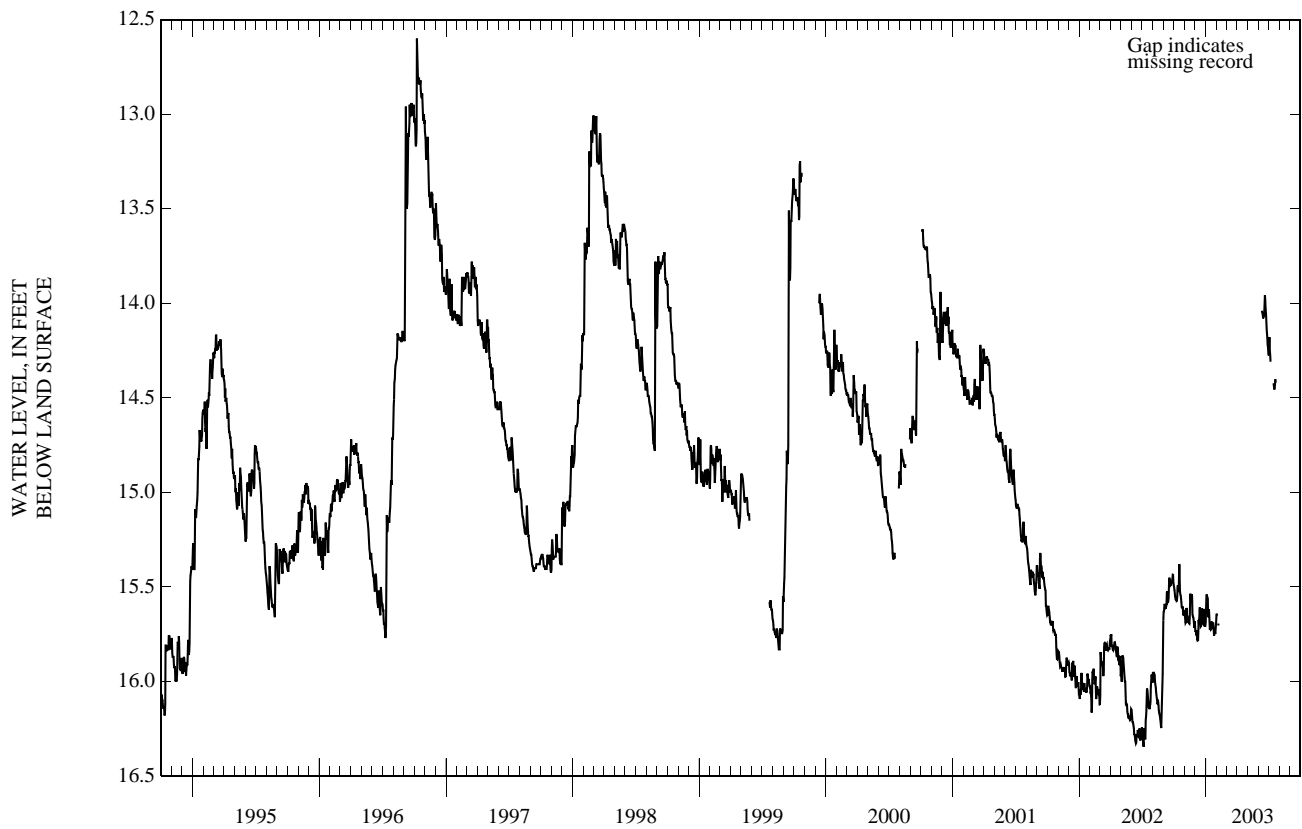
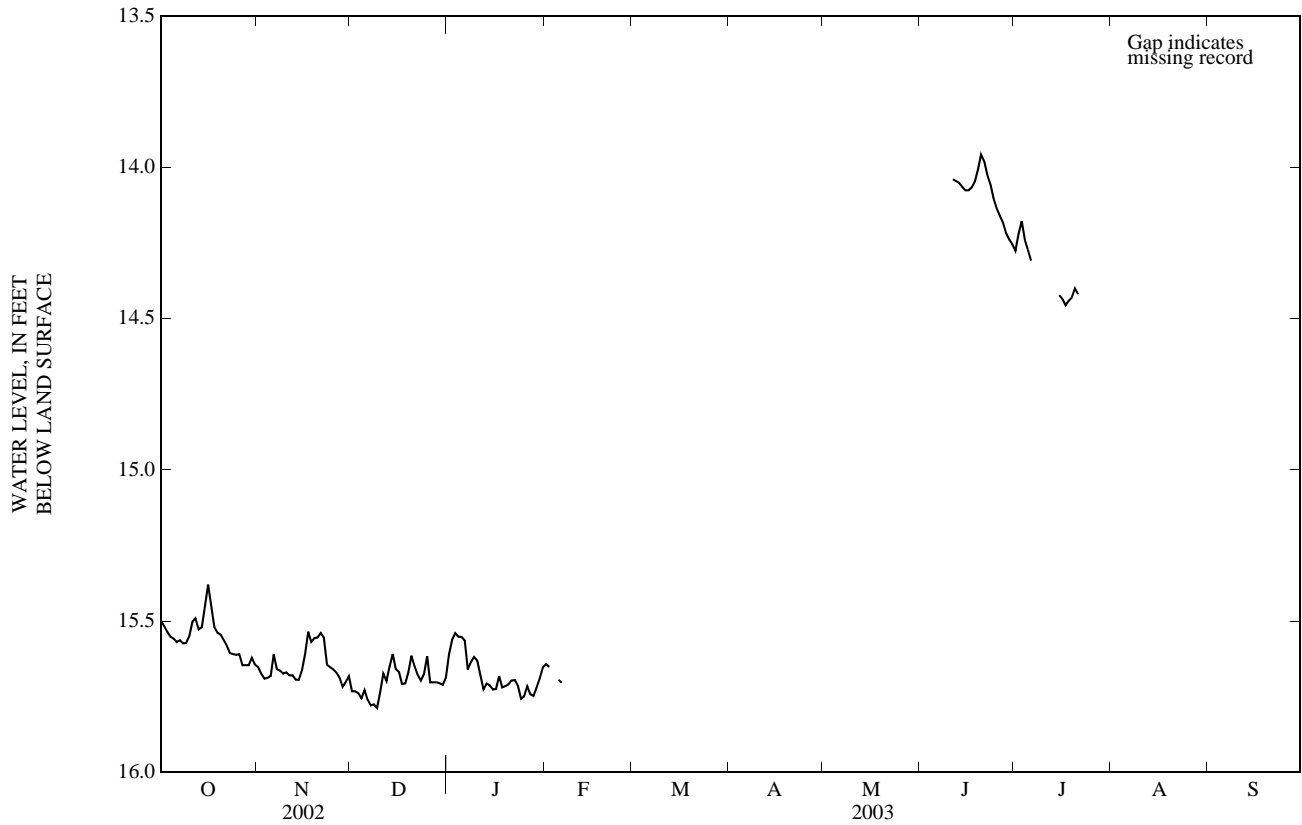
GROUND-WATER LEVELS
ON SLOW COUNTY—Continued

343641077290106. County number, ON-230; DENR Dixon Tower Research Station well Y25q6.



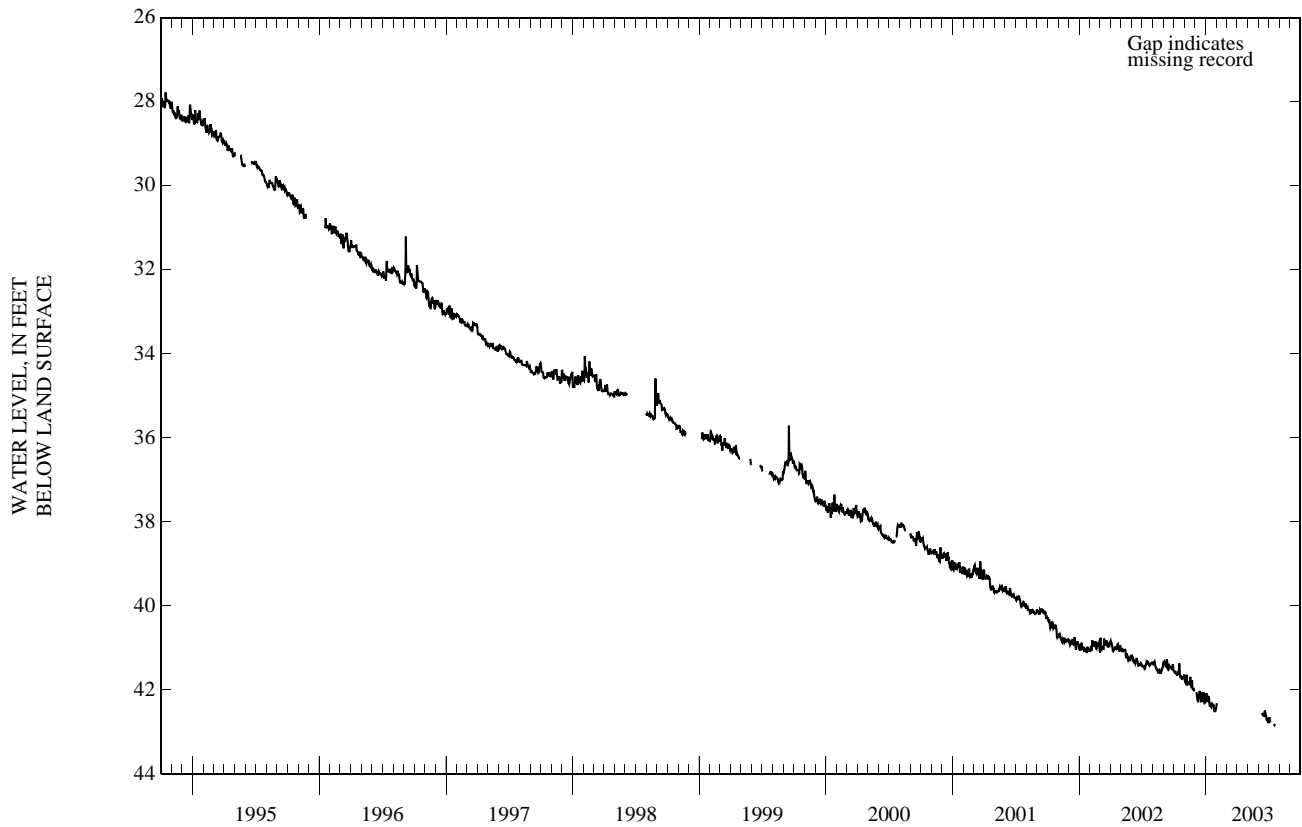
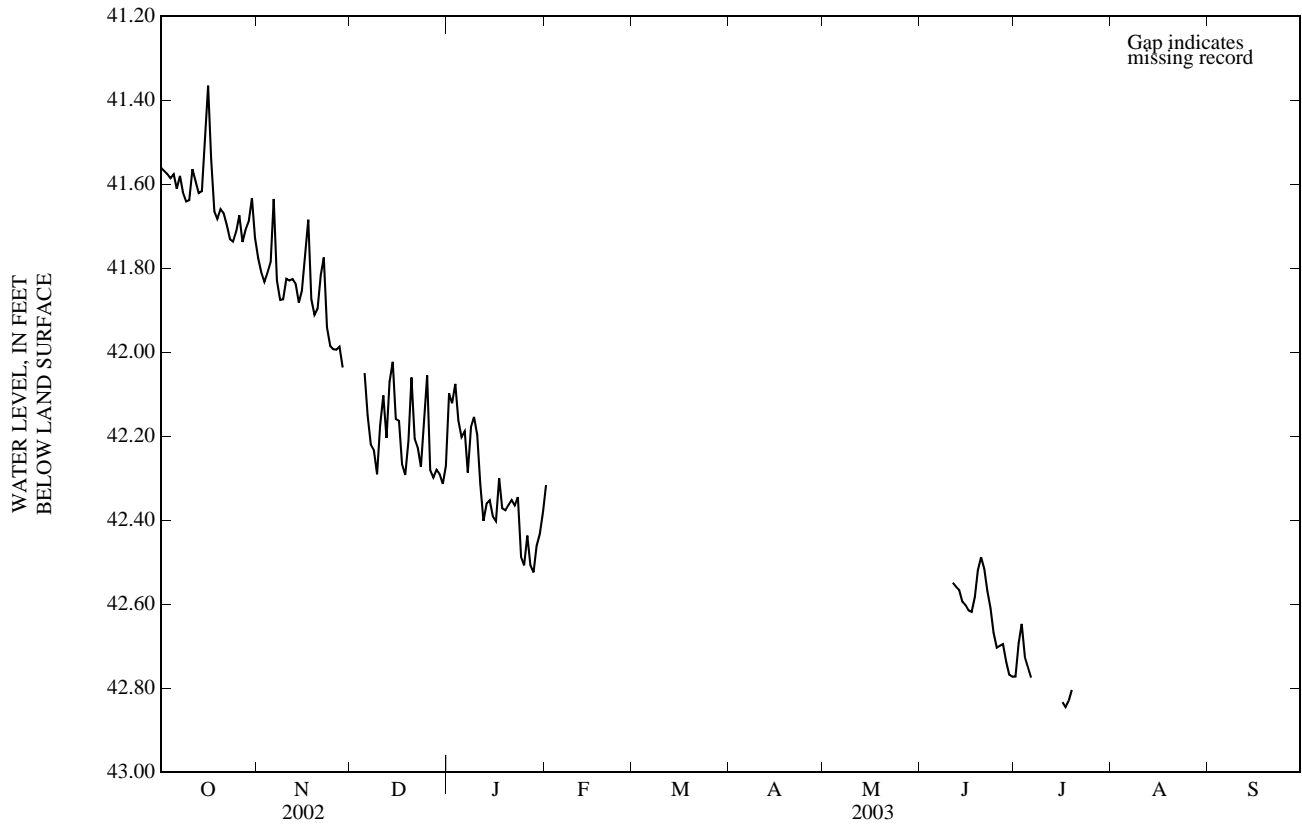
GROUND-WATER LEVELS
ONslow COUNTY—Continued

344139077211201. County number, ON-255; DENR Hadnot Point Research Station well X24s1.



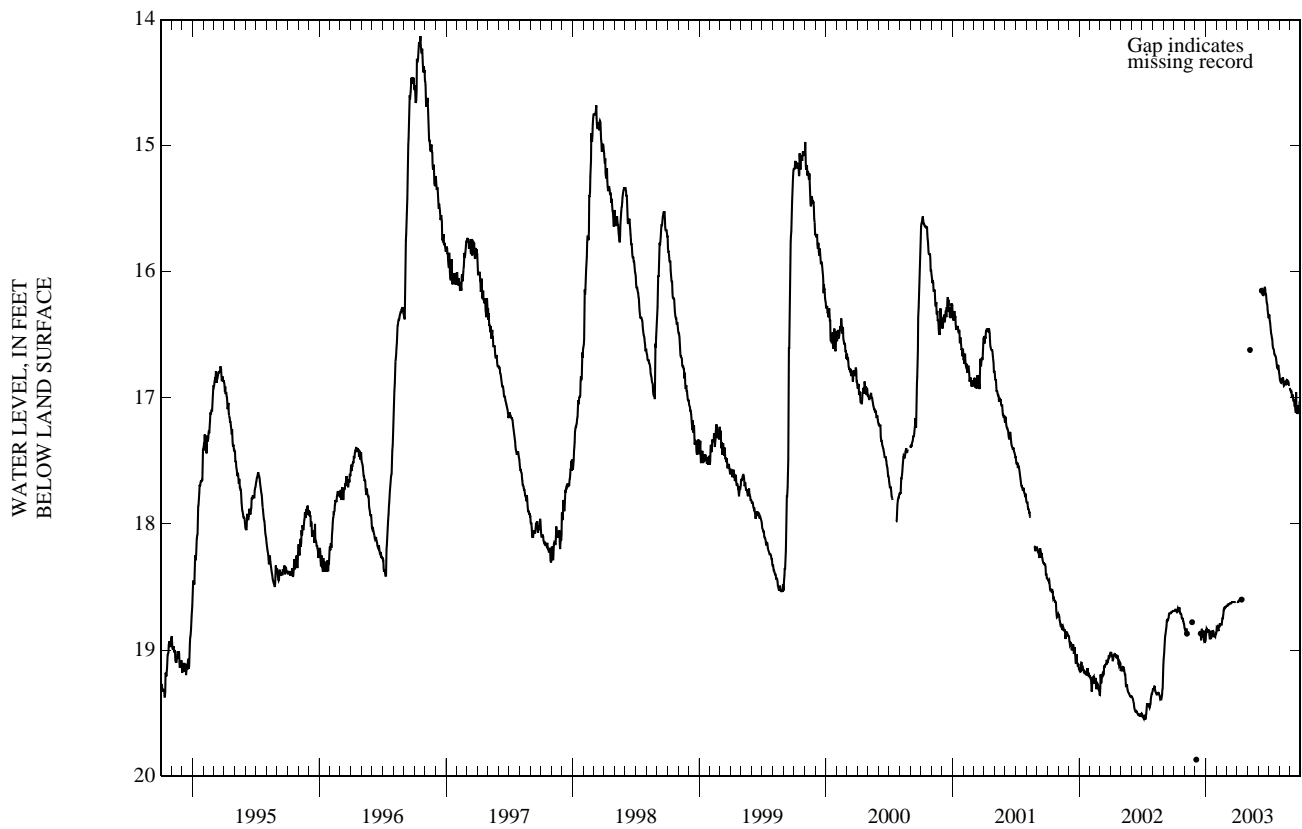
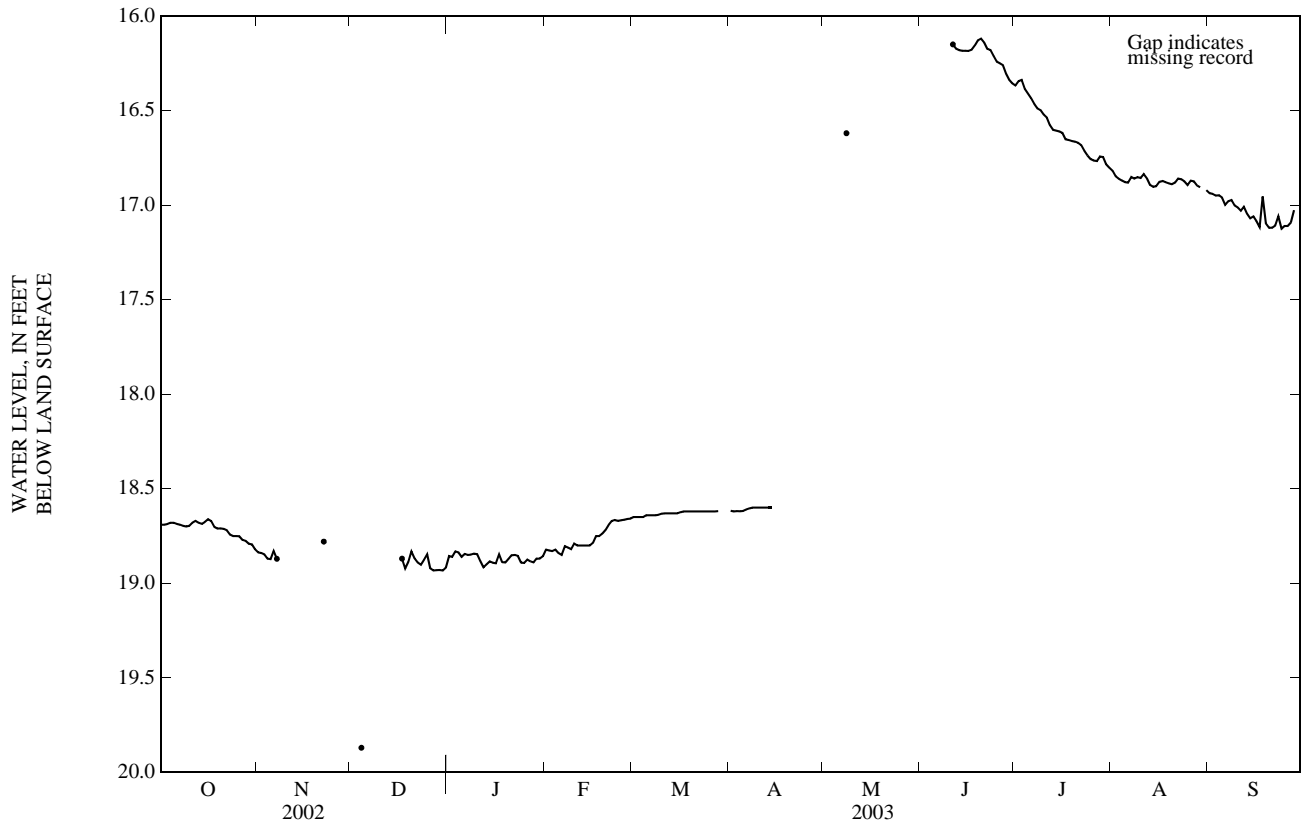
GROUND-WATER LEVELS
ONslow COUNTY—Continued

344139077211202. County number, ON-256; DENR Hadnot Point Research Station well X24s2.



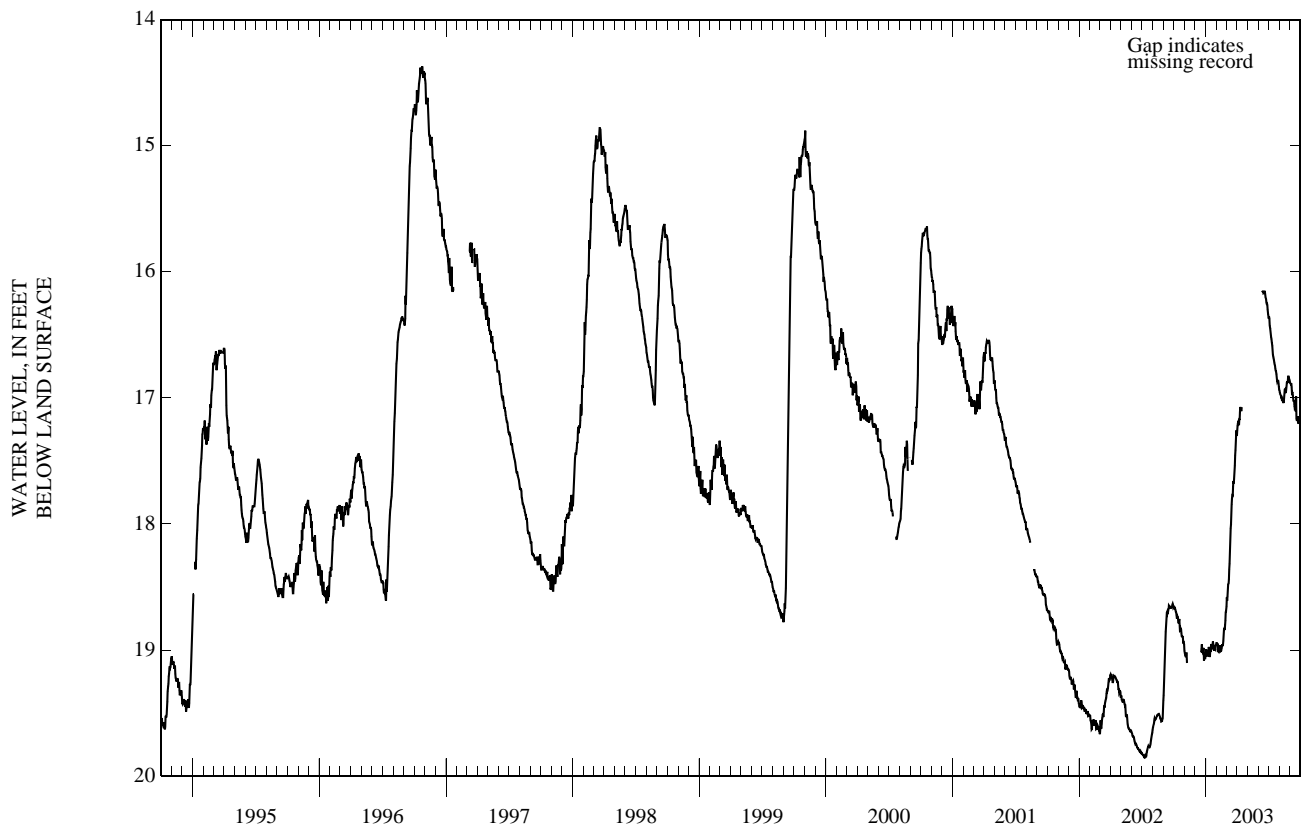
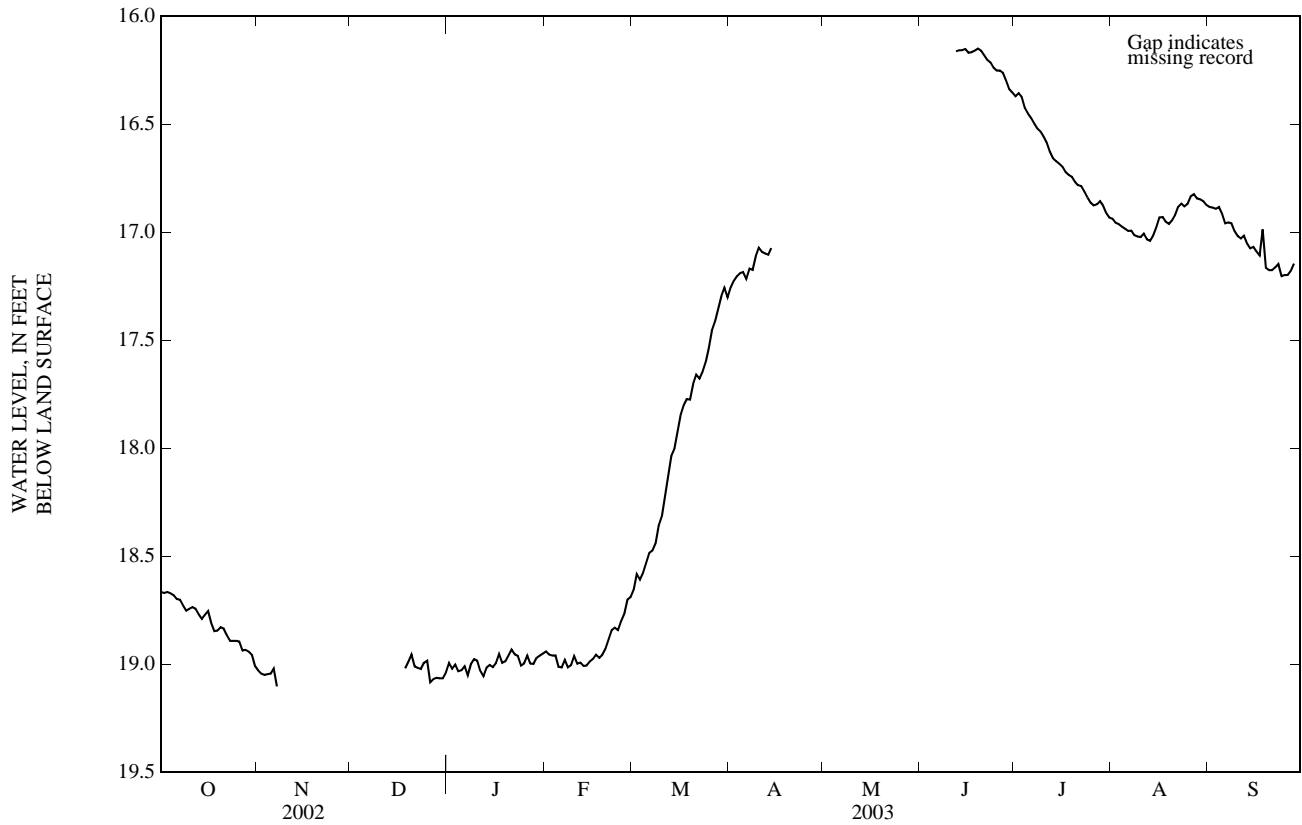
GROUND-WATER LEVELS
ONslow COUNTY—Continued

344139077211206. County number, ON-266; DENR Hadnot Point Research Station well X24s6.



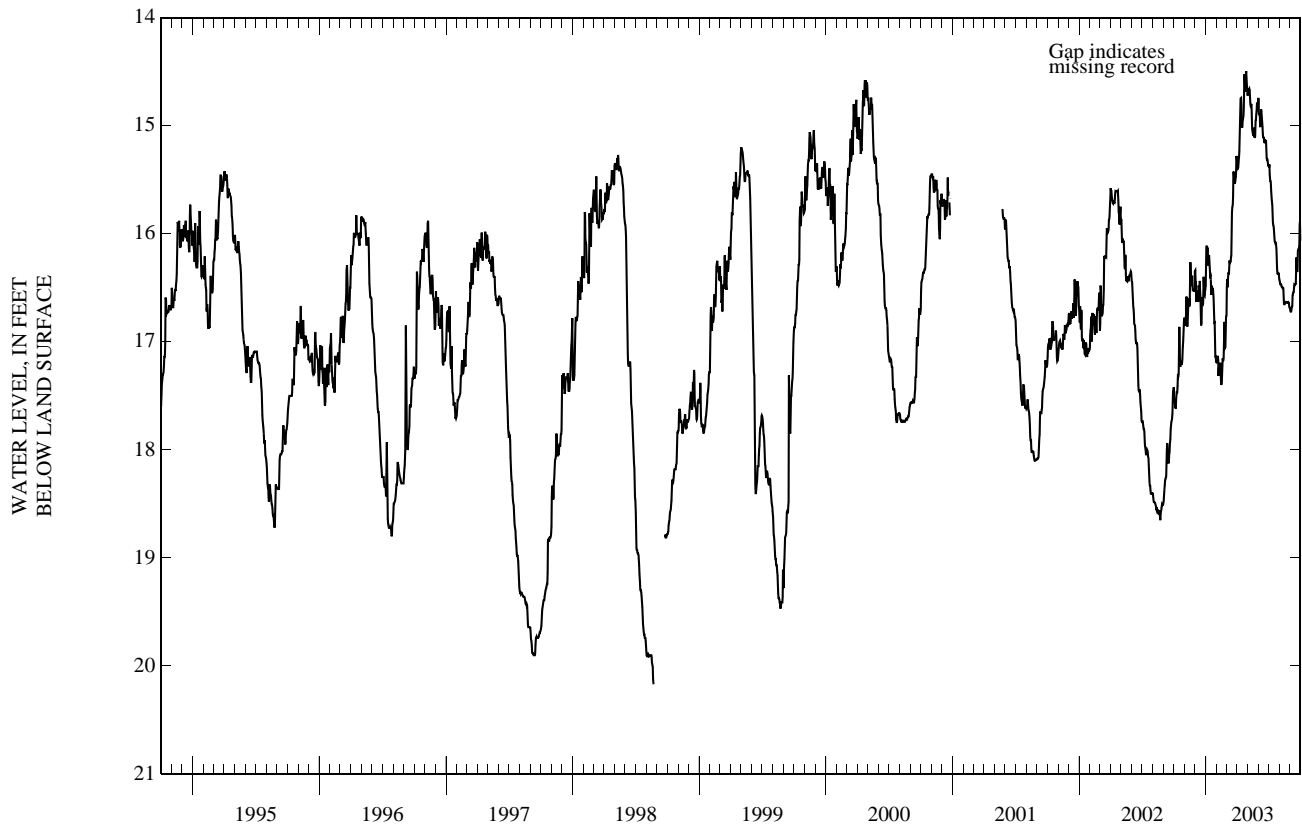
GROUND-WATER LEVELS
ONSLow COUNTY—Continued

344139077211207. County number, ON-267; DENR Hadnot Point Research Station well X24s7.



GROUND-WATER LEVELS
ONslow COUNTY—Continued

344037077253901. County number, ON-291; Ragged Point Well.



GROUND-WATER LEVELS
ON SLOW COUNTY—Continued

344304077232901. County number, ON-292; Paradise Point Well.

LOCATION.--Lat 34°43'05", long 77°23'28", Hydrologic Unit 03030001, north of Camp Lejeune golf course driving range. Owner: U.S. Geological Survey.

AQUIFER.--Castle Hayne aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 232 ft, diameter 2 in., cased to 222 ft, screened interval from 222 to 232 ft.

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

DATUM.--Land-surface datum is 15 ft above NGVD of 1929 (from topographic map). Measuring point: Top of shelter floor, 2.47 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

PERIOD OF RECORD.--October 1994 to current year. Prior to October 1997, published as ON-290, Paradise Point Well.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.68 ft below land-surface datum, Apr. 28, 2000; lowest water level recorded, 13.80 ft below land-surface datum, Aug. 20, 1998.

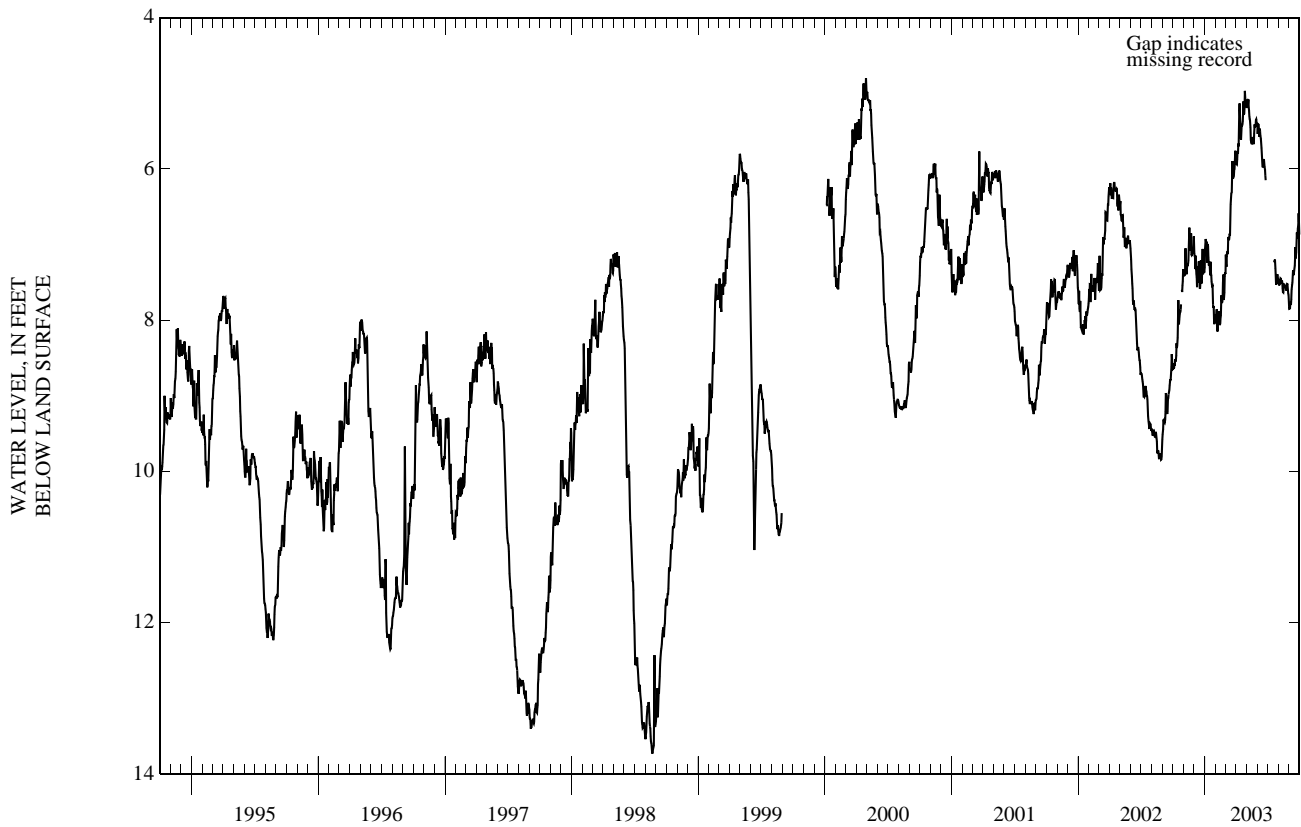
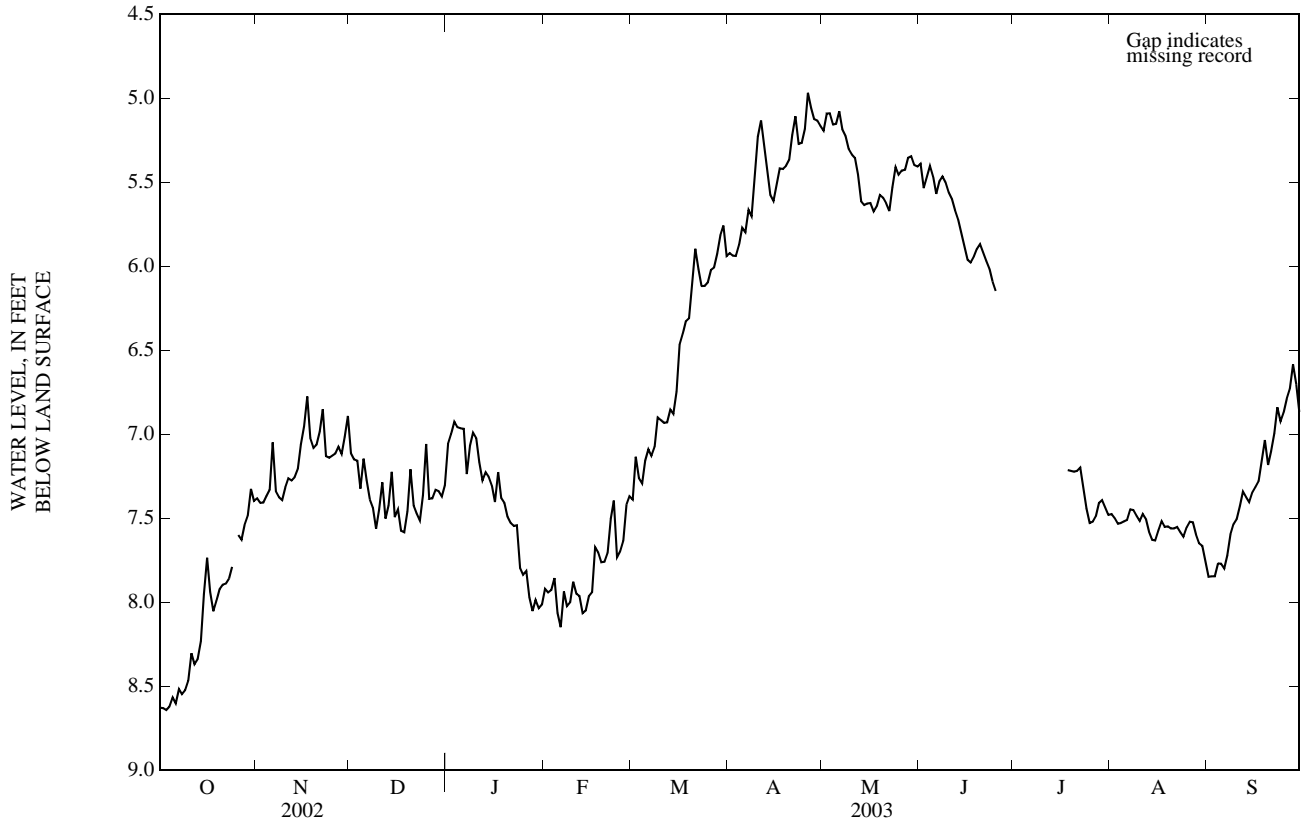
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.63	7.38	7.11	7.06	7.92	7.39	5.92	5.19	5.39	---	7.48	7.85
2	8.63	7.41	7.15	7.00	7.94	7.13	5.94	5.09	5.54	---	7.50	7.85
3	8.64	7.41	7.16	6.93	7.93	7.26	5.94	5.09	5.47	---	7.53	7.85
4	8.62	7.37	7.32	6.96	7.86	7.29	5.87	5.16	5.40	---	7.53	7.77
5	8.57	7.33	7.15	6.97	8.06	7.16	5.77	5.15	5.47	---	7.52	7.77
6	8.60	7.05	7.27	6.97	8.15	7.09	5.80	5.08	5.57	---	7.51	7.80
7	8.52	7.34	7.39	7.24	7.94	7.13	5.67	5.19	5.49	---	7.45	7.72
8	8.55	7.38	7.44	7.07	8.02	7.08	5.70	5.22	5.47	---	7.45	7.60
9	8.52	7.39	7.56	6.99	8.00	6.90	5.47	5.30	5.50	---	7.49	7.54
10	8.47	7.32	7.45	7.02	7.88	6.92	5.23	5.33	5.56	---	7.52	7.50
11	8.30	7.26	7.29	7.17	7.95	6.93	5.13	5.36	5.60	---	7.48	7.43
12	8.37	7.28	7.50	7.28	7.96	6.93	5.29	5.45	5.67	---	7.51	7.34
13	8.34	7.26	7.42	7.23	8.07	6.85	5.44	5.62	5.72	---	7.58	7.38
14	8.23	7.21	7.22	7.25	8.05	6.88	5.58	5.64	5.80	---	7.63	7.41
15	7.95	7.06	7.49	7.31	7.96	6.75	5.61	5.63	5.88	---	7.63	7.35
16	7.74	6.95	7.45	7.40	7.94	6.47	5.51	5.62	5.96	---	7.57	7.31
17	7.94	6.78	7.57	7.23	7.67	6.40	5.42	5.67	5.98	---	7.52	7.28
18	8.05	7.02	7.58	7.38	7.70	6.33	5.42	5.64	5.94	7.21	7.55	7.16
19	7.99	7.08	7.46	7.41	7.76	6.31	5.40	5.58	5.90	7.22	7.55	7.04
20	7.92	7.06	7.21	7.49	7.76	6.10	5.37	5.59	5.87	7.22	7.56	7.18
21	7.90	6.98	7.42	7.53	7.71	5.90	5.22	5.63	5.92	7.22	7.56	7.10
22	7.89	6.85	7.47	7.55	7.50	6.02	5.11	5.67	5.97	7.20	7.55	7.00
23	7.86	7.13	7.51	7.54	7.40	6.12	5.27	5.53	6.02	7.32	7.58	6.84
24	7.79	7.14	7.36	7.80	7.73	6.12	5.27	5.41	6.09	7.44	7.61	6.92
25	---	7.13	7.06	7.84	7.70	6.10	5.18	5.46	6.15	7.53	7.56	6.87
26	7.60	7.11	7.38	7.81	7.64	6.02	4.97	5.43	---	7.52	7.52	6.79
27	7.63	7.07	7.38	7.97	7.42	6.01	5.06	5.43	---	7.49	7.52	6.73
28	7.54	7.12	7.33	8.05	7.37	5.93	5.13	5.36	---	7.41	7.60	6.59
29	7.49	7.02	7.34	7.99	---	5.82	5.13	5.35	---	7.39	7.65	6.70
30	7.33	6.89	7.37	8.03	---	5.76	5.17	5.40	---	7.44	7.66	6.87
31	7.40	---	7.30	8.01	---	5.94	---	5.41	---	7.48	7.76	---

WTR YR 2003 MEAN 6.92 HIGH 4.97 LOW 8.64

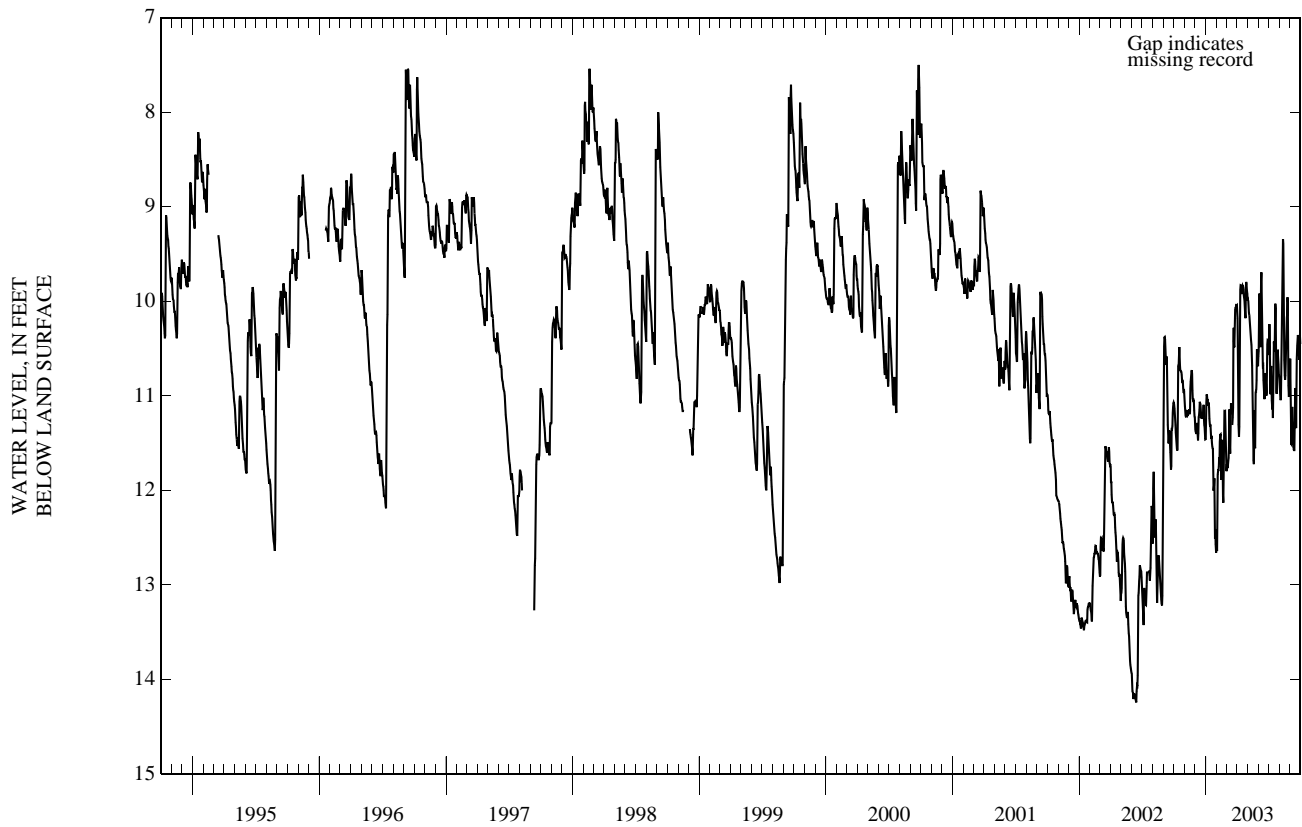
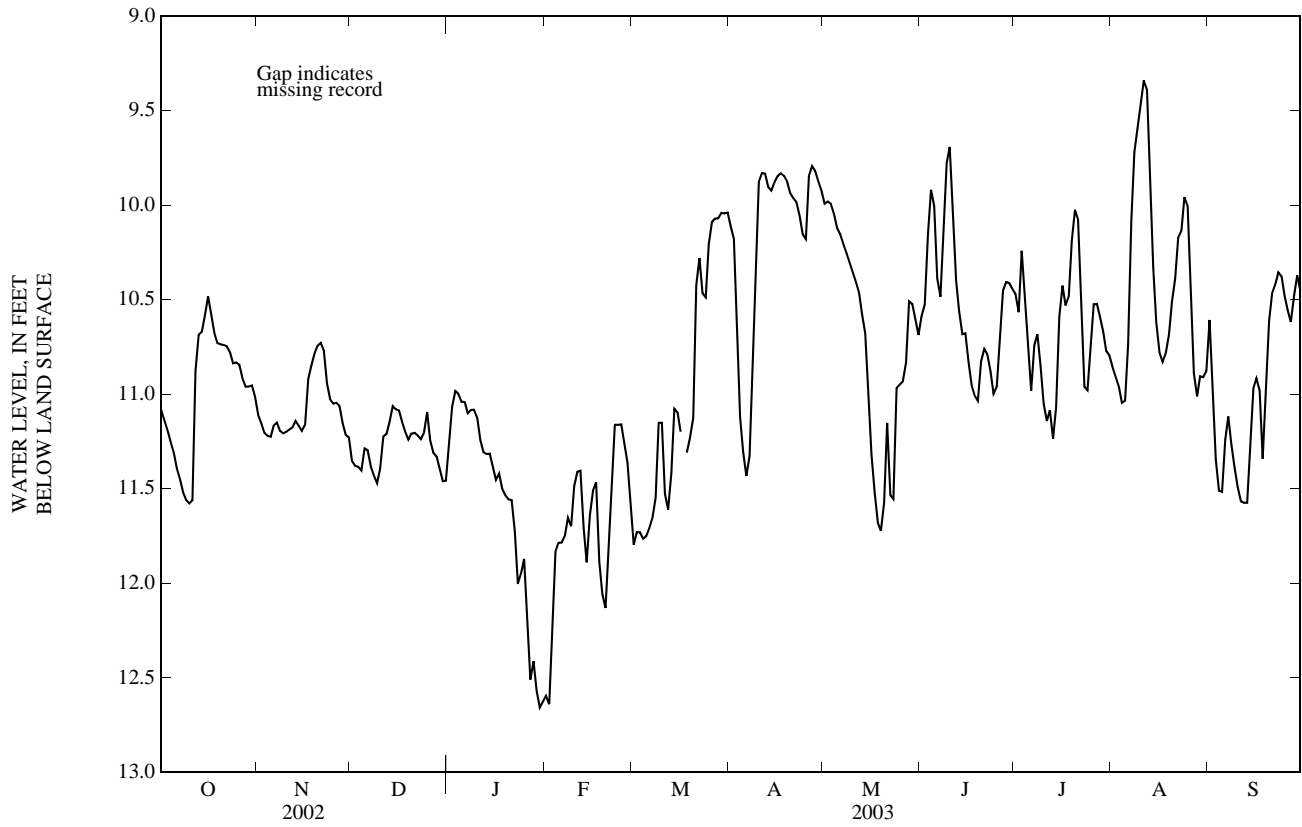
GROUND-WATER LEVELS
ONslow COUNTY—Continued

344304077232901. County number, ON-292; Paradise Point Well.



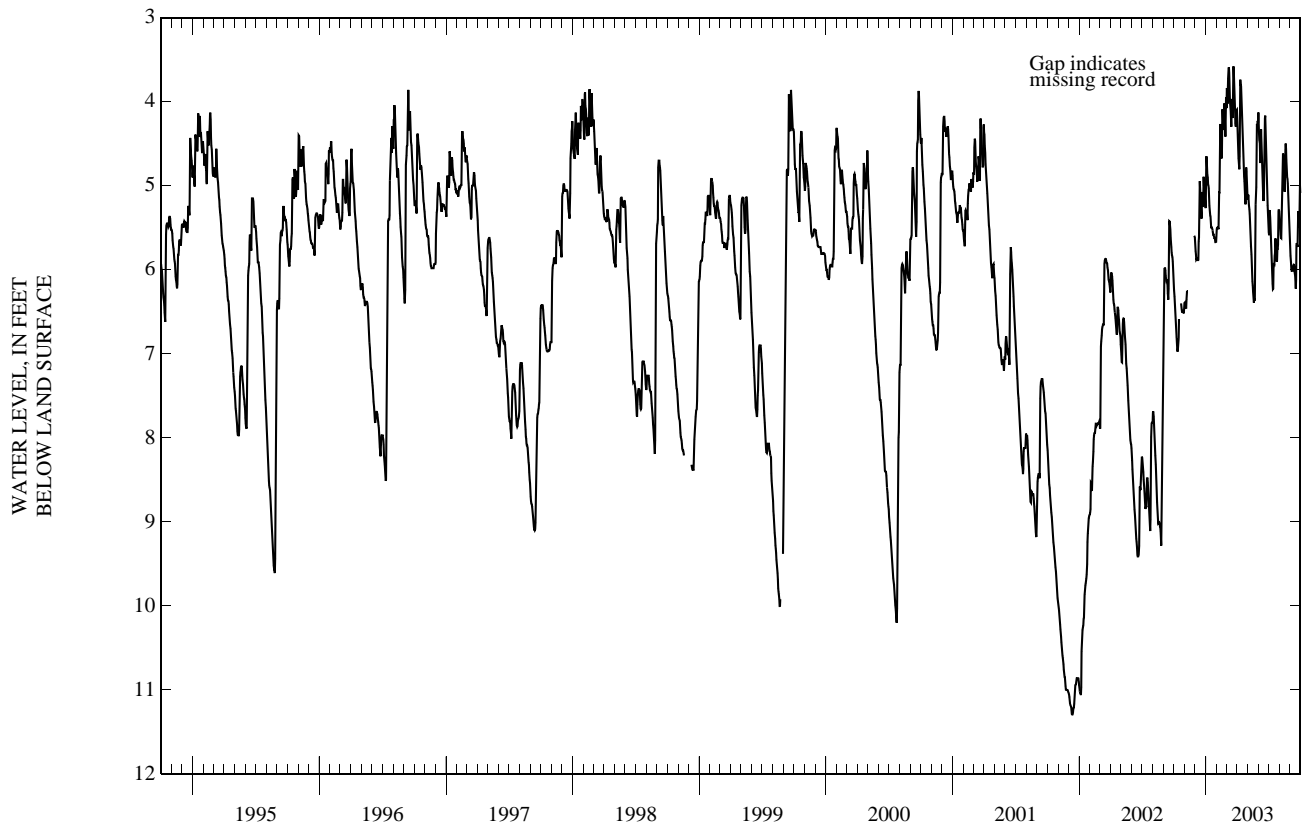
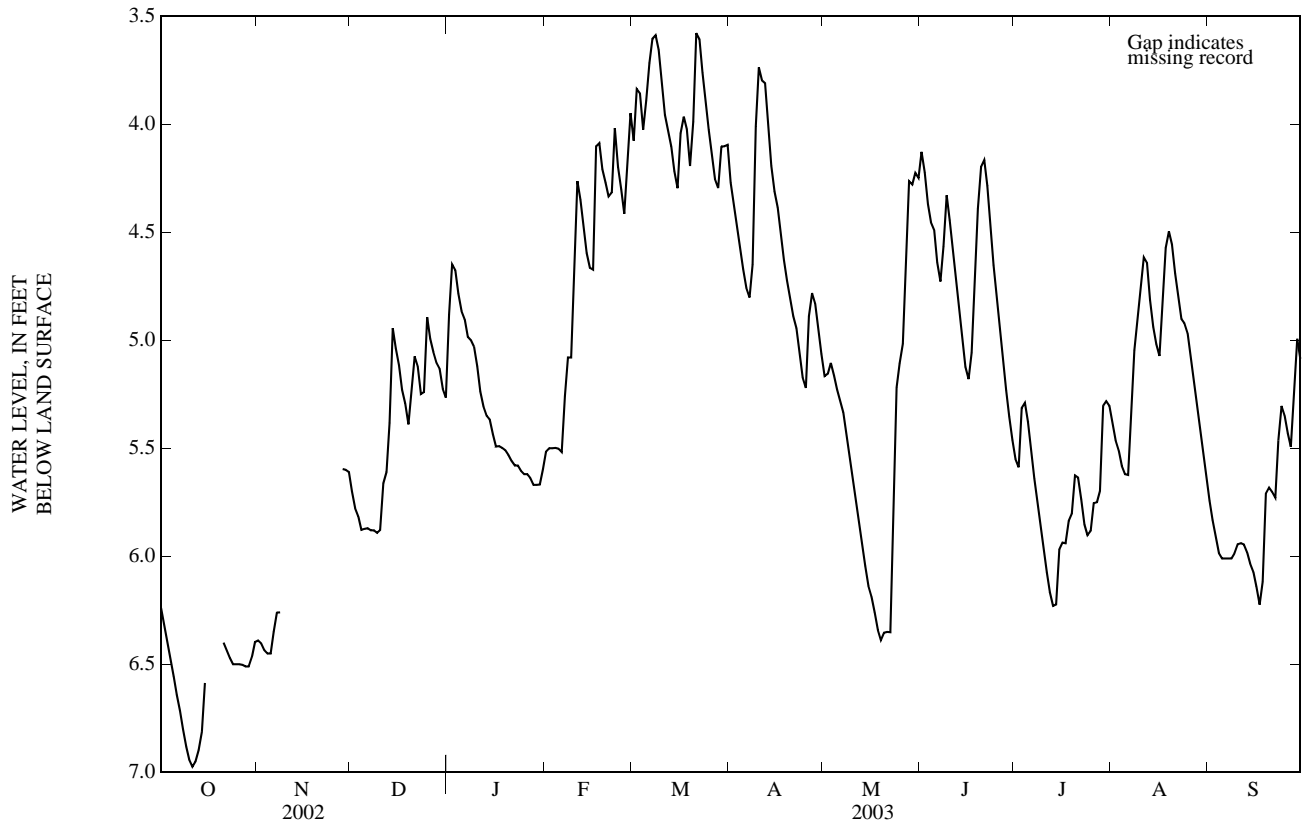
GROUND-WATER LEVELS
ONSWLOW COUNTY—Continued

343609077171301. County number, ON-293; Sneads Ferry Road Well.



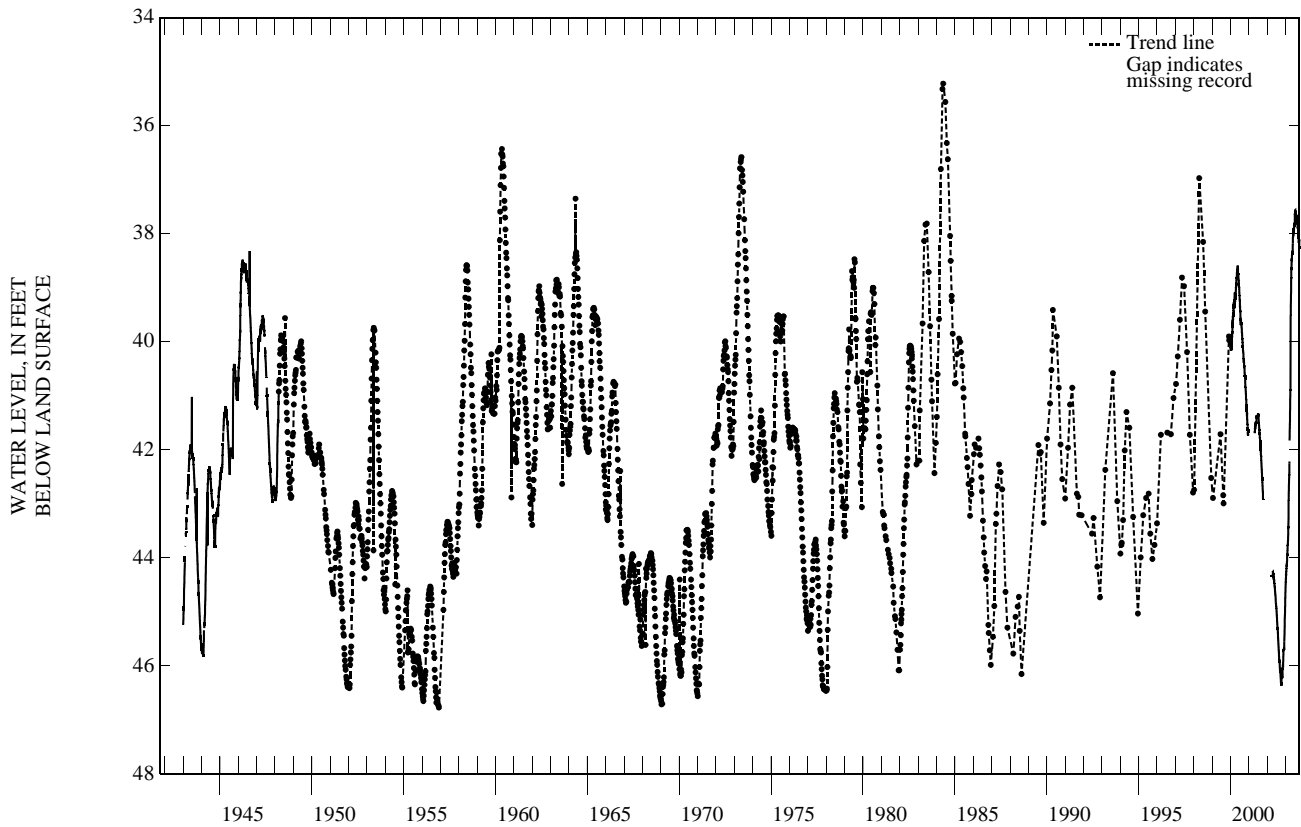
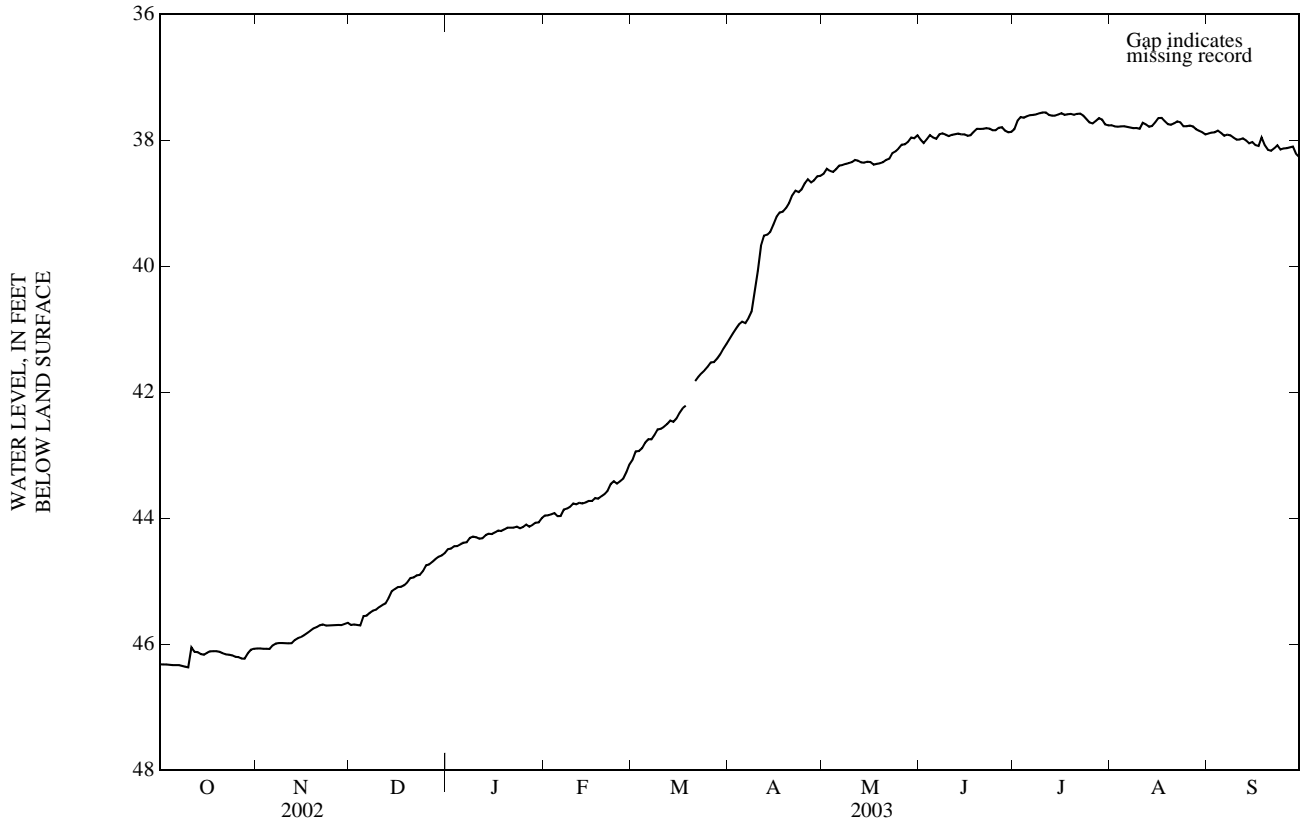
GROUND-WATER LEVELS
ONSWLOW COUNTY—Continued

343842077241501. County number, ON-294; Town Creek Well 1.



GROUND-WATER LEVELS
ORANGE COUNTY—Continued

355522079043001. Local number, NC-126; County number, OR-069.



GROUND-WATER LEVELS

PASQUOTANK COUNTY

362050076163705. Local number, NC-150; DENR Elizabeth City Forest Service Research Station well D11v5; County number, PK-199.

LOCATION.--Lat 36°20'51.2", long 76°16'38.9", Hydrologic Unit 03010205, 4 mi northwest of Elizabeth City at North Carolina Division of Forest Resources Maintenance Yard, west of U.S. Highways 17 and 158 on Secondary Road 1338. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Yorktown aquifer of Pliocene and Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, depth 130 ft, diameter 4 in., screened interval from 120 to 130 ft.

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

DATUM.--Land-surface datum is 7.14 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 3.48 ft above land-surface datum; revised from 3.13 ft above land-surface datum, October 1987.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--July 1975 to current year. Continuous record began November 1986. Records from July 1975 to November 1986 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.22 ft below land-surface datum, June 26, 1979; lowest water level recorded, 10.57 ft below land-surface datum, Aug. 27, 2002.

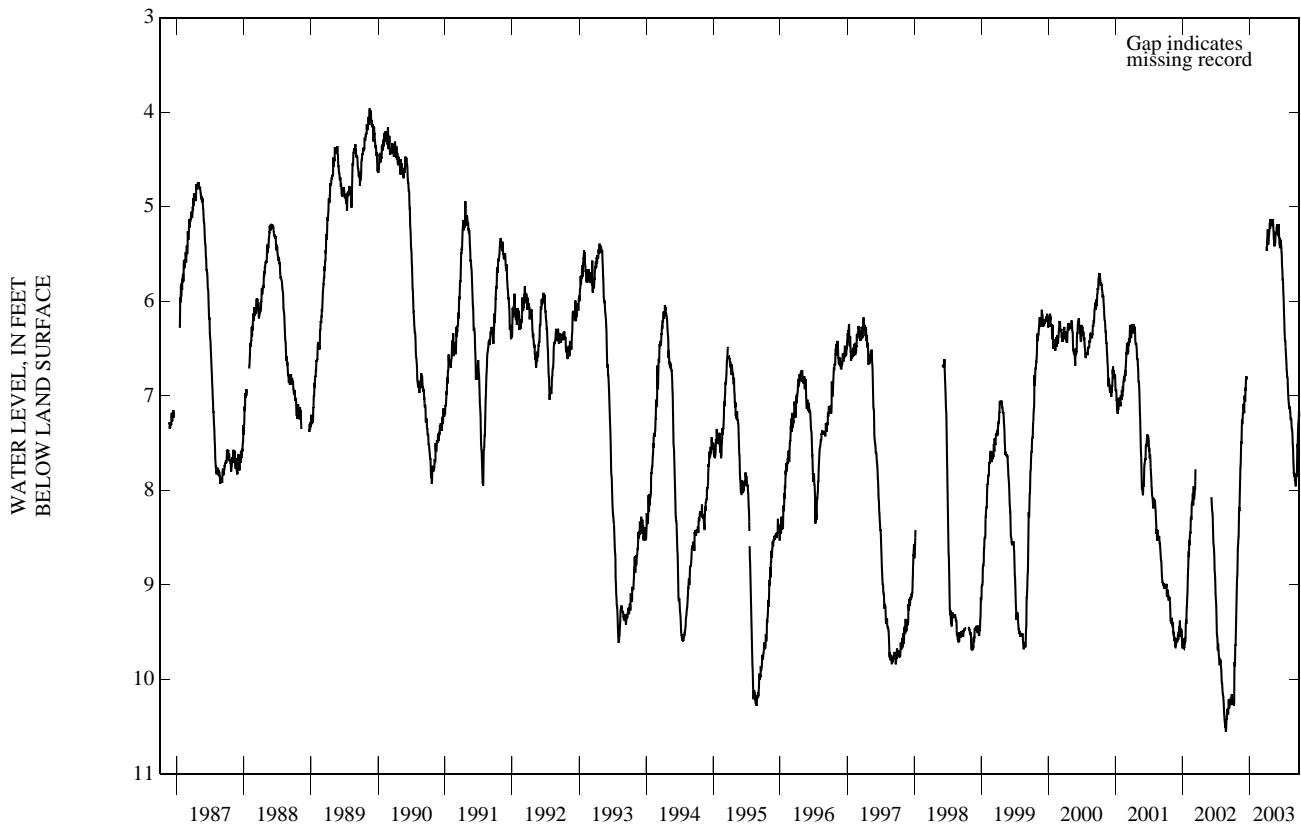
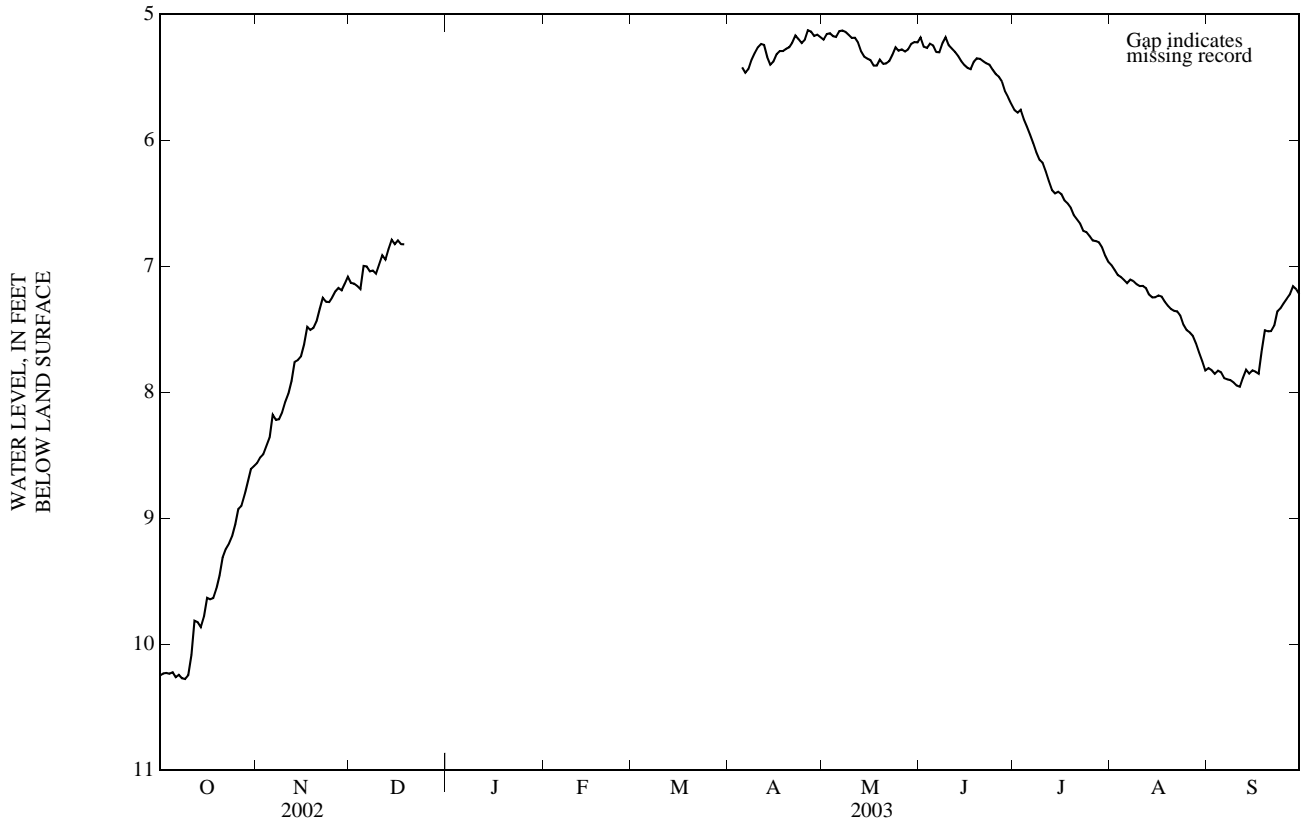
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.25	8.56	7.13	---	---	---	---	5.20	5.19	5.76	6.99	7.81
2	10.23	8.52	7.14	---	---	---	---	5.16	5.26	5.78	7.03	7.82
3	10.23	8.49	7.16	---	---	---	---	5.15	5.27	5.76	7.07	7.85
4	10.23	8.42	7.18	---	---	---	---	5.18	5.24	5.83	7.09	7.83
5	10.22	8.36	7.00	---	---	---	5.42	5.18	5.25	5.89	7.11	7.84
6	10.26	8.18	7.00	---	---	---	5.47	5.14	5.30	5.96	7.14	7.89
7	10.24	8.22	7.04	---	---	---	5.44	5.13	5.30	6.03	7.11	7.90
8	10.27	8.21	7.03	---	---	---	5.36	5.14	5.23	6.10	7.12	7.90
9	10.28	8.16	7.06	---	---	---	5.31	5.17	5.18	6.16	7.14	7.92
10	10.25	8.08	6.99	---	---	---	5.26	5.19	5.25	6.18	7.16	7.95
11	10.09	8.01	6.91	---	---	---	5.24	5.19	5.27	6.25	7.16	7.96
12	9.81	7.91	6.95	---	---	---	5.25	5.22	5.30	6.32	7.17	7.89
13	9.83	7.76	6.87	---	---	---	5.34	5.30	5.33	6.40	7.23	7.82
14	9.86	7.75	6.79	---	---	---	5.40	5.34	5.38	6.42	7.25	7.85
15	9.78	7.72	6.83	---	---	---	5.38	5.35	5.40	6.41	7.25	7.83
16	9.63	7.62	6.80	---	---	---	5.32	5.37	5.43	6.43	7.23	7.84
17	9.64	7.48	6.83	---	---	---	5.29	5.41	5.44	6.48	7.24	7.85
18	9.63	7.51	6.83	---	---	---	5.29	5.41	5.38	6.50	7.28	7.67
19	9.56	7.49	---	---	---	---	5.28	5.36	5.35	6.54	7.31	7.51
20	9.45	7.44	---	---	---	---	5.26	5.39	5.36	6.60	7.34	7.52
21	9.31	7.34	---	---	---	---	5.23	5.39	5.38	6.63	7.35	7.51
22	9.24	7.25	---	---	---	---	5.17	5.37	5.39	6.66	7.36	7.47
23	9.20	7.28	---	---	---	---	5.20	5.32	5.40	6.72	7.39	7.36
24	9.14	7.28	---	---	---	---	5.23	5.26	5.44	6.73	7.46	7.33
25	9.05	7.25	---	---	---	---	5.20	5.29	5.48	6.76	7.51	7.29
26	8.93	7.20	---	---	---	---	5.13	5.28	5.50	6.80	7.53	7.26
27	8.90	7.17	---	---	---	---	5.14	5.30	5.54	6.80	7.55	7.22
28	8.82	7.19	---	---	---	---	5.17	5.28	5.62	6.81	7.61	7.16
29	8.71	7.14	---	---	---	---	5.16	5.24	5.66	6.85	7.69	7.18
30	8.61	7.08	---	---	---	---	5.18	5.22	5.72	6.92	7.76	7.22
31	8.59	---	---	---	---	---	---	5.23	---	6.97	7.83	---

WTR YR 2003 MEAN 6.87 HIGH 5.13 LOW 10.28

PASQUOTANK COUNTY—Continued

362050076163705. Local number, NC-150; DENR Elizabeth City Forest Service Research Station well D11v5; County number, PK-199.



GROUND-WATER LEVELS
PASQUOTANK COUNTY—Continued

361829076163201. Local number, NC-195; County number, PK-141.

LOCATION.--Lat 36°18'30.1", long 76°16'31.4", Hydrologic Unit 03010205, northwest of Elizabeth City, 1.2 mi west of Secondary Road 1307 on Secondary Road 1309. Owner: U.S. Geological Survey.

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Bored observation well, augered to 13.0 ft, diameter 4 in., cased to 2.4 ft, screened interval from 2.4 to 12.4 ft.

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

DATUM.--Land-surface datum is 15 ft above NGVD of 1929 (from topographic map). Measuring point: Top of instrument shelf, 3.38 ft above land-surface datum.

REMARKS.--In October 1991, well replaced nearby NC-143. Well is part of climatic-effects network. Negative values of water levels in feet below land surface indicate ground-water levels that are above land surface.

PERIOD OF RECORD.--October 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.56 ft above land-surface datum, Oct. 1, 2000; lowest water level recorded, 6.15 ft below land-surface datum, Jan. 2, 2002.

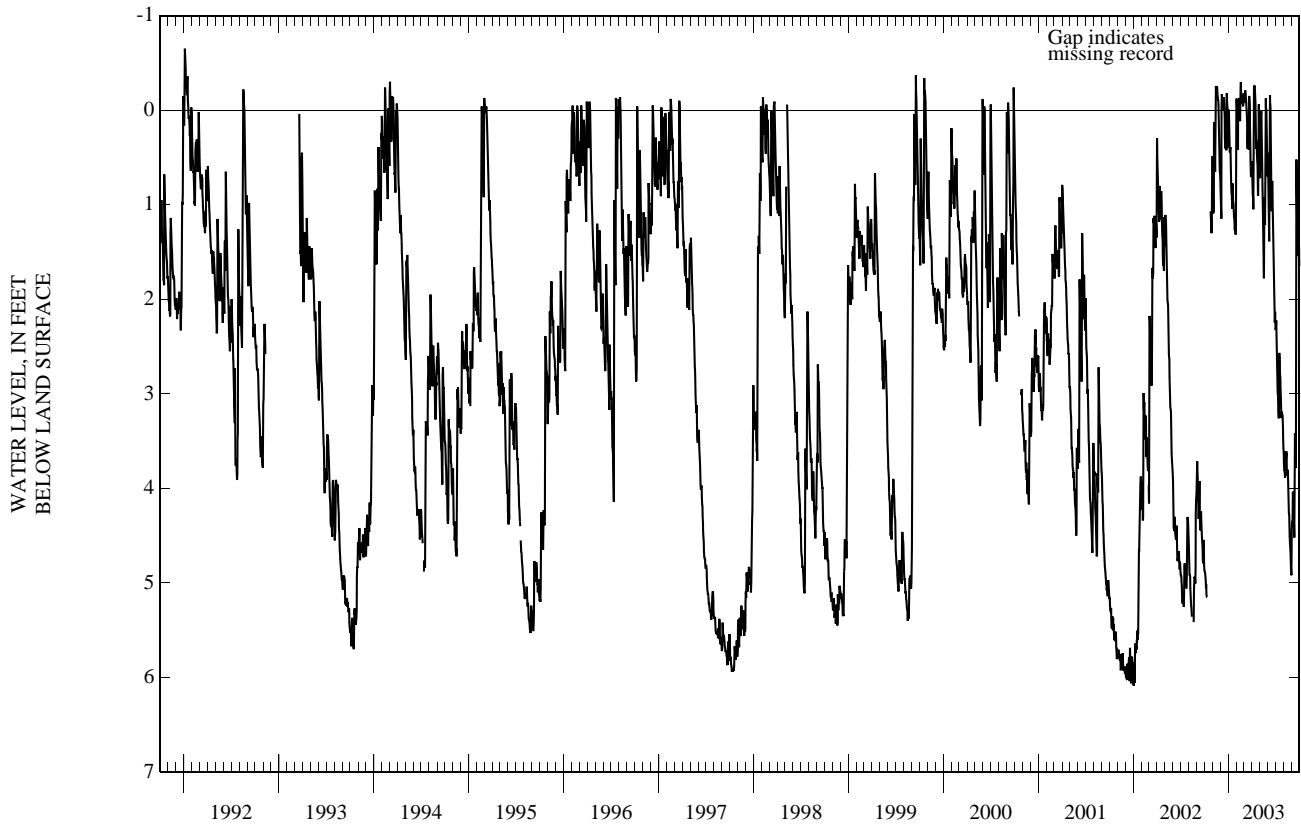
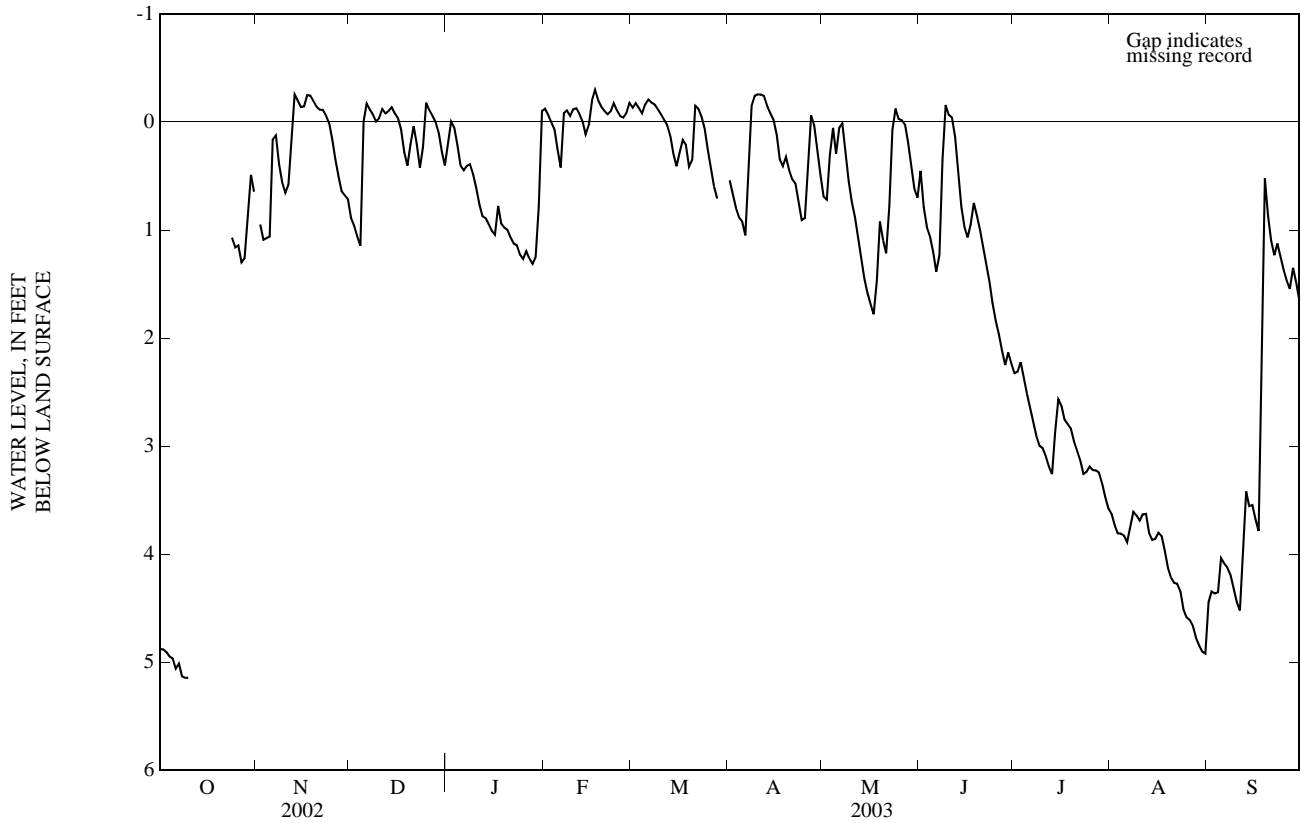
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.88	---	0.88	0.20	-0.12	-0.13	0.54	0.69	0.45	2.32	3.63	4.44
2	4.88	0.95	0.96	0.00	-0.07	-0.17	0.67	0.72	0.79	2.31	3.73	4.34
3	4.90	1.09	1.06	0.05	0.00	-0.13	0.79	0.31	0.97	2.22	3.81	4.36
4	4.95	1.07	1.15	0.21	0.07	-0.08	0.88	0.06	1.06	2.37	3.81	4.35
5	4.96	1.06	0.00	0.40	0.25	-0.16	0.92	0.29	1.20	2.52	3.83	4.04
6	5.06	0.16	-0.17	0.45	0.42	-0.21	1.05	0.05	1.39	2.65	3.89	4.08
7	5.01	0.12	-0.12	0.41	-0.08	-0.18	0.47	0.01	1.23	2.78	3.75	4.12
8	5.13	0.39	-0.07	0.39	-0.11	-0.16	-0.15	0.28	0.35	2.91	3.61	4.19
9	5.14	0.56	-0.01	0.48	-0.06	-0.12	-0.24	0.55	-0.16	3.00	3.64	4.31
10	5.14	0.65	-0.04	0.61	-0.12	-0.07	-0.26	0.74	-0.07	3.02	3.69	4.44
11	---	0.58	-0.12	0.76	-0.13	-0.02	-0.26	0.88	-0.04	3.09	3.63	4.52
12	---	0.13	-0.08	0.87	-0.08	0.02	-0.24	1.08	0.14	3.19	3.63	3.96
13	---	-0.26	-0.10	0.89	0.00	0.13	-0.15	1.27	0.48	3.26	3.80	3.42
14	---	-0.20	-0.14	0.94	0.12	0.29	-0.08	1.44	0.78	2.87	3.87	3.56
15	---	-0.14	-0.08	1.01	0.03	0.41	-0.02	1.58	0.97	2.57	3.86	3.54
16	---	-0.15	-0.04	1.04	-0.20	0.28	0.12	1.68	1.07	2.63	3.80	3.67
17	---	-0.25	0.07	0.78	-0.30	0.17	0.34	1.78	0.95	2.75	3.83	3.79
18	---	-0.24	0.28	0.94	-0.20	0.21	0.41	1.46	0.75	2.80	3.96	1.83
19	---	-0.19	0.40	0.98	-0.14	0.41	0.32	0.92	0.87	2.84	4.12	0.52
20	---	-0.14	0.21	1.00	-0.10	0.35	0.45	1.09	1.00	2.95	4.21	0.87
21	---	-0.11	0.04	1.07	-0.07	-0.15	0.53	1.21	1.17	3.04	4.26	1.10
22	---	-0.11	0.20	1.13	-0.10	-0.12	0.57	0.77	1.32	3.13	4.27	1.23
23	---	-0.06	0.42	1.14	-0.17	-0.05	0.75	0.07	1.48	3.26	4.34	1.12
24	1.07	0.01	0.23	1.23	-0.11	0.06	0.91	-0.12	1.68	3.24	4.51	1.24
25	1.16	0.16	-0.18	1.27	-0.06	0.25	0.89	-0.03	1.84	3.19	4.58	1.36
26	1.14	0.35	-0.11	1.19	-0.04	0.42	0.39	-0.02	1.96	3.22	4.61	1.47
27	1.30	0.50	-0.06	1.26	-0.08	0.60	-0.06	0.02	2.11	3.22	4.66	1.54
28	1.26	0.64	0.00	1.31	-0.18	0.71	0.03	0.19	2.25	3.24	4.77	1.35
29	0.87	0.68	0.09	1.25	---	---	0.26	0.40	2.13	3.34	4.84	1.49
30	0.49	0.71	0.27	0.78	---	---	0.49	0.61	2.23	3.47	4.90	1.65
31	0.65	---	0.40	-0.10	---	---	---	0.70	---	3.58	4.92	---

WTR YR 2003 MEAN 1.33 HIGH -0.30 LOW 5.14

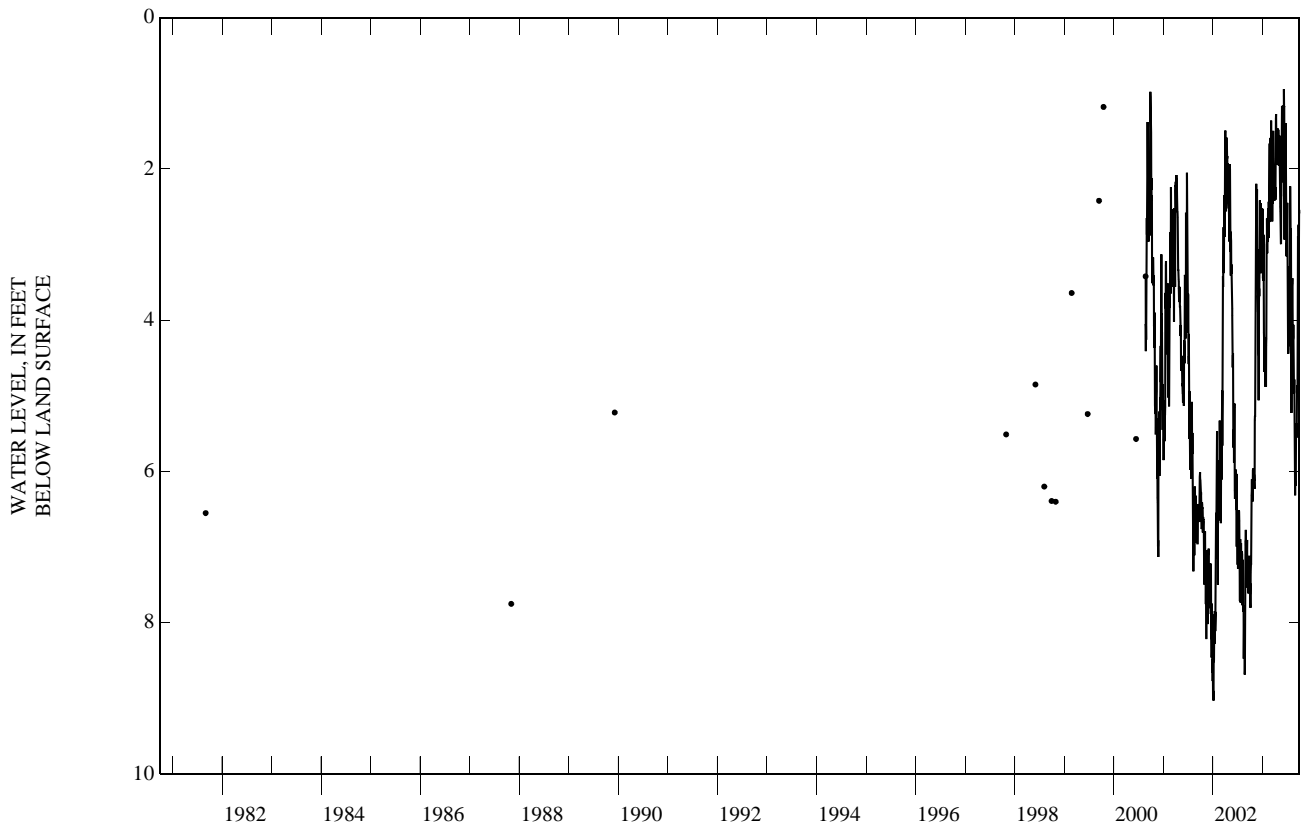
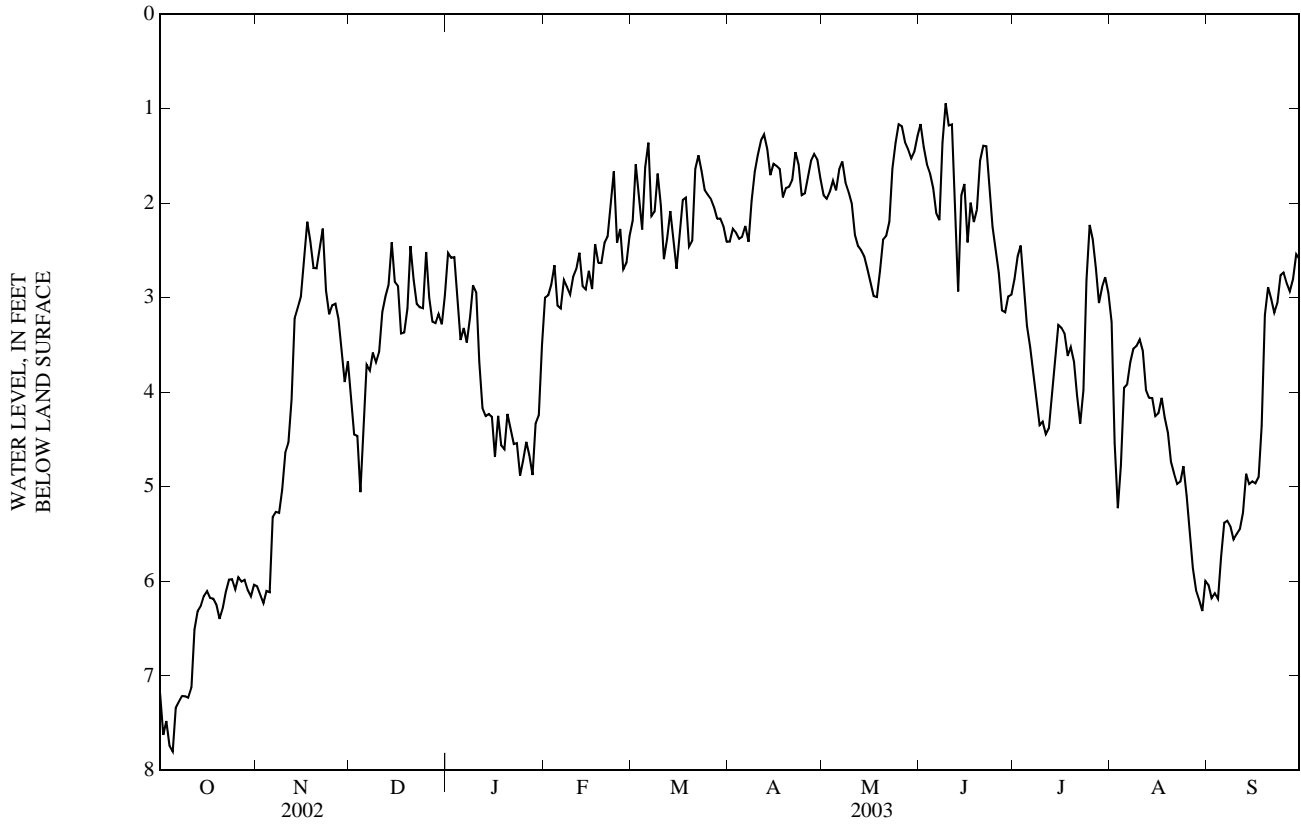
PASQUOTANK COUNTY—Continued

361829076163201. Local number, NC-195; County number, PK-141.



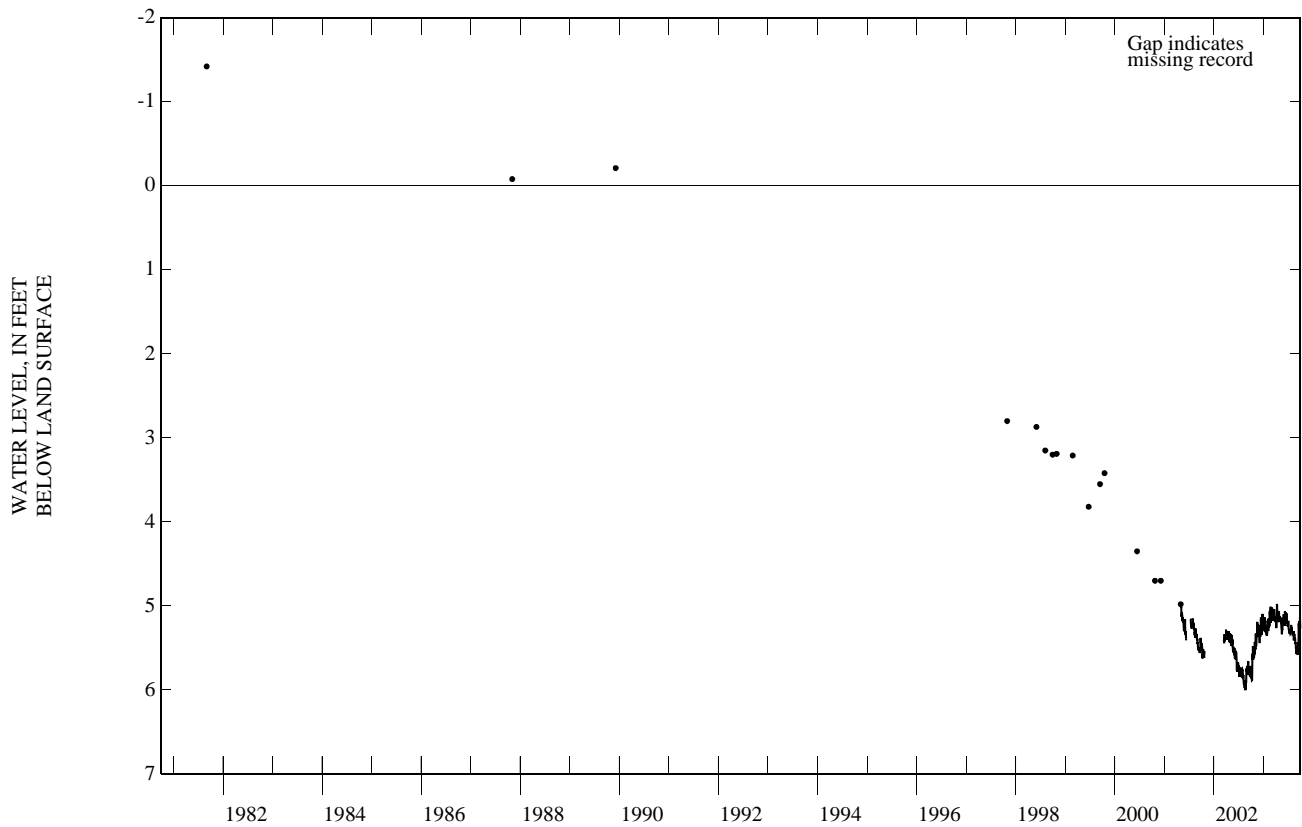
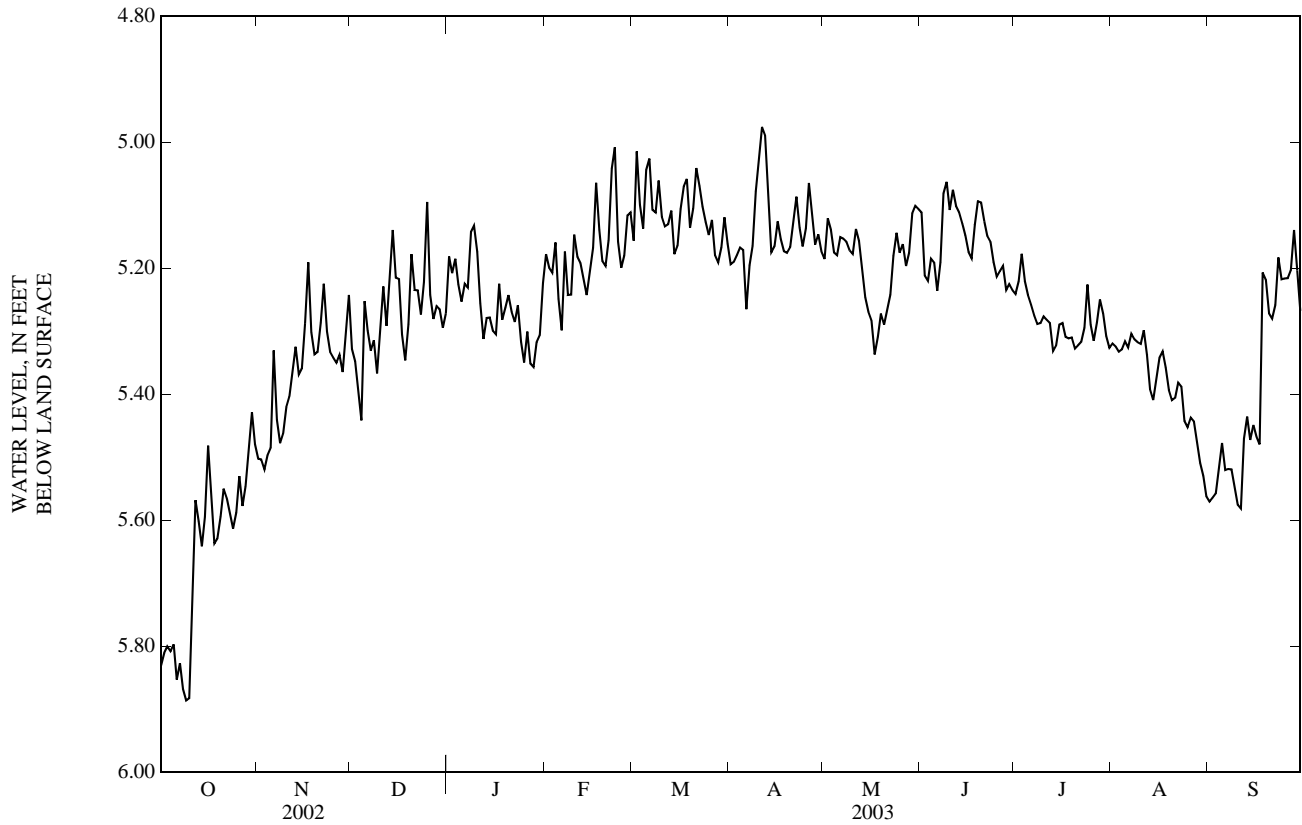
PASQUOTANK COUNTY—Continued

362601076230702. Local number, NC-203; DENR Morgans Corner Research Station well C12w2; County number, PK-190.



PASQUOTANK COUNTY—Continued

362601076230704. Local number, NC-204: DENR Morgans Corner Research Station well C12w4; County number, PK-191.



GROUND-WATER LEVELS

PITT COUNTY

353219077153801. Local number, NC-160; County number, PI-532.

LOCATION.--Lat 35°32'17.8", long 77°15'41.2", Hydrologic Unit 03020103, 2.7 mi southwest of Simpson at intersection of Secondary Roads 1755 and 1769.
Owner: U.S. Geological Survey.

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Bored observation well, augered to 12 ft, diameter 6 in., cased to 5.9 ft, screened interval from 5.9 to 10.9 ft.

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

DATUM.--Land-surface datum is 56.27 ft above NGVD of 1929 (levels by Soil Conservation Service). Measuring point: Top of instrument shelf, 3.72 ft above land-surface datum; revised from 1.04 ft above land-surface datum, Oct. 4, 1990.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--December 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.55 ft below land-surface datum, Sept. 16, 1999; lowest water level recorded, 8.87 ft below land-surface datum, Oct. 10, 2002.

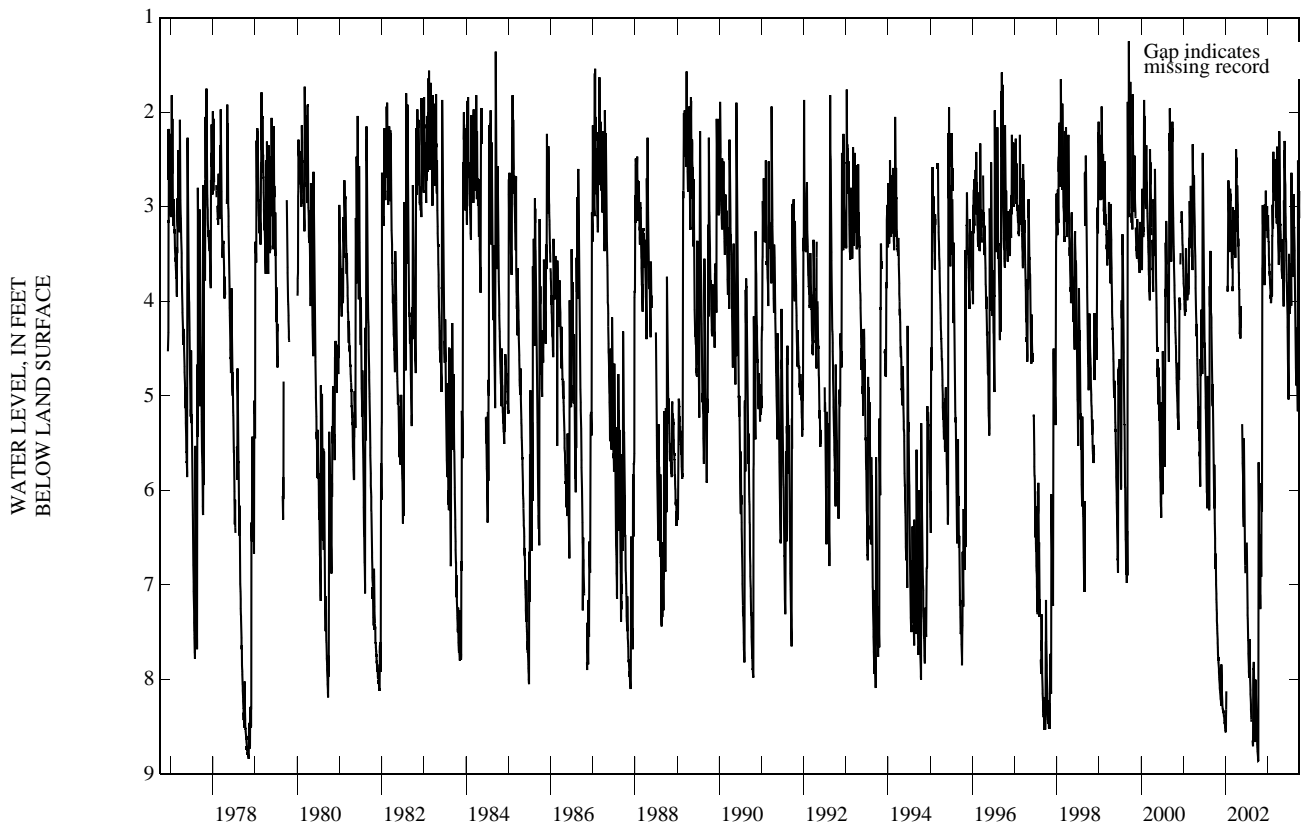
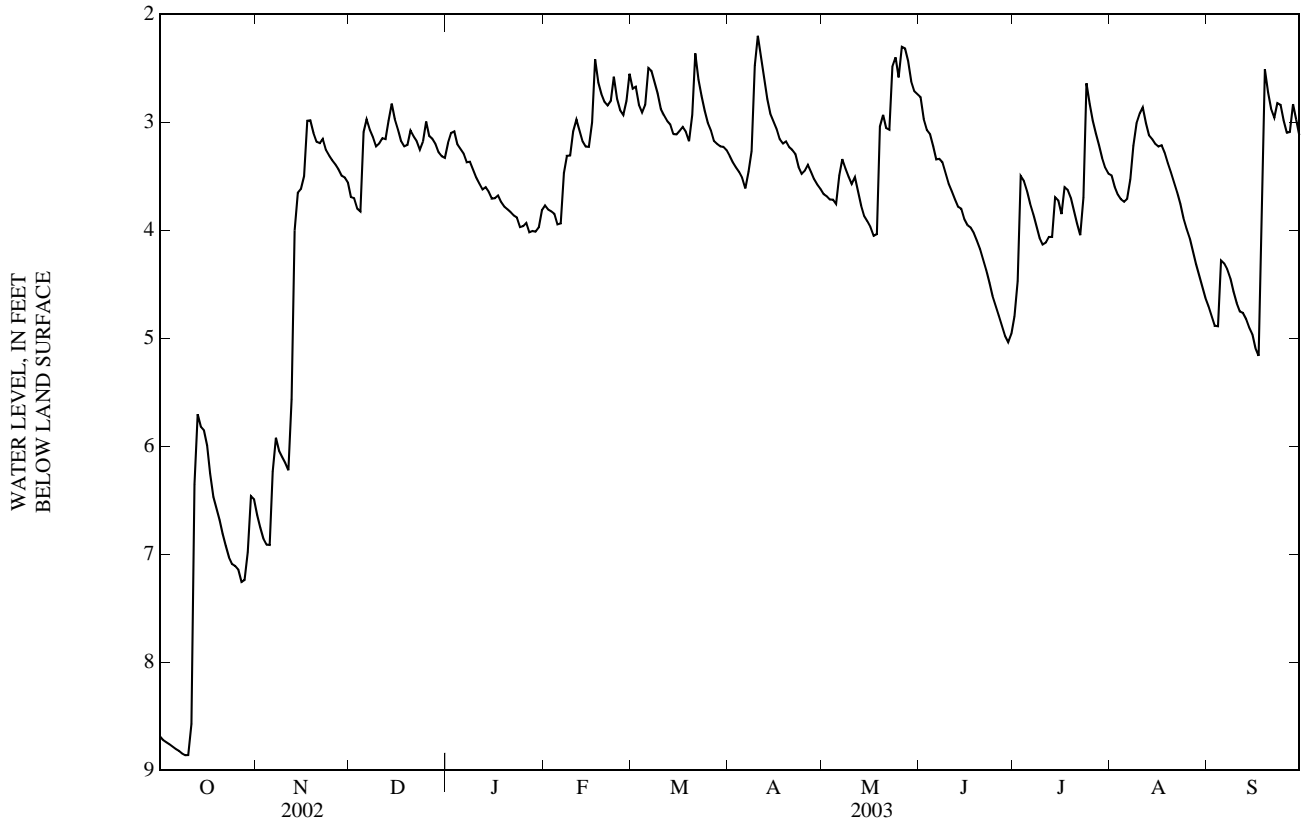
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.69	6.64	3.69	3.19	3.77	2.69	3.31	3.67	2.77	4.80	3.49	4.70
2	8.72	6.75	3.71	3.10	3.81	2.67	3.37	3.69	2.97	4.47	3.60	4.79
3	8.74	6.86	3.80	3.09	3.83	2.84	3.42	3.72	3.07	3.50	3.67	4.88
4	8.76	6.91	3.83	3.21	3.85	2.91	3.46	3.72	3.11	3.54	3.71	4.89
5	8.78	6.91	3.09	3.25	3.95	2.84	3.52	3.76	3.22	3.64	3.74	4.28
6	8.80	6.23	2.97	3.29	3.94	2.50	3.61	3.49	3.35	3.75	3.71	4.31
7	8.82	5.92	3.07	3.37	3.47	2.53	3.46	3.34	3.34	3.85	3.53	4.36
8	8.84	6.04	3.14	3.37	3.31	2.64	3.27	3.43	3.37	3.96	3.22	4.45
9	8.86	6.10	3.23	3.44	3.31	2.74	2.48	3.51	3.47	4.07	3.01	4.57
10	8.86	6.16	3.20	3.51	3.08	2.88	2.20	3.57	3.57	4.13	2.92	4.68
11	8.57	6.22	3.15	3.57	2.98	2.94	2.40	3.51	3.64	4.12	2.87	4.75
12	6.35	5.57	3.16	3.62	3.08	2.99	2.59	3.64	3.72	4.06	3.01	4.77
13	5.70	4.00	2.99	3.60	3.18	3.02	2.78	3.77	3.78	4.06	3.12	4.82
14	5.82	3.65	2.83	3.64	3.23	3.11	2.92	3.87	3.80	3.70	3.16	4.90
15	5.85	3.62	2.97	3.71	3.23	3.11	2.99	3.92	3.90	3.73	3.20	4.96
16	5.99	3.50	3.07	3.70	3.00	3.08	3.06	3.97	3.96	3.85	3.23	5.09
17	6.26	2.99	3.17	3.68	2.42	3.05	3.16	4.05	3.98	3.60	3.21	5.16
18	6.47	2.98	3.22	3.74	2.63	3.09	3.20	4.04	4.03	3.63	3.28	3.65
19	6.57	3.10	3.21	3.78	2.74	3.18	3.18	3.04	4.10	3.70	3.38	2.51
20	6.68	3.18	3.08	3.81	2.81	2.94	3.23	2.93	4.17	3.82	3.46	2.73
21	6.81	3.20	3.13	3.83	2.85	2.36	3.26	3.05	4.27	3.94	3.56	2.88
22	6.92	3.16	3.18	3.86	2.81	2.61	3.30	3.07	4.37	4.05	3.65	2.96
23	7.03	3.26	3.26	3.88	2.58	2.76	3.42	2.49	4.49	3.70	3.76	2.82
24	7.09	3.31	3.18	3.97	2.78	2.90	3.48	2.40	4.61	2.64	3.89	2.84
25	7.11	3.35	3.00	3.96	2.89	3.00	3.45	2.59	4.70	2.83	3.99	2.98
26	7.14	3.39	3.13	3.93	2.94	3.08	3.40	2.30	4.79	2.99	4.08	3.10
27	7.26	3.44	3.16	4.02	2.80	3.18	3.46	2.32	4.89	3.11	4.20	3.09
28	7.24	3.50	3.20	4.01	2.55	3.20	3.53	2.43	4.98	3.21	4.32	2.83
29	6.98	3.51	3.28	4.01	---	3.23	3.58	2.62	5.04	3.33	4.42	2.98
30	6.46	3.56	3.32	3.98	---	3.23	3.62	2.71	4.96	3.42	4.52	3.12
31	6.49	---	3.33	3.81	---	3.26	---	2.74	---	3.48	4.62	---

WTR YR 2003 MEAN 3.88 HIGH 2.20 LOW 8.86

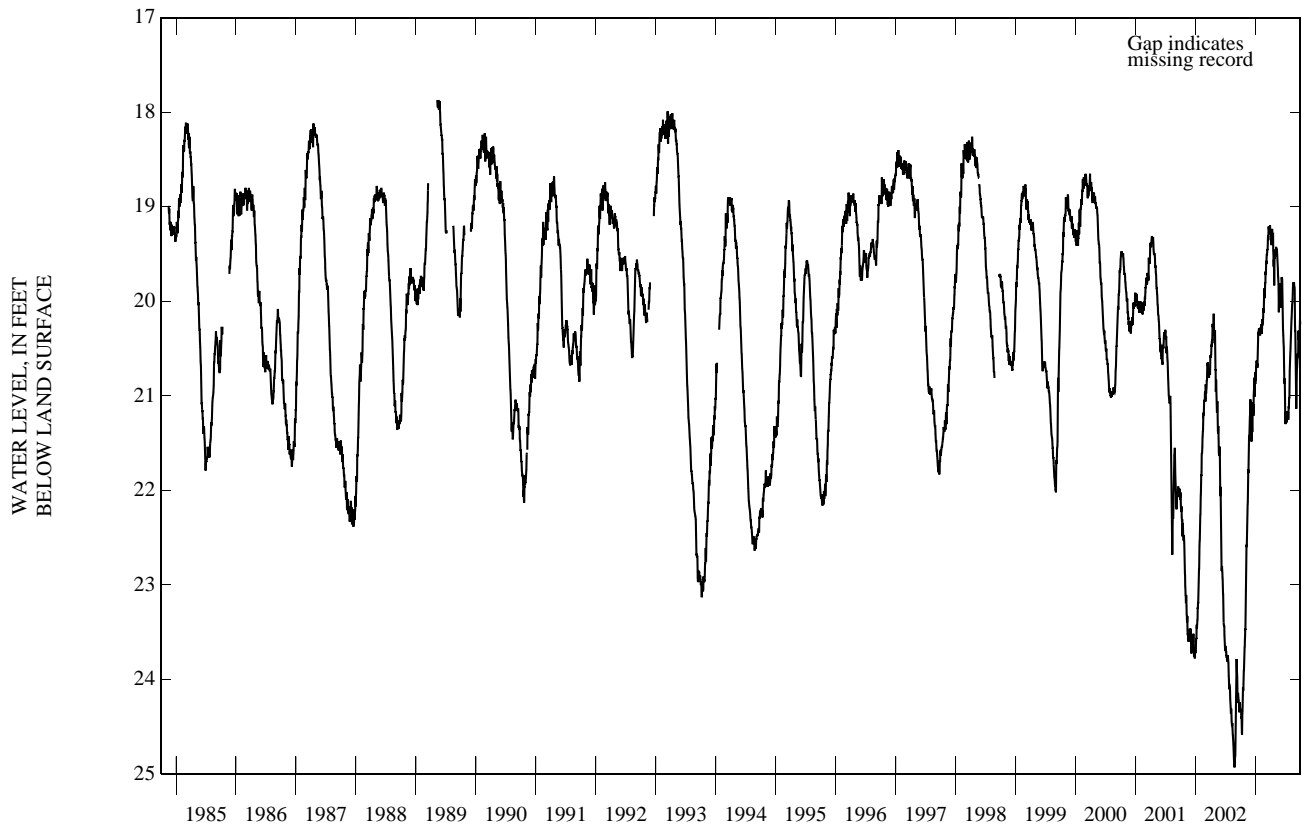
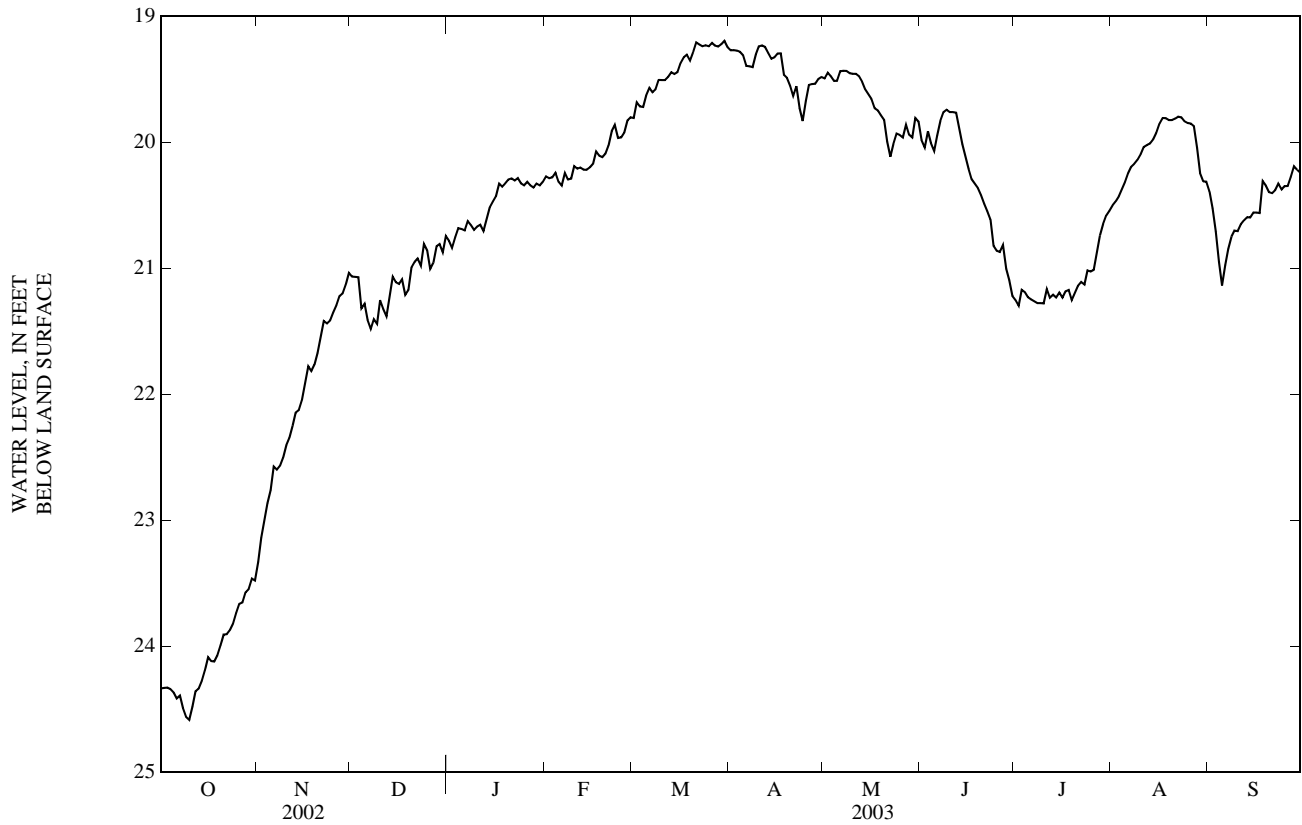
PITT COUNTY—Continued

353219077153801. Local number, NC-160; County number, PI-532.



PITT COUNTY—Continued

353146077193403. Local number, NC-184; DENR Conley Research Station well N23p3; County number, PI-536.



GROUND-WATER LEVELS

ROBESON COUNTY

343840078550009. Local number, NC-177; DENR Littlefield School Research Station well Y42f9; County number, RB-183.

LOCATION.--Lat 34°38'39.7", long 78°54'58.0", Hydrologic Unit 03040203, 6 mi east of Lumberton on State Highway 41 at Littlefield School. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 468 ft; diameter 6 in. to 348 ft, diameter 4 in. from 348 to 468 ft; screened intervals from 390 to 395 ft, 429 to 434 ft, and 444 to 449 ft; measured depth 462 ft, December 1987.

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

DATUM.--Land-surface datum is 140.8 ft above NGVD of 1929. Measuring point: Top of instrument shelf, 1.40 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network. Records prior to July 1985 are from Littlefield School Research Station well Y42f3 which was adjacent to and of similar construction to well Y42f9. Well Y42f3 was destroyed in September 1987.

PERIOD OF RECORD.--October 1970 to current year. Periodic water level measurements June 1981 to February 2000. Continuous record began March 2000. Records for well Y42f3 from October 1970 to June 1985 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 76.40 ft below land-surface datum, Jan. 5, 1971; lowest water level recorded, 153.02 ft below land-surface datum, Jan. 2, 2002.

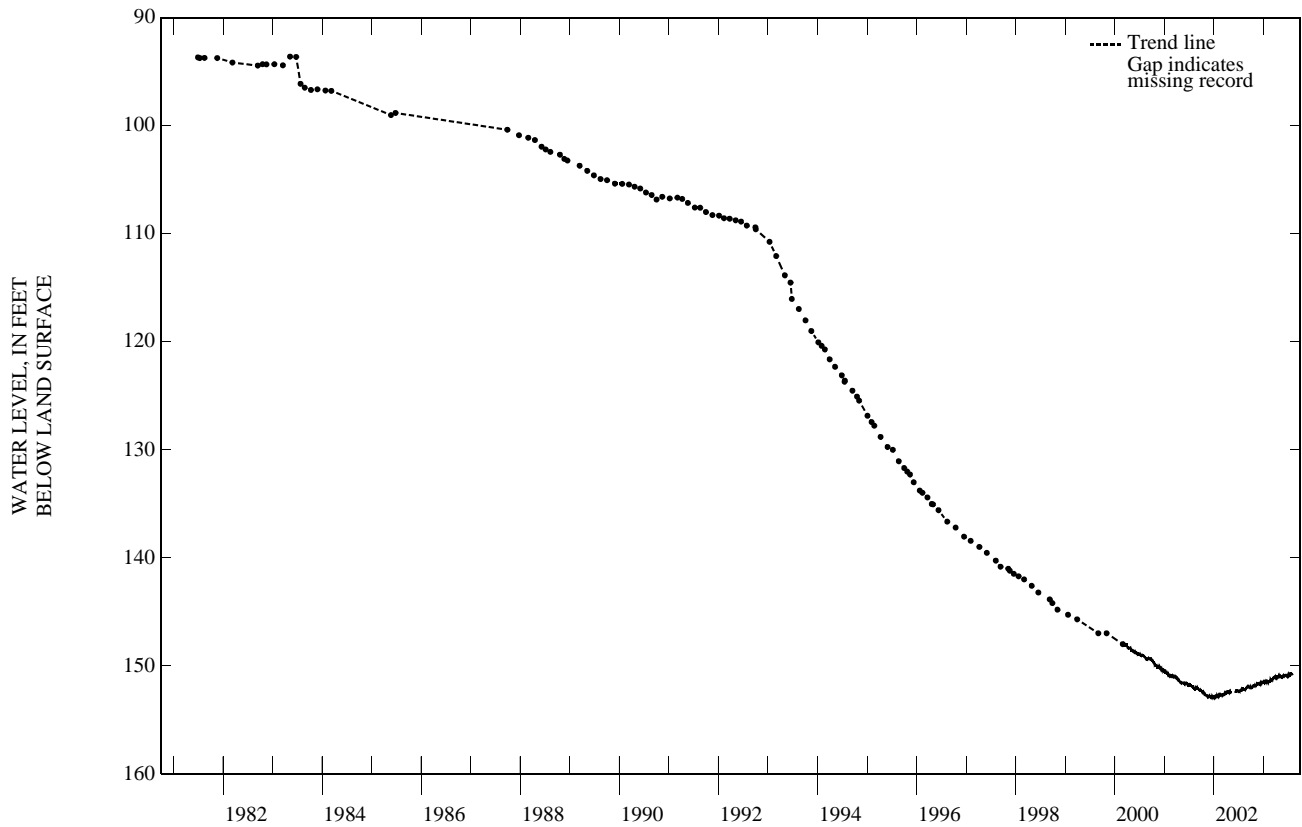
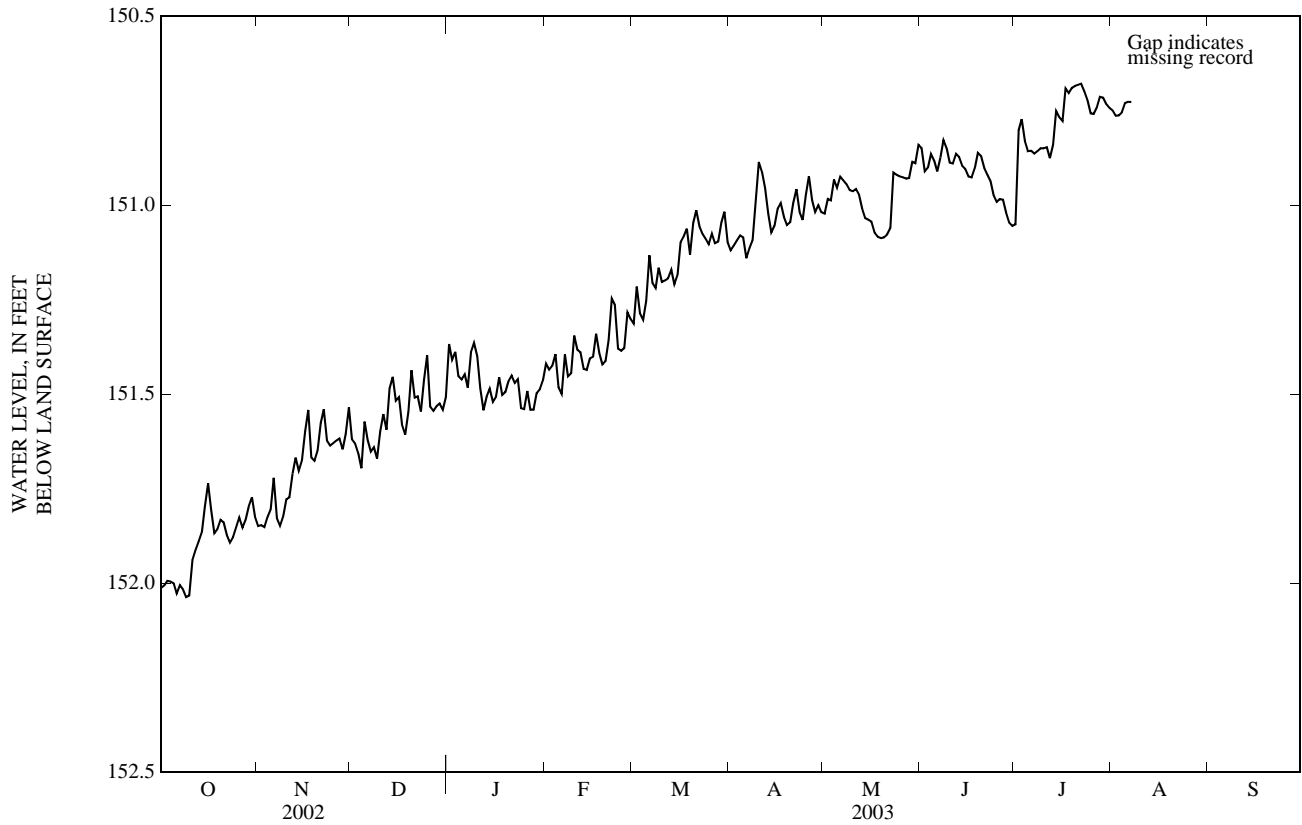
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152.01	151.85	151.62	151.37	151.42	151.31	151.12	151.02	150.85	151.05	150.75	---
2	152.01	151.85	151.63	151.41	151.44	151.22	151.11	150.98	150.91	150.80	150.76	---
3	151.99	151.85	151.66	151.39	151.43	151.29	151.09	150.99	150.90	150.77	150.76	---
4	152.00	151.83	151.70	151.45	151.39	151.30	151.08	150.93	150.86	150.83	150.75	---
5	152.00	151.80	151.57	151.46	151.48	151.25	151.09	150.95	150.88	150.86	150.73	---
6	152.03	151.72	151.62	151.45	151.50	151.13	151.14	150.92	150.91	150.86	150.73	---
7	152.01	151.83	151.65	151.48	151.39	151.21	151.11	150.93	150.87	150.86	150.73	---
8	152.02	151.85	151.64	151.39	151.45	151.22	151.09	150.94	150.83	150.86	---	---
9	152.04	151.82	151.67	151.36	151.44	151.17	150.99	150.96	150.85	150.85	---	---
10	152.03	151.78	151.60	151.40	151.34	151.20	150.89	150.96	150.89	150.85	---	---
11	151.94	151.77	151.55	151.48	151.38	151.20	150.91	150.96	150.89	150.85	---	---
12	151.91	151.71	151.59	151.54	151.39	151.19	150.96	150.97	150.86	150.88	---	---
13	151.89	151.67	151.48	151.51	151.43	151.17	151.02	151.01	150.87	150.84	---	---
14	151.87	151.70	151.45	151.49	151.44	151.21	151.07	151.03	150.90	150.75	---	---
15	151.80	151.68	151.52	151.52	151.41	151.18	151.05	151.04	150.90	150.77	---	---
16	151.74	151.60	151.51	151.51	151.40	151.10	151.01	151.04	150.92	150.78	---	---
17	151.81	151.54	151.58	151.46	151.34	151.08	150.99	151.07	150.93	150.69	---	---
18	151.87	151.67	151.61	151.50	151.39	151.06	151.03	151.08	150.90	150.70	---	---
19	151.86	151.68	151.55	151.49	151.42	151.13	151.05	151.09	150.86	150.69	---	---
20	151.83	151.65	151.44	151.47	151.41	151.05	151.05	151.09	150.87	150.69	---	---
21	151.84	151.58	151.51	151.45	151.36	151.01	150.99	151.08	150.90	150.68	---	---
22	151.87	151.54	151.51	151.47	151.25	151.06	150.96	151.06	150.92	150.68	---	---
23	151.89	151.62	151.55	151.46	151.26	151.08	151.02	150.91	150.94	150.70	---	---
24	151.88	151.64	151.46	151.54	151.38	151.09	151.04	150.92	150.97	150.72	---	---
25	151.85	151.63	151.40	151.54	151.39	151.10	150.97	150.92	150.99	150.76	---	---
26	151.83	151.62	151.53	151.49	151.38	151.08	150.92	150.93	150.98	150.76	---	---
27	151.85	151.62	151.54	151.54	151.28	151.10	150.99	150.93	150.99	150.74	---	---
28	151.83	151.65	151.53	151.54	151.30	151.10	151.02	150.93	151.02	150.71	---	---
29	151.80	151.61	151.53	151.50	---	151.05	151.00	150.89	151.05	150.72	---	---
30	151.77	151.54	151.54	151.49	---	151.02	151.02	150.89	151.06	150.73	---	---
31	151.82	---	151.51	151.46	---	151.10	---	150.84	---	150.74	---	---

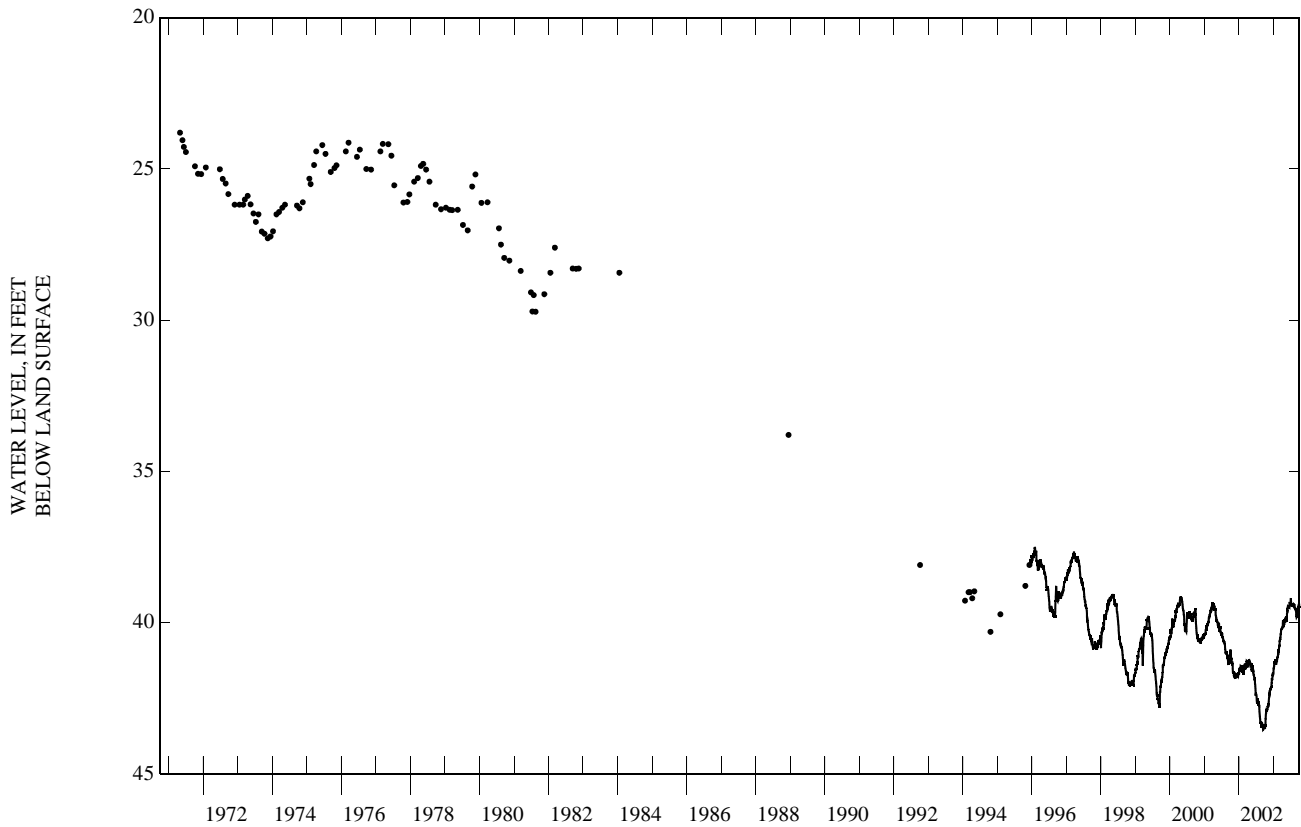
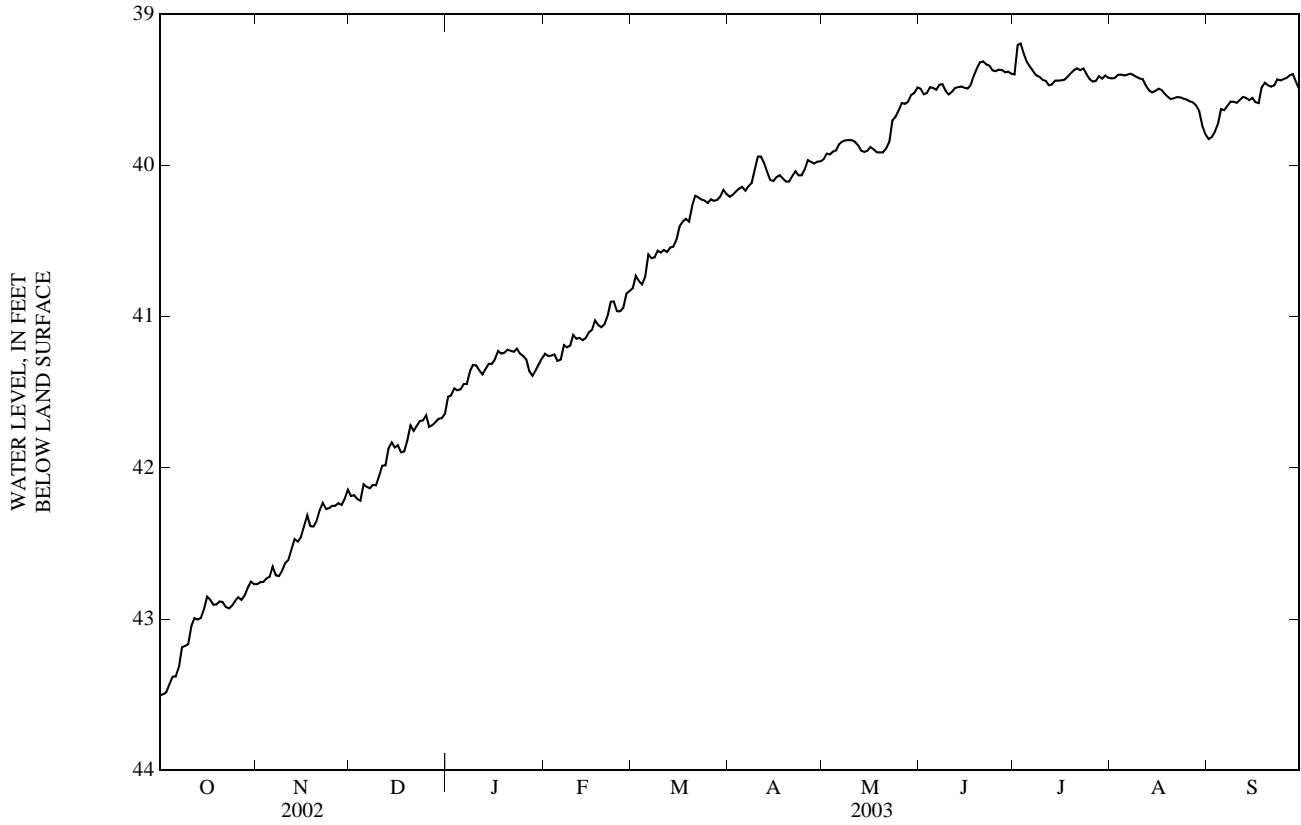
WTR YR 2003 MEAN 151.27 HIGH 150.68 LOW 152.04

GROUND-WATER LEVELS
ROBESON COUNTY—Continued

343840078550009. Local number, NC-177; DENR Littlefield School Research Station well Y42f9; County number, RB-183.



343156079174702. County number, RB-148; DENR Rowland Research Station well Z47m2.



GROUND-WATER LEVELS

ROBESON COUNTY—Continued

345035079051804. County number, RB-168; DENR Rex Rennert Research Station well V45u4.

LOCATION.--Lat 34°50'36", long 79°05'15", Hydrologic Unit 03040203, 1.6 mi southeast of State Highway 71 on Secondary Road 1752 at Rex Rennert School. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 132 ft, diameter 4 in. to 115 ft, diameter 2.5 in. from 101 to 132 ft, screened interval from 122 to 127 ft.

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

DATUM.--Land-surface datum is 187.28 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 2.28 ft above land-surface datum (since July 2001).

REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--July 1981 to current year. Continuous record began December 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.26 ft below land-surface datum, Jan. 29, 1997; lowest recorded, 8.50 ft below land-surface datum, Oct. 10, 11, 2002.

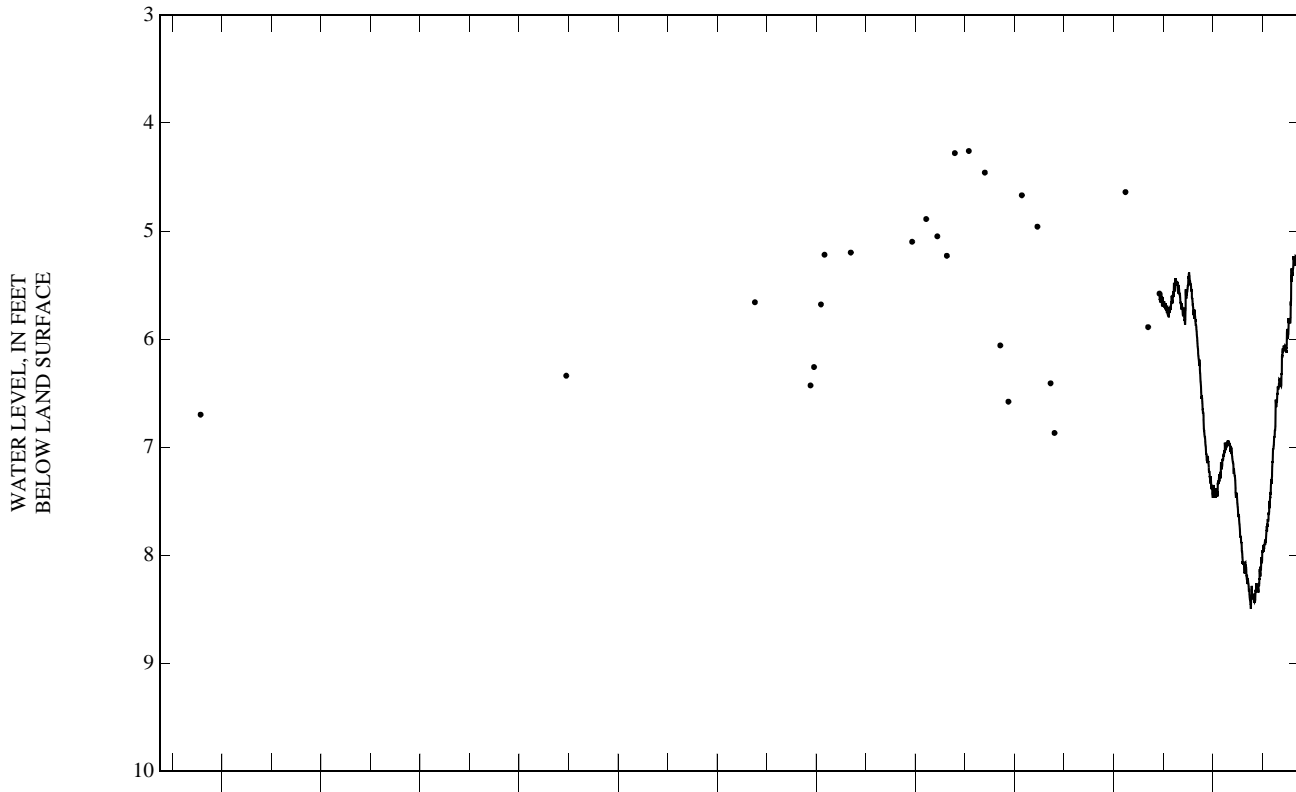
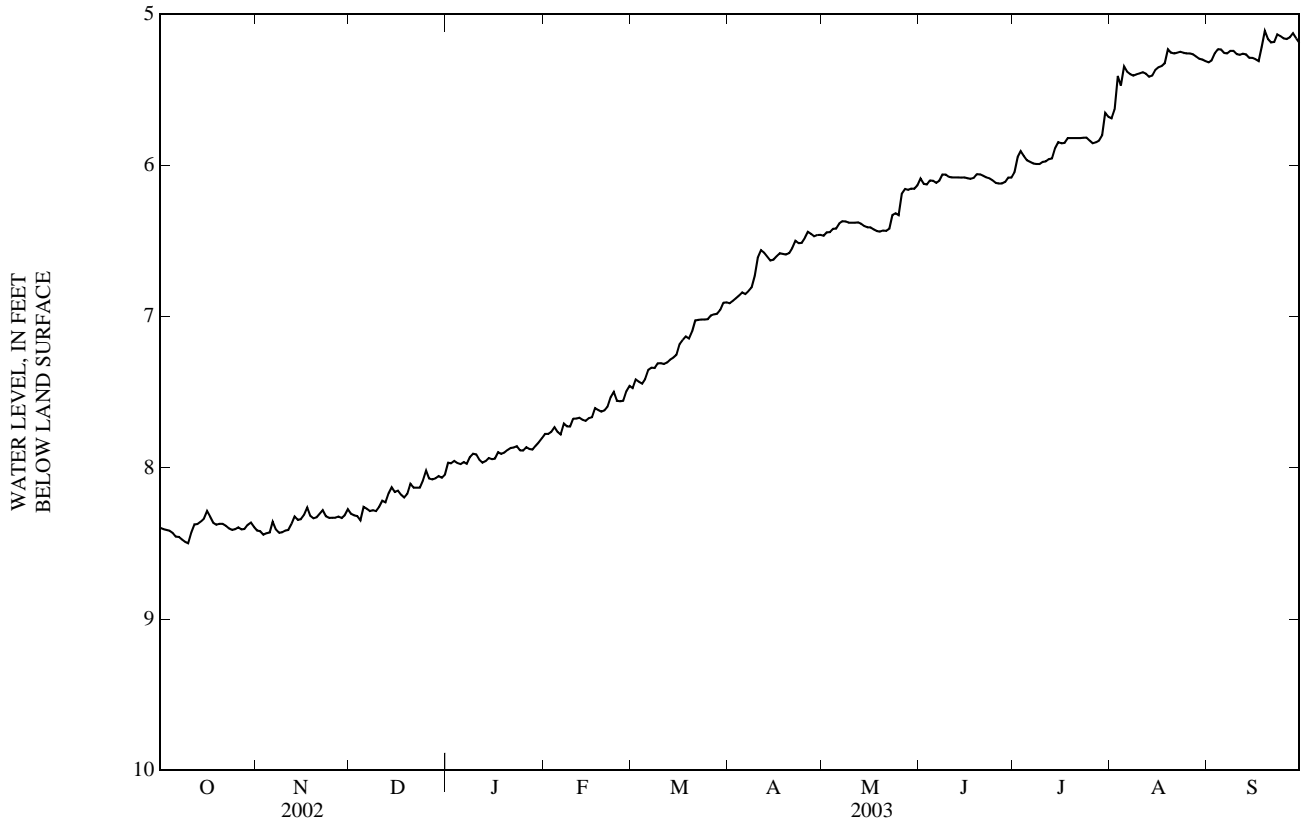
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.40	8.42	8.30	7.97	7.78	7.47	6.91	6.47	6.09	6.05	5.69	5.32
2	8.41	8.42	8.31	7.97	7.78	7.42	6.90	6.44	6.12	5.95	5.63	5.31
3	8.41	8.44	8.32	7.95	7.76	7.43	6.88	6.44	6.13	5.91	5.41	5.26
4	8.42	8.43	8.35	7.97	7.73	7.44	6.86	6.42	6.10	5.94	5.47	5.23
5	8.43	8.43	8.26	7.98	7.76	7.41	6.84	6.42	6.10	5.97	5.35	5.23
6	8.45	8.36	8.27	7.96	7.78	7.35	6.85	6.38	6.12	5.98	5.38	5.26
7	8.46	8.41	8.29	7.97	7.71	7.34	6.83	6.37	6.10	5.99	5.40	5.26
8	8.47	8.43	8.28	7.93	7.73	7.34	6.81	6.37	6.06	5.99	5.41	5.24
9	8.49	8.43	8.29	7.91	7.73	7.31	6.73	6.38	6.06	5.99	5.40	5.24
10	8.50	8.41	8.26	7.91	7.68	7.31	6.61	6.38	6.08	5.98	5.39	5.26
11	8.43	8.41	8.22	7.95	7.67	7.31	6.56	6.38	6.08	5.97	5.38	5.27
12	8.37	8.37	8.23	7.97	7.67	7.30	6.58	6.38	6.08	5.96	5.39	5.26
13	8.37	8.32	8.17	7.96	7.68	7.28	6.60	6.39	6.08	5.95	5.42	5.27
14	8.36	8.34	8.13	7.94	7.69	7.27	6.63	6.40	6.08	5.89	5.41	5.29
15	8.34	8.34	8.16	7.94	7.67	7.25	6.62	6.41	6.08	5.85	5.37	5.29
16	8.29	8.31	8.15	7.94	7.67	7.18	6.60	6.41	6.09	5.85	5.35	5.30
17	8.32	8.26	8.18	7.90	7.61	7.16	6.58	6.42	6.09	5.85	5.34	5.31
18	8.36	8.32	8.20	7.91	7.62	7.13	6.59	6.43	6.08	5.82	5.33	5.22
19	8.38	8.33	8.17	7.90	7.63	7.15	6.59	6.44	6.06	5.82	5.23	5.11
20	8.37	8.33	8.11	7.88	7.62	7.10	6.58	6.43	6.06	5.82	5.26	5.16
21	8.37	8.30	8.13	7.87	7.60	7.03	6.55	6.43	6.07	5.82	5.26	5.19
22	8.38	8.28	8.13	7.87	7.53	7.02	6.50	6.42	6.08	5.82	5.26	5.18
23	8.40	8.32	8.13	7.86	7.50	7.02	6.51	6.33	6.09	5.82	5.25	5.13
24	8.41	8.33	8.09	7.88	7.56	7.02	6.51	6.32	6.10	5.82	5.26	5.15
25	8.41	8.33	8.02	7.89	7.56	7.02	6.48	6.33	6.12	5.84	5.26	5.16
26	8.39	8.33	8.07	7.86	7.56	6.99	6.44	6.19	6.12	5.86	5.26	5.17
27	8.41	8.32	8.08	7.87	7.49	6.99	6.45	6.16	6.12	5.85	5.27	5.15
28	8.40	8.33	8.07	7.88	7.46	6.98	6.47	6.16	6.11	5.84	5.28	5.13
29	8.38	8.31	8.05	7.86	---	6.95	6.46	6.15	6.08	5.80	5.30	5.16
30	8.36	8.27	8.07	7.83	---	6.91	6.46	6.16	6.08	5.65	5.30	5.19
31	8.39	---	8.05	7.80	---	6.91	---	6.13	---	5.68	5.31	---

WTR YR 2003 MEAN 6.93 HIGH 5.11 LOW 8.50

GROUND-WATER LEVELS
ROBESON COUNTY—Continued

345035079051804. County number, RB-168; DENR Rex Rennert Research Station well V45u4.



GROUND-WATER LEVELS

ROBESON COUNTY—Continued

343840078550010. County number, RB-184; DENR Littlefield School Research Station well Y42f10.

LOCATION.--Lat 34°38'41", long 78°54'57", Hydrologic Unit 03040203, 4 mi east of Lumberton on State Highway 41 at Littlefield School. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 330 ft, diameter 6 in. to 280 ft, diameter 4 in. from 258 to 330 ft, screened intervals from 300 to 305 ft, 310 to 315 ft, and 320 to 325 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 139.8 ft above NGVD of 1929. Measuring point: Top of instrument shelf, 2.28 ft above land-surface datum.

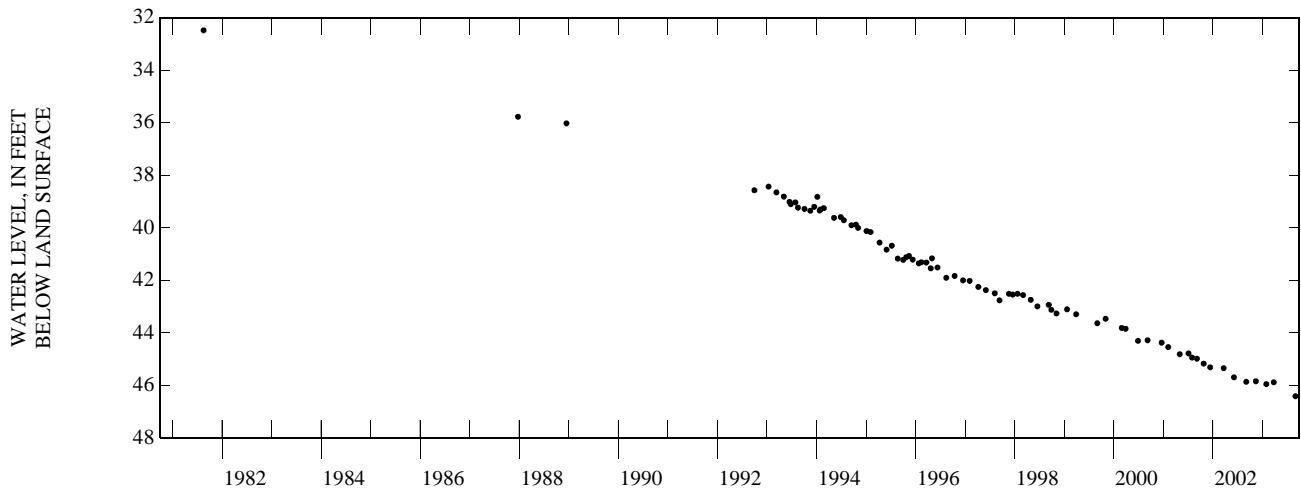
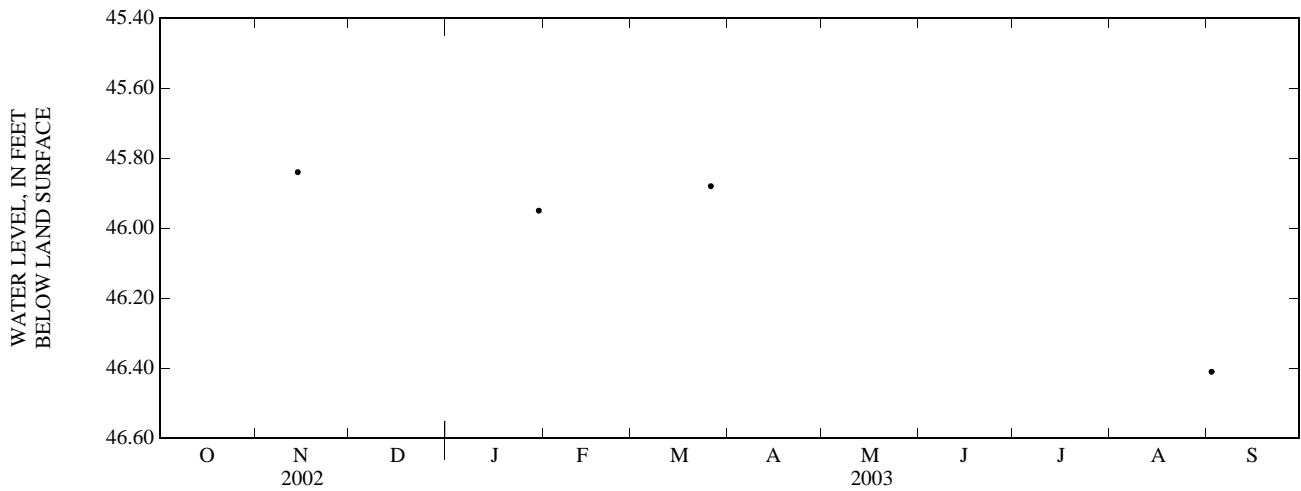
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--August 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.48 ft below land-surface datum, Aug. 18, 1981; lowest measured, 46.41 ft below land-surface datum, Sept. 2, 2003.

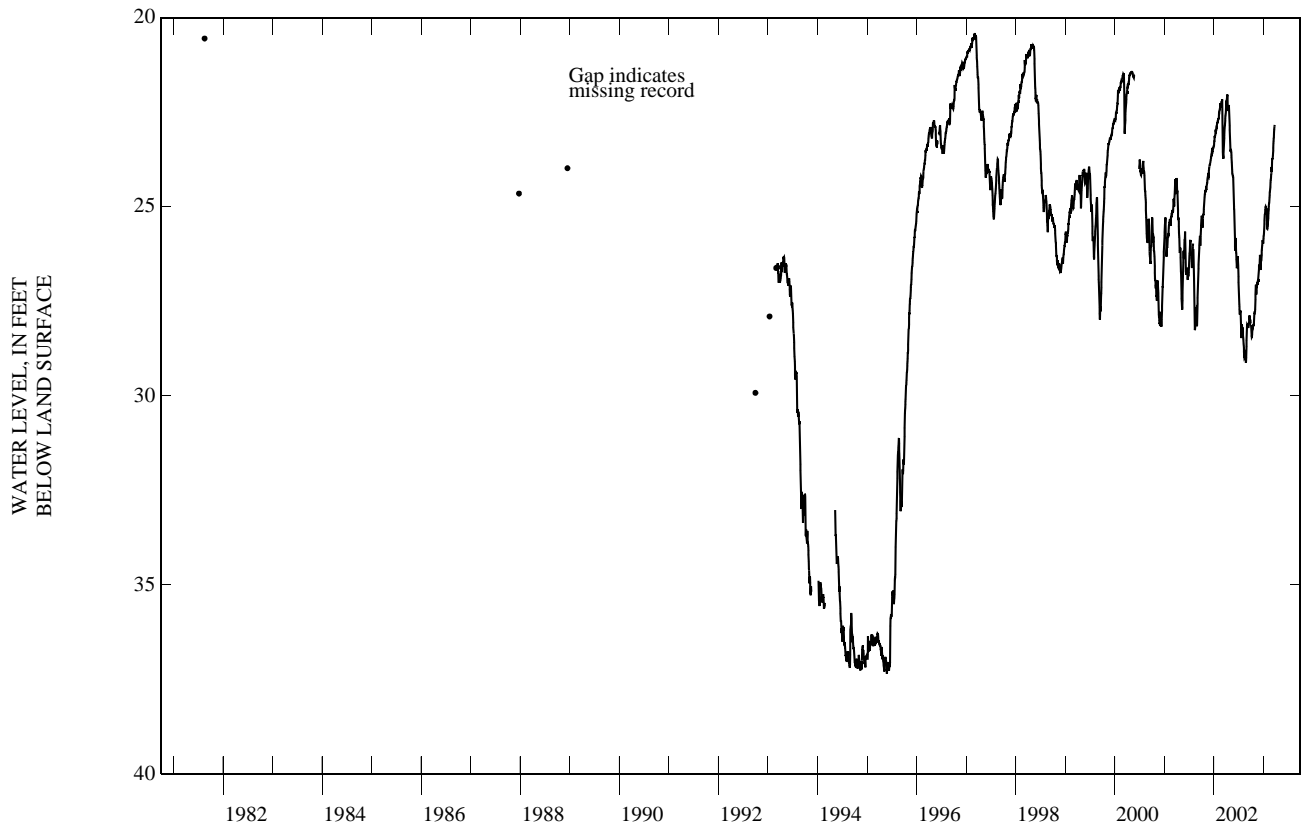
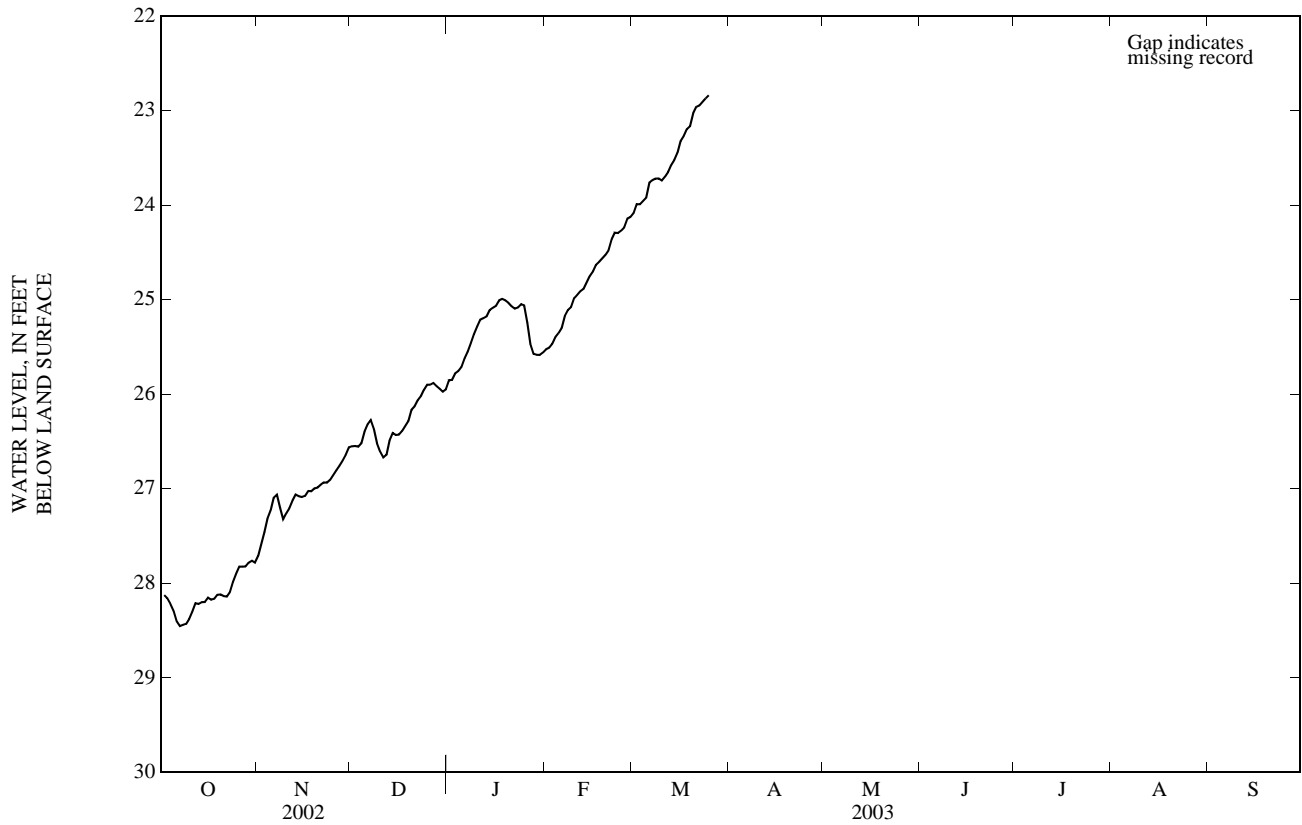
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 14	45.84	JAN 30	45.95	MAR 26	45.88	SEP 02	46.41



GROUND-WATER LEVELS
ROBESON COUNTY—Continued

343840078550011. County number, RB-185; DENR Littlefield School Research Station well Y42f11.



GROUND-WATER LEVELS

ROBESON COUNTY—Continued

342620078581801. County number, RB-188; DENR Boardman Research Station well AA43q1.

LOCATION.--Lat 34°26'23", long 78°58'18", Hydrologic Unit 03040203, west of Boardman, 0.6 mi southwest of U.S. Highway 74 on Secondary Road 2245. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 497 ft, diameter 4 in. to 220 ft, diameter 2.5 in. from 214 to 497 ft, screened interval from 445 to 455 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 80.46 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of 4-inch casing, 2.45 ft above land-surface datum (since June 2000).

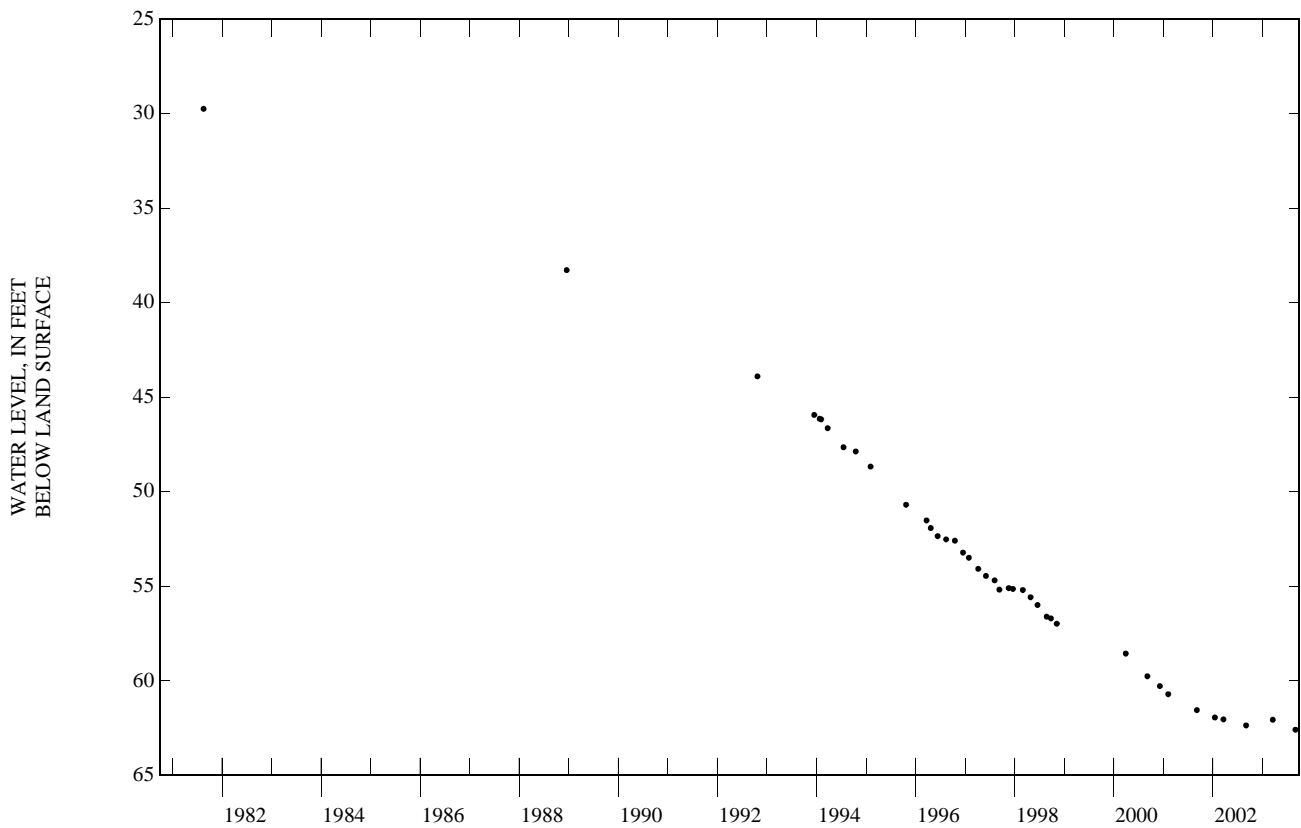
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--August 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.75 ft below land-surface datum, Aug. 18, 1981; lowest water level measured, 62.59 ft below land-surface datum, Sept. 2, 2003.

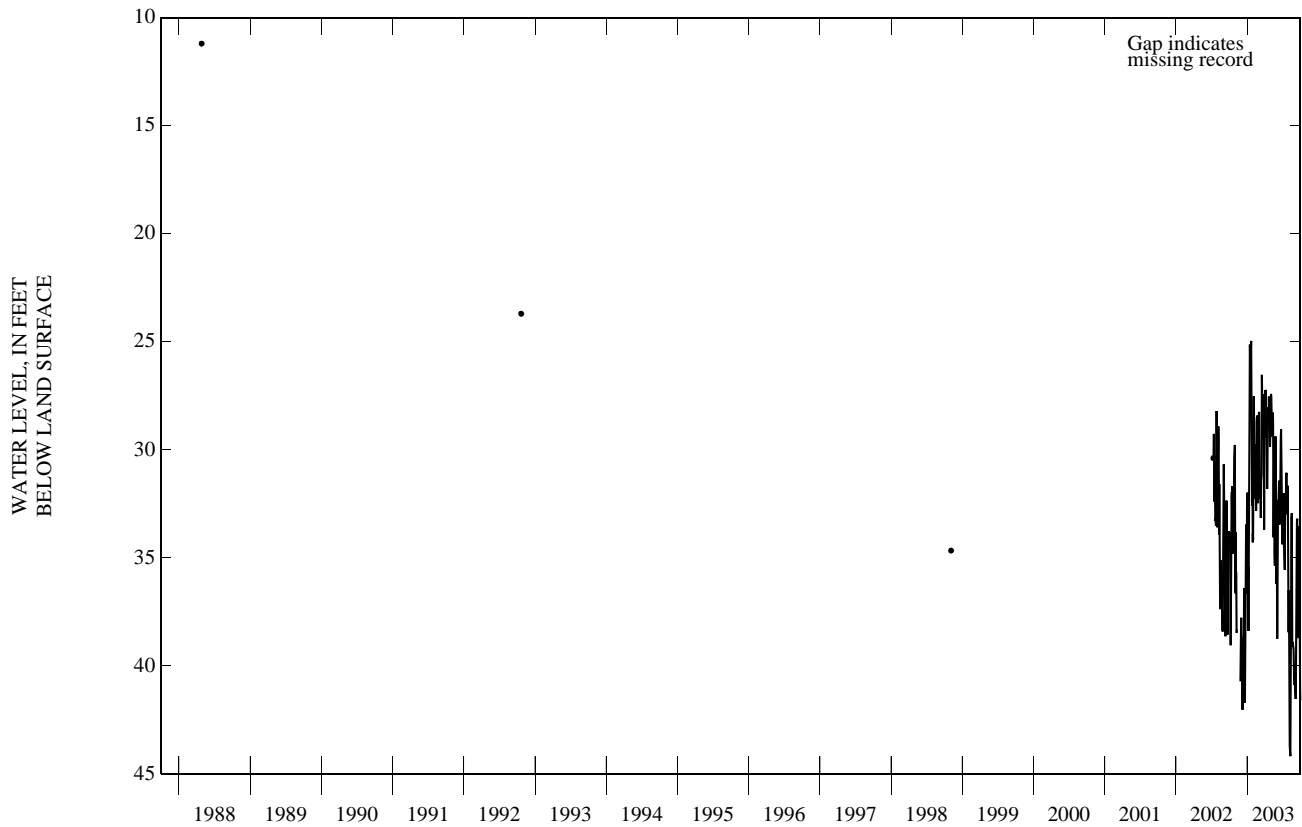
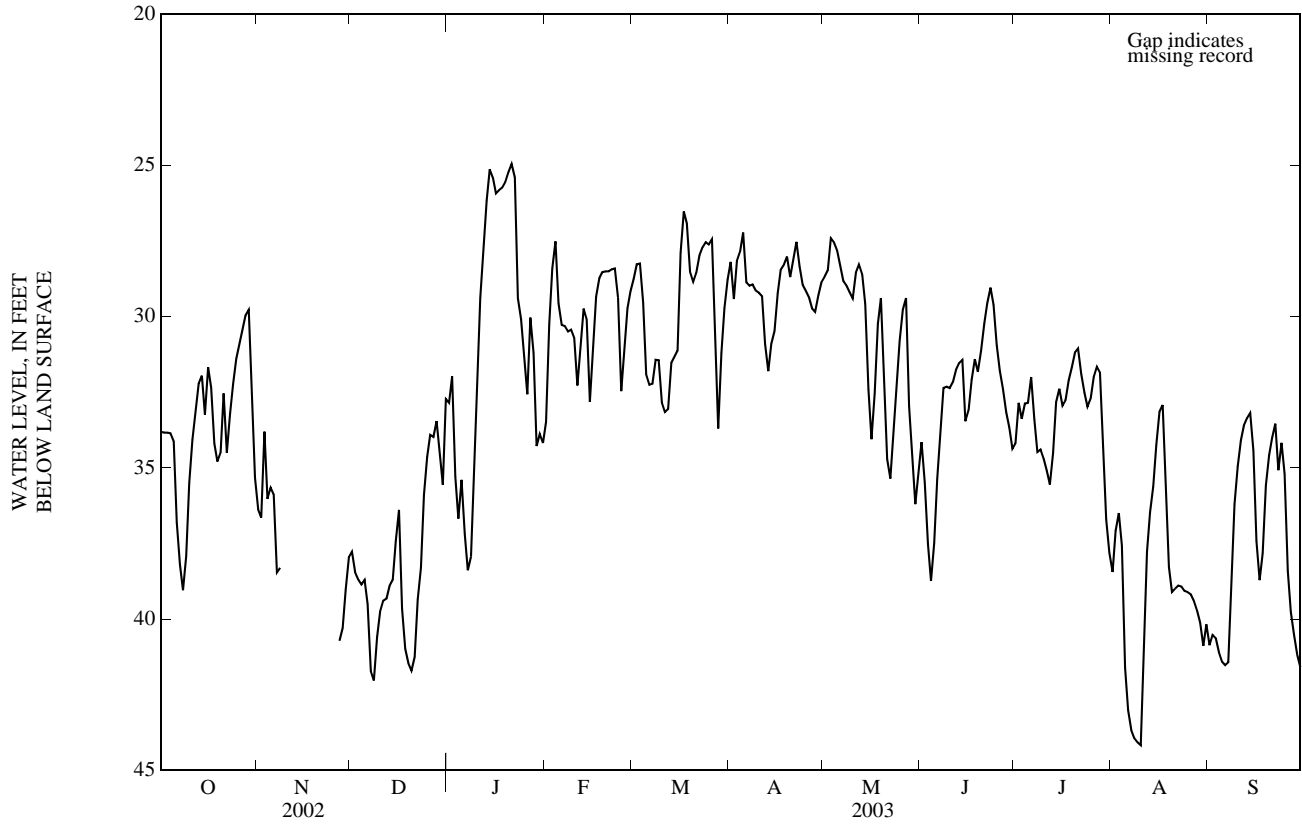
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 19	62.06	SEP 02	62.59



GROUND-WATER LEVELS
ROBESON COUNTY—Continued

343753079020301. County number, RB-199; Lumberton well 3.



GROUND-WATER LEVELS
ROBESON COUNTY—Continued

344621079192401. County number, RB-264.

LOCATION.--Lat 34°46'22", long 79°19'23", Hydrologic Unit 03040203, 2.4 mi northeast of Maxton on State Highway 71 at Campbell Soup Company.
Owner: Campbell Soup Company.

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled well, measured depth 84.3 ft, diameter 4 in., screened interval from 59 to 79 ft.

INSTRUMENTATION.--Water-level recorder collecting data at 30-minute intervals.

DATUM.--Land-surface datum is 195 ft above NGVD of 1929 (from topographic map). Measuring point: Top of instrument shelf, 1.37 ft above land-surface datum (since August 1996).

REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study. Water levels affected by pumping of nearby municipal wells.

PERIOD OF RECORD.--December 1993 to current year. Continuous record began August 1996.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.55 ft below land-surface datum, Mar. 22, 1998; lowest water level recorded, 15.47 ft below land-surface datum, Oct. 8, 2002.

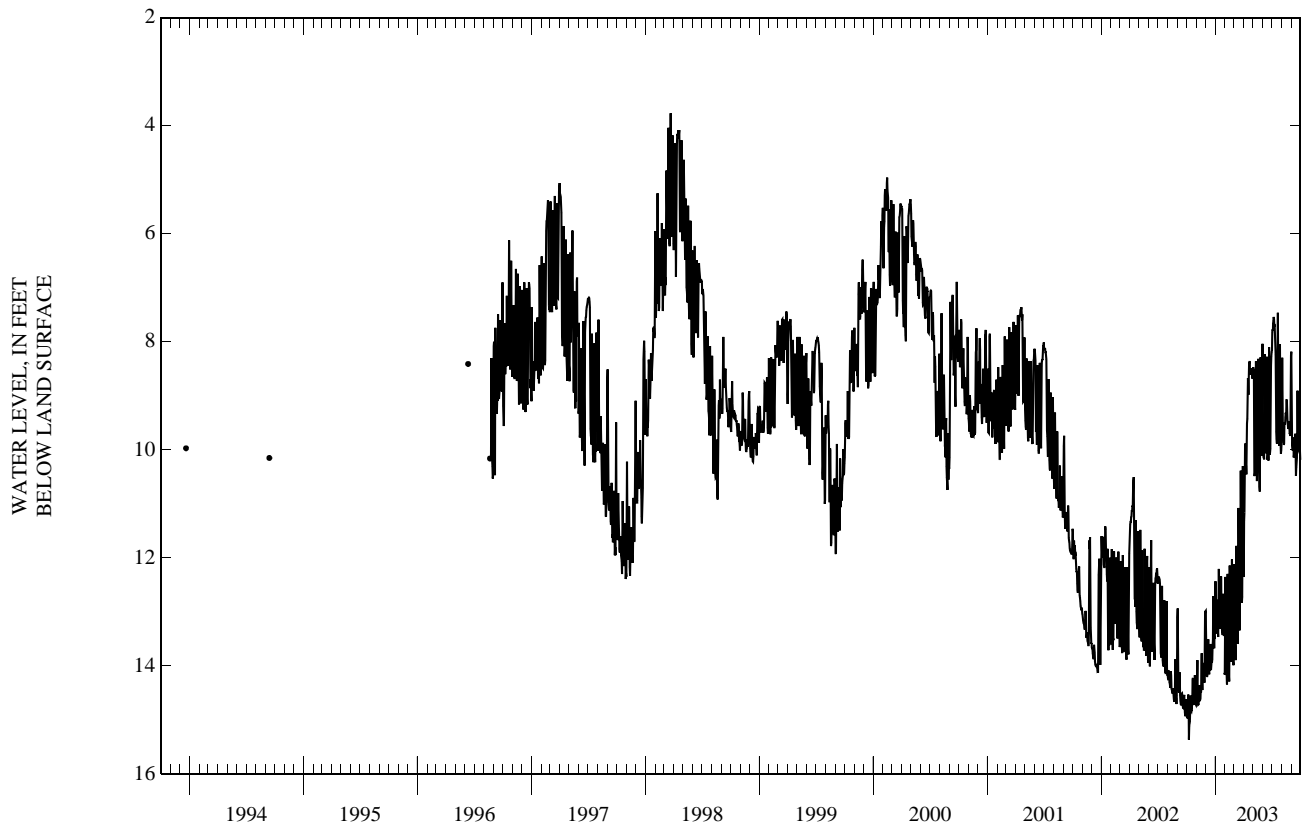
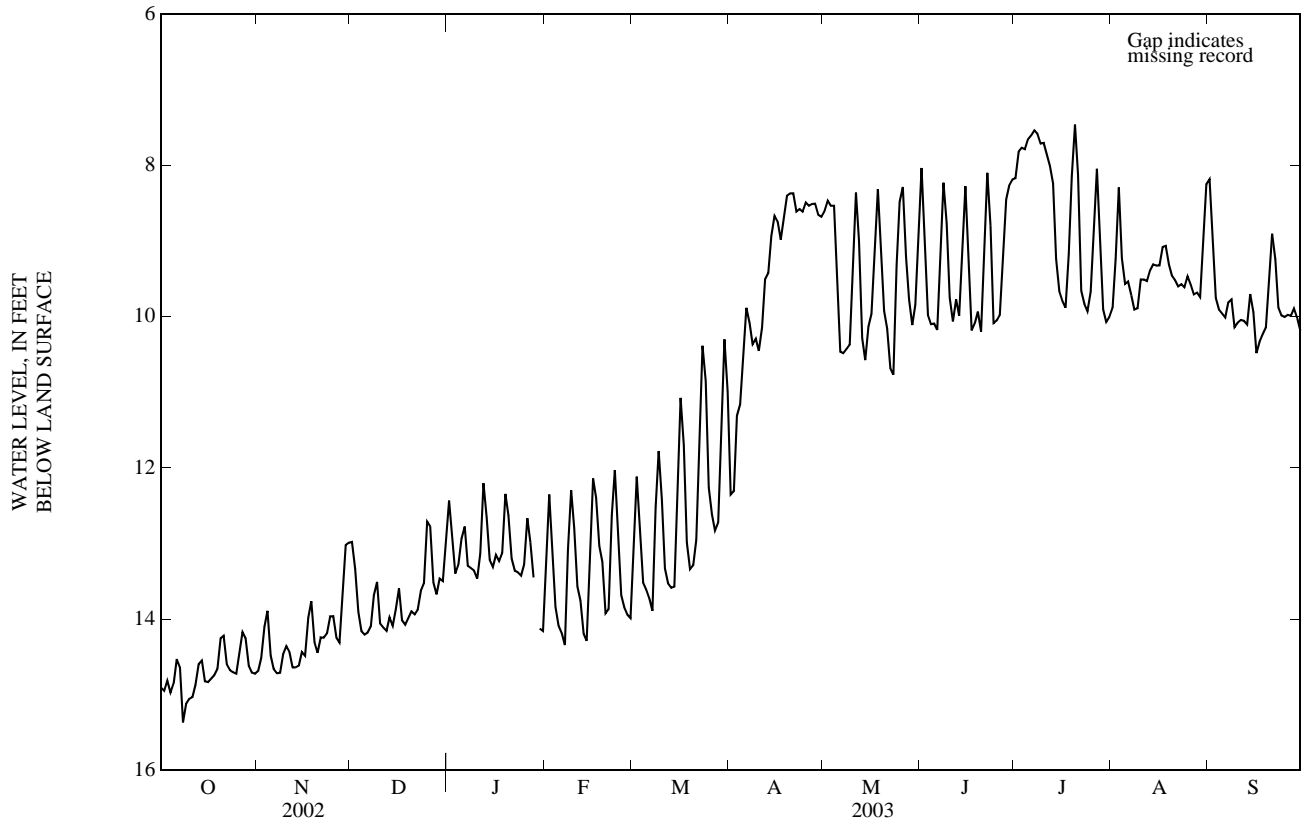
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.91	14.69	12.98	12.43	13.30	13.01	12.35	8.60	8.04	8.17	9.88	8.18
2	14.95	14.51	13.34	12.87	12.35	12.12	12.31	8.47	8.83	7.82	9.24	9.01
3	14.82	14.10	13.91	13.40	12.97	12.72	11.31	8.53	9.98	7.77	8.29	9.75
4	14.97	13.89	14.16	13.28	13.84	13.52	11.16	8.54	10.10	7.79	9.23	9.91
5	14.85	14.48	14.20	12.93	14.08	13.61	10.49	9.32	10.09	7.66	9.57	9.96
6	14.53	14.66	14.18	12.78	14.18	13.73	9.89	10.47	10.18	7.61	9.54	10.01
7	14.64	14.72	14.10	13.30	14.34	13.89	10.08	10.48	9.08	7.54	9.72	9.81
8	15.37	14.71	13.68	13.33	13.08	12.52	10.37	10.43	8.23	7.58	9.91	9.77
9	15.12	14.46	13.51	13.36	12.30	11.78	10.29	10.37	8.76	7.71	9.89	10.14
10	15.06	14.36	14.06	13.46	12.79	12.42	10.45	9.33	9.75	7.70	9.51	10.08
11	15.03	14.43	14.11	13.13	13.57	13.33	10.15	8.36	10.06	7.85	9.51	10.04
12	14.87	14.64	14.16	12.20	13.75	13.53	9.51	9.00	9.77	8.01	9.53	10.06
13	14.60	14.64	13.98	12.66	14.19	13.59	9.42	10.29	9.99	8.24	9.39	10.10
14	14.55	14.62	14.09	13.22	14.29	13.57	8.94	10.58	9.22	9.24	9.31	9.70
15	14.82	14.44	13.87	13.31	13.06	12.30	8.67	10.13	8.28	9.66	9.33	9.94
16	14.83	14.49	13.59	13.15	12.14	11.08	8.75	9.96	9.15	9.80	9.32	10.48
17	14.79	13.98	14.02	13.23	12.40	11.70	8.98	9.23	10.18	9.88	9.08	10.33
18	14.74	13.76	14.07	13.13	13.03	12.99	8.67	8.32	10.09	9.18	9.07	10.24
19	14.66	14.31	13.98	12.34	13.24	13.34	8.40	9.10	9.94	8.14	9.31	10.15
20	14.26	14.45	13.90	12.63	13.93	13.29	8.37	9.93	10.20	7.46	9.46	9.50
21	14.22	14.24	13.94	13.20	13.87	12.95	8.37	10.16	9.08	8.13	9.52	8.90
22	14.60	14.25	13.88	13.36	12.63	11.34	8.61	10.68	8.10	9.66	9.60	9.24
23	14.68	14.19	13.62	13.38	12.03	10.39	8.58	10.77	8.80	9.83	9.57	9.88
24	14.70	13.97	13.53	13.43	12.73	10.85	8.61	9.32	10.09	9.93	9.61	9.99
25	14.72	13.96	12.71	13.28	13.68	12.26	8.49	8.48	10.05	9.67	9.47	10.00
26	14.45	14.25	12.78	12.67	13.84	12.62	8.53	8.29	9.98	8.86	9.58	9.98
27	14.17	14.31	13.52	12.98	13.94	12.83	8.51	9.21	9.24	8.05	9.71	9.99
28	14.25	13.62	13.67	13.45	13.99	12.72	8.51	9.78	8.45	8.79	9.68	9.89
29	14.61	13.02	13.46	---	---	11.34	8.66	10.11	8.27	9.91	9.74	10.02
30	14.71	12.99	13.50	14.13	---	10.30	8.68	9.85	8.19	10.07	9.04	10.18
31	14.72	---	13.02	14.16	---	10.99	---	8.92	---	10.00	8.25	---

WTR YR 2003 MEAN 11.48 HIGH 7.46 LOW 15.37

ROBESON COUNTY—Continued

344621079192401. County number, RB-264.



GROUND-WATER LEVELS

ROCKINGHAM COUNTY

362334079421601. County number, RK-227; DENR Upper Piedmont Research Station MW-N1S (Regolith well).

LOCATION.--Lat 36°23'34.5", long 79°42'17.2", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 15 ft, diameter 4 in., cased to 5 ft, screened interval from 5 ft to 15 ft, sand filter packed from 4 ft to 15 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 680 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.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.55 ft below land-surface datum, Aug. 12, 2003; lowest water level measured 7.91 ft below land-surface datum, Aug. 7, 2002.

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

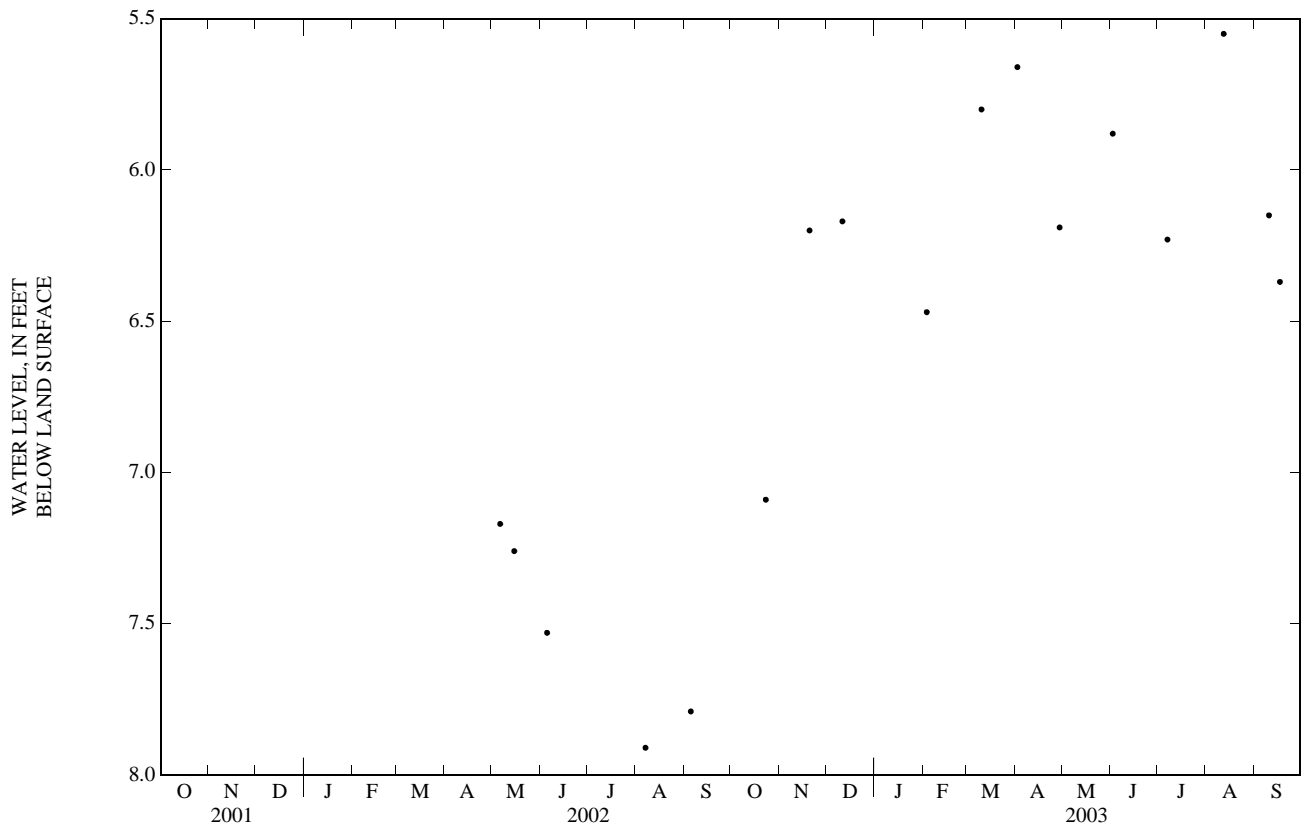
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 06	7.17*	MAY 15	7.26*	JUN 05	7.53*	AUG 07	7.91*	SEP 05	7.79*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	7.09*	DEC 11	6.17*	MAR 10	5.80*	APR 29	6.19*	JUL 07	6.23*	SEP 10	6.15*
NOV 20	6.20*	FEB 03	6.47*	APR 02	5.66*	JUN 02	5.88*	AUG 12	5.55*	17	6.37*

*DENR measurements.



ROCKINGHAM COUNTY—Continued

362334079421602. County number, RK-228; DENR Upper Piedmont Research Station MW-N11 (Transition Zone well).

LOCATION.--Lat 36°23'34.5", long 79°42'16.6", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 65 ft, diameter 4 in., cased to 50 ft, screened interval from 50 ft to 65 ft, sand filter packed from 20 ft to 50 ft, natural fill from 50 ft to 65 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 680 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.81 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.99 ft below land-surface datum, Aug. 12, 2003; lowest water level measured 7.38 ft below land-surface datum, Aug. 7, 2002.

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

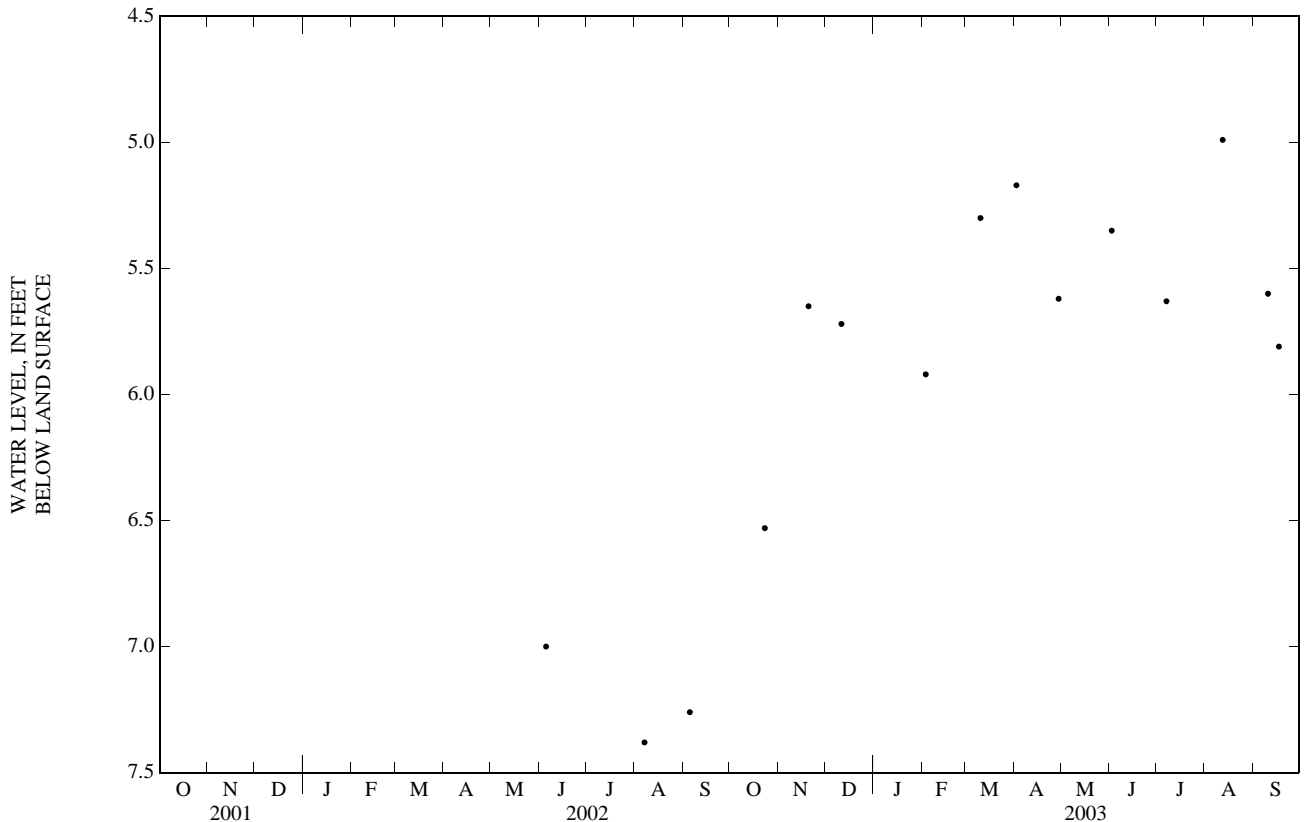
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 05	7.00*	AUG 07	7.38*	SEP 05	7.26*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	6.53*	DEC 11	5.72*	MAR 10	5.30*	APR 29	5.62*	JUL 07	5.63*	SEP 10	5.60*
NOV 20	5.65*	FEB 03	5.92*	APR 02	5.17*	JUN 02	5.35*	AUG 12	4.99*	17	5.81*

*DENR measurements.



GROUND-WATER LEVELS
ROCKINGHAM COUNTY—Continued

362334079421603. County number, RK-229; DENR Upper Piedmont Research Station MW-N1D (Bedrock well).

LOCATION.--Lat 36°23'34.5", long 79°42'16.9", 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.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 6 in., cased to 100 ft, open hole from 100 ft to 300 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 680 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.90 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.40 ft below land-surface datum, June 2, 2003; lowest water level measured 4.62 ft below land-surface datum, Aug. 7, 2002.

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

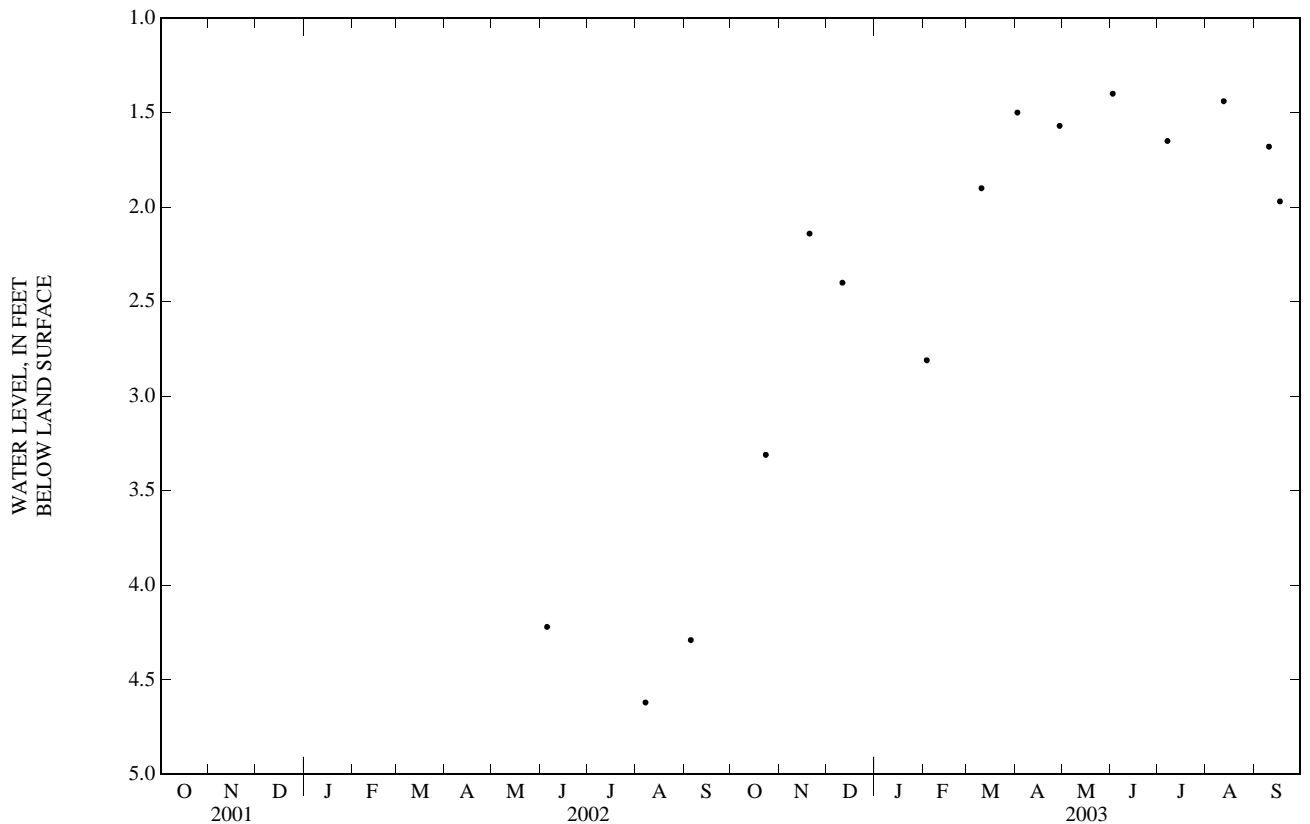
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 05	4.22*	AUG 07	4.62*	SEP 05	4.29*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	3.31*	DEC 11	2.40*	MAR 10	1.90*	APR 29	1.57*	JUL 07	1.65*	SEP 10	1.68*
NOV 20	2.14*	FEB 03	2.81*	APR 02	1.50*	JUN 02	1.40*	AUG 12	1.44*	17	1.97*

*DENR measurements.



GROUND-WATER LEVELS
ROCKINGHAM COUNTY—Continued

362331079421602. County number, RK-231; DENR Upper Piedmont Research Station MW-N2I (Transition Zone well).

LOCATION.--Lat 36°23'32.1", long 79°42'16.2", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 50 ft, diameter 4 in., cased to 25 ft, open hole from 25 ft to 50 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 680 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.99 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--June 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.90 ft below land-surface datum, Aug. 12, 2003; lowest water level measured, 6.98 ft below land-surface datum, Aug. 7, 2002.

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

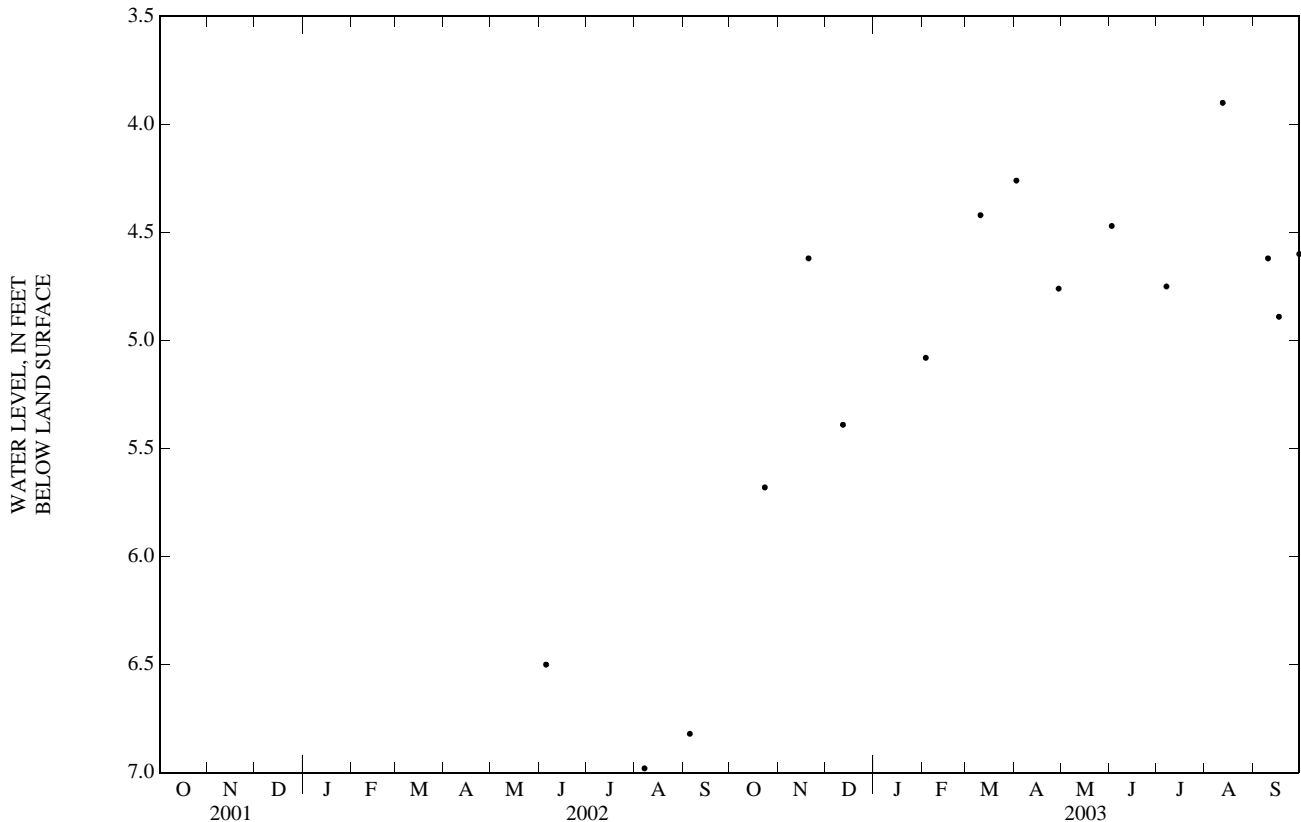
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 05	6.50*	AUG 07	6.98*	SEP 05	6.82*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	5.68*	FEB 03	5.08*	APR 29	4.76*	AUG 12	3.90*	SEP 30	4.60*
NOV 20	4.62*	MAR 10	4.42*	JUN 02	4.47*	SEP 10	4.62*		
DEC 12	5.39*	APR 02	4.26*	JUL 07	4.75*	17	4.89*		

*DENR measurements.



ROCKINGHAM COUNTY—Continued

362331079421603. County number, RK-232; DENR Upper Piedmont Research Station MW-N2D (Bedrock well).

LOCATION.--Lat 36°23'31.9", long 79°42'16.7", 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.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 4 in., cased to 60 ft, open hole from 60 ft to 300 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 680 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 3.05 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--June 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.23 ft below land-surface datum, Aug. 12, 2003; lowest water level measured 7.32 ft below land-surface datum, Aug. 7, 2002.

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

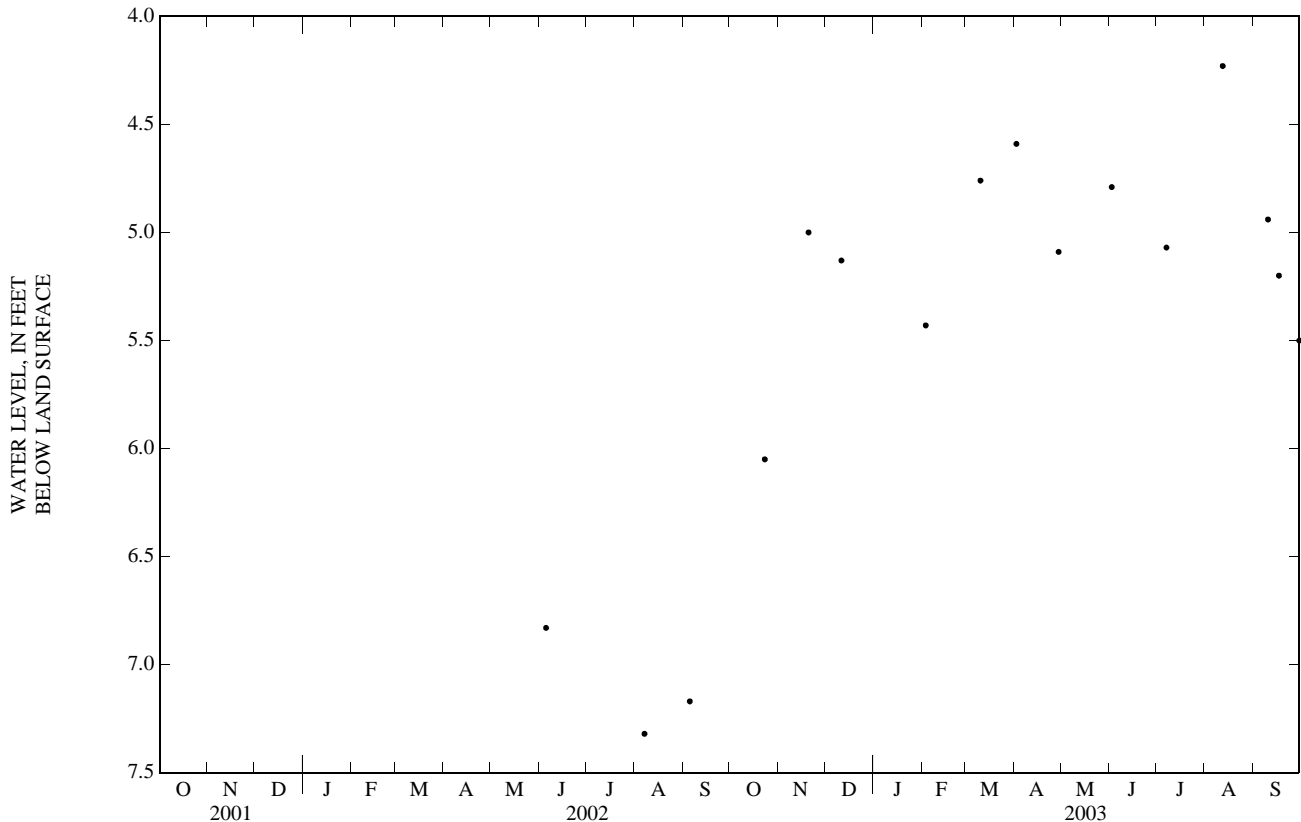
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 05	6.83*	AUG 07	7.32*	SEP 05	7.17*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	6.05*	FEB 03	5.43*	APR 29	5.09*	AUG 12	4.23*	SEP 30	5.50*
NOV 20	5.00*	MAR 10	4.76*	JUN 02	4.79*	SEP 10	4.94*		
DEC 11	5.13*	APR 02	4.59*	JUL 07	5.07*	17	5.20*		

*DENR measurements.



GROUND-WATER LEVELS

ROCKINGHAM COUNTY—Continued

362328079421701. County number, RK-233; DENR Upper Piedmont Research Station MW-N3I (Transition Zone well).

LOCATION.--Lat 36°23'28", long 79°42'17", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 30 ft, diameter 4 in., cased to 15 ft, screened interval from 25 ft to 50 ft, sand filter packed from 12 ft to 30 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 760 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.20 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--August 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.59 ft below land-surface datum, July 7, 2003; lowest water level measured 29.30 ft below land-surface datum, Mar. 10, 2003.

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

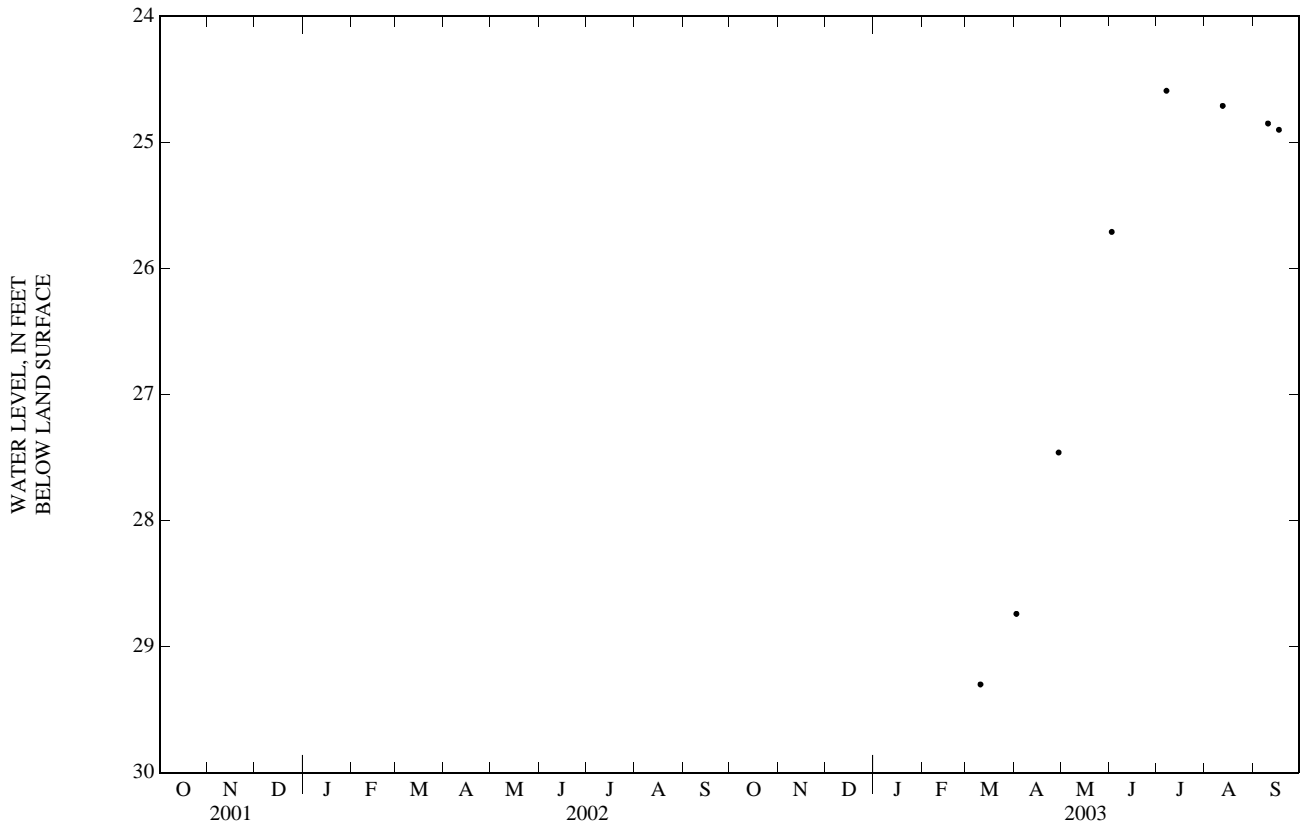
DATE	WATER LEVEL	DATE	WATER LEVEL
AUG 07	DRY*	SEP 05	DRY*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	DRY*	DEC 12	DRY*	MAR 10	29.30*	APR 29	27.46*	JUL 07	24.59*	SEP 10	24.85*
NOV 20	DRY*	FEB 03	DRY*	APR 02	28.74*	JUN 02	25.71*	AUG 12	24.71*	17	24.90*

*DENR measurements.



ROCKINGHAM COUNTY—Continued

362328079421702. County number, RK-234; DENR Upper Piedmont Research Station MW-N3D (Bedrock well).

LOCATION.--Lat 36°23'28", long 79°42'17", 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.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 260 ft, diameter 6 in., cased to 40 ft, open hole from 40 ft to 300 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 760 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.26 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--August 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 62.61 ft below land-surface datum, July 7, 2003; lowest water level measured 68.06 ft below land-surface datum, Oct. 23, 2002.

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

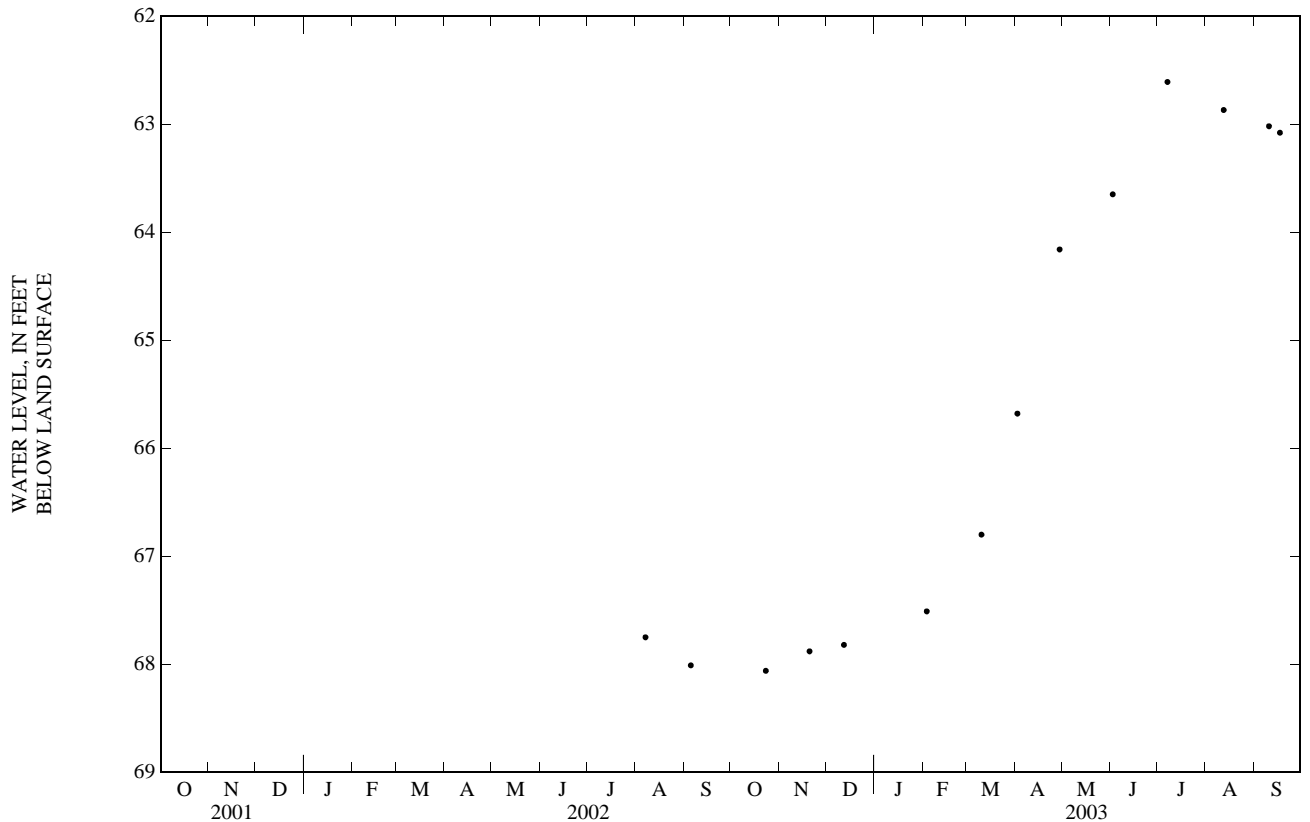
DATE	WATER LEVEL	DATE	WATER LEVEL
AUG 07	67.75*	SEP 05	68.01*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	68.06*	DEC 12	67.82*	MAR 10	66.80*	APR 29	64.16*	JUL 07	62.61*	SEP 10	63.02*
NOV 20	67.88*	FEB 03	67.51*	APR 02	65.68*	JUN 02	63.65*	AUG 12	62.87*	17	63.08*

*DENR measurements.



GROUND-WATER LEVELS
ROCKINGHAM COUNTY—Continued

362323079421201. County number, RK-235; DENR Upper Piedmont Research Station MW-N4I (Transition Zone well).

LOCATION.--Lat 36°23'23.1", long 79°42'12.5", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 70 ft, diameter 4 in., cased to 44 ft, open hole from 44 ft to 70 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 840 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.80 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--June 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.36 ft below land-surface datum, July 7, 2003; lowest water level measured 37.54 ft below land-surface datum, Oct. 23, 2002.

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

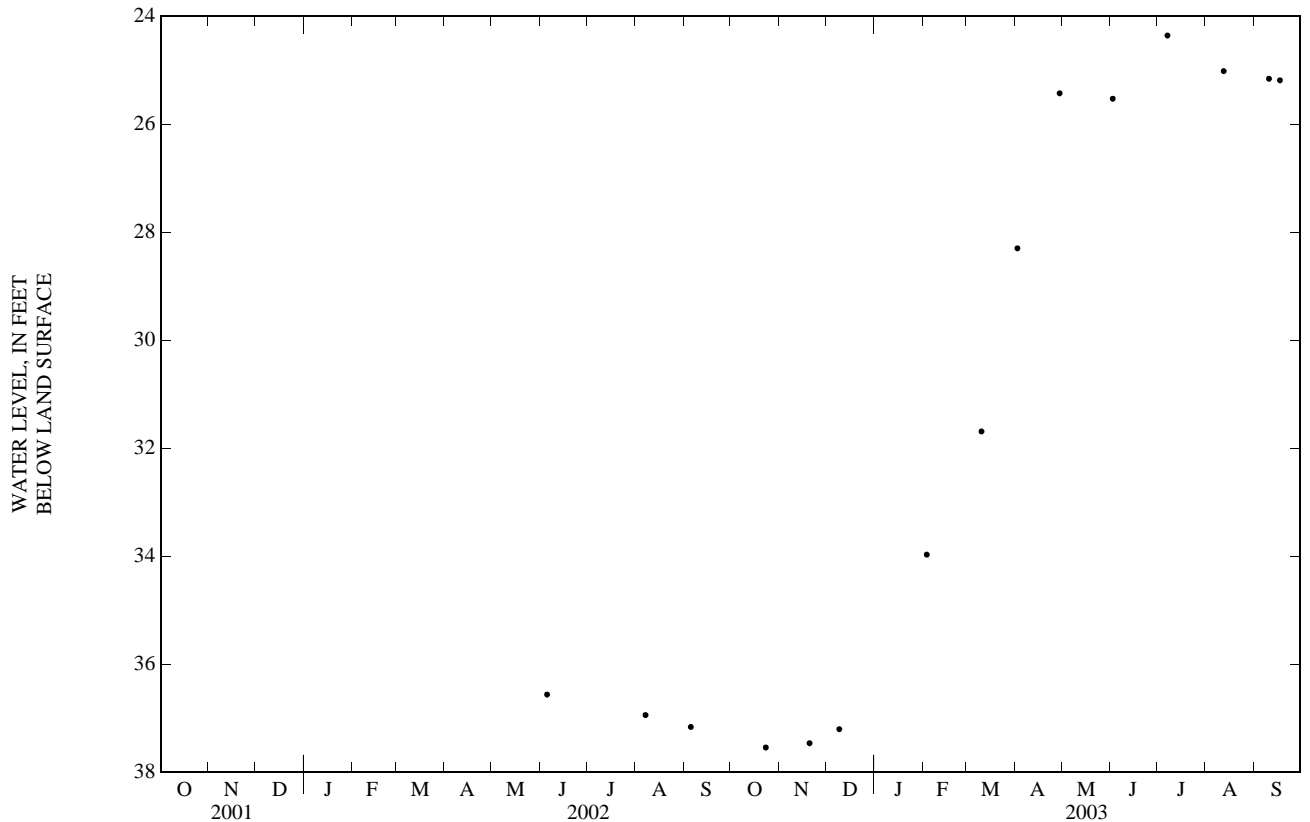
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 05	36.56*	AUG 07	36.94*	SEP 05	37.16*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	37.54*	DEC 09	37.20*	MAR 10	31.69*	APR 29	25.43*	JUL 07	24.36*	SEP 10	25.16*
NOV 20	37.46*	FEB 03	33.97*	APR 02	28.30*	JUN 02	25.53*	AUG 12	25.02*	17	25.19*

*DENR measurements.



ROCKINGHAM COUNTY—Continued

362323079421202. County number, RK-236; DENR Upper Piedmont Research Station MW-N4D (Bedrock well).

LOCATION.--Lat 36°23'23.1", long 79°42'12.8", 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.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 6 in., cased to 80 ft, open hole from 80 ft to 300 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 860 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.58 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--June 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.56 ft below land-surface datum, Sept. 17, 2003; lowest water level measured 43.96 ft below land-surface datum, Sept. 5, 2002.

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

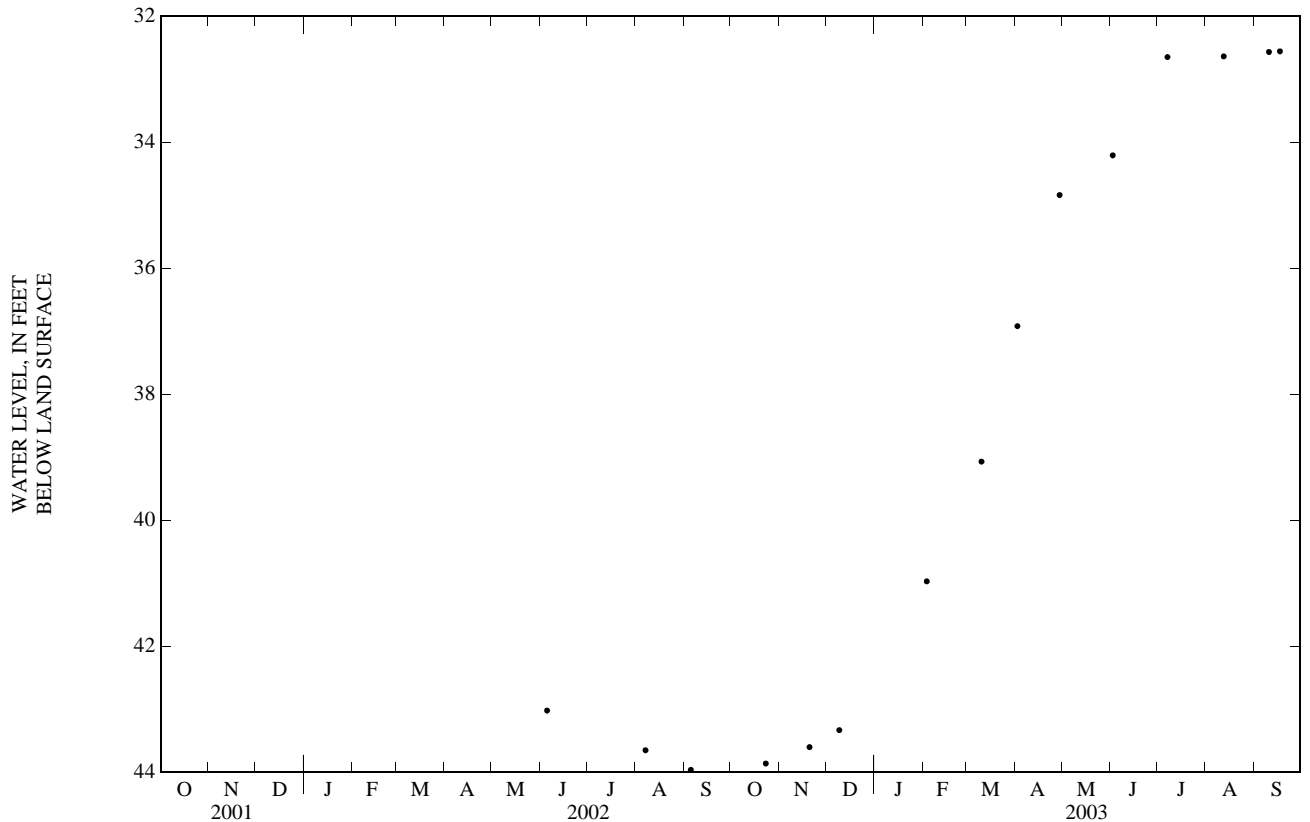
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 05	43.02*	AUG 07	43.65*	SEP 05	43.96*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	43.86*	DEC 09	43.33*	MAR 10	39.07*	APR 29	34.84*	JUL 07	32.65*	SEP 10	32.57*
NOV 20	43.60*	FEB 03	40.97*	APR 02	36.92*	JUN 02	34.21*	AUG 12	32.64*	SEP 17	32.56*

*DENR measurements.



GROUND-WATER LEVELS
ROCKINGHAM COUNTY—Continued

362240079411801. County number, RK-237; DENR Upper Piedmont Research Station MW-S1I (Transition Zone well).

LOCATION.--Lat 36°22'40.9", long 79°41'18.7", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 50 ft, diameter 4 in., cased to 35 ft, screened interval from 35 ft to 50 ft, sand filter packed from 30 ft to 50 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 800 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.50 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.73 ft below land-surface datum, April 29, 2003; lowest water level measured 31.36 ft below land-surface datum, Oct. 23, 2002.

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

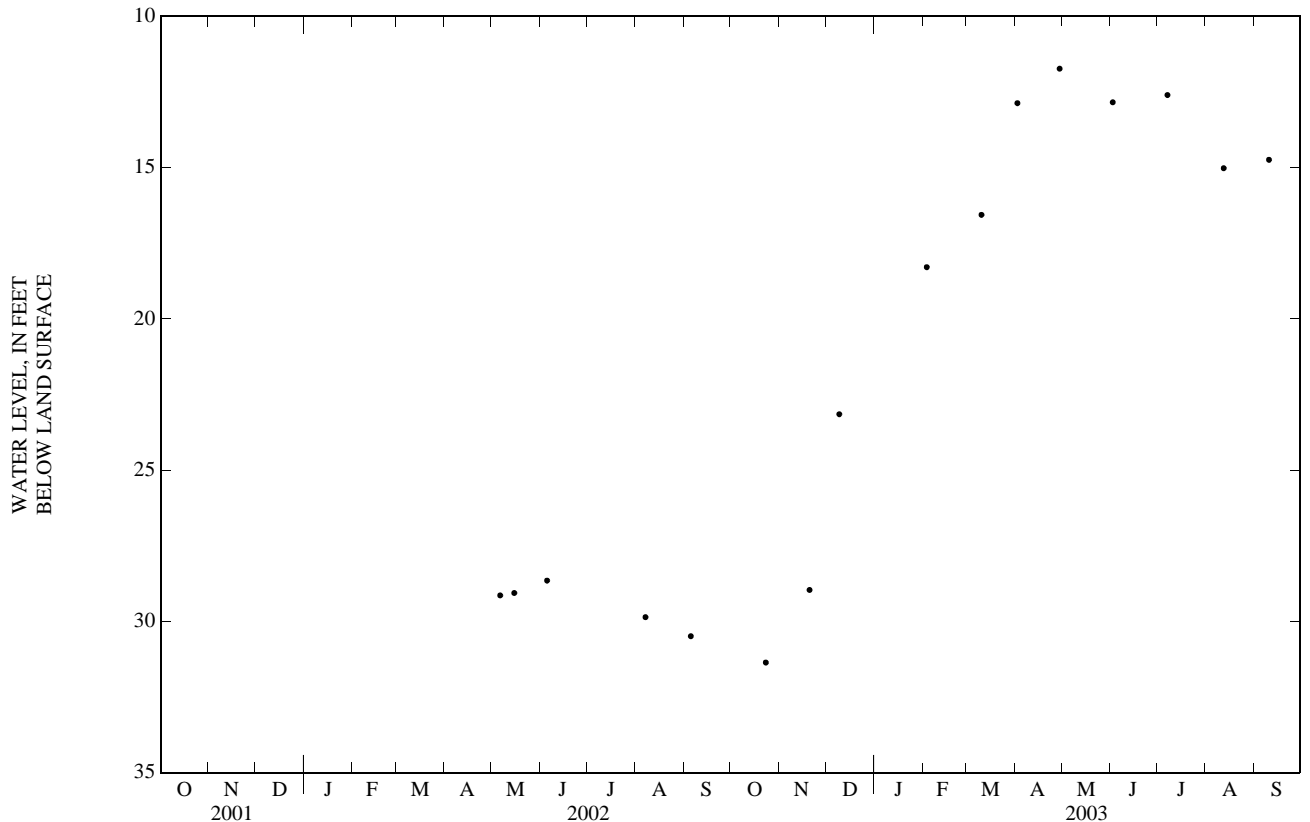
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 06	29.14*	MAY 15	29.06*	JUN 05	28.65*	AUG 07	29.86*	SEP 05	30.49*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	31.36*	DEC 09	23.15*	MAR 10	16.56*	APR 29	11.73*	JUL 07	12.60*	SEP 10	14.74*
NOV 20	28.96*	FEB 03	18.29*	APR 02	12.87*	JUN 02	12.84*	AUG 12	15.02*		

*DENR measurements.



ROCKINGHAM COUNTY—Continued

362240079411802. County number, RK-238; DENR Upper Piedmont Research Station MW-S1D (Bedrock well).

LOCATION.--Lat 36°22'40.7", long 79°41'18.9", Hydrologic Unit 03010103, .2 mi north of Wentworth Street, 1.5 mi west of State Highway 14 on North Carolina State University Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 302 ft, diameter 6 in., cased to 62 ft, open hole from 62 ft to 302 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 800 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.80 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--June 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.14 ft below land-surface datum, April 29, 2003; lowest water level measured 23.95 ft below land-surface datum, Oct. 23, 2002.

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

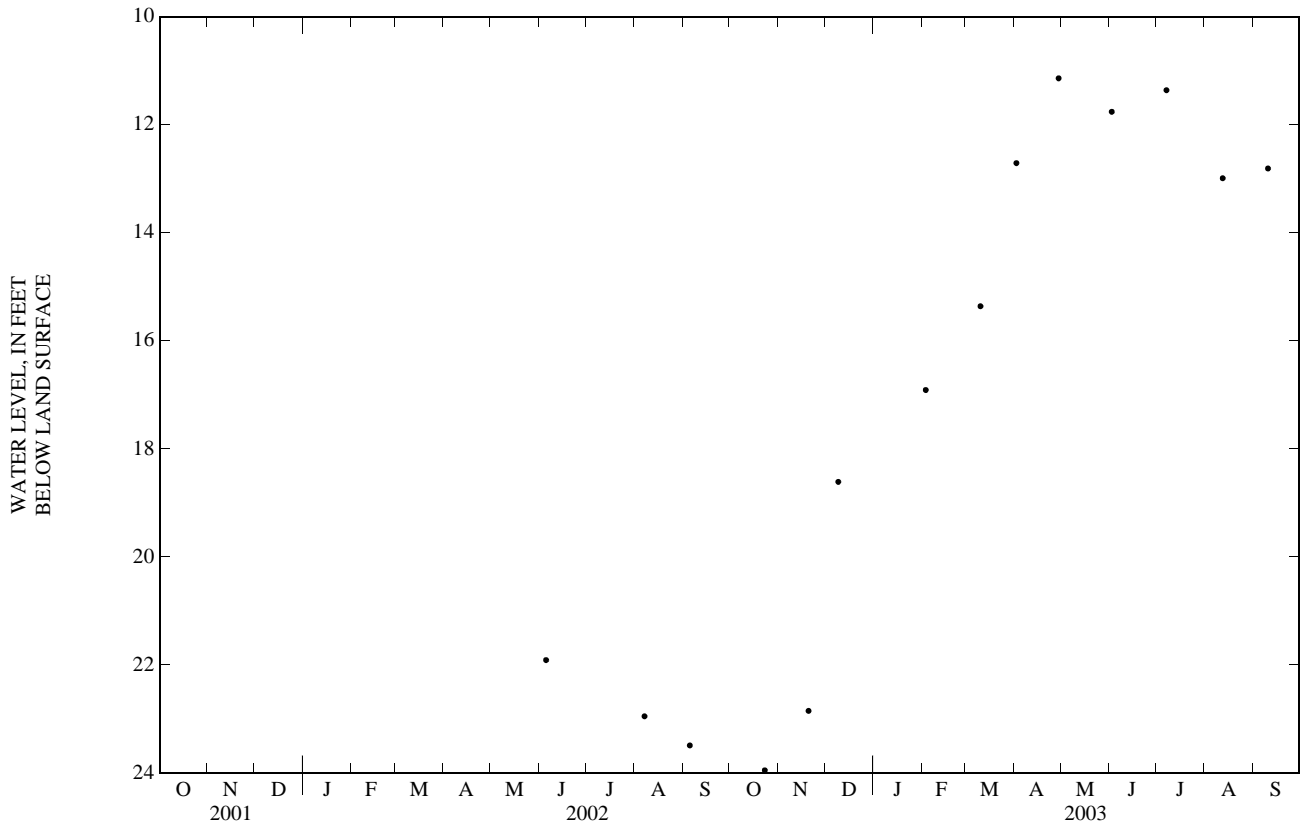
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 05	21.91*	AUG 07	22.95*	SEP 05	23.49*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	23.95*	DEC 09	18.61*	MAR 10	15.36*	APR 29	11.14*	JUL 07	11.36*	SEP 10	12.81*
NOV 20	22.85*	FEB 03	16.91*	APR 02	12.71*	JUN 02	11.76*	AUG 12	12.99*		

*DENR measurements.



GROUND-WATER LEVELS

ROCKINGHAM COUNTY—Continued

362231079410801. County number, RK-239; DENR Upper Piedmont Research Station MW-S3S (Regolith well).

LOCATION.--Lat 36°22'31", long 79°41'08", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 38 ft, diameter 4 in., cased to 23 ft, screened interval from 23 ft to 38 ft, sand filter packed from 21 ft to 38 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 710 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.99 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.61 ft below land-surface datum, Sept. 10, 2003; lowest water level measured 26.83 ft below land-surface datum, Oct. 23, 2002.

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

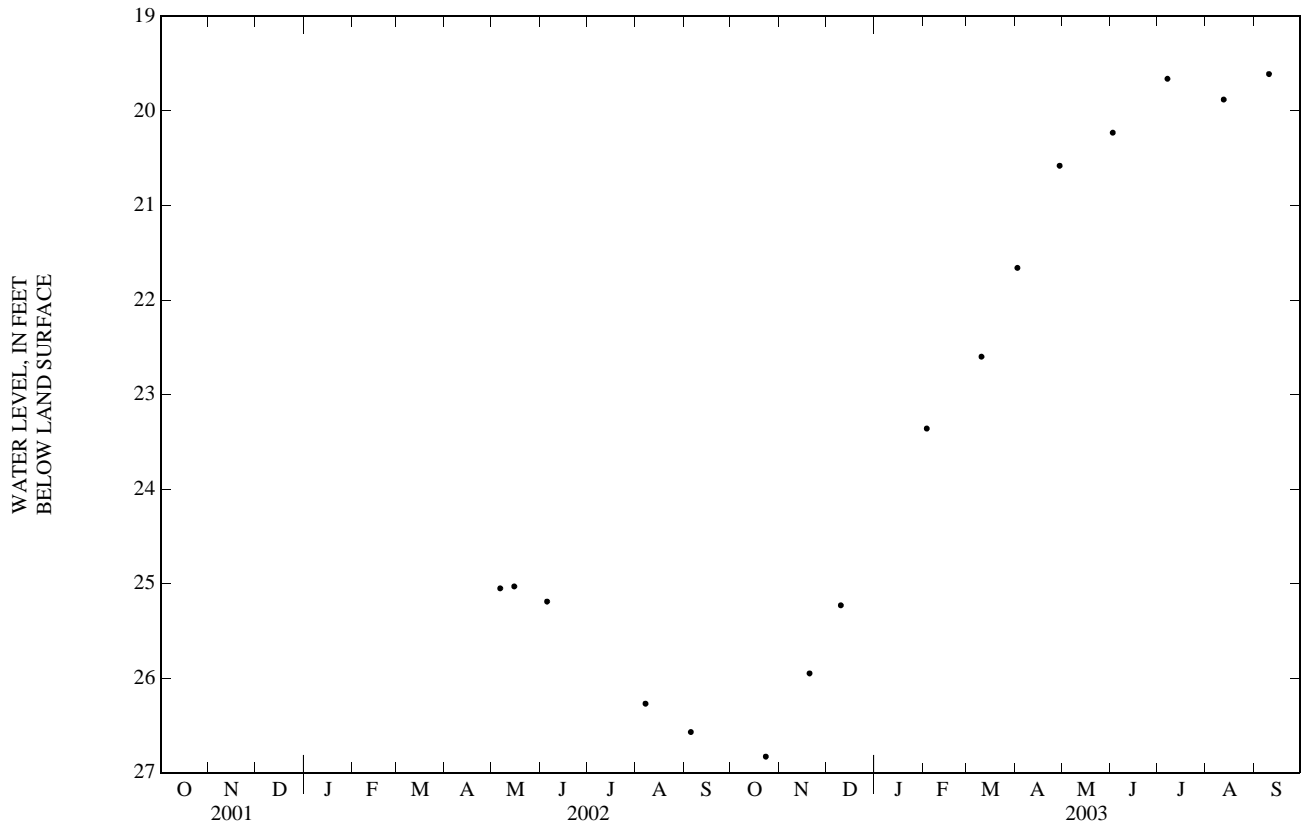
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 06	25.05*	MAY 15	25.03*	JUN 05	25.19*	AUG 07	26.27*	SEP 05	26.57*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	26.83*	DEC 10	25.23*	MAR 10	22.60*	APR 29	20.58*	JUL 07	19.66*	SEP 10	19.61*
NOV 20	25.95*	FEB 03	23.36*	APR 02	21.66*	JUN 02	20.23*	AUG 12	19.88*		

*DENR measurements.



ROCKINGHAM COUNTY—Continued

362231079410802. County number, RK-240; DENR Upper Piedmont Research Station MW-S3UI (Transition Zone well).

LOCATION.--Lat 36°22'31.6", long 79°41'08.1", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 55 ft, diameter 4 in., cased to 45 ft, screened interval from 45 ft to 55 ft, sand filter packed from 38 ft to 55 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 710 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.73 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.98 ft below land-surface datum, July 7, 2003; lowest water level measured 27.11 ft below land-surface datum, Oct. 23, 2002.

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

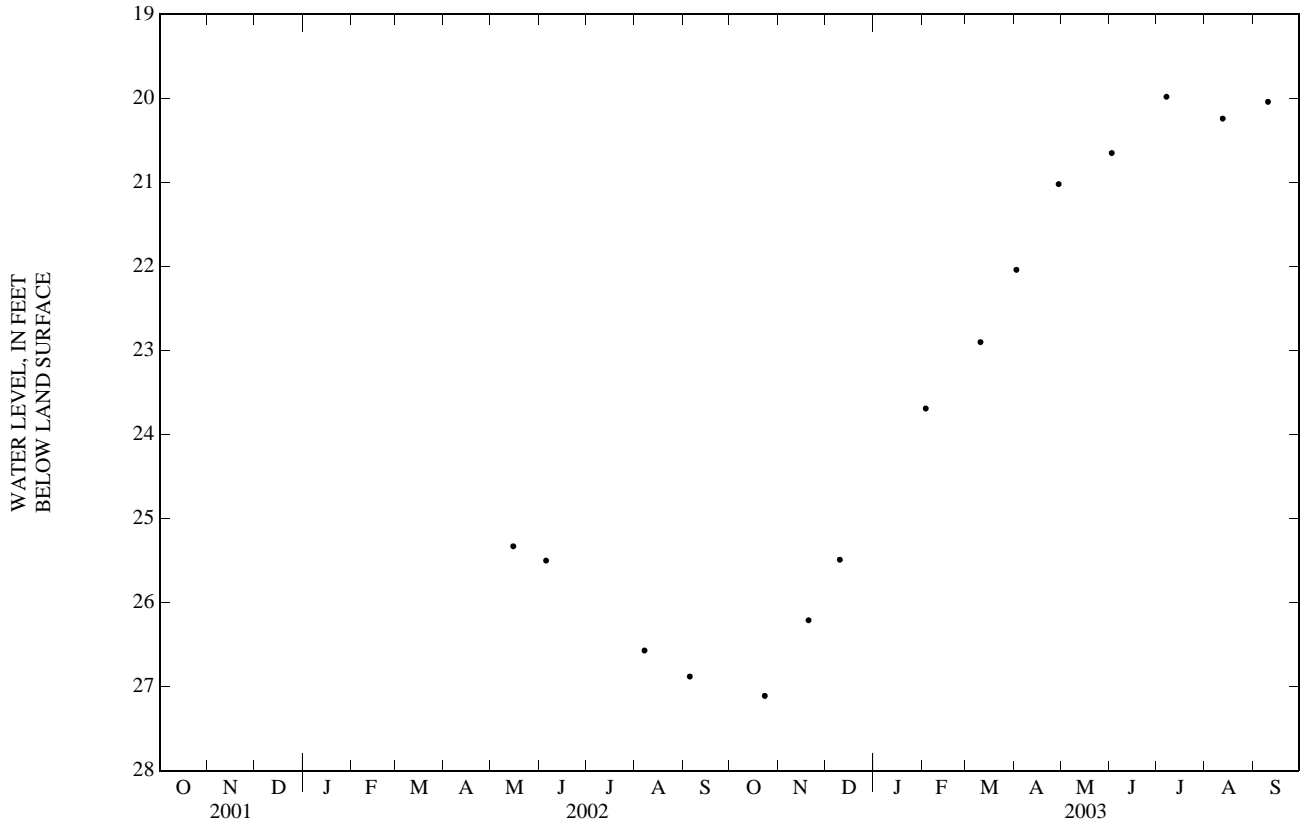
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 15	25.33*	JUN 05	25.50*	AUG 07	26.57*	SEP 05	26.88*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	27.11*	DEC 10	25.49*	MAR 10	22.90*	APR 29	21.02*	JUL 07	19.98*	SEP 10	20.04*
NOV 20	26.21*	FEB 03	23.69*	APR 02	22.04*	JUN 02	20.65*	AUG 12	20.24*		

*DENR measurements.



GROUND-WATER LEVELS
ROCKINGHAM COUNTY—Continued

362231079310803. County number, RK-241; DENR Upper Piedmont Research Station MW-S3LI (Transition Zone well).

LOCATION.--Lat 36°22'31.6", long 79°41'08.1", 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.

AQUIFER.--Regolith (saprolitic Biotite Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 73 ft, diameter 4 in., cased to 63 ft, screened interval from 63 ft to 73 ft, sand filter packed from 61 ft to 73 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 710 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.65 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.76 ft below land-surface datum, July 7, 2003; lowest water level measured 26.80 ft below land-surface datum, Oct. 23, 2002.

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

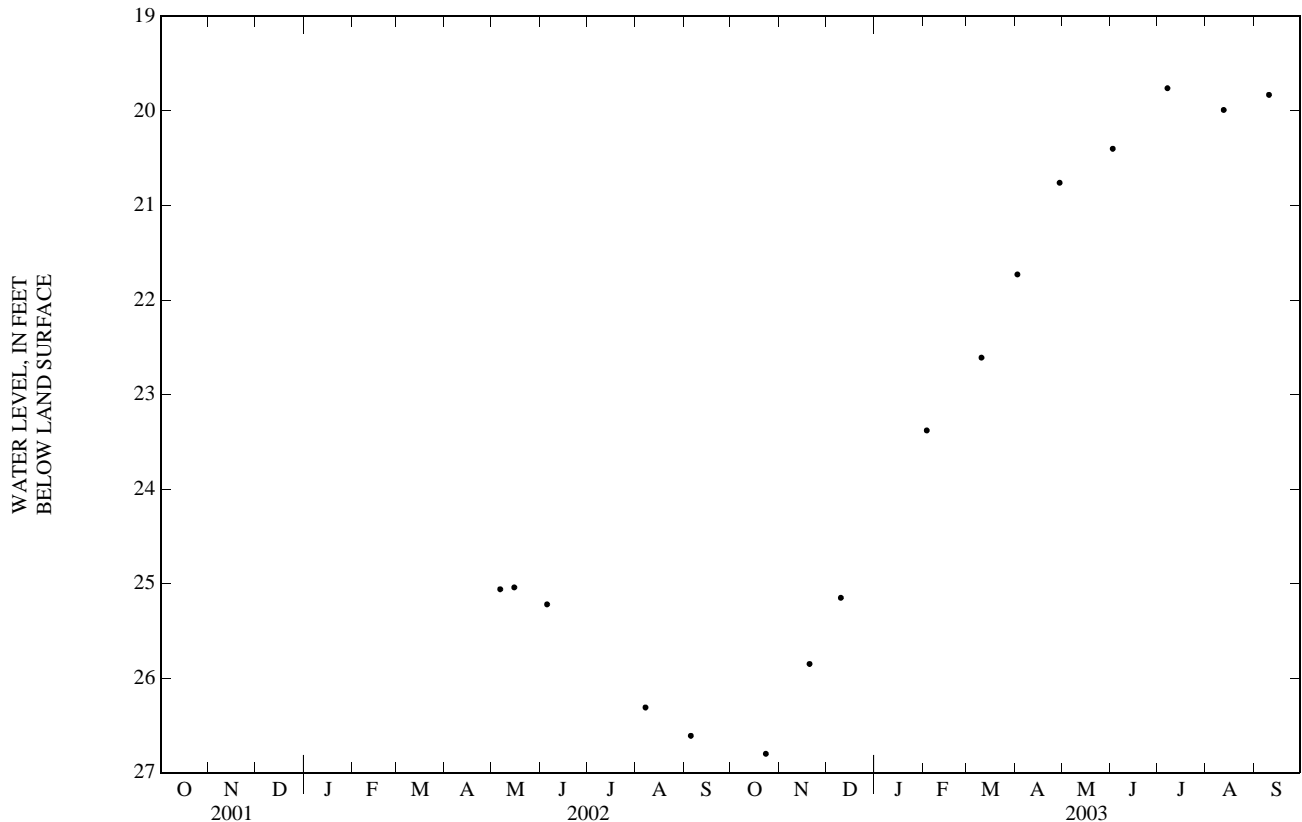
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 06	25.06*	MAY 15	25.04*	JUN 05	25.22*	AUG 07	26.31*	SEP 05	26.61*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	26.80*	DEC 10	25.15*	MAR 10	22.61*	APR 29	20.76*	JUL 07	19.76*	SEP 10	19.83*
NOV 20	25.85*	FEB 03	23.38*	APR 02	21.73*	JUN 02	20.40*	AUG 12	19.99*		

*DENR measurements.



ROCKINGHAM COUNTY—Continued

362231079310804. County number, RK-242; DENR Upper Piedmont Research Station MW-S3D (Bedrock well).

LOCATION.--Lat 36°22'31.5", long 79°41'08.2", 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.

AQUIFER.--Biotite Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 438 ft, diameter 6 in., cased to 88 ft, open hole from 88 ft to 438 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by both DENR and USGS).

DATUM.--Land-surface datum is 710 ft above NGVD of 1929. Measuring point: Top of protective steel casing, 2.94 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--May 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.52 ft below land-surface datum, July 7, 2003; lowest water level measured 26.29 ft below land-surface datum, Oct. 23, 2002.

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

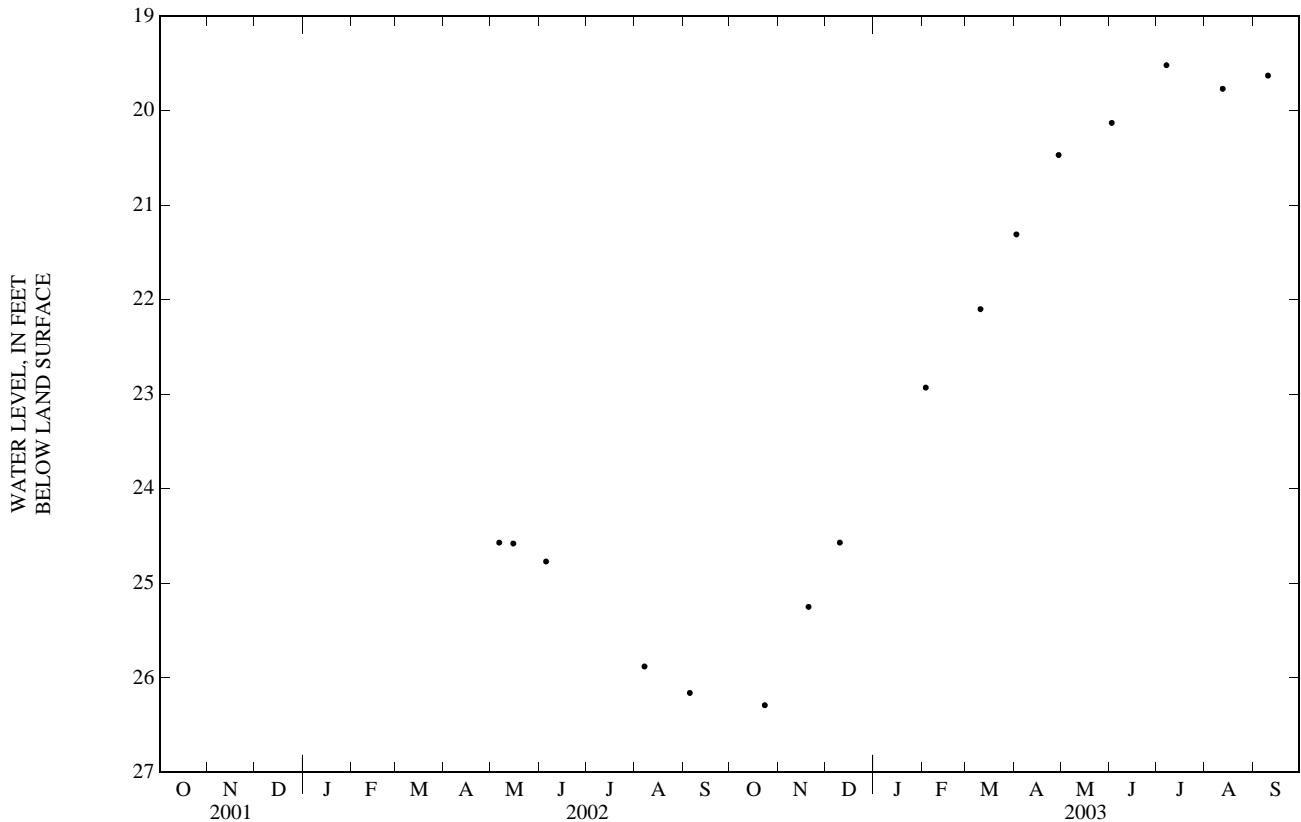
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 06	24.57*	MAY 15	24.58*	JUN 05	24.77*	AUG 07	25.88*	SEP 05	26.16*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	26.29*	DEC 10	24.57*	MAR 10	22.10*	APR 29	20.47*	JUL 07	19.52*	SEP 10	19.63*
NOV 20	25.25*	FEB 03	22.93*	APR 02	21.31*	JUN 02	20.13*	AUG 12	19.77*		

*DENR measurements.



GROUND-WATER LEVELS

ROCKINGHAM COUNTY—Continued

362226079410101. County number, RK-243; DENR Upper Piedmont Research Station MW-S4S (Regolith 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 15 ft, diameter 4 in., cased to 5 ft, screened interval from 5 ft to 15 ft, sand filter packed from 4 ft to 15 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, 1.99 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, 4.13 ft below land-surface datum, Aug. 12, 2003; lowest water level measured 5.47 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	5.28*	MAY 15	5.25*	JUN 05	5.33*	AUG 07	5.47*	SEP 05	5.38*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	4.72*	DEC 10	4.91*	MAR 10	4.27*	APR 29	4.47*	JUL 07	4.68*	SEP 10	4.65*
NOV 20	4.63*	FEB 03	4.68*	APR 02	4.42*	JUN 02	4.44*	AUG 12	4.13*		

*DENR measurements.

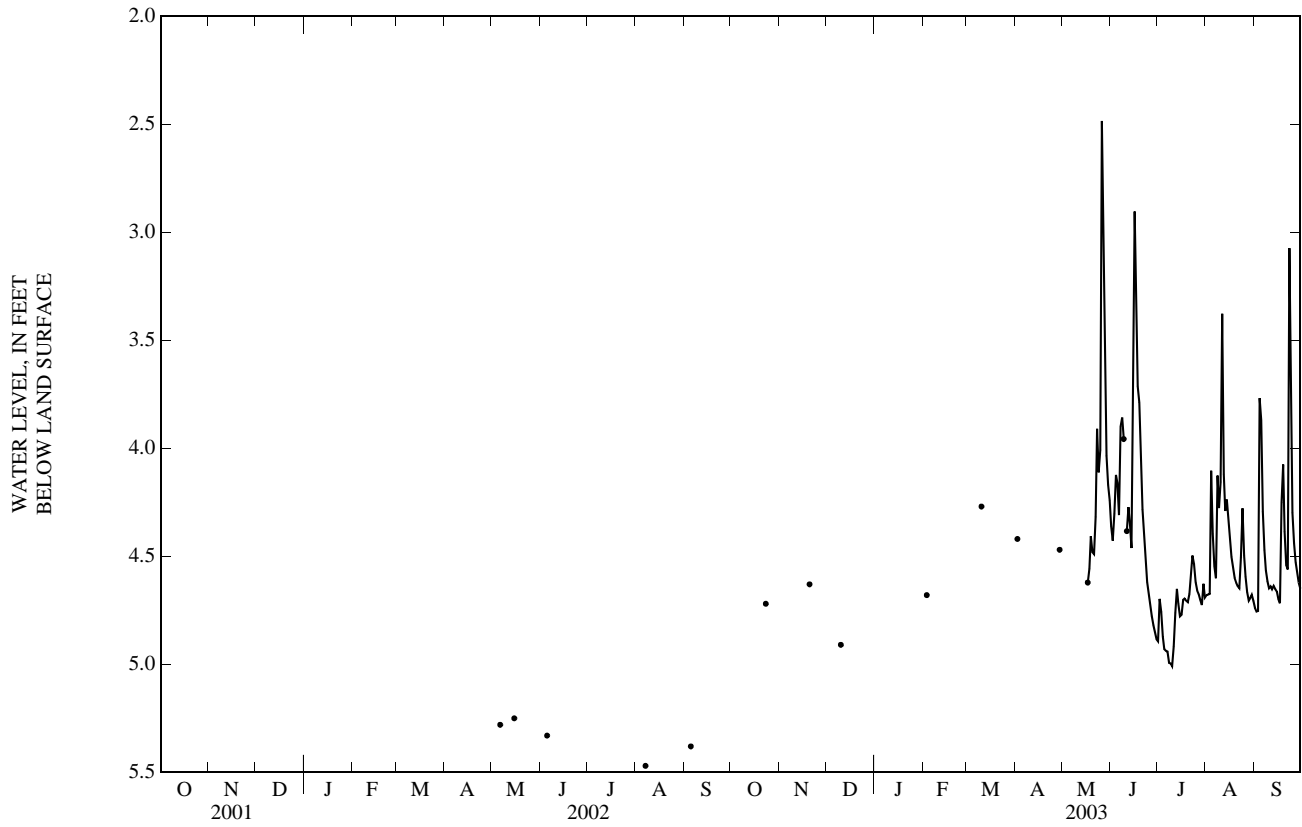
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
FOR PERIOD MAY 2003 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	4.36	4.89	4.68	4.74
2	---	---	---	---	---	---	---	---	4.43	4.70	4.68	4.76
3	---	---	---	---	---	---	---	---	4.30	4.76	4.67	4.75
4	---	---	---	---	---	---	---	---	4.12	4.87	4.10	3.77
5	---	---	---	---	---	---	---	---	4.16	4.93	4.40	3.87
6	---	---	---	---	---	---	---	---	4.31	4.94	4.55	4.29
7	---	---	---	---	---	---	---	---	3.90	4.94	4.60	4.47
8	---	---	---	---	---	---	---	---	3.86	4.99	4.13	4.57
9	---	---	---	---	---	---	---	---	3.96	5.00	4.28	4.62
10	---	---	---	---	---	---	---	---	---	5.01	4.16	4.65
11	---	---	---	---	---	---	---	---	4.38	4.92	3.38	4.64
12	---	---	---	---	---	---	---	---	4.27	4.76	4.12	4.65
13	---	---	---	---	---	---	---	---	4.36	4.65	4.29	4.64
14	---	---	---	---	---	---	---	---	4.46	4.72	4.24	4.65
15	---	---	---	---	---	---	---	---	3.99	4.78	4.33	4.66
16	---	---	---	---	---	---	---	---	2.91	4.77	4.43	4.70
17	---	---	---	---	---	---	---	4.62	3.25	4.70	4.50	4.72
18	---	---	---	---	---	---	---	4.56	3.71	4.70	4.55	4.25
19	---	---	---	---	---	---	---	4.41	3.79	4.71	4.60	4.08
20	---	---	---	---	---	---	---	4.48	4.08	4.71	4.62	4.39
21	---	---	---	---	---	---	---	4.49	4.28	4.67	4.64	4.54
22	---	---	---	---	---	---	---	4.32	4.41	4.59	4.65	4.56
23	---	---	---	---	---	---	---	3.91	4.52	4.50	4.51	3.07
24	---	---	---	---	---	---	---	4.11	4.62	4.54	4.28	4.03
25	---	---	---	---	---	---	---	4.01	4.68	4.62	4.50	4.30
26	---	---	---	---	---	---	---	2.49	4.73	4.66	4.59	4.44
27	---	---	---	---	---	---	---	3.53	4.78	4.67	4.67	4.53
28	---	---	---	---	---	---	---	3.84	4.82	4.70	4.71	4.58
29	---	---	---	---	---	---	---	4.04	4.85	4.73	4.69	4.62
30	---	---	---	---	---	---	---	4.17	4.89	4.63	4.68	4.65
31	---	---	---	---	---	---	---	4.24	---	4.69	4.71	---

WTR YR 2003 MEAN 4.43 HIGH 2.49 LOW 5.01

ROCKINGHAM COUNTY—Continued

362226079410101. County number, RK-243; DENR Upper Piedmont Research Station MW-S4S (Regolith well).



362226079410101 RK-243 DENR Upper Piedmont Research Station MW-S4S (Regolith 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	388, August 14	312, June 7, 8
pH, standard units	6.5, on many days during the period	6.2, September 11, 23-30
WATER TEMPERATURE, °C	17.2, September 23	11.5, May 1, 2
DISSOLVED OXYGEN, mg/L	0.5, June 7	0.0, on many days during the period
DISSOLVED OXYGEN, PERCENT SATURATION,%	5, June 7	0, on many days during the period

362226079410101 RK-243 DENR Upper Piedmont Research Station MW-S4S (Regolith 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	---	---	---	---	---	---	---	---	326	328	331	332
2	---	---	---	---	---	---	---	323	327	328	331	333
3	---	---	---	---	---	---	---	326	328	328	331	332
4	---	---	---	---	---	---	---	326	328	328	332	332
5	---	---	---	---	---	---	---	326	328	328	333	332
6	---	---	---	---	---	---	---	326	328	328	333	331
7	---	---	---	---	---	---	---	326	325	328	333	331
8	---	---	---	---	---	---	---	326	317	328	333	332
9	---	---	---	---	---	---	---	325	324	328	333	331
10	---	---	---	---	---	---	---	326	---	327	334	331
11	---	---	---	---	---	---	---	326	325	328	333	330
12	---	---	---	---	---	---	---	326	327	328	---	330
13	---	---	---	---	---	---	---	325	327	329	---	329
14	---	---	---	---	---	---	---	325	327	328	336	329
15	---	---	---	---	---	---	---	325	327	328	336	329
16	---	---	---	---	---	---	---	325	327	328	337	329
17	---	---	---	---	---	---	---	324	326	326	337	329
18	---	---	---	---	---	---	---	325	328	327	336	328
19	---	---	---	---	---	---	---	325	328	327	336	329
20	---	---	---	---	---	---	---	325	329	327	335	328
21	---	---	---	---	---	---	---	325	329	328	335	328
22	---	---	---	---	---	---	---	326	329	329	335	328
23	---	---	---	---	---	---	---	326	329	329	334	327
24	---	---	---	---	---	---	---	325	329	329	334	327
25	---	---	---	---	---	---	---	325	329	330	334	327
26	---	---	---	---	---	---	---	319	329	330	334	327
27	---	---	---	---	---	---	---	320	329	330	334	327
28	---	---	---	---	---	---	---	324	329	329	334	327
29	---	---	---	---	---	---	---	325	329	330	334	327
30	---	---	---	---	---	---	---	326	329	331	333	327
31	---	---	---	---	---	---	---	326	---	330	333	---
MEAN	---	---	---	---	---	---	---	---	---	328	---	329
MAX	---	---	---	---	---	---	---	---	---	331	---	333
MIN	---	---	---	---	---	---	---	---	---	326	---	327

362226079410101 RK-243 DENR Upper Piedmont Research Station MW-S4S (Regolith 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	---	---	---	---	---	---	---	---	6.4	6.4	6.4	6.3
2	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
3	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
4	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
5	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
6	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
7	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
8	---	---	---	---	---	---	---	6.3	6.3	6.4	6.4	6.3
9	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
10	---	---	---	---	---	---	---	6.3	---	6.4	6.4	6.3
11	---	---	---	---	---	---	---	6.3	6.4	6.4	6.4	6.3
12	---	---	---	---	---	---	---	6.4	6.4	6.4	---	6.3
13	---	---	---	---	---	---	---	6.4	6.4	6.5	---	6.3
14	---	---	---	---	---	---	---	6.4	6.4	6.4	---	6.3
15	---	---	---	---	---	---	---	6.4	6.4	6.4	6.4	6.3
16	---	---	---	---	---	---	---	6.4	6.4	6.4	6.4	6.3
17	---	---	---	---	---	---	---	6.5	6.4	6.4	6.4	6.3
18	---	---	---	---	---	---	---	6.5	6.4	6.4	6.4	6.3
19	---	---	---	---	---	---	---	6.5	6.4	6.4	6.4	6.3
20	---	---	---	---	---	---	---	6.5	6.4	6.4	6.4	6.3
21	---	---	---	---	---	---	---	6.5	6.4	6.4	6.4	6.3
22	---	---	---	---	---	---	---	6.5	6.4	6.4	6.4	6.3
23	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.3
24	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.2
25	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.2
26	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.2
27	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.2
28	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.2
29	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.2
30	---	---	---	---	---	---	---	6.5	6.4	6.4	6.3	6.2
31	---	---	---	---	---	---	---	6.5	---	6.4	6.3	---
MEAN	---	---	---	---	---	---	---	---	---	6.4	---	6.3
MAX	---	---	---	---	---	---	---	---	---	6.5	---	6.3
MIN	---	---	---	---	---	---	---	---	---	6.4	---	6.2

362226079410101 RK-243 DENR Upper Piedmont Research Station MW-S4S (Regolith 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	---	---	---	---	---	---	---	---	12.7	13.6	14.9	15.6
2	---	---	---	---	---	---	---	11.6	12.7	13.7	14.9	15.6
3	---	---	---	---	---	---	---	11.6	12.8	13.7	14.9	15.7
4	---	---	---	---	---	---	---	11.6	12.8	13.7	15.0	15.9
5	---	---	---	---	---	---	---	11.6	12.8	13.8	14.9	15.7
6	---	---	---	---	---	---	---	11.7	12.8	13.8	14.9	15.7
7	---	---	---	---	---	---	---	11.7	12.9	13.9	15.0	15.7
8	---	---	---	---	---	---	---	11.8	13.0	13.9	15.1	15.8
9	---	---	---	---	---	---	---	11.8	13.0	14.0	15.0	15.8
10	---	---	---	---	---	---	---	11.8	---	14.0	15.1	15.8
11	---	---	---	---	---	---	---	11.9	12.9	14.0	15.1	15.9
12	---	---	---	---	---	---	---	11.9	12.9	14.1	14.9	15.9
13	---	---	---	---	---	---	---	11.9	12.9	14.1	14.9	16.0
14	---	---	---	---	---	---	---	12.0	13.0	14.1	15.0	16.0
15	---	---	---	---	---	---	---	12.0	13.1	14.2	15.0	16.0
16	---	---	---	---	---	---	---	12.1	13.1	14.2	15.0	16.1
17	---	---	---	---	---	---	---	12.1	13.0	14.2	15.1	16.1
18	---	---	---	---	---	---	---	12.1	13.0	14.2	15.1	16.3
19	---	---	---	---	---	---	---	12.2	13.1	14.3	15.1	16.1
20	---	---	---	---	---	---	---	12.2	13.1	14.4	15.2	16.1
21	---	---	---	---	---	---	---	12.2	13.1	14.4	15.2	16.1
22	---	---	---	---	---	---	---	12.3	13.2	14.5	15.3	16.1
23	---	---	---	---	---	---	---	12.3	13.2	14.5	15.3	16.4
24	---	---	---	---	---	---	---	12.4	13.3	14.5	15.3	16.1
25	---	---	---	---	---	---	---	12.4	13.4	14.5	15.3	16.2
26	---	---	---	---	---	---	---	12.5	13.4	14.6	15.4	16.2
27	---	---	---	---	---	---	---	12.5	13.4	14.6	15.4	16.2
28	---	---	---	---	---	---	---	12.5	13.5	14.7	15.5	16.3
29	---	---	---	---	---	---	---	12.5	13.6	14.7	15.5	16.3
30	---	---	---	---	---	---	---	12.6	13.6	14.8	15.6	16.3
31	---	---	---	---	---	---	---	12.6	---	14.8	15.6	---
MEAN	---	---	---	---	---	---	---	---	---	14.2	15.1	16.0
MAX	---	---	---	---	---	---	---	---	---	14.8	15.6	16.4
MIN	---	---	---	---	---	---	---	---	---	13.6	14.9	15.6

362226079410101 RK-243 DENR Upper Piedmont Research Station MW-S4S (Regolith 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	---	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1
2	---	---	---	---	---	---	---	0.1	0.1	0.1	0.0	0.1
3	---	---	---	---	---	---	---	0.1	0.1	0.1	0.0	0.1
4	---	---	---	---	---	---	---	0.1	0.1	0.1	0.0	0.1
5	---	---	---	---	---	---	---	0.1	0.1	0.1	0.0	0.1
6	---	---	---	---	---	---	---	0.2	0.1	0.1	0.0	0.1
7	---	---	---	---	---	---	---	0.2	0.2	0.1	0.0	0.1
8	---	---	---	---	---	---	---	0.2	0.2	0.1	0.0	0.1
9	---	---	---	---	---	---	---	0.2	0.1	0.1	0.0	0.1
10	---	---	---	---	---	---	---	0.1	---	0.1	0.0	0.1
11	---	---	---	---	---	---	---	0.1	0.2	0.1	0.0	0.1
12	---	---	---	---	---	---	---	0.1	0.1	0.1	---	0.1
13	---	---	---	---	---	---	---	0.2	0.1	0.1	---	0.1
14	---	---	---	---	---	---	---	0.2	0.1	0.1	---	0.1
15	---	---	---	---	---	---	---	0.2	0.1	0.1	0.2	0.1
16	---	---	---	---	---	---	---	0.2	0.1	0.0	0.2	0.1
17	---	---	---	---	---	---	---	0.1	0.1	0.0	0.2	0.1
18	---	---	---	---	---	---	---	0.1	0.1	0.0	0.2	0.1
19	---	---	---	---	---	---	---	0.1	0.1	0.0	0.2	0.1
20	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
21	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
22	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
23	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
24	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
25	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
26	---	---	---	---	---	---	---	0.2	0.1	0.0	0.1	0.1
27	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
28	---	---	---	---	---	---	---	0.1	0.1	0.0	0.2	0.1
29	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
30	---	---	---	---	---	---	---	0.1	0.1	0.0	0.1	0.1
31	---	---	---	---	---	---	---	0.1	---	0.0	0.2	---
MEAN	---	---	---	---	---	---	---	---	---	0.0	---	0.1
MAX	---	---	---	---	---	---	---	---	---	0.1	---	0.1
MIN	---	---	---	---	---	---	---	---	---	0.0	---	0.1

362226079410101 RK-243 DENR Upper Piedmont Research Station MW-S4S (Regolith 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	---	---	---	---	---	---	---	---	0	0	0	1
2	---	---	---	---	---	---	---	0	0	0	0	1
3	---	---	---	---	---	---	---	1	0	0	0	1
4	---	---	---	---	---	---	---	0	0	0	0	1
5	---	---	---	---	---	---	---	0	0	0	0	1
6	---	---	---	---	---	---	---	1	0	0	0	1
7	---	---	---	---	---	---	---	2	0	0	0	1
8	---	---	---	---	---	---	---	2	2	0	0	1
9	---	---	---	---	---	---	---	1	0	0	0	1
10	---	---	---	---	---	---	---	1	---	0	0	1
11	---	---	---	---	---	---	---	0	2	0	0	1
12	---	---	---	---	---	---	---	0	0	0	---	1
13	---	---	---	---	---	---	---	1	0	0	---	1
14	---	---	---	---	---	---	---	1	0	0	---	1
15	---	---	---	---	---	---	---	2	0	0	2	1
16	---	---	---	---	---	---	---	1	0	0	2	1
17	---	---	---	---	---	---	---	0	0	0	2	1
18	---	---	---	---	---	---	---	0	0	0	2	1
19	---	---	---	---	---	---	---	0	0	0	2	1
20	---	---	---	---	---	---	---	0	0	0	1	1
21	---	---	---	---	---	---	---	0	0	0	1	1
22	---	---	---	---	---	---	---	0	0	0	1	1
23	---	---	---	---	---	---	---	0	0	0	1	1
24	---	---	---	---	---	---	---	0	0	0	1	1
25	---	---	---	---	---	---	---	0	0	0	1	1
26	---	---	---	---	---	---	---	2	0	0	1	1
27	---	---	---	---	---	---	---	0	0	0	1	0
28	---	---	---	---	---	---	---	0	0	0	2	0
29	---	---	---	---	---	---	---	0	0	0	1	0
30	---	---	---	---	---	---	---	0	0	0	1	0
31	---	---	---	---	---	---	---	0	---	0	2	---
MEAN	---	---	---	---	---	---	---	---	---	0	---	0
MAX	---	---	---	---	---	---	---	---	---	0	---	1
MIN	---	---	---	---	---	---	---	---	---	0	---	0

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	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unfltrd uS/cm 25 degC (00095)	Temper-ature, 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)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)
DEC 10...	1545	0.5	6.2	319	15.0	130	27.7	13.9	2.01	7.12	0.09	16.5	38.2
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-phosphate, water, fltrd, mg/L as P (00671)	Alum-inum, water, fltrd, mg/L (01106)	Anti-mony, water, fltrd, mg/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...	40.3	204	0.25	0.24	<0.06	<0.008	0.02	E1	<0.30	<2	8	<0.06	<13
Date	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, 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)	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)
DEC 10...	0.04	<0.8	2.43	0.4	946	<0.08	653	1.9	1.54	<3	<0.2	2	-0.1
Date	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)										
DEC 10...	4.2	4,880	0.80										

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 measurements.

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

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

*DENR measurements.

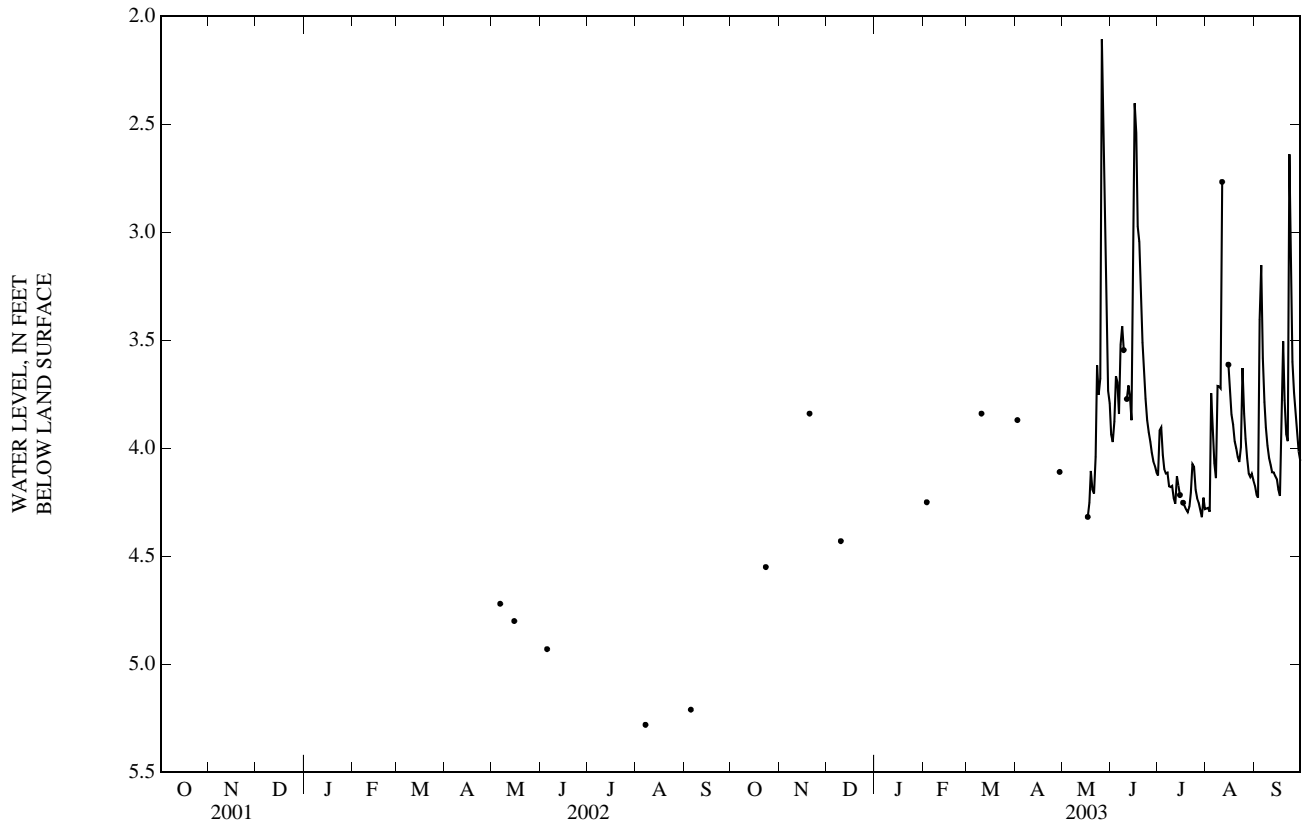
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
FOR PERIOD MAY 2003 TO SEPTEMBER 2003
DAILY MEAN VALUES

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	---	---	---	---	---	---	---	4.19	3.30	4.30	4.00	3.78
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	4.05	3.85
28	---	---	---	---	---	---	---	3.34	4.06	4.29	4.12	3.93
29	---	---	---	---	---	---	---	3.56	4.08	4.32	4.13	4.02
30	---	---	---	---	---	---	---	3.73	4.11	4.23	4.12	4.06
31	---	---	---	---	---	---	---	3.79	---	4.28	4.15	---

WTR YR 2003 MEAN 3.88 HIGH 2.11 LOW 4.32

ROCKINGHAM COUNTY—Continued

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

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
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	---	---	---	---	---	---	---	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
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
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
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	---	---	---	---	---	---	---	13.9	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	---	14.0	14.2	---
MEAN	---	---	---	---	---	---	---	---	---	14.0	---	14.2
MAX	---	---	---	---	---	---	---	---	---	14.0	---	14.2
MIN	---	---	---	---	---	---	---	---	---	13.9	---	14.2

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	---	---	---	---	---	---	---	---	0.2	0.2	0.2	0.3
2	---	---	---	---	---	---	---	0.2	0.2	0.2	0.2	0.3
3	---	---	---	---	---	---	---	0.1	0.2	0.2	0.2	0.3
4	---	---	---	---	---	---	---	0.2	0.2	0.2	0.2	0.3
5	---	---	---	---	---	---	---	0.1	0.2	0.2	0.2	0.3
6	---	---	---	---	---	---	---	0.1	0.2	0.2	0.2	0.3
7	---	---	---	---	---	---	---	0.1	0.1	0.2	0.2	0.3
8	---	---	---	---	---	---	---	0.1	0.2	0.2	0.2	0.3
9	---	---	---	---	---	---	---	0.1	0.2	0.2	0.4	0.3
10	---	---	---	---	---	---	---	0.1	---	0.2	---	0.3
11	---	---	---	---	---	---	---	0.1	0.1	0.2	---	0.3
12	---	---	---	---	---	---	---	0.1	0.1	0.2	---	0.3
13	---	---	---	---	---	---	---	0.1	0.1	0.2	---	0.3
14	---	---	---	---	---	---	---	0.1	0.2	0.2	---	0.3
15	---	---	---	---	---	---	---	0.1	0.2	0.2	0.5	0.4
16	---	---	---	---	---	---	---	0.1	0.2	0.2	0.4	0.4
17	---	---	---	---	---	---	---	0.1	0.2	0.2	0.3	0.4
18	---	---	---	---	---	---	---	0.1	0.1	0.3	0.3	0.4
19	---	---	---	---	---	---	---	0.1	0.1	0.3	0.3	0.4
20	---	---	---	---	---	---	---	0.1	0.1	0.3	0.3	0.4
21	---	---	---	---	---	---	---	0.1	0.1	0.3	0.3	0.4
22	---	---	---	---	---	---	---	0.1	0.1	0.4	0.3	0.4
23	---	---	---	---	---	---	---	0.1	0.2	0.3	0.3	0.4
24	---	---	---	---	---	---	---	0.1	0.2	0.4	0.3	0.4
25	---	---	---	---	---	---	---	0.1	0.2	0.5	0.4	0.4
26	---	---	---	---	---	---	---	0.1	0.2	0.2	0.4	0.3
27	---	---	---	---	---	---	---	0.1	0.2	0.2	0.3	0.3
28	---	---	---	---	---	---	---	0.1	0.2	0.2	0.4	0.2
29	---	---	---	---	---	---	---	0.1	0.2	0.1	0.3	0.2
30	---	---	---	---	---	---	---	0.1	0.2	0.2	0.3	0.2
31	---	---	---	---	---	---	---	0.2	---	0.2	0.3	---
MEAN	---	---	---	---	---	---	---	---	---	0.2	---	0.3
MAX	---	---	---	---	---	---	---	---	---	0.5	---	0.4
MIN	---	---	---	---	---	---	---	---	---	0.1	---	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	2	3
3	---	---	---	---	---	---	---	1	1	2	2	3
4	---	---	---	---	---	---	---	1	1	2	2	3
5	---	---	---	---	---	---	---	0	1	2	2	3
6	---	---	---	---	---	---	---	0	2	2	2	3
7	---	---	---	---	---	---	---	0	1	2	2	3
8	---	---	---	---	---	---	---	0	1	2	2	3
9	---	---	---	---	---	---	---	0	2	2	4	3
10	---	---	---	---	---	---	---	0	---	2	---	3
11	---	---	---	---	---	---	---	0	0	2	---	3
12	---	---	---	---	---	---	---	0	0	2	---	3
13	---	---	---	---	---	---	---	0	0	2	---	3
14	---	---	---	---	---	---	---	0	1	2	---	3
15	---	---	---	---	---	---	---	0	1	2	5	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	4	3
27	---	---	---	---	---	---	---	0	2	2	3	3
28	---	---	---	---	---	---	---	0	2	1	4	2
29	---	---	---	---	---	---	---	0	2	0	3	2
30	---	---	---	---	---	---	---	1	2	2	3	2
31	---	---	---	---	---	---	---	1	---	2	3	---
MEAN	---	---	---	---	---	---	---	---	---	2	---	3
MAX	---	---	---	---	---	---	---	---	---	5	---	4
MIN	---	---	---	---	---	---	---	---	---	0	---	2

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	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unfltrd uS/cm 25 degC (00095)	Temper-ature, 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)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, 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)	Alum-inum, water, fltrd, mg/L (01106)	Anti-mony, water, fltrd, mg/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	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, 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)	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)
DEC 10...	<0.04	<0.8	0.128	0.3	902	E.06	188	2.3	1.35	<3	<0.2	926	3.9
Date	Gross beta radioac water, fltrd, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)										
DEC 10...	5.9	5,900	0.15										

GROUND-WATER LEVELS
ROCKINGHAM COUNTY—Continued

362226079410103. County number, RK-245; DENR Upper Piedmont Research Station MW-S4D (Bedrock 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.--Felsic Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 380 ft, diameter 6 in., cased to 77 ft, open hole from 77 ft to 380 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, 3.02 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 measured, 3.40 ft below land-surface datum, Aug. 12, 2003; lowest water level measured 5.55 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	4.90*	MAY 15	5.00*	JUN 05	5.15*	AUG 07	5.55*	SEP 05	5.50*

*DENR measurements.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	4.86*	DEC 10	4.55*	MAR 10	3.79*	APR 29	4.08*	JUL 07	4.09*	SEP 10	3.94*
NOV 20	3.94*	FEB 03	4.31*	APR 02	3.77*	JUN 02	3.99*	AUG 12	3.40*		

*DENR measurements.

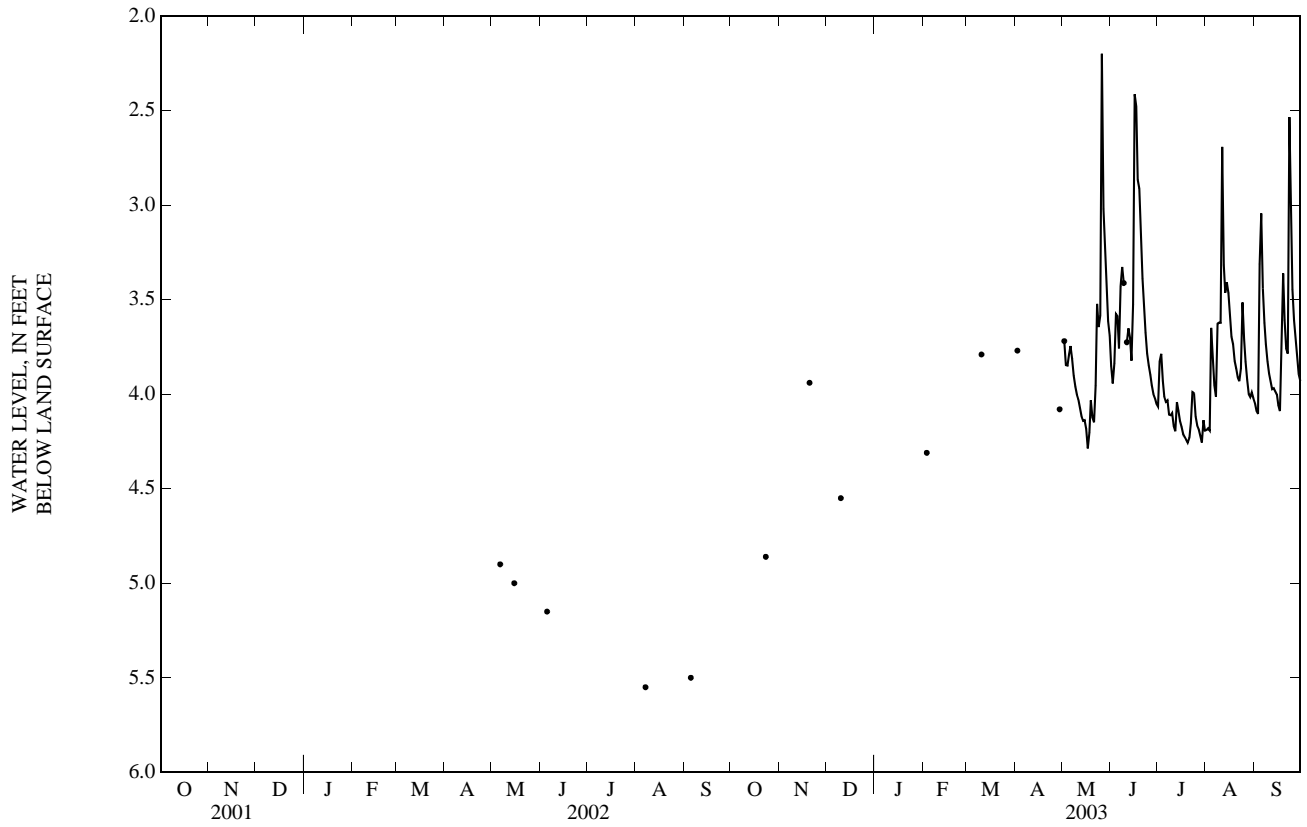
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
FOR PERIOD MAY 2003 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	3.85	4.07	4.19	4.05
2	---	---	---	---	---	---	---	3.72	3.94	3.83	4.18	4.09
3	---	---	---	---	---	---	---	3.85	3.84	3.79	4.19	4.10
4	---	---	---	---	---	---	---	3.85	3.58	3.93	3.65	3.31
5	---	---	---	---	---	---	---	3.79	3.59	4.01	3.80	3.04
6	---	---	---	---	---	---	---	3.75	3.76	4.04	3.95	3.44
7	---	---	---	---	---	---	---	3.81	3.43	4.03	4.01	3.62
8	---	---	---	---	---	---	---	3.90	3.33	4.11	3.63	3.74
9	---	---	---	---	---	---	---	3.96	3.41	4.11	3.62	3.83
10	---	---	---	---	---	---	---	4.00	---	4.10	3.62	3.89
11	---	---	---	---	---	---	---	4.03	3.73	4.17	2.69	3.94
12	---	---	---	---	---	---	---	4.07	3.65	4.20	3.32	3.97
13	---	---	---	---	---	---	---	4.12	3.70	4.04	3.46	3.97
14	---	---	---	---	---	---	---	4.14	3.82	4.09	3.41	3.98
15	---	---	---	---	---	---	---	4.14	3.53	4.14	3.47	4.00
16	---	---	---	---	---	---	---	4.18	2.41	4.17	3.58	4.06
17	---	---	---	---	---	---	---	4.29	2.48	4.21	3.70	4.09
18	---	---	---	---	---	---	---	4.20	2.87	4.23	3.74	3.73
19	---	---	---	---	---	---	---	4.03	2.91	4.24	3.82	3.36
20	---	---	---	---	---	---	---	4.12	3.17	4.26	3.87	3.61
21	---	---	---	---	---	---	---	4.15	3.39	4.23	3.91	3.76
22	---	---	---	---	---	---	---	3.95	3.54	4.15	3.93	3.79
23	---	---	---	---	---	---	---	3.52	3.67	3.99	3.86	2.54
24	---	---	---	---	---	---	---	3.65	3.79	4.00	3.51	3.17
25	---	---	---	---	---	---	---	3.58	3.85	4.12	3.71	3.45
26	---	---	---	---	---	---	---	2.20	3.90	4.17	3.83	3.61
27	---	---	---	---	---	---	---	3.02	3.95	4.18	3.92	3.71
28	---	---	---	---	---	---	---	3.27	4.00	4.22	4.00	3.80
29	---	---	---	---	---	---	---	3.46	4.02	4.26	4.02	3.89
30	---	---	---	---	---	---	---	3.61	4.05	4.14	3.99	3.93
31	---	---	---	---	---	---	---	3.69	---	4.19	4.02	---

WTR YR 2003 MEAN 3.79 HIGH 2.20 LOW 4.29

ROCKINGHAM COUNTY—Continued

362226079410103. County number, RK-245; DENR Upper Piedmont Research Station MW-S4D (Bedrock well).



362226079410103 RK-245 DENR Upper Piedmont Research Station MW-S4D (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	348, May 3	306, September 14
pH, standard units	8.0, May 1, 2, 3, 4	7.0, September 25, 27, 29
WATER TEMPERATURE, °C	14.7, on many days during the period	14.7, on many days during the period
DISSOLVED OXYGEN, mg/L	0.9, May 1	0.0, on many days during the period
DISSOLVED OXYGEN, PERCENT SATURATION,%	11, May 1	0, on many days during the period

362226079410103 RK-245 DENR Upper Piedmont Research Station MW-S4D (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	---	---	---	---	---	---	---	---	343	327	323	317
2	---	---	---	---	---	---	---	347	342	327	323	317
3	---	---	---	---	---	---	---	347	343	327	323	317
4	---	---	---	---	---	---	---	346	342	327	323	316
5	---	---	---	---	---	---	---	345	342	325	323	316
6	---	---	---	---	---	---	---	345	341	325	323	316
7	---	---	---	---	---	---	---	343	340	324	322	315
8	---	---	---	---	---	---	---	342	340	324	323	314
9	---	---	---	---	---	---	---	341	340	324	323	313
10	---	---	---	---	---	---	---	341	---	323	323	309
11	---	---	---	---	---	---	---	340	339	322	324	307
12	---	---	---	---	---	---	---	340	339	322	324	307
13	---	---	---	---	---	---	---	340	339	322	325	307
14	---	---	---	---	---	---	---	340	339	321	326	307
15	---	---	---	---	---	---	---	340	337	321	325	307
16	---	---	---	---	---	---	---	341	337	321	325	307
17	---	---	---	---	---	---	---	342	336	321	324	307
18	---	---	---	---	---	---	---	342	336	321	324	308
19	---	---	---	---	---	---	---	343	336	322	323	308
20	---	---	---	---	---	---	---	343	336	322	322	308
21	---	---	---	---	---	---	---	343	335	322	322	308
22	---	---	---	---	---	---	---	344	333	322	321	308
23	---	---	---	---	---	---	---	343	333	322	321	308
24	---	---	---	---	---	---	---	344	332	322	320	308
25	---	---	---	---	---	---	---	344	331	322	320	308
26	---	---	---	---	---	---	---	343	330	322	319	308
27	---	---	---	---	---	---	---	343	329	322	319	307
28	---	---	---	---	---	---	---	343	329	322	318	307
29	---	---	---	---	---	---	---	344	329	322	318	307
30	---	---	---	---	---	---	---	344	328	323	318	307
31	---	---	---	---	---	---	---	343	---	323	318	---
MEAN	---	---	---	---	---	---	---	---	---	323	322	310
MAX	---	---	---	---	---	---	---	---	---	327	326	317
MIN	---	---	---	---	---	---	---	---	---	321	318	307

362226079410103 RK-245 DENR Upper Piedmont Research Station MW-S4D (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	---	---	---	---	---	---	---	---	7.9	7.8	7.8	7.7
2	---	---	---	---	---	---	---	8.0	7.9	7.8	7.8	7.7
3	---	---	---	---	---	---	---	8.0	7.9	7.7	7.8	7.7
4	---	---	---	---	---	---	---	8.0	7.9	7.7	7.8	7.6
5	---	---	---	---	---	---	---	7.9	7.9	7.7	7.8	7.6
6	---	---	---	---	---	---	---	7.9	7.9	7.7	7.8	7.6
7	---	---	---	---	---	---	---	7.9	7.9	7.7	7.8	7.5
8	---	---	---	---	---	---	---	7.9	7.9	7.7	7.8	7.5
9	---	---	---	---	---	---	---	7.9	7.9	7.7	7.8	7.4
10	---	---	---	---	---	---	---	7.9	---	7.7	7.8	7.2
11	---	---	---	---	---	---	---	7.8	7.9	7.7	7.8	7.1
12	---	---	---	---	---	---	---	7.8	7.9	7.7	7.8	7.1
13	---	---	---	---	---	---	---	7.8	7.9	7.7	7.8	7.1
14	---	---	---	---	---	---	---	7.8	7.9	7.7	7.9	7.1
15	---	---	---	---	---	---	---	7.8	7.9	7.7	7.8	7.1
16	---	---	---	---	---	---	---	7.8	7.9	7.7	7.8	7.1
17	---	---	---	---	---	---	---	7.8	7.9	7.7	7.8	7.1
18	---	---	---	---	---	---	---	7.8	7.8	7.8	7.8	7.1
19	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
20	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
21	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
22	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
23	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
24	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
25	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
26	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
27	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
28	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
29	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
30	---	---	---	---	---	---	---	7.9	7.8	7.8	7.8	7.1
31	---	---	---	---	---	---	---	7.9	---	7.8	7.7	---
MEAN	---	---	---	---	---	---	---	---	---	7.8	7.8	7.2
MAX	---	---	---	---	---	---	---	---	---	7.8	7.9	7.7
MIN	---	---	---	---	---	---	---	---	---	7.7	7.7	7.1

362226079410103 RK-245 DENR Upper Piedmont Research Station MW-S4D (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	---	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7
2	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
3	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
4	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
5	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
6	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
7	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
8	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
9	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
10	---	---	---	---	---	---	---	14.7	---	14.7	14.7	14.7
11	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
12	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
13	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
14	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
15	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
16	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
17	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
18	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
19	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
20	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
21	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
22	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
23	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
24	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
25	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
26	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
27	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
28	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
29	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
30	---	---	---	---	---	---	---	14.7	14.7	14.7	14.7	14.7
31	---	---	---	---	---	---	---	14.7	---	14.7	14.7	---
MEAN	---	---	---	---	---	---	---	---	---	14.7	14.7	14.7
MAX	---	---	---	---	---	---	---	---	---	14.7	14.7	14.7
MIN	---	---	---	---	---	---	---	---	---	14.7	14.7	14.7

362226079410103 RK-245 DENR Upper Piedmont Research Station MW-S4D (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	---	---	---	---	---	---	---	---	0.4	0.2	0.1	0.1
2	---	---	---	---	---	---	---	0.8	0.4	0.1	0.1	0.1
3	---	---	---	---	---	---	---	0.6	0.4	0.1	0.1	0.1
4	---	---	---	---	---	---	---	0.6	0.4	0.1	0.1	0.1
5	---	---	---	---	---	---	---	0.5	0.4	0.1	0.1	0.1
6	---	---	---	---	---	---	---	0.5	0.4	0.1	0.1	0.1
7	---	---	---	---	---	---	---	0.4	0.4	0.1	0.1	0.1
8	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
9	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
10	---	---	---	---	---	---	---	0.3	---	0.1	0.1	0.1
11	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
12	---	---	---	---	---	---	---	0.3	0.5	0.1	0.1	0.1
13	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
14	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
15	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
16	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
17	---	---	---	---	---	---	---	0.4	0.4	0.1	0.1	0.1
18	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
19	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
20	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
21	---	---	---	---	---	---	---	0.3	0.4	0.1	0.1	0.1
22	---	---	---	---	---	---	---	0.3	0.3	0.1	0.1	0.1
23	---	---	---	---	---	---	---	0.3	0.3	0.1	0.1	0.1
24	---	---	---	---	---	---	---	0.3	0.3	0.1	0.1	0.1
25	---	---	---	---	---	---	---	0.3	0.2	0.1	0.1	0.1
26	---	---	---	---	---	---	---	0.3	0.2	0.1	0.1	0.1
27	---	---	---	---	---	---	---	0.3	0.2	0.1	0.1	0.1
28	---	---	---	---	---	---	---	0.3	0.2	0.1	0.1	0.0
29	---	---	---	---	---	---	---	0.4	0.2	0.1	0.1	0.0
30	---	---	---	---	---	---	---	0.4	0.2	0.1	0.1	0.0
31	---	---	---	---	---	---	---	0.4	---	0.1	0.1	---
MEAN	---	---	---	---	---	---	---	---	---	0.1	0.1	0.1
MAX	---	---	---	---	---	---	---	---	---	0.2	0.1	0.1
MIN	---	---	---	---	---	---	---	---	---	0.1	0.1	0.0

362226079410103 RK-245 DENR Upper Piedmont Research Station MW-S4D (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	---	---	---	---	---	---	---	---	4	2	1	1
2	---	---	---	---	---	---	---	8	4	1	1	1
3	---	---	---	---	---	---	---	6	4	1	1	1
4	---	---	---	---	---	---	---	6	4	1	1	1
5	---	---	---	---	---	---	---	5	4	1	1	1
6	---	---	---	---	---	---	---	5	4	1	1	0
7	---	---	---	---	---	---	---	4	4	1	1	1
8	---	---	---	---	---	---	---	3	4	1	1	1
9	---	---	---	---	---	---	---	3	4	1	1	0
10	---	---	---	---	---	---	---	3	---	1	1	0
11	---	---	---	---	---	---	---	3	4	1	1	0
12	---	---	---	---	---	---	---	3	5	1	1	1
13	---	---	---	---	---	---	---	3	4	1	1	0
14	---	---	---	---	---	---	---	3	4	1	1	1
15	---	---	---	---	---	---	---	3	4	1	1	1
16	---	---	---	---	---	---	---	3	4	1	1	0
17	---	---	---	---	---	---	---	4	4	1	1	0
18	---	---	---	---	---	---	---	3	4	1	1	0
19	---	---	---	---	---	---	---	3	4	1	1	0
20	---	---	---	---	---	---	---	3	4	1	1	0
21	---	---	---	---	---	---	---	3	4	1	1	0
22	---	---	---	---	---	---	---	3	3	1	1	0
23	---	---	---	---	---	---	---	3	3	1	1	0
24	---	---	---	---	---	---	---	3	3	1	1	0
25	---	---	---	---	---	---	---	3	2	1	1	0
26	---	---	---	---	---	---	---	3	2	1	1	0
27	---	---	---	---	---	---	---	3	2	1	1	0
28	---	---	---	---	---	---	---	3	2	1	1	0
29	---	---	---	---	---	---	---	4	2	1	1	0
30	---	---	---	---	---	---	---	4	2	1	1	0
31	---	---	---	---	---	---	---	4	---	1	1	---
MEAN	---	---	---	---	---	---	---	---	---	1	1	0
MAX	---	---	---	---	---	---	---	---	---	2	1	1
MIN	---	---	---	---	---	---	---	---	---	1	1	0

362226079410103 RK-245 DENR Upper Piedmont Research Station MW-S4D (Bedrock 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	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, 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 11...	1130	0.1	6.9	295	15.2	110	35.9	5.95	2.27	11.0	0.06	12.1	32.2
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)	Orthophosphate, water, fltrd, mg/L as P (00671)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)
DEC 11...	54.5	208	<0.10	<0.04	<0.06	<0.008	<0.02	<2	<0.30	<2	21	0.10	<13
Date	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)	Molybdenum, 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 radioactivity water, fltrd, Th-230, pCi/L (04126)
DEC 11...	<0.04	<0.8	0.158	0.7	235	0.10	89.7	3.0	0.94	<3	<0.2	1,140	3.5
Date	Gross beta radioac water, fltrd, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)										
DEC 11...	7.7	1,240	1.13										

GROUND-WATER LEVELS

ROWAN COUNTY

354057080362601. Local number, NC-193; DENR Piedmont Research Station well L63t1; County number, RO-149.

LOCATION.--Lat 35°40'58", long 80°36'25", Hydrologic Unit 03040102, 0.75 mi south of Secondary Road 1526 on Piedmont Research Station road, 2.75 mi south of Barber. Owner: North Carolina Department of Agriculture.

WATER-LEVEL RECORDS

AQUIFER.--Unconfined alluvial silt.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 24 ft, diameter 4 in., cased to 9 ft, screened interval from 9 to 19 ft, sand filter pack from 7.2 to 24 ft.

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

DATUM.--Land-surface datum is 678 ft above NGVD of 1929 (from topographic map). Measuring point: Two saw cuts in top of casing, 3.30 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--November 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.97 ft below land-surface datum, Mar. 30, 1993; lowest water level recorded, 11.15 ft below land-surface datum, Sept. 14, 15, 16, 2002.

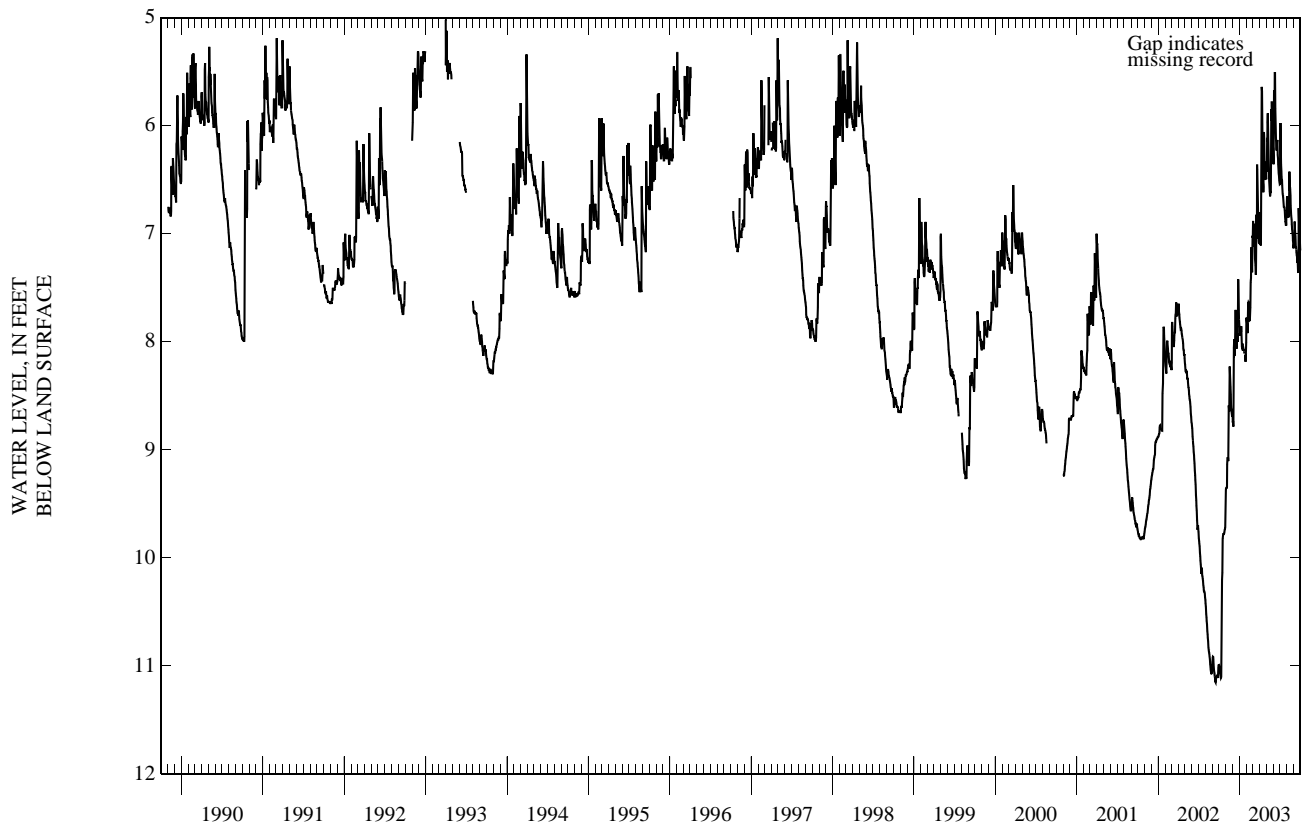
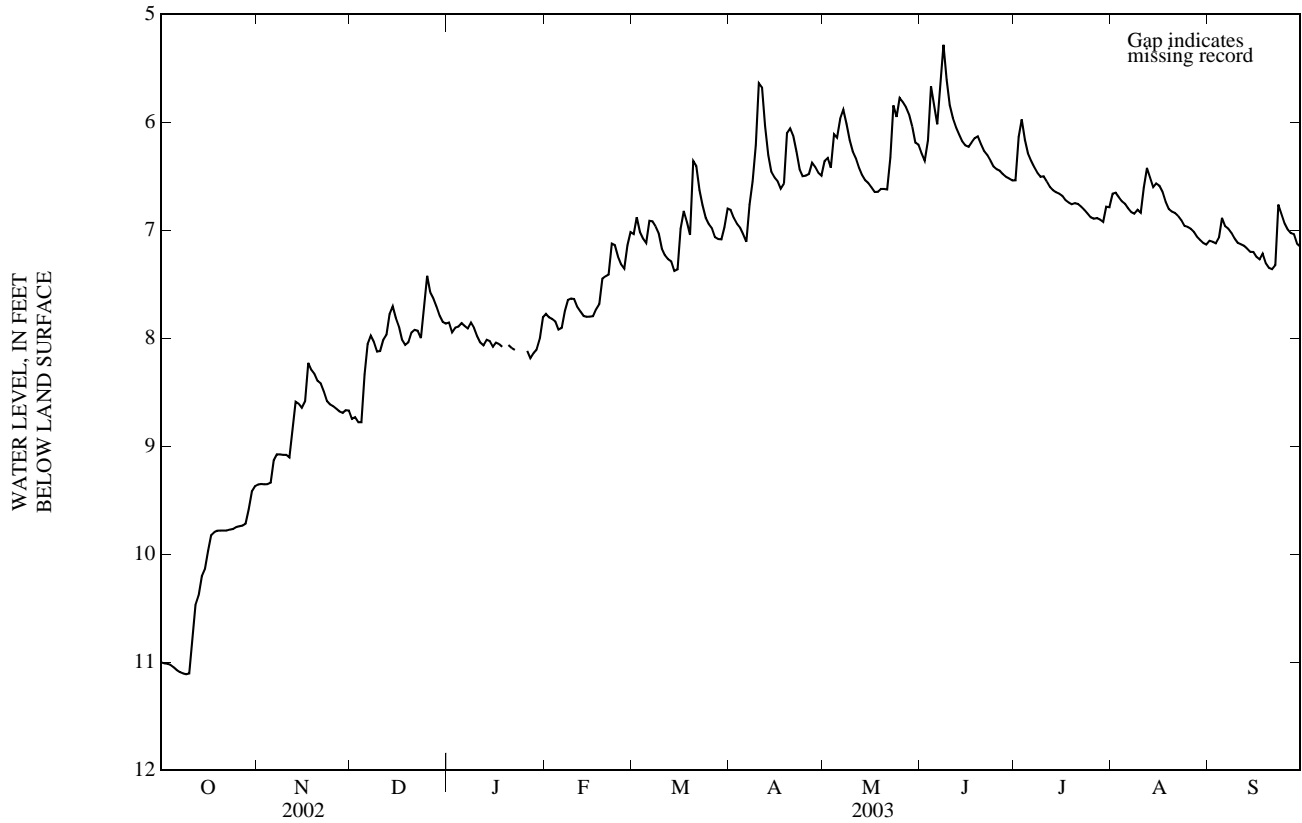
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.00	9.35	8.75	7.86	7.78	7.04	6.81	6.36	6.29	6.54	6.66	7.10
2	11.01	9.35	8.73	7.95	7.81	6.88	6.89	6.33	6.36	6.14	6.65	7.11
3	11.01	9.35	8.78	7.90	7.82	7.02	6.94	6.42	6.17	5.98	6.70	7.12
4	11.03	9.35	8.78	7.89	7.85	7.08	6.98	6.11	5.67	6.16	6.73	7.07
5	11.05	9.34	8.33	7.86	7.92	7.12	7.04	6.14	5.84	6.29	6.76	6.89
6	11.07	9.13	8.06	7.89	7.91	6.91	7.11	5.97	6.02	6.36	6.80	6.96
7	11.09	9.08	7.98	7.91	7.75	6.92	6.76	5.89	5.65	6.42	6.83	6.99
8	11.10	9.08	8.03	7.86	7.65	6.96	6.55	6.02	5.28	6.47	6.85	7.03
9	11.11	9.08	8.12	7.90	7.63	7.03	6.22	6.17	5.61	6.51	6.81	7.08
10	11.10	9.08	8.12	7.98	7.64	7.17	5.64	6.27	5.84	6.50	6.84	7.12
11	10.80	9.10	8.01	8.04	7.71	7.23	5.68	6.34	5.96	6.55	6.61	7.13
12	10.47	8.82	7.97	8.07	7.75	7.27	6.04	6.42	6.05	6.60	6.42	7.14
13	10.38	8.59	7.78	8.02	7.80	7.29	6.31	6.49	6.11	6.63	6.51	7.17
14	10.20	8.61	7.71	8.03	7.80	7.38	6.46	6.54	6.18	6.65	6.60	7.20
15	10.14	8.64	7.81	8.08	7.80	7.36	6.51	6.57	6.22	6.66	6.57	7.20
16	9.97	8.59	7.89	8.04	7.80	6.99	6.55	6.60	6.23	6.68	6.59	7.25
17	9.82	8.23	8.01	8.06	7.73	6.82	6.62	6.65	6.19	6.72	6.65	7.27
18	9.80	8.29	8.06	8.08	7.68	6.92	6.57	6.65	6.15	6.74	6.74	7.22
19	9.78	8.33	8.04	---	7.45	7.04	6.10	6.62	6.13	6.76	6.80	7.31
20	9.78	8.39	7.95	8.06	7.43	6.36	6.06	6.62	6.20	6.75	6.83	7.35
21	9.78	8.42	7.92	8.09	7.41	6.41	6.13	6.62	6.27	6.76	6.84	7.36
22	9.78	8.49	7.93	8.11	7.13	6.63	6.27	6.33	6.31	6.78	6.87	7.33
23	9.77	8.58	8.00	---	7.14	6.77	6.44	5.85	6.36	6.81	6.91	6.76
24	9.77	8.61	7.73	---	7.25	6.88	6.50	5.95	6.41	6.85	6.96	6.85
25	9.75	8.63	7.42	---	7.32	6.94	6.50	5.78	6.44	6.88	6.97	6.94
26	9.74	8.65	7.57	8.12	7.36	6.98	6.48	5.81	6.45	6.89	6.99	7.00
27	9.74	8.68	7.63	8.18	7.14	7.06	6.38	5.86	6.48	6.89	7.02	7.03
28	9.72	8.69	7.71	8.14	7.02	7.08	6.42	5.93	6.51	6.90	7.06	7.04
29	9.58	8.67	7.79	8.11	---	7.08	6.47	6.04	6.52	6.92	7.09	7.13
30	9.42	8.67	7.85	8.01	---	6.97	6.50	6.19	6.54	6.78	7.12	7.15
31	9.37	---	7.87	7.81	---	6.80	---	6.21	---	6.79	7.13	---

WTR YR 2003 MEAN 7.42 HIGH 5.28 LOW 11.11

ROWAN COUNTY—Continued

354057080362601. Local number, NC-193; DENR Piedmont Research Station well L63t1; County number, RO-149.



354057080362601 Local number, NC-193; DENR Piedmont Research Station well L63t1; County number, RO-149—Continued

PRECIPITATION RECORDS

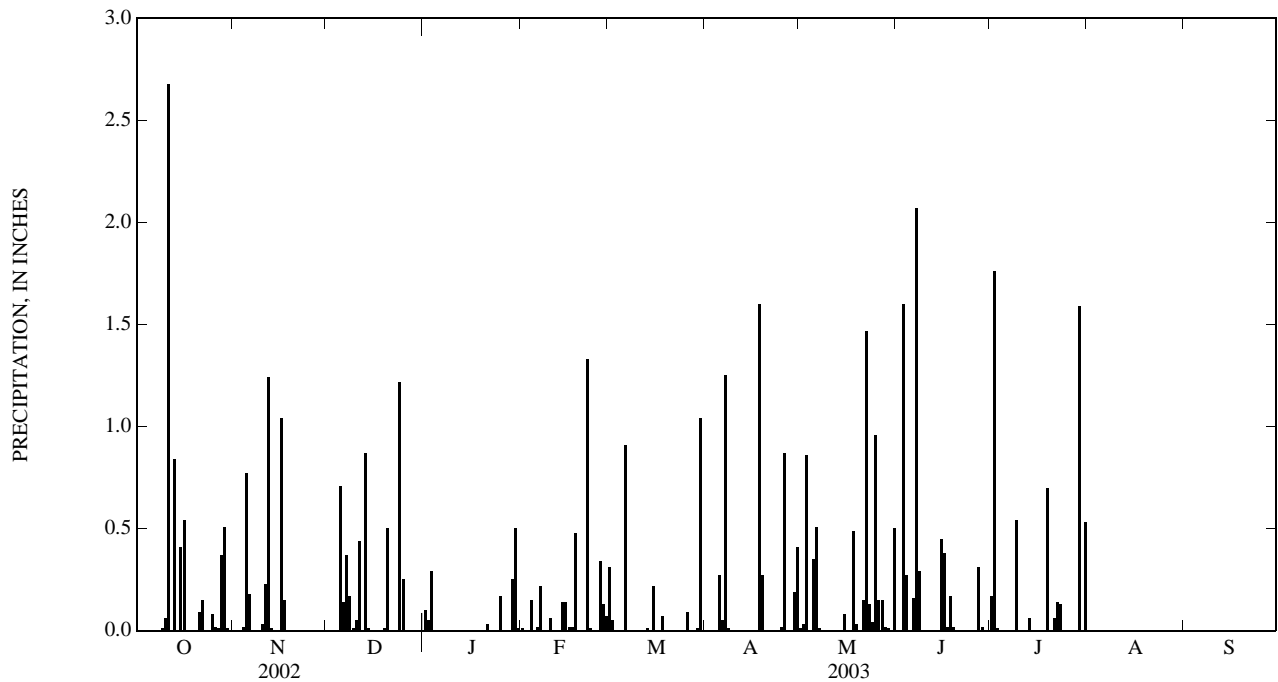
PERIOD OF RECORD.--April 1996 to current year.

GAGE.--Tipping-bucket raingage and electronic datalogger. Satellite telemetry at station.

REMARKS.--Gage is operated as part of climatic-effects network. Precipitation data collected during freezing periods may not be accurately reflected in daily record; consequently, winter record is poor.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.10	0.01	0.31	0.00	0.01	0.00	0.17	---	---
2	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.03	0.00	1.76	---	---
3	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.86	1.60	0.01	---	---
4	0.00	0.02	0.00	0.00	0.15	0.00	0.00	0.00	0.27	0.00	---	---
5	0.00	0.77	0.71	0.00	0.00	0.00	0.27	0.35	0.00	0.00	---	---
6	0.00	0.18	0.14	0.00	0.02	0.91	0.05	0.51	0.16	0.00	---	---
7	0.00	0.00	0.37	0.00	0.22	0.00	1.25	0.01	2.07	0.00	---	---
8	0.00	0.00	0.17	0.00	0.00	0.00	0.01	0.00	0.29	0.00	---	---
9	0.01	0.00	0.01	0.00	0.00	0.00	---	0.00	0.00	0.54	---	---
10	0.06	0.03	0.05	0.00	0.06	0.00	---	0.00	0.00	0.00	---	---
11	2.68	0.23	0.44	0.00	0.00	0.00	---	0.00	0.00	0.00	---	---
12	0.00	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---
13	0.84	0.01	0.87	0.00	0.00	0.01	0.00	0.00	0.00	0.06	---	---
14	0.00	0.00	0.01	0.00	0.14	0.00	0.00	0.00	0.00	0.00	---	---
15	0.41	0.00	0.00	0.00	0.14	0.22	0.00	0.08	0.45	0.00	---	---
16	0.54	1.04	0.00	0.00	0.02	---	0.00	0.00	0.38	0.00	---	---
17	0.00	0.15	0.00	0.00	0.02	0.00	0.00	0.00	0.02	0.00	---	---
18	0.00	0.00	0.00	0.00	0.48	0.07	1.60	0.49	0.17	0.00	---	---
19	0.00	0.00	0.01	0.00	0.00	0.00	0.27	0.03	0.02	0.70	---	---
20	0.00	0.00	0.50	0.00	0.00	---	---	0.00	0.00	0.00	---	---
21	0.09	0.00	0.00	0.03	0.00	---	0.00	0.15	0.00	0.06	---	---
22	0.15	0.00	0.00	0.00	1.33	0.00	0.00	1.47	0.00	0.14	---	---
23	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.13	0.00	0.13	---	---
24	0.00	0.00	1.22	0.00	0.00	0.00	0.00	1.04	0.00	0.00	---	---
25	0.08	0.00	0.25	0.17	0.00	0.00	0.02	0.96	0.00	0.00	---	---
26	0.02	0.00	0.00	0.00	0.34	0.09	0.87	0.15	0.00	0.00	---	---
27	0.01	0.00	0.00	0.00	0.13	0.00	0.00	0.15	0.31	0.00	---	---
28	0.37	0.00	0.00	0.00	0.07	0.00	0.00	0.02	0.02	0.00	---	---
29	0.51	0.00	0.00	0.25	---	0.01	0.19	0.01	0.00	1.59	---	---
30	0.01	0.00	0.00	0.50	---	1.04	0.41	0.00	0.00	0.00	---	---
31	0.00	---	0.00	0.01	---	---	---	0.50	---	0.53	---	---
TOTAL	5.78	3.67	4.75	1.40	3.14	---	---	5.95	5.76	5.69	---	---



SAMPSON COUNTY

345927078170301. County number, SA-134; Clinton well 18D.

LOCATION.--Lat 34°59'27.1", long 78°17'03.4", Hydrologic Unit 03030006, 0.3 mi south of State Highway 24 on Secondary Road 1921. Owner: City of Clinton.

AQUIFER.--Upper and lower Cape Fear aquifers of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth and diameter uncertain, screened intervals from 235 to 260 ft, 265 to 270 ft, 305 to 320 ft, and 346 to 382 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

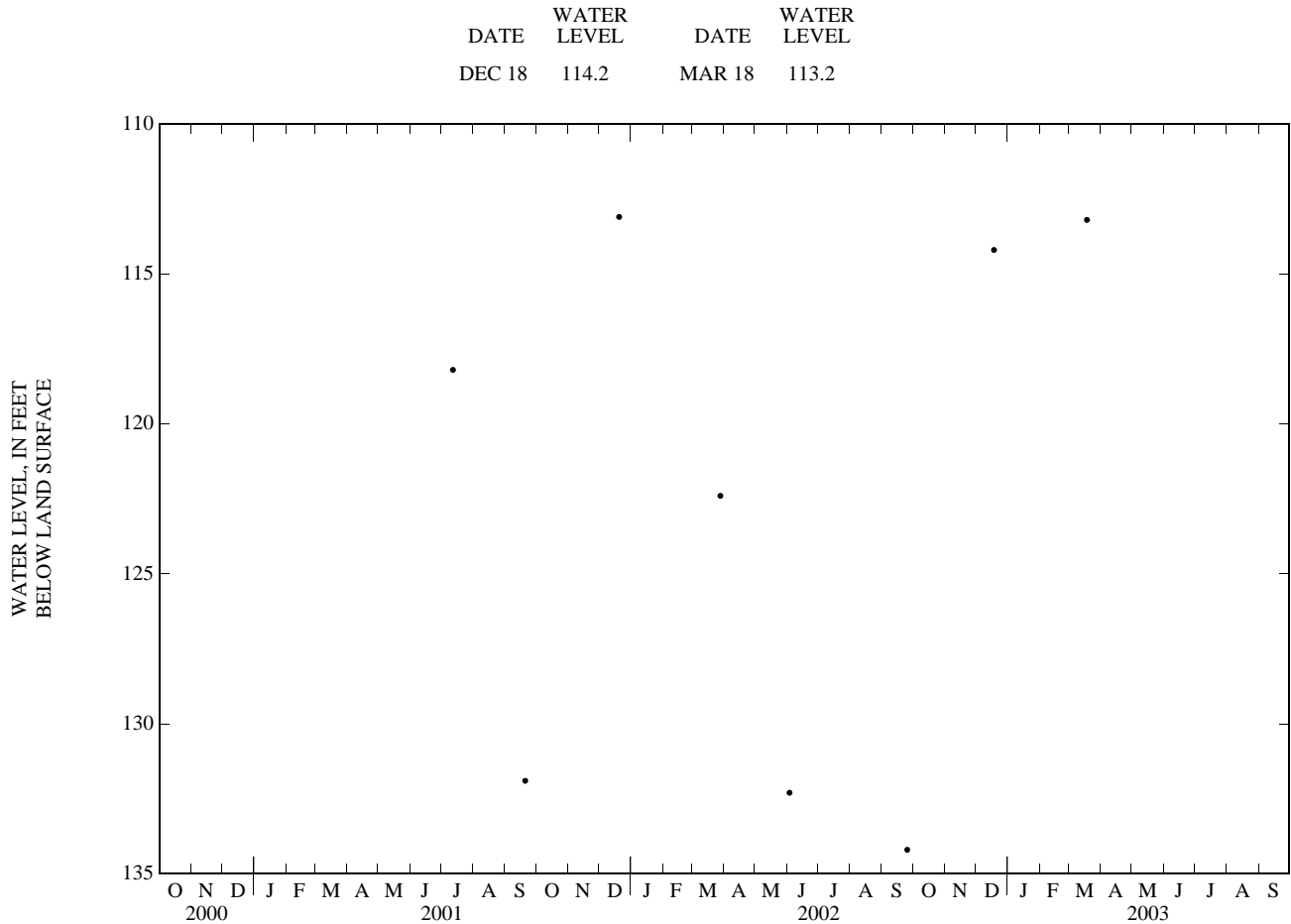
DATUM.--Land-surface datum is 154 ft above NGVD of 1929 (from topographic map). Measuring point: Top of well access pipe in pump pedestal, 1.2 ft above land-surface datum.

REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--July 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 113.1 ft below land-surface datum, Dec. 20, 2001; lowest measured, 134.2 ft below land-surface datum, Sept. 25, 2002.

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



GROUND-WATER LEVELS
SAMPSON COUNTY—Continued

345927078170302. County number, SA-135; Clinton well 18S.

LOCATION.--Lat 34°59'26.8", long 78°17'03.2", Hydrologic Unit 03030006, 0.3 mi south of State Highway 24 on Secondary Road 1921. Owner: City of Clinton.

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 200 ft, diameter 10 in., screened intervals from 105 to 145 ft, 158 to 168 ft, and 180 to 190 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 154 ft above NGVD of 1929 (from topographic map). Measuring point: Top of 1-inch well access pipe in pump pedestal, 2.2 ft above land-surface datum.

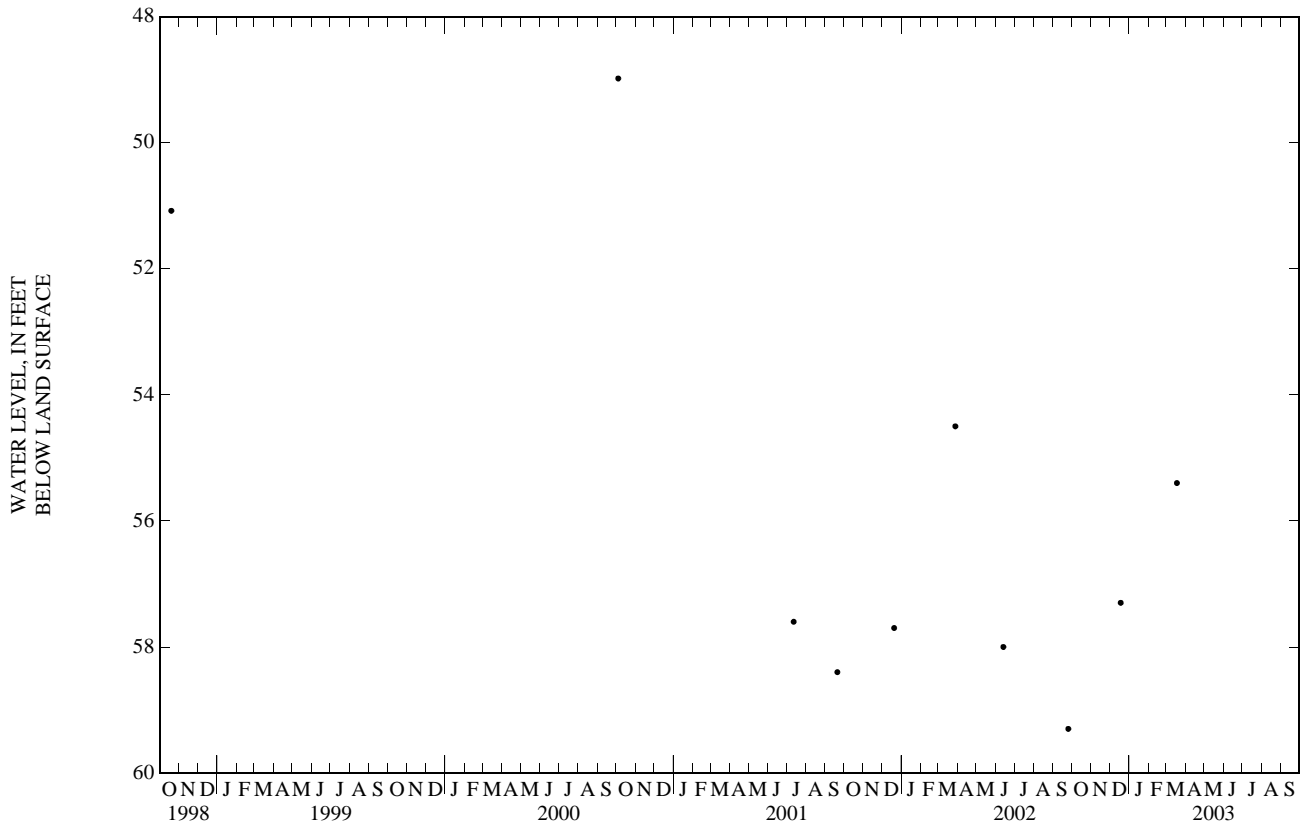
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--October 1998 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 48.98 ft below land-surface datum, Oct. 4, 2000; lowest measured, 59.3 ft below land-surface datum, Sept. 25, 2002.

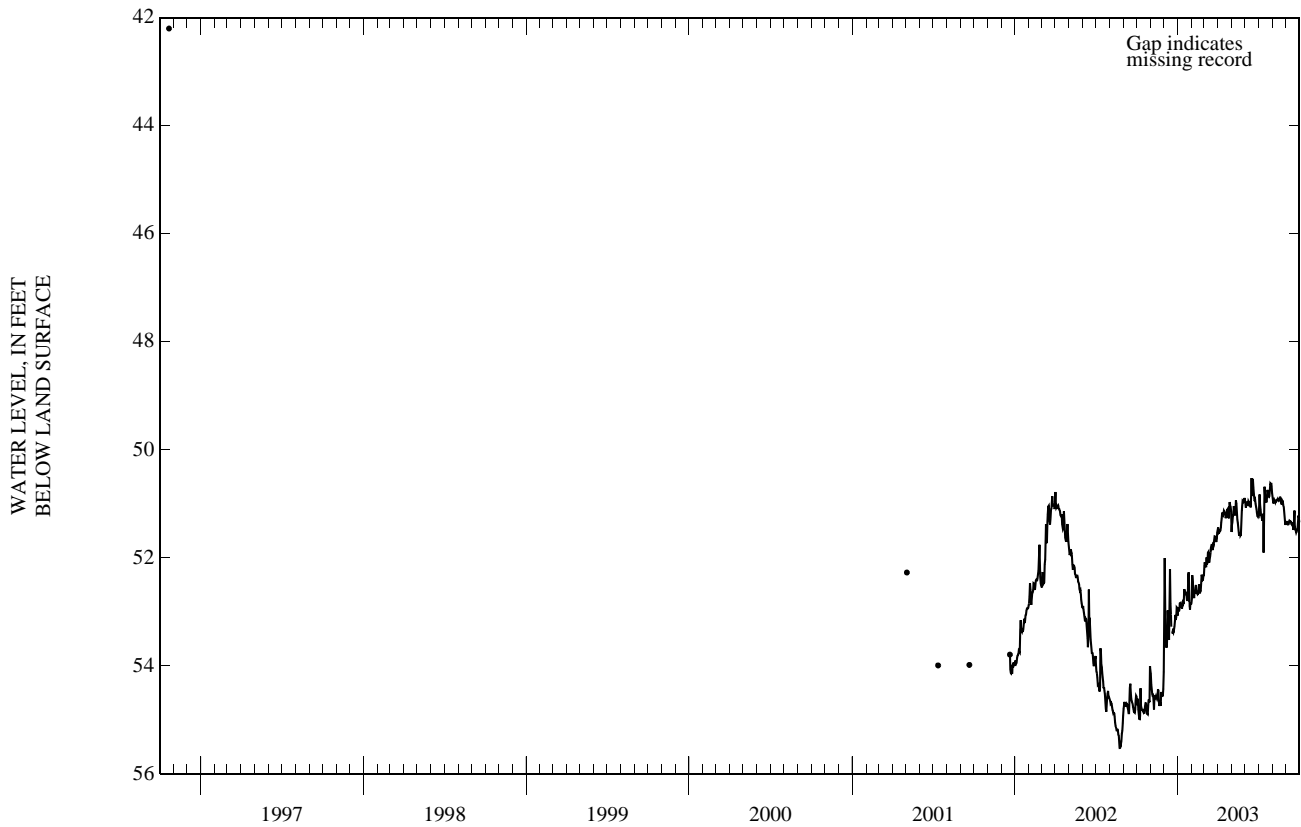
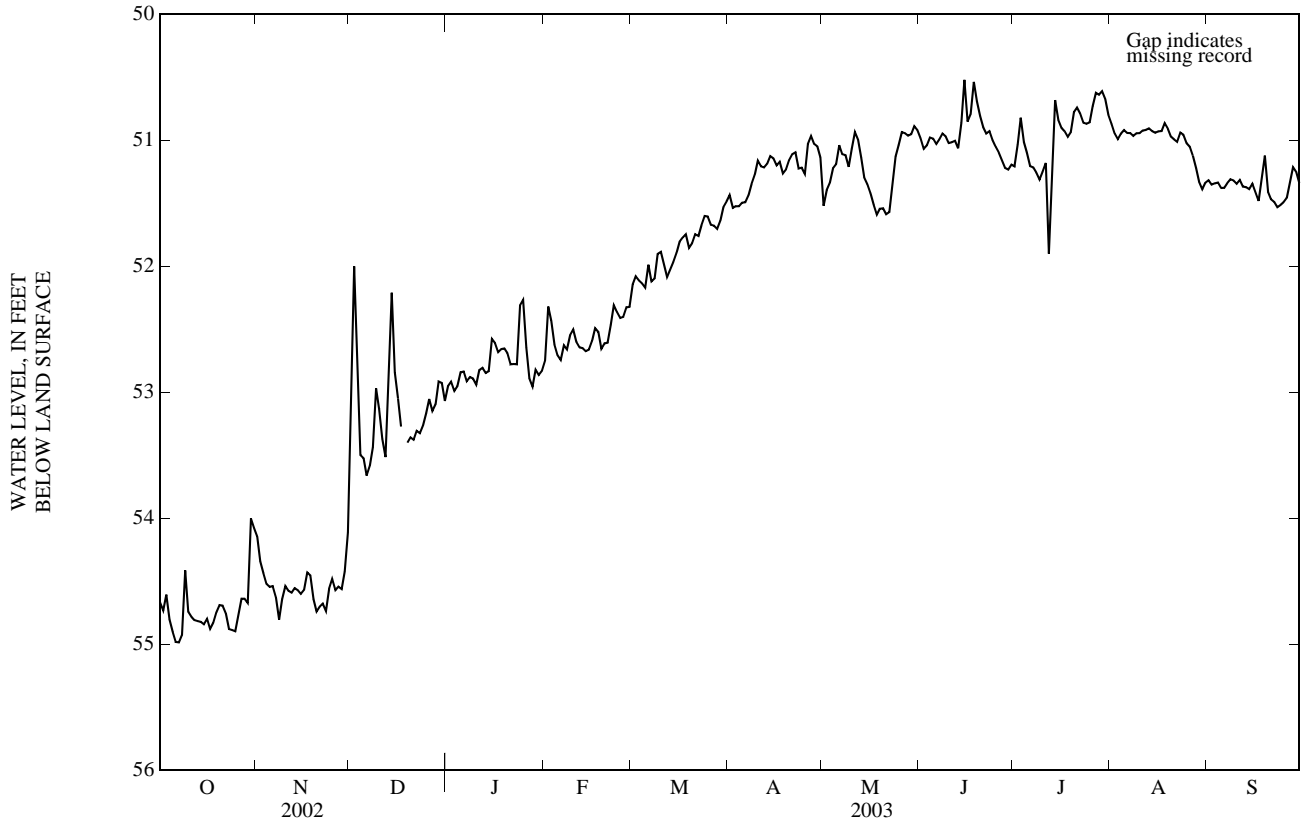
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 18	57.3	MAR 18	55.4



GROUND-WATER LEVELS
SAMPSON COUNTY—Continued

345853078165401. County number, SA-140; Clinton observation well 1200.



GROUND-WATER LEVELS
SAMPSON COUNTY—Continued

345730078301702. County number, SA-144; Roseboro well 2.

LOCATION.--Lat 34°57'30.5", long 78°30'16.9", Hydrologic Unit 03030006, in Roseboro off Cypress Street. Owner: Town of Roseboro.

AQUIFER.--Black Creek and upper Cape Fear aquifers of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 275 ft, diameter 10 in., screened intervals from 137 to 147 ft, 170 to 190 ft, and 260 to 265 ft (reported by driller).

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 120 ft above NGVD of 1929 (from topographic map). Measuring point: Top of coupling in pump base, 1.4 ft above land-surface datum.

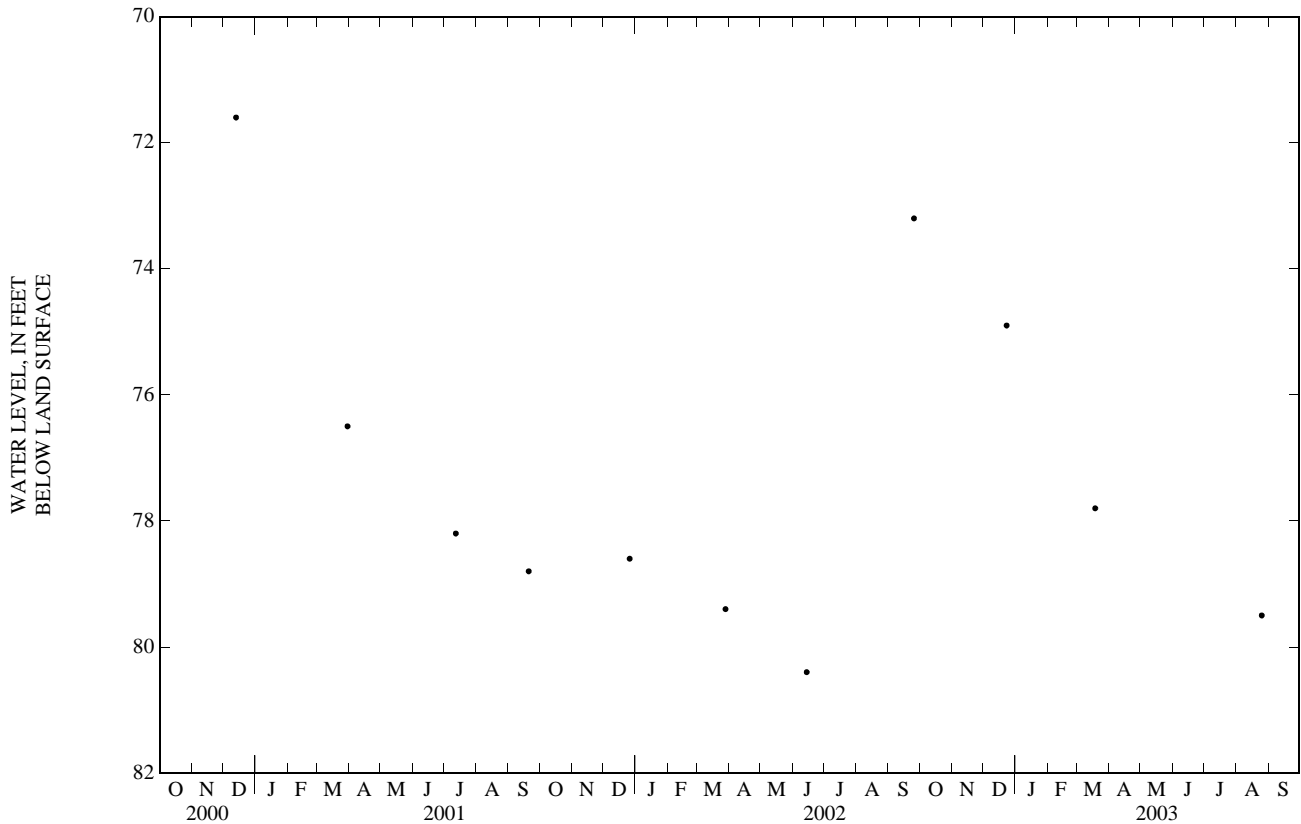
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--December 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 71.6 ft below land-surface datum, Dec. 13, 2000; lowest measured, 80.4 ft below land-surface datum, June 14, 2002.

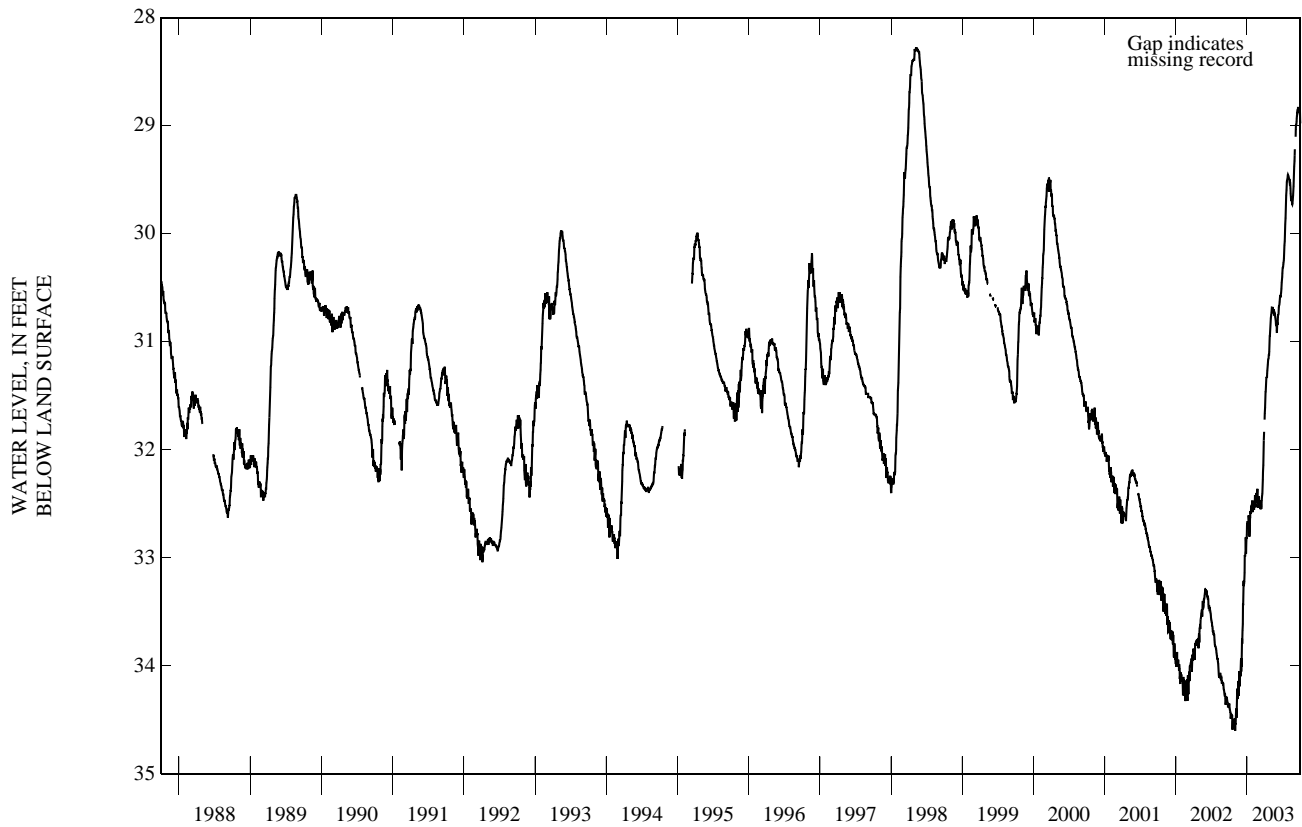
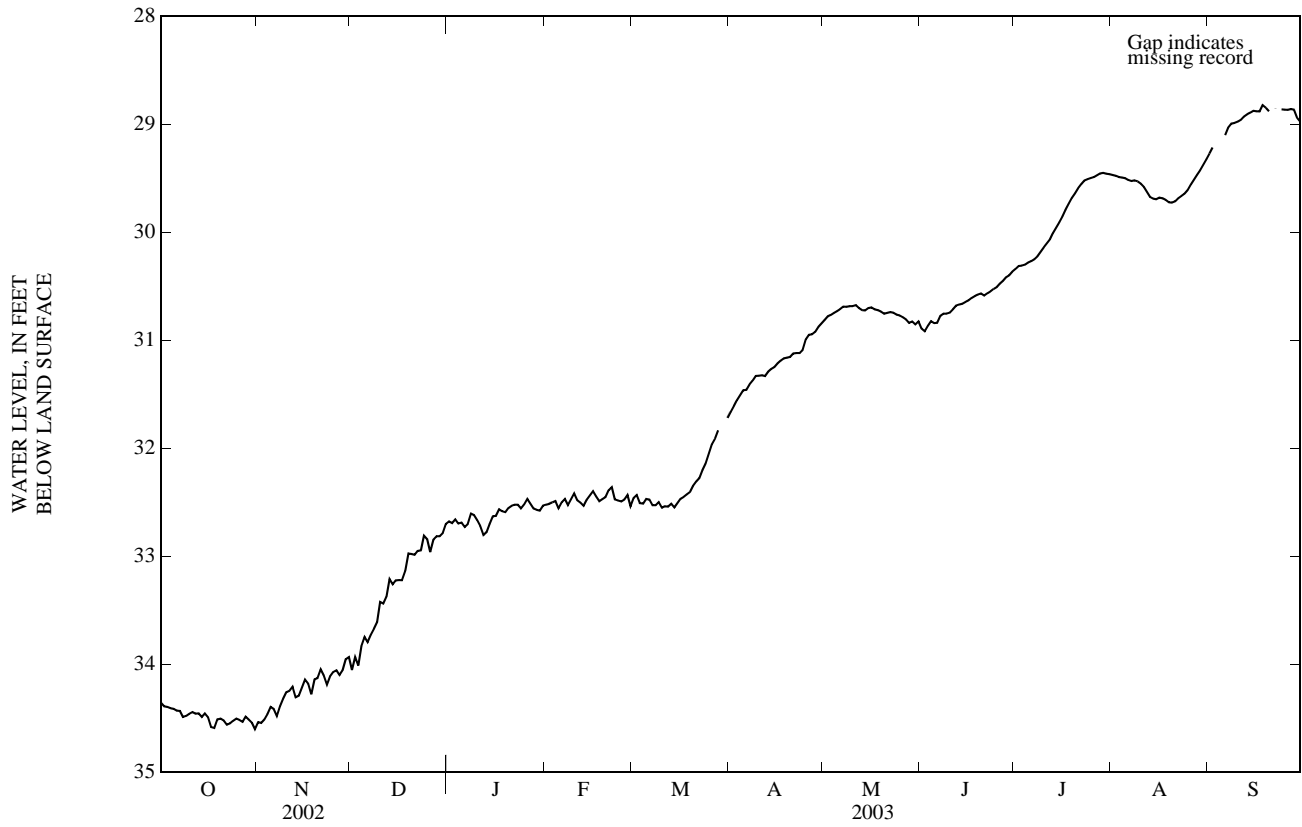
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	74.9	MAR 18	77.8	AUG 25	79.5



SCOTLAND COUNTY—Continued

345812079313401. Local number, NC-194; County number, SC-080.



GROUND-WATER LEVELS
SCOTLAND COUNTY—Continued

344520079281001. County number, SC-040; Laurinburg well 4.

LOCATION.--Lat 34°45'18", long 79°28'02", Hydrologic Unit 03040204, in Laurinburg off Willow Drive. Owner: City of Laurinburg.

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused supply well, depth 240 ft, diameter 10 and 8 in., screened intervals from 70 to 106 ft, 150 to 165 ft, 185 to 195 ft, 200 to 205 ft, and 217 to 224 ft (reported by driller).

INSTRUMENTATION.--Pressure transducer recording data at 15-minute intervals.

DATUM.--Land-surface datum is 210 ft above NGVD of 1929 (from topographic map). Measuring point: Top of instrument shelf, 1.5 ft above land-surface datum (since July 2000).

REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study. Water levels affected by pumping of nearby municipal wells.

PERIOD OF RECORD.--July 1969 to current year. Continuous record began December 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.95 ft below land-surface datum, Apr. 12, 2003; lowest measured, 21.68 ft below land-surface datum, Oct. 20, 1993.

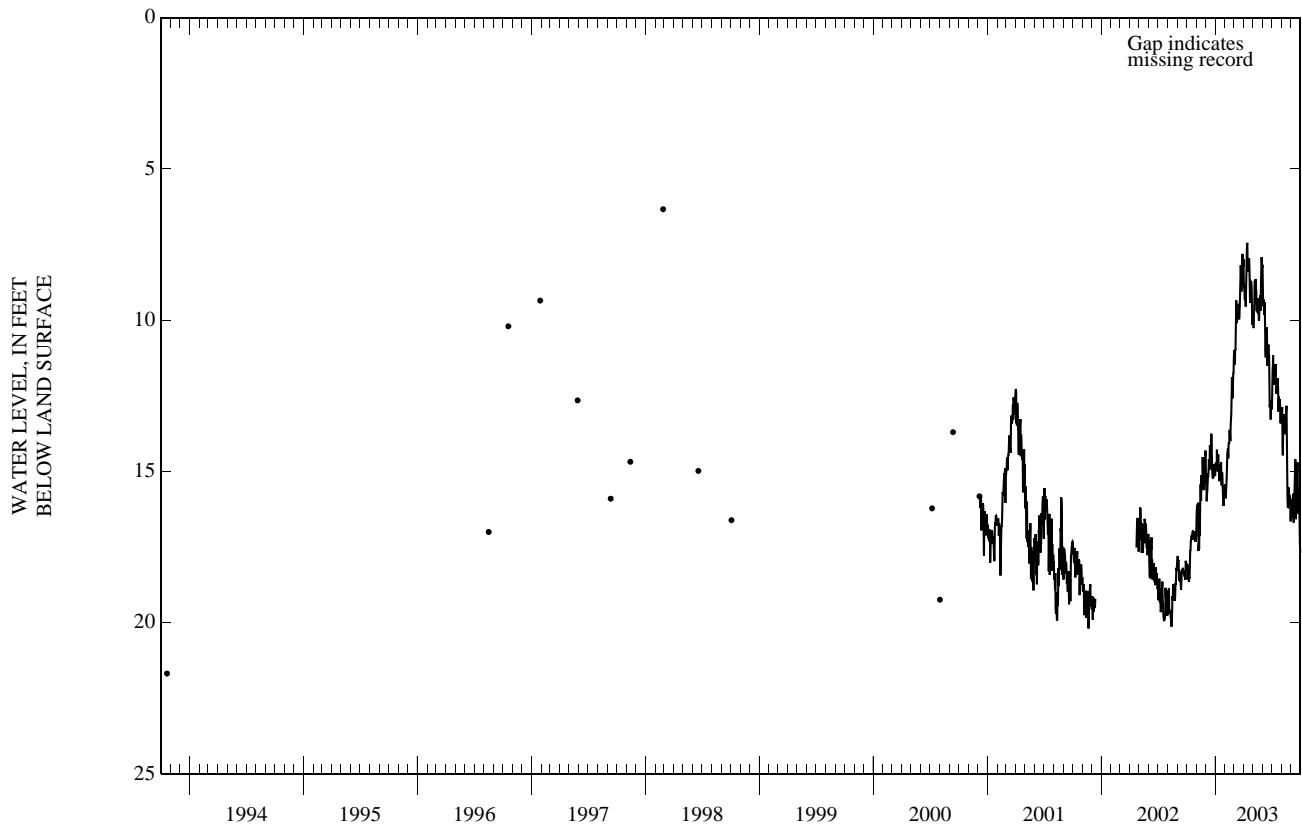
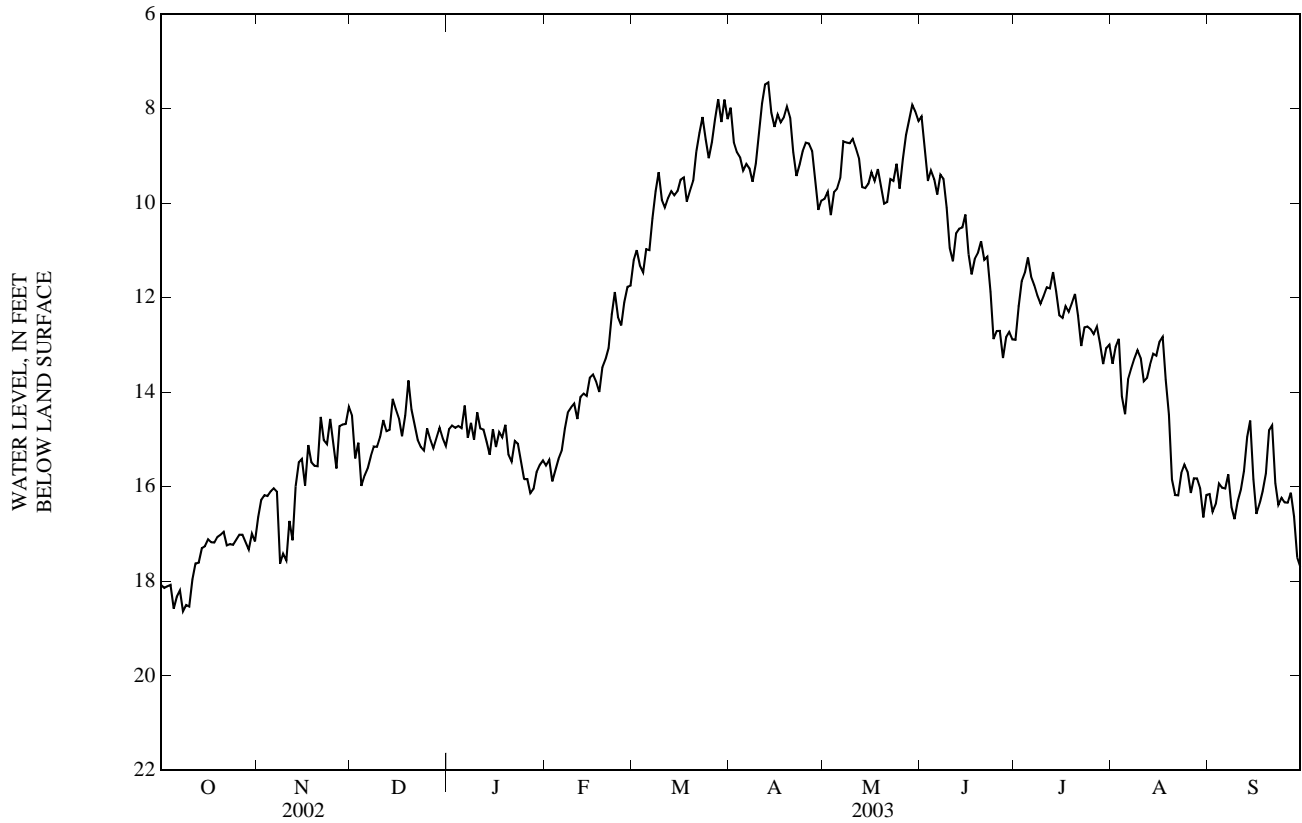
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.08	16.64	14.49	14.78	15.55	11.21	7.98	9.91	8.17	12.89	13.40	16.15
2	18.14	16.28	15.40	14.71	15.43	11.00	8.72	9.76	8.90	12.18	13.04	16.53
3	18.11	16.18	15.07	14.75	15.89	11.32	8.92	10.26	9.53	11.65	12.87	16.36
4	18.08	16.20	15.98	14.71	15.65	11.46	9.03	9.77	9.31	11.47	14.09	15.93
5	18.58	16.10	15.76	14.76	15.41	10.98	9.31	9.70	9.49	11.15	14.47	16.02
6	18.33	16.03	15.62	14.28	15.24	11.00	9.18	9.47	9.82	11.55	13.73	16.04
7	18.20	16.11	15.36	14.96	14.77	10.33	9.27	8.70	9.40	11.74	13.50	15.74
8	18.64	17.63	15.15	14.65	14.42	9.75	9.55	8.72	9.49	11.95	13.29	16.43
9	18.50	17.42	15.16	15.01	14.32	9.35	9.17	8.73	10.10	12.13	13.11	16.69
10	18.54	17.56	14.95	14.43	14.24	9.93	8.59	8.64	10.95	11.97	13.28	16.31
11	17.96	16.72	14.59	14.77	14.57	10.09	7.89	8.84	11.23	11.78	13.77	16.06
12	17.62	17.13	14.82	14.79	14.10	9.89	7.49	9.05	10.64	11.81	13.70	15.67
13	17.61	15.99	14.80	15.05	14.03	9.75	7.45	9.66	10.54	11.46	13.42	14.95
14	17.30	15.49	14.14	15.32	14.08	9.84	8.09	9.68	10.52	11.87	13.19	14.60
15	17.26	15.41	14.35	14.78	13.69	9.75	8.39	9.59	10.24	12.38	13.23	15.84
16	17.11	15.97	14.56	15.16	13.62	9.50	8.12	9.35	11.08	12.43	12.93	16.58
17	17.17	15.12	14.93	14.85	13.77	9.46	8.29	9.53	11.51	12.18	12.83	16.36
18	17.18	15.48	14.49	14.96	14.00	9.97	8.18	9.28	11.18	12.30	13.74	16.10
19	17.06	15.55	13.75	14.69	13.48	9.74	7.96	9.62	11.05	12.13	14.47	15.72
20	17.02	15.57	14.36	15.32	13.30	9.53	8.19	10.01	10.81	11.92	15.85	14.81
21	16.95	14.52	14.70	15.47	13.07	8.92	8.92	9.98	11.20	12.38	16.17	14.70
22	17.24	15.01	15.01	15.03	12.36	8.51	9.43	9.49	11.13	13.02	16.18	15.93
23	17.21	15.10	15.16	15.09	11.88	8.18	9.18	9.53	11.88	12.63	15.71	16.38
24	17.23	14.57	15.23	15.49	12.41	8.65	8.90	9.17	12.87	12.61	15.53	16.24
25	17.12	15.09	14.77	15.84	12.59	9.05	8.72	9.69	12.71	12.67	15.69	16.33
26	17.02	15.61	14.99	15.84	12.10	8.71	8.74	9.07	12.70	12.77	16.13	16.34
27	17.01	14.72	15.19	16.14	11.77	8.23	8.90	8.56	13.28	12.61	15.82	16.13
28	17.16	14.68	14.97	16.05	11.75	7.81	9.48	8.25	12.83	12.96	15.83	16.63
29	17.33	14.67	14.75	15.69	---	8.28	10.14	7.92	12.72	13.41	16.03	17.50
30	16.99	14.31	14.98	15.54	---	7.81	9.95	8.06	12.88	13.07	16.65	17.69
31	17.16	---	15.14	15.44	---	8.22	---	8.26	---	13.00	16.18	---

WTR YR 2003 MEAN 13.20 HIGH 7.45 LOW 18.64

SCOTLAND COUNTY—Continued

344520079281001. County number, SC-040; Laurinburg well 4.



GROUND-WATER LEVELS
 SCOTLAND COUNTY—Continued

345313079220901. County number, SC-106; Wagram well 3.

LOCATION.--Lat 34°53'14", long 79°22'08", Hydrologic Unit 03040204, in Wagram, northwest of intersection of First and Richmond Streets. Owner: Town of Wagram.

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled supply well, depth 63 ft, diameter 8 in., screened interval from 47 to 57 ft (reported by owner).

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 235 ft above NGVD of 1929 (from topographic map). Measuring point: Top of nipple in well sanitary seal, 1.35 ft above land-surface datum.

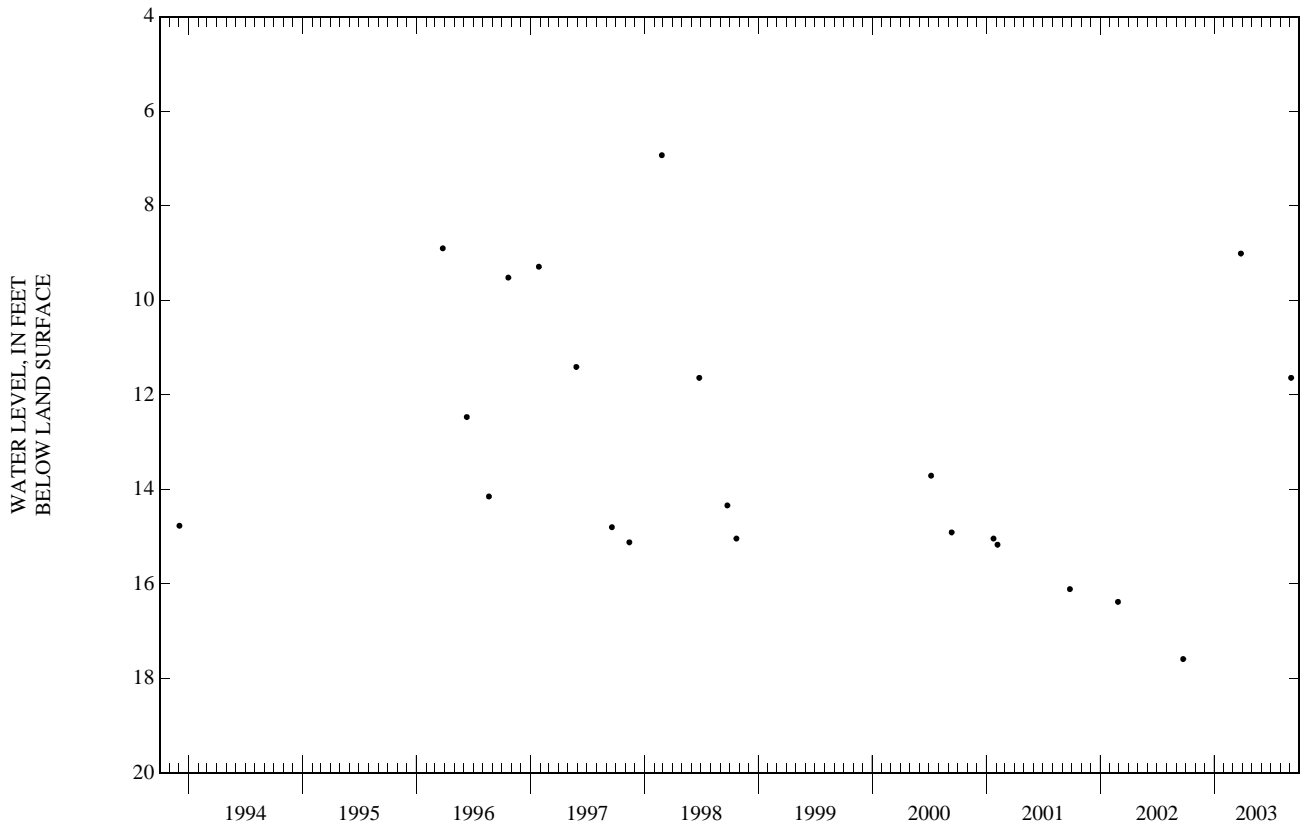
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--December 1993 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.93 ft below land-surface datum, Feb. 25, 1998; lowest water level measured, 17.59 ft below land-surface datum, Sept. 23, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 27	9.01	SEP 04	11.64



SWAIN COUNTY

352519083272401. Local number, NC-219; County number, SW-036.

LOCATION.--Lat 35°25'19", long 83°27'24", Hydrologic Unit 06010203, in Bryson City, 0.75 mi southwest of intersection Fontana Dam road and Tuskaseegee River. Owner: Wallace Company of North Carolina.

AQUIFER.--Felsic Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 555 ft, diameter 10 in.

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

DATUM.--Land-surface datum is 1,719.00 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 6.90 ft above land-surface datum.

REMARKS.--Well is part of terrane-effects network.

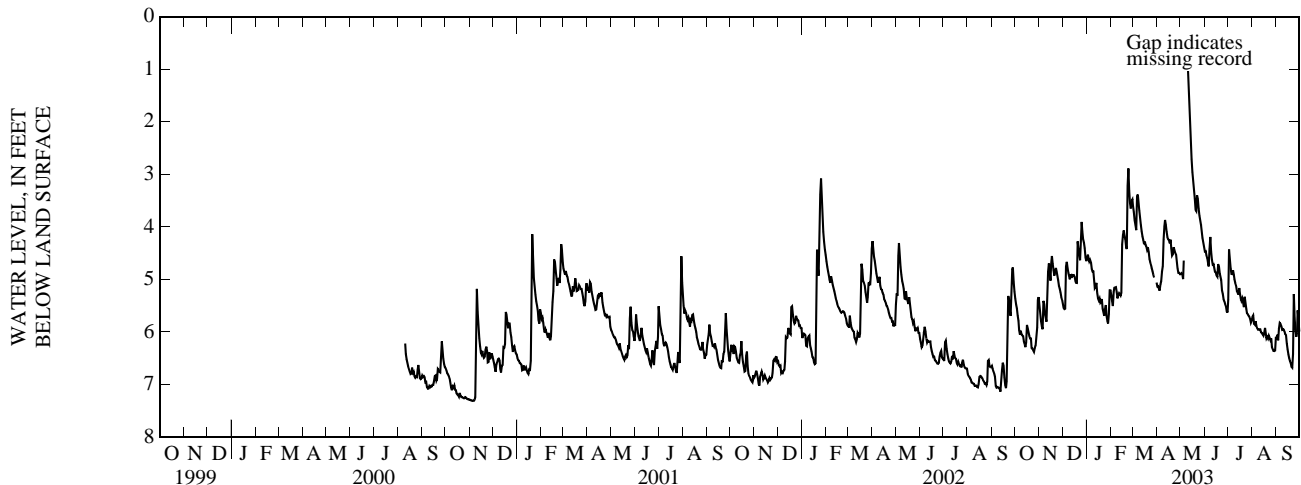
PERIOD OF RECORD.--August 2000 to current year. Records from February 1965 to March 1999 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.26 ft above land-surface datum, May 8, 2003; lowest water level recorded, 7.31 ft below land-surface datum, Nov. 4-7, 2000.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

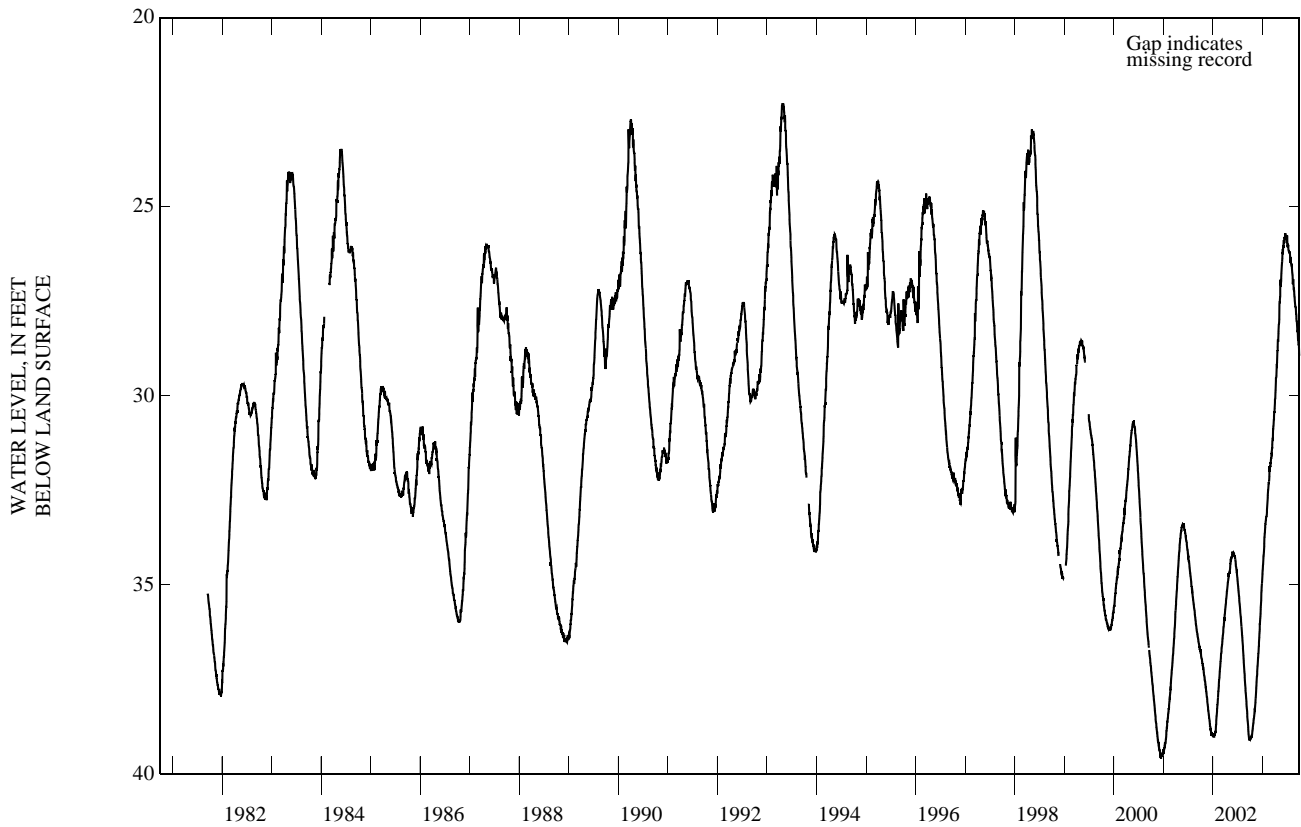
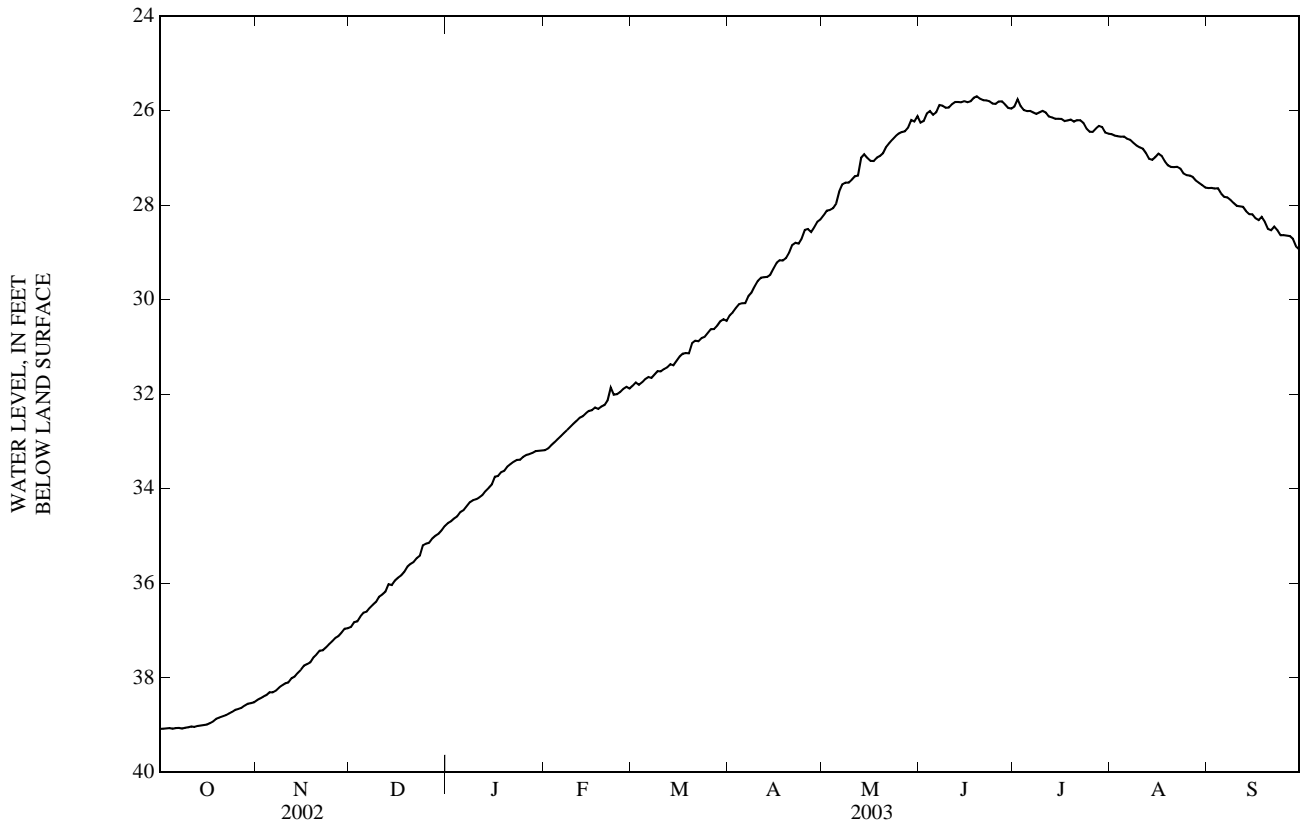
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.37	5.48	5.48	4.60	5.30	3.61	5.13	4.90	4.47	5.38	5.70	6.14
2	5.47	5.63	5.54	4.53	5.42	3.72	5.13	4.88	4.46	4.43	5.68	6.05
3	5.55	5.80	5.56	4.60	5.51	3.88	5.16	4.90	4.54	4.61	5.84	6.16
4	5.69	5.89	5.56	4.66	5.24	3.96	5.21	5.00	4.59	4.79	5.86	5.94
5	5.79	5.95	4.75	4.63	5.16	4.06	5.10	4.64	4.69	4.89	5.80	5.83
6	5.96	5.41	4.67	4.67	5.15	3.42	5.03	---	4.75	4.90	5.88	5.85
7	6.05	5.46	4.79	4.80	5.15	3.38	4.85	---	4.42	4.83	5.93	5.89
8	5.98	5.65	4.88	4.85	5.24	3.56	4.75	---	4.19	4.91	5.96	5.96
9	6.05	5.72	4.95	4.85	5.36	3.69	4.24	0.52	4.47	5.00	5.95	5.94
10	6.07	5.81	5.00	5.02	5.29	3.82	3.99	0.96	4.62	5.07	5.95	5.96
11	6.08	5.34	4.90	5.17	5.26	3.97	3.87	1.29	4.72	5.12	5.95	5.99
12	6.18	4.85	4.97	5.14	5.29	4.09	3.96	1.62	4.71	5.22	6.01	6.04
13	6.23	4.70	4.92	5.07	5.31	4.18	4.10	2.00	4.79	5.25	6.02	6.06
14	6.29	4.83	4.93	5.26	5.25	4.25	4.20	2.36	4.85	5.29	6.05	6.22
15	6.20	5.02	4.92	5.36	4.33	4.33	4.24	2.71	4.86	5.17	6.07	6.33
16	5.87	4.71	4.95	5.40	4.16	4.28	4.26	2.96	4.92	5.29	6.02	6.43
17	5.93	4.55	5.03	5.37	4.07	4.34	4.31	3.15	4.95	5.35	5.93	6.50
18	6.01	4.70	5.06	5.45	4.17	4.37	4.24	3.30	4.71	5.41	6.02	6.55
19	6.08	4.82	5.06	5.43	4.24	4.44	4.41	3.46	4.75	5.37	6.12	6.60
20	6.13	4.93	4.28	5.37	4.39	4.39	4.55	3.68	4.88	5.45	6.10	6.66
21	6.13	4.85	4.42	5.56	4.42	4.48	4.52	3.70	4.96	5.53	6.13	6.68
22	6.31	4.78	4.52	5.62	3.22	4.61	4.39	3.40	5.01	5.33	6.07	6.42
23	6.32	4.86	4.64	5.69	2.89	4.68	4.44	3.47	5.21	5.44	6.11	5.28
24	6.35	4.93	4.21	5.57	3.31	4.73	4.49	3.65	5.28	5.56	6.16	5.74
25	6.38	5.02	3.91	5.49	3.55	4.79	4.53	3.79	5.38	5.64	6.12	5.96
26	6.30	5.12	4.08	5.71	3.65	4.85	4.67	3.88	5.42	5.66	6.29	6.09
27	6.26	5.18	4.24	5.80	3.50	4.91	4.78	3.97	5.47	5.69	6.32	6.02
28	6.09	5.25	4.30	5.84	3.48	4.96	4.87	4.11	5.52	5.71	6.36	5.59
29	5.91	5.34	4.41	5.66	---	---	4.87	4.21	5.62	5.75	6.36	5.77
30	5.39	5.39	4.58	5.21	---	---	4.90	4.30	5.61	5.83	6.35	5.99
31	5.34	---	4.65	5.21	---	5.06	---	4.39	---	5.79	6.09	---

WTR YR 2003 MEAN 5.04 HIGH 0.52 LOW 6.68



TRANSYLVANIA COUNTY—Continued

351808082374302. Local number NC-144; County number, TR-065.



GROUND-WATER LEVELS

TRANSYLVANIA COUNTY—Continued

351709082434101. Local number, NC-147; County number, TR-066.

LOCATION.--Lat 35°17'09", long 82°43'40", Hydrologic Unit 06010105, 3.5 mi north of Brevard on U.S. Highway 276, 700 ft northwest of U.S. Forest Service Ranger Station in Pisgah National Forest. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined alluvial sand.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 25 ft, diameter 4 in., cased to 11.6 ft, screened interval from 11.6 to 21.6 ft; measured depth 22.9 ft, June 1985.

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

DATUM.--Land-surface datum is 2,176.70 ft above NGVD of 1929. Measuring point: Top of casing, 2.24 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--June 1985 to current year.

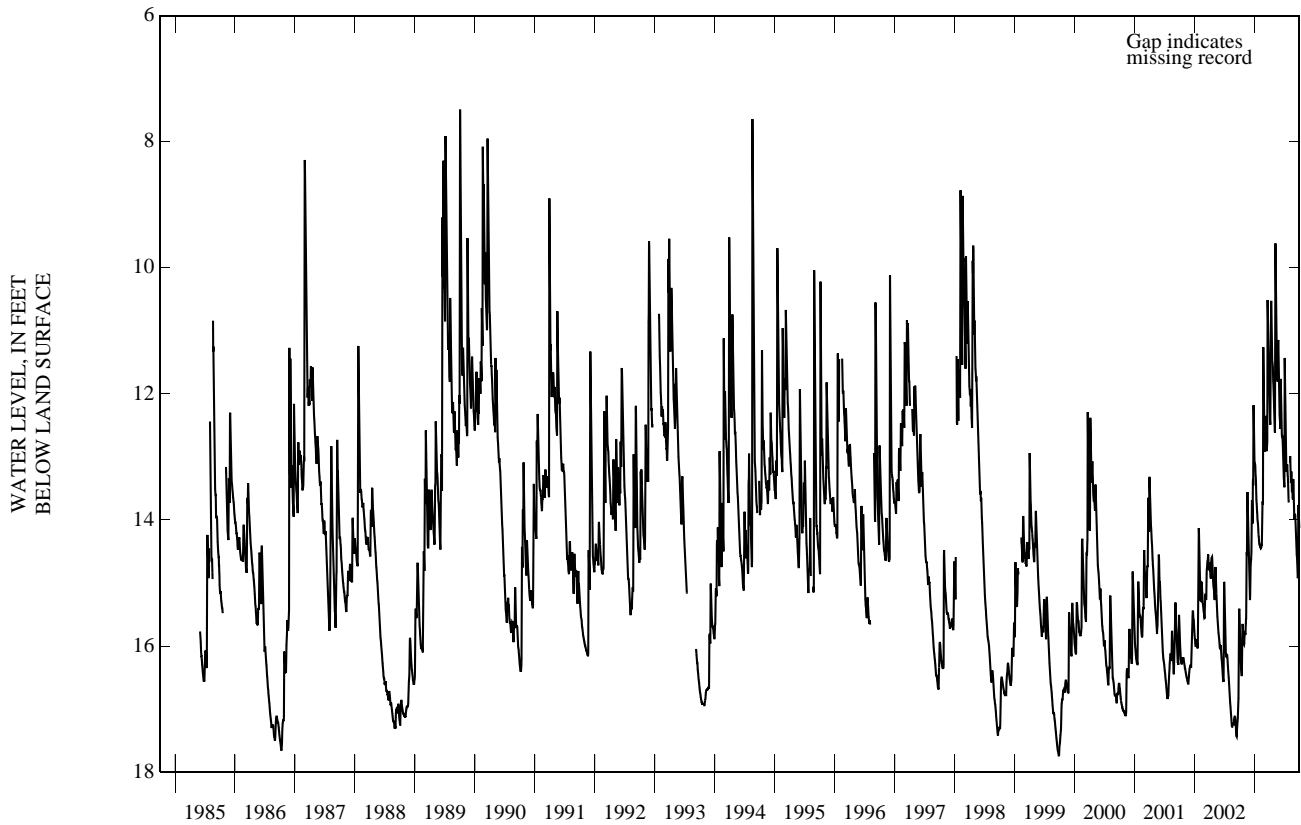
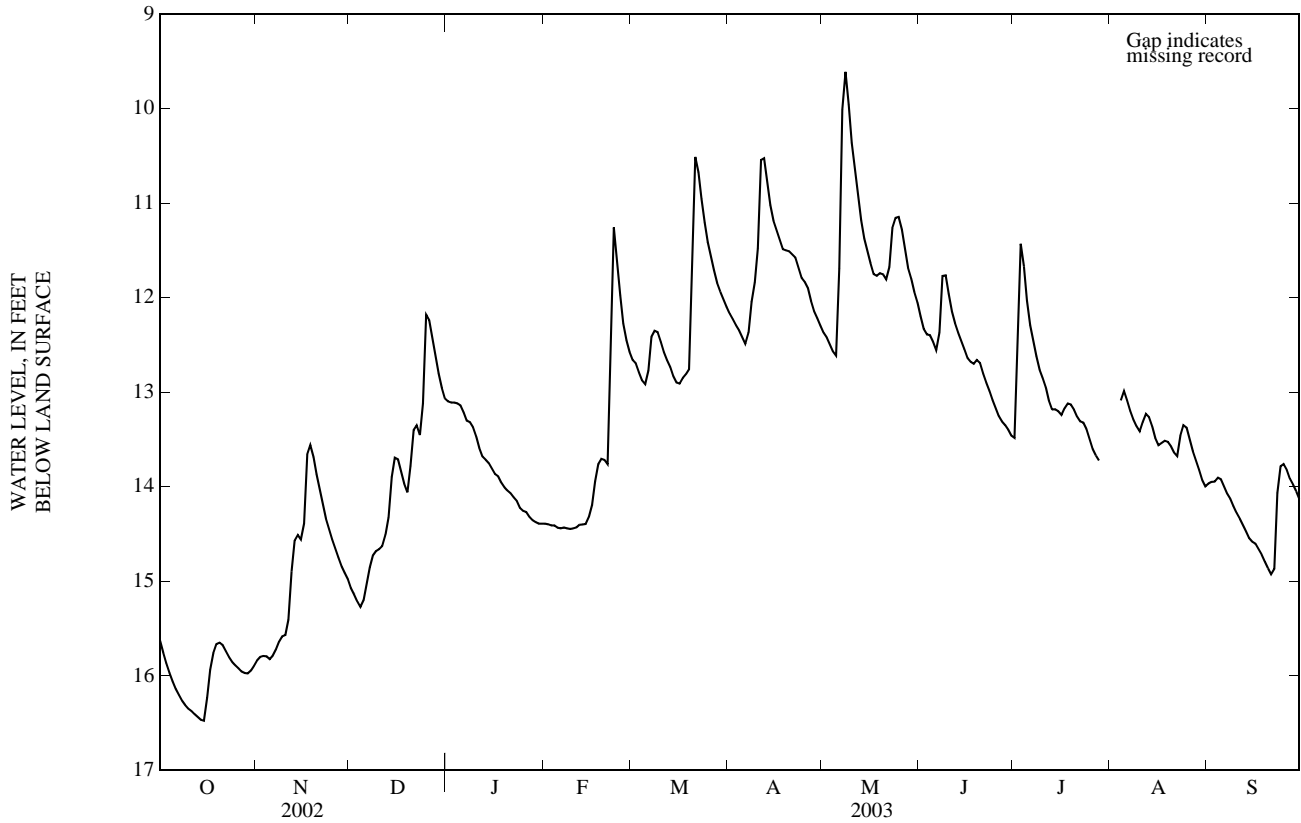
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.43 ft below land-surface datum, Oct. 2, 1989; lowest water level recorded, 17.75 ft below land-surface datum, Sept. 26, 27, 28, 1999.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	15.63	15.84	15.07	13.10	14.39	12.66	12.17	12.37	12.20	13.48	---	13.97	
2	15.75	15.80	15.14	13.11	14.40	12.69	12.23	12.42	12.33	12.21	---	13.95	
3	15.87	15.79	15.22	13.11	14.41	12.79	12.29	12.49	12.39	11.43	---	13.95	
4	15.97	15.79	15.27	13.12	14.41	12.88	12.35	12.57	12.40	11.67	13.09	13.90	
5	16.06	15.82	15.20	13.14	14.43	12.91	12.41	12.61	12.47	12.03	12.99	13.92	
6	16.14	15.79	15.03	13.21	14.44	12.77	12.49	11.69	12.55	12.29	13.09	14.00	
7	16.20	15.72	14.85	13.30	14.43	12.42	12.37	10.01	12.37	12.46	13.20	14.07	
8	16.26	15.64	14.73	13.32	14.44	12.35	12.05	9.61	11.77	12.62	13.29	14.13	
9	16.31	15.58	14.68	13.37	14.45	12.37	11.84	9.96	11.76	12.76	13.36	14.21	
10	16.35	15.57	14.66	13.47	14.44	12.47	11.48	10.36	11.96	12.85	13.41	14.28	
11	16.37	15.41	14.63	13.59	14.43	12.57	10.54	10.68	12.14	12.95	13.32	14.34	
12	16.40	14.89	14.51	13.68	14.40	12.66	10.53	10.94	12.27	13.09	13.23	14.40	
13	16.44	14.57	14.32	13.71	14.40	12.73	10.76	11.18	12.37	13.18	13.26	14.47	
14	16.47	14.51	13.90	13.75	14.39	12.83	11.02	11.37	12.46	13.18	13.36	14.54	
15	16.48	14.56	13.69	13.81	14.32	12.90	11.19	11.50	12.54	13.20	13.48	14.58	
16	16.23	14.39	13.71	13.86	14.19	12.91	11.29	11.63	12.64	13.24	13.56	14.60	
17	15.94	13.66	13.84	13.89	13.94	12.85	11.38	11.75	12.68	13.17	13.54	14.66	
18	15.76	13.56	13.97	13.96	13.76	12.81	11.49	11.77	12.70	13.12	13.51	14.72	
19	15.67	13.68	14.06	14.00	13.70	12.76	11.50	11.74	12.66	13.13	13.53	14.79	
20	15.65	13.87	13.78	14.04	13.72	11.46	11.51	11.75	12.69	13.18	13.57	14.86	
21	15.67	14.03	13.40	14.07	13.76	10.51	11.54	11.81	12.80	13.26	13.64	14.93	
22	15.74	14.18	13.35	14.11	12.65	10.67	11.58	11.68	12.90	13.31	13.68	14.87	
23	15.80	14.34	13.45	14.15	11.26	10.96	11.68	11.26	12.99	13.32	13.46	14.07	
24	15.85	14.45	13.12	14.23	11.59	11.21	11.79	11.16	13.08	13.39	13.35	13.78	
25	15.89	14.56	12.18	14.26	11.97	11.41	11.83	11.15	13.17	13.49	13.38	13.76	
26	15.92	14.66	12.24	14.27	12.27	11.56	11.90	11.28	13.25	13.60	13.50	13.82	
27	15.95	14.75	12.44	14.32	12.45	11.71	12.04	11.49	13.31	13.67	13.62	13.91	
28	15.97	14.84	12.63	14.35	12.57	11.84	12.14	11.68	13.35	13.72	13.73	13.98	
29	15.97	14.91	12.80	14.37	---	11.94	12.22	11.80	13.40	---	13.82	14.05	
30	15.94	14.98	12.95	14.39	---	12.02	12.29	11.94	13.46	---	13.93	14.13	
31	15.89	---	13.06	14.39	---	12.10	---	12.05	---	---	14.00	---	
WTR YR	2003	MEAN	13.42	HIGH	9.61	LOW	16.48						

TRANSYLVANIA COUNTY—Continued

351709082434101. Local number, NC-147; County number, TR-066.



GROUND-WATER LEVELS

WAKE COUNTY

354356078403501. County number, WK-277; DENR Lake Wheeler Research Station MW-1S (Regolith well).

LOCATION.--Lat 35°43'55.6", long 78°40'34.6", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER.--Regolith (saprolitic Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 20 ft, diameter 4 in., cased to 5 ft, screened interval from 5 to 20 ft, sand filter packed from 5 to 20 ft.

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

DATUM.--Land-surface datum is 334.25 ft above NGVD of 1929. Measuring point: Top of instrument shelter floor, 2.10 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--July 2001 to current year. Continuous record began December 2001. Periodic water level measurements made by DENR, July 2001 to December 2001.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, -0.38 ft below land-surface datum, July 2, 2003; lowest water level recorded 2.71 ft below land-surface datum, Aug. 13, 2002.

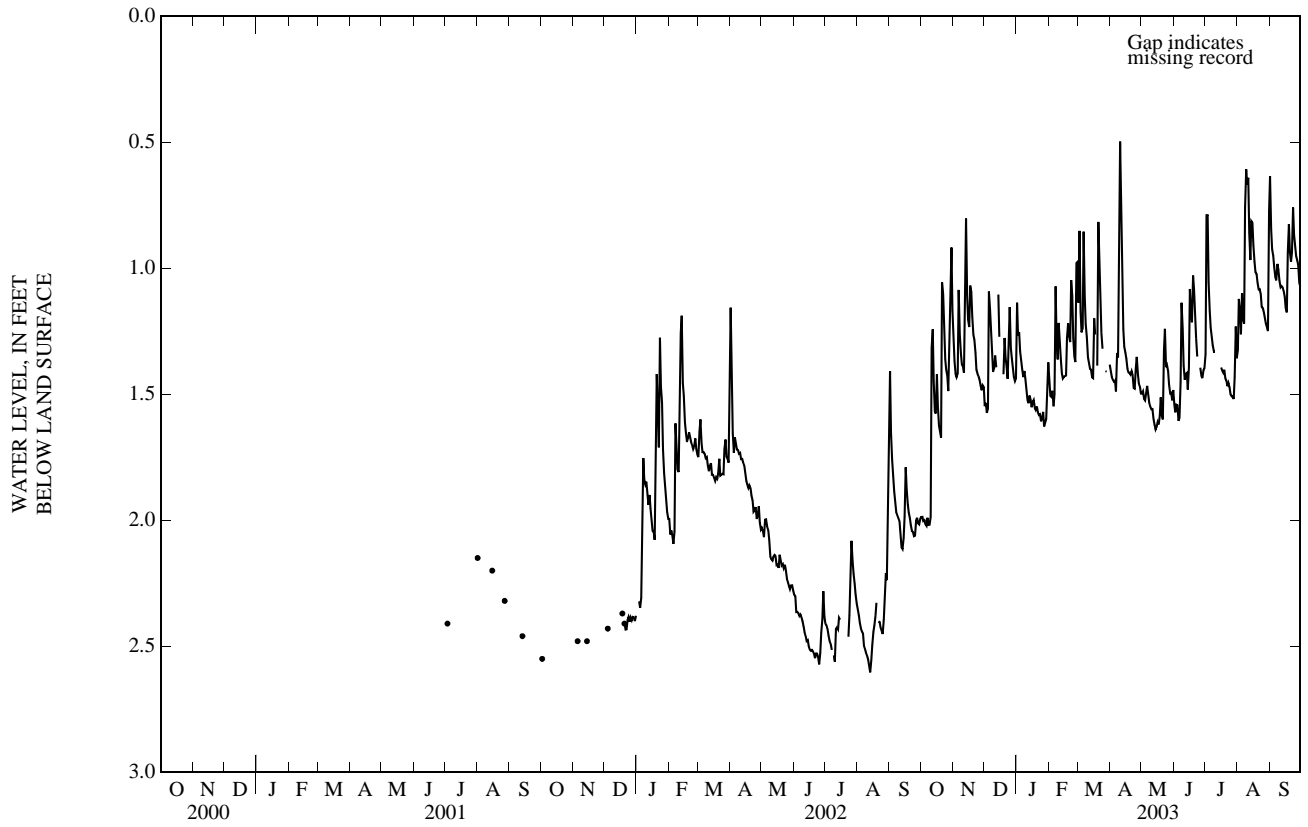
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.99	1.29	1.55	1.14	1.45	1.14	1.41	1.50	1.54	1.34	1.32	0.64
2	1.99	1.37	1.53	1.27	1.51	0.85	1.43	1.49	1.57	0.79	1.12	0.85
3	2.00	1.42	1.57	1.25	1.51	1.17	1.44	1.52	1.54	0.79	1.17	0.92
4	2.00	1.43	1.56	1.33	1.49	1.25	1.45	1.52	1.54	1.06	1.26	0.95
5	2.02	1.42	1.09	1.37	1.55	1.24	1.45	1.50	1.61	1.17	1.10	1.00
6	2.02	1.09	1.16	1.40	1.50	0.86	1.49	1.47	1.59	1.24	1.20	1.03
7	1.99	1.26	1.26	1.43	1.07	1.12	1.34	1.50	1.45	1.28	1.22	1.05
8	2.02	1.34	1.34	1.41	1.29	1.22	1.35	1.53	1.14	1.31	0.76	0.98
9	2.02	1.38	1.41	1.44	1.36	1.27	0.95	1.55	1.24	1.33	0.61	1.01
10	1.99	1.39	1.40	1.48	1.22	1.35	0.50	1.56	1.39	1.33	0.67	1.05
11	1.32	1.42	1.35	1.52	1.28	1.37	0.87	1.56	1.44	---	0.64	1.08
12	1.24	1.06	1.39	1.54	1.36	1.40	1.10	1.60	1.42	---	0.86	1.07
13	1.45	0.80	---	1.51	1.42	1.40	1.24	1.62	1.42	---	0.97	1.08
14	1.57	1.11	1.10	1.52	1.44	1.43	1.31	1.64	1.48	---	0.81	1.09
15	1.58	1.21	1.27	1.55	1.43	1.44	1.34	1.63	1.39	---	0.82	1.11
16	1.42	1.23	---	1.53	1.43	1.20	1.36	1.61	1.08	1.39	0.91	1.16
17	1.55	1.07	---	1.52	1.43	1.26	1.40	1.62	1.18	1.41	0.97	1.18
18	1.62	1.09	---	1.55	1.28	---	1.41	1.59	1.21	1.42	1.02	0.94
19	1.65	1.19	1.42	1.56	1.22	1.39	1.42	1.51	1.03	1.40	1.02	0.83
20	1.67	1.27	1.28	1.55	1.27	0.82	1.42	1.58	1.08	1.44	1.06	0.94
21	1.06	1.28	1.35	1.57	1.29	0.98	1.41	1.60	1.18	1.45	1.08	0.97
22	1.10	1.33	1.39	1.58	1.05	1.16	1.42	1.33	1.28	1.47	1.08	0.94
23	1.25	1.40	1.44	1.58	1.11	1.26	1.48	1.24	1.35	1.46	1.10	0.76
24	1.36	1.42	1.27	1.61	1.28	1.32	1.48	1.39	---	1.47	1.15	0.87
25	1.40	1.43	1.15	1.60	1.35	---	1.40	1.39	---	1.50	1.16	0.92
26	1.43	1.44	1.32	1.57	1.37	---	1.35	1.41	1.40	1.51	1.17	0.95
27	1.49	1.47	1.36	1.63	0.98	1.41	1.42	1.46	1.43	1.51	1.20	0.97
28	1.32	1.48	1.39	1.61	0.98	1.41	1.46	1.50	1.44	1.52	1.22	0.99
29	1.11	1.46	1.43	1.60	---	---	1.47	1.49	1.41	1.43	1.23	1.06
30	0.92	1.47	1.45	1.47	---	---	1.50	1.52	1.40	1.23	1.25	1.07
31	1.17	---	1.44	1.37	---	1.38	---	1.48	---	1.36	0.77	---

WTR YR 2003 MEAN 1.32 HIGH 0.50 LOW 2.02

WAKE COUNTY—Continued

354356078403501. County number, WK-277; DENR Lake Wheeler Research Station MW-1S (Regolith well).



354356078403501 WK-277 DENR Lake Wheeler Research Station MW-1S (Regolith Well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2002 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 2001 to current year.

pH: December 2001 to current year.

WATER TEMPERATURE: December 2001 to current year.

DISSOLVED OXYGEN: December 2001 to current year.

DISSOLVED OXYGEN, PERCENT SATURATION: December 2001 to current year.

INSTRUMENTATION.-- Water-quality monitor with satellite telemetry from December 2001 to present.

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 760 mm Hg.

EXTREMES FOR PERIOD OF DAILY RECORD.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	288, September 1, 2002	109, August 25, 26, 2002
pH, standard units	6.1, September 1, 2002	4.7, on several days during the period
WATER TEMPERATURE, °C	17.4, October 11, 21, 28, 2002	13.6, February 22, 2003
DISSOLVED OXYGEN, mg/L	4.1, February 4-11, 13, 15-16, 2002	1.4, September 1, 2002
DISSOLVED OXYGEN, PERCENT SATURATION,%	40, on many days during the period	14, September 1, 2002

EXTREMES FOR CURRENT YEAR.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	213, November 14	114, November 9, 11
pH, standard units	5.9, November 14, 15	4.7, on several days during the year
WATER TEMPERATURE, °C	17.4, October 11, 21, 28	13.6, February 22
DISSOLVED OXYGEN, mg/L	4.0, January 30 - February 5	2.7, September 30
DISSOLVED OXYGEN, PERCENT SATURATION,%	39, January 30, 31, February 1-5	28, July 2, 3, September 30

354356078403501 WK-277 DENR Lake Wheeler Research Station MW-1S (Regolith Well)—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	117	118	124	126	128	131	134	133	134	138	142
2	116	117	118	123	126	128	131	133	133	134	138	142
3	116	117	118	123	126	128	132	133	133	134	138	142
4	116	117	118	122	126	129	133	133	133	134	138	143
5	116	116	121	122	127	129	133	133	133	135	138	143
6	117	117	126	123	127	129	133	133	133	135	139	143
7	118	118	122	123	127	129	133	134	133	136	139	143
8	118	115	120	123	127	129	133	134	133	136	139	143
9	118	115	119	123	127	129	134	134	132	136	139	143
10	117	115	119	123	127	129	134	134	132	137	139	143
11	118	115	119	124	127	129	134	134	132	---	139	144
12	121	118	119	124	127	129	134	133	132	---	139	144
13	120	136	119	124	128	129	134	133	132	---	139	144
14	118	156	120	124	128	130	135	133	133	---	139	144
15	117	176	120	123	128	130	134	134	133	---	139	144
16	117	142	---	123	128	129	134	134	132	137	139	144
17	118	136	---	123	128	129	134	134	133	137	139	144
18	117	140	---	123	128	---	134	134	133	137	140	144
19	118	127	123	124	128	129	134	134	132	137	139	143
20	118	121	123	124	128	130	134	134	132	137	140	143
21	119	118	123	124	128	130	134	134	132	137	141	143
22	121	118	123	124	128	130	134	134	132	137	141	143
23	121	117	123	124	128	130	134	134	132	137	141	142
24	119	117	124	124	128	130	134	134	---	137	141	142
25	117	117	123	124	129	---	135	133	---	137	141	143
26	117	117	124	124	129	---	134	133	133	137	141	143
27	117	117	124	124	128	130	134	134	133	137	141	143
28	117	117	123	124	129	130	134	134	134	137	142	143
29	117	117	123	124	---	---	134	134	134	137	142	143
30	118	118	123	125	---	---	134	133	134	138	142	143
31	118	---	123	126	---	131	---	133	---	138	142	---
MEAN	118	123	---	124	128	---	134	134	---	---	140	143
MAX	121	176	---	126	129	---	135	134	---	---	142	144
MIN	116	115	---	122	126	---	131	133	---	---	138	142

354356078403501 WK-277 DENR Lake Wheeler Research Station MW-1S (Regolith Well)—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	5.5	5.5	5.3	5.0	5.0	4.8	4.7	4.8	4.7	4.8	4.8
2	5.5	5.5	5.5	5.3	5.0	5.0	4.8	4.7	4.7	4.7	4.8	4.8
3	5.5	5.5	5.5	5.3	5.0	5.0	4.8	4.7	4.7	4.7	4.8	4.8
4	5.4	5.5	5.5	5.2	5.0	5.0	4.8	4.7	4.7	4.7	4.8	4.8
5	5.4	5.5	5.5	5.2	5.0	5.0	4.8	4.7	4.7	4.7	4.8	4.8
6	5.5	5.5	5.6	5.2	5.0	5.0	4.8	4.7	4.7	4.7	4.8	4.8
7	5.5	5.5	5.6	5.2	5.0	5.0	4.8	4.8	4.7	4.7	4.8	4.8
8	5.5	5.5	5.5	5.2	5.0	5.0	4.9	4.8	4.7	4.7	4.8	4.8
9	5.5	5.5	5.5	5.2	5.0	5.0	4.9	4.8	4.7	4.7	4.8	4.8
10	5.5	5.5	5.5	5.2	5.0	5.0	4.9	4.8	4.7	4.7	4.8	4.8
11	5.5	5.5	5.5	5.2	4.9	5.0	4.9	4.8	4.7	---	4.8	4.8
12	5.6	5.5	5.5	5.2	4.9	5.0	4.9	4.8	4.7	---	4.8	4.8
13	5.6	5.6	5.5	5.2	4.9	5.0	4.9	4.8	4.7	---	4.8	4.8
14	5.6	5.7	5.6	5.2	4.9	5.0	4.9	4.8	4.7	---	4.8	4.8
15	5.5	5.8	5.6	5.2	4.9	5.0	4.9	4.9	4.7	---	4.8	4.8
16	5.5	5.6	---	5.2	5.0	5.0	4.9	4.9	4.7	4.8	4.8	4.8
17	5.6	5.6	---	5.2	5.0	5.0	4.9	4.8	4.7	4.7	4.8	4.8
18	5.5	5.7	---	5.2	5.0	5.0	4.8	4.8	4.7	4.7	4.8	4.8
19	5.6	5.6	5.5	5.1	5.0	5.0	4.8	4.8	4.8	4.7	4.8	4.8
20	5.6	5.5	5.4	5.1	5.0	4.9	4.8	4.8	4.8	4.7	4.8	4.8
21	5.6	5.5	5.4	5.1	5.0	4.9	4.8	4.7	4.8	4.7	4.8	4.8
22	5.6	5.5	5.4	5.1	5.0	4.9	4.8	4.8	4.8	4.7	4.8	4.8
23	5.6	5.5	5.4	5.1	5.0	4.9	4.8	4.8	4.8	4.7	4.8	4.8
24	5.6	5.5	5.4	5.1	5.0	4.9	4.8	4.8	---	4.7	4.8	4.8
25	5.5	5.5	5.4	5.1	5.0	---	4.8	4.8	---	4.7	4.8	4.8
26	5.5	5.5	5.4	5.1	5.0	---	4.8	4.8	4.7	4.7	4.8	4.8
27	5.5	5.5	5.4	5.0	5.0	4.9	4.8	4.8	4.7	4.7	4.8	4.8
28	5.5	5.5	5.3	5.0	5.0	4.9	4.8	4.8	4.7	4.7	4.8	4.8
29	5.5	5.5	5.3	5.0	---	---	4.8	4.8	4.7	4.7	4.8	4.8
30	5.5	5.5	5.3	4.9	---	---	4.7	4.8	4.7	4.8	4.8	4.8
31	5.5	---	5.3	5.0	---	4.9	---	4.8	---	4.8	4.8	---
MEAN	5.5	5.5	---	5.1	5.0	---	4.8	4.8	---	---	4.8	4.8
MAX	5.6	5.8	---	5.3	5.0	---	4.9	4.9	---	---	4.8	4.8
MIN	5.4	5.5	---	4.9	4.9	---	4.7	4.7	---	---	4.8	4.8

354356078403501 WK-277 DENR Lake Wheeler Research Station MW-1S (Regolith Well)—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.9	17.1	16.5	15.4	14.3	14.1	14.6	14.9	15.2	15.5	15.8	16.1
2	16.9	17.1	16.4	15.4	14.4	13.9	14.6	14.9	15.2	15.5	15.8	16.1
3	16.9	17.1	16.4	15.4	14.4	14.1	14.6	14.9	15.2	15.6	15.8	16.2
4	16.9	17.1	16.4	15.4	14.4	14.2	14.6	14.9	15.2	15.6	15.8	16.2
5	16.9	17.1	16.0	15.4	14.4	14.2	14.6	14.9	15.3	15.6	15.9	16.2
6	16.9	17.2	16.1	15.4	14.4	14.0	14.7	14.9	15.3	15.6	15.9	16.2
7	16.9	17.1	16.1	15.4	14.0	14.2	14.6	14.9	15.3	15.6	15.9	16.2
8	16.9	17.0	16.1	15.4	14.3	14.3	14.6	15.0	15.3	15.6	15.9	16.2
9	16.9	17.0	16.0	15.4	14.3	14.3	14.5	15.0	15.3	15.6	15.9	16.2
10	17.0	17.0	16.0	15.4	14.2	14.3	14.5	15.0	15.3	15.6	15.9	16.2
11	17.1	17.0	15.9	15.4	14.2	14.3	14.6	15.0	15.3	---	15.9	16.2
12	17.1	17.1	15.9	15.3	14.3	14.3	14.6	15.0	15.3	---	15.9	16.2
13	17.0	17.0	15.7	15.3	14.3	14.3	14.7	15.0	15.3	---	15.9	16.2
14	17.0	17.0	15.7	15.2	14.3	14.3	14.7	15.0	15.4	---	15.9	16.2
15	17.0	17.0	15.8	15.2	14.2	14.3	14.7	15.0	15.4	---	16.0	16.3
16	17.1	17.0	---	15.2	14.2	14.2	14.7	15.0	15.4	15.7	16.0	16.3
17	17.0	16.9	---	15.1	14.2	14.3	14.7	15.1	15.4	15.7	16.0	16.3
18	17.0	16.9	---	15.1	13.9	---	14.7	15.1	15.4	15.7	16.0	16.3
19	17.0	16.9	15.8	15.0	14.0	14.4	14.7	15.1	15.4	15.7	16.0	16.3
20	17.0	16.8	15.7	15.0	14.1	14.2	14.7	15.1	15.4	15.7	16.0	16.3
21	17.2	16.8	15.7	15.0	14.1	14.4	14.8	15.1	15.4	15.7	16.0	16.3
22	17.1	16.8	15.8	14.9	14.0	14.4	14.8	15.1	15.4	15.7	16.0	16.3
23	17.0	16.8	15.8	14.9	14.0	14.5	14.8	15.1	15.4	15.7	16.0	16.3
24	17.0	16.7	15.6	14.9	14.2	14.5	14.8	15.1	---	15.7	16.0	16.3
25	17.0	16.7	15.6	14.8	14.2	---	14.8	15.1	---	15.7	16.1	16.3
26	17.0	16.7	15.6	14.8	14.2	---	14.8	15.2	15.5	15.8	16.1	16.4
27	17.0	16.6	15.6	14.8	14.0	14.6	14.8	15.2	15.5	15.8	16.1	16.4
28	17.2	16.6	15.6	14.7	13.9	14.6	14.8	15.2	15.5	15.8	16.1	16.4
29	17.1	16.6	15.6	14.7	---	---	14.8	15.2	15.5	15.8	16.1	16.4
30	17.1	16.5	15.5	14.4	---	---	14.8	15.2	15.5	15.8	16.1	16.4
31	17.1	---	15.5	14.2	---	14.6	---	15.2	---	15.8	16.1	---
MEAN	17.0	16.9	---	15.1	14.2	---	14.7	15.0	---	---	16.0	16.3
MAX	17.2	17.2	---	15.4	14.4	---	14.8	15.2	---	---	16.1	16.4
MIN	16.9	16.5	---	14.2	13.9	---	14.5	14.9	---	---	15.8	16.1

354356078403501 WK-277 DENR Lake Wheeler Research Station MW-1S (Regolith Well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	---	---	---	4.0	3.6	3.4	3.0	3.0	3.0	3.1	3.0
2	3.4	---	---	---	4.0	3.6	3.4	3.0	3.0	2.9	3.1	3.0
3	3.4	---	---	---	4.0	3.6	3.4	3.0	3.0	2.9	3.1	3.0
4	3.4	---	---	---	4.0	3.6	3.3	3.0	3.0	3.0	3.1	3.0
5	3.3	---	---	---	3.9	3.6	3.3	3.0	3.0	3.0	3.1	3.0
6	---	---	---	---	3.9	3.5	3.3	3.0	3.0	3.0	3.1	3.0
7	---	---	---	---	3.8	3.5	3.3	3.0	3.0	2.9	3.1	3.0
8	---	---	---	---	3.9	3.6	3.4	3.0	3.0	3.0	3.1	3.0
9	---	---	---	---	3.9	3.6	3.3	3.0	3.1	3.0	3.1	3.0
10	---	---	---	---	3.9	3.5	3.3	3.0	3.0	3.0	3.1	3.0
11	---	---	---	---	3.9	3.5	3.4	3.0	3.0	---	3.1	3.0
12	---	---	---	---	3.9	3.5	3.4	3.0	3.0	---	3.1	3.1
13	---	---	---	---	3.9	3.5	3.4	3.0	3.0	---	3.1	3.1
14	---	---	---	---	3.9	3.5	3.3	3.0	3.0	---	3.1	3.1
15	---	---	---	---	3.8	3.5	3.2	3.0	3.0	---	3.1	3.1
16	---	---	---	---	3.8	3.5	3.2	3.0	3.1	3.0	3.1	3.1
17	---	---	---	---	3.8	3.5	3.1	3.0	3.1	3.0	3.1	3.0
18	---	---	---	---	3.8	---	3.1	3.0	3.0	3.0	3.1	3.0
19	---	---	---	---	3.8	3.4	3.2	3.0	3.1	3.1	3.1	3.1
20	---	---	---	---	3.8	3.3	3.1	3.0	3.1	3.1	3.1	3.0
21	---	---	---	---	3.8	3.4	3.1	3.0	3.0	3.1	3.1	3.0
22	---	---	---	---	3.8	3.4	3.1	3.0	3.0	3.1	3.1	3.0
23	---	---	---	---	3.6	3.4	3.1	3.0	3.0	3.1	3.1	3.0
24	---	---	---	---	3.7	3.4	3.1	3.0	---	3.1	3.0	3.1
25	---	---	---	---	3.6	---	3.1	3.0	---	3.1	3.0	3.0
26	---	---	---	---	3.6	---	3.1	3.0	3.0	3.1	3.0	3.0
27	---	---	---	---	3.6	3.4	3.1	3.0	3.0	3.1	3.0	3.0
28	---	---	---	---	3.6	3.3	3.1	3.0	3.0	3.1	3.0	3.0
29	---	---	---	---	---	---	3.1	3.0	3.0	3.1	3.0	3.0
30	---	---	---	---	---	---	3.1	3.0	3.0	3.1	3.0	3.0
31	---	---	---	4.0	---	3.4	---	3.0	---	3.1	3.0	---
MEAN	---	---	---	---	3.8	---	3.2	3.0	---	---	3.1	3.0
MAX	---	---	---	---	4.0	---	3.4	3.0	---	---	3.1	3.1
MIN	---	---	---	---	3.6	---	3.1	3.0	---	---	3.0	3.0

354356078403501 WK-277 DENR Lake Wheeler Research Station MW-1S (Regolith Well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	---	---	---	39	35	34	30	30	30	31	31
2	35	---	---	---	39	35	34	30	30	29	31	31
3	35	---	---	---	39	35	34	30	30	29	31	31
4	35	---	---	---	39	35	33	30	30	30	31	31
5	34	---	---	---	38	35	33	30	30	30	31	31
6	---	---	---	---	38	34	33	30	30	30	31	31
7	---	---	---	---	37	34	33	30	30	29	31	31
8	---	---	---	---	38	35	34	30	30	30	31	31
9	---	---	---	---	38	35	32	30	31	30	31	31
10	---	---	---	---	38	34	33	30	30	30	31	31
11	---	---	---	---	38	34	34	30	30	---	31	31
12	---	---	---	---	38	34	34	30	30	---	31	32
13	---	---	---	---	38	34	34	30	30	---	31	32
14	---	---	---	---	38	34	33	30	30	---	31	32
15	---	---	---	---	37	34	32	30	30	---	31	32
16	---	---	---	---	37	34	32	30	31	30	31	32
17	---	---	---	---	37	34	31	30	31	30	31	31
18	---	---	---	---	37	---	31	30	30	30	31	31
19	---	---	---	---	37	33	32	30	31	31	31	32
20	---	---	---	---	37	32	31	30	31	31	31	31
21	---	---	---	---	37	33	31	30	30	31	31	31
22	---	---	---	---	37	33	31	30	30	31	31	31
23	---	---	---	---	35	33	31	30	30	31	31	31
24	---	---	---	---	36	33	31	30	---	31	30	32
25	---	---	---	---	35	---	31	30	---	31	31	31
26	---	---	---	---	35	---	31	30	30	31	31	31
27	---	---	---	---	35	33	31	30	30	31	31	31
28	---	---	---	---	35	33	31	30	30	31	31	31
29	---	---	---	---	---	---	31	30	30	31	31	31
30	---	---	---	---	---	---	31	30	30	31	31	31
31	---	---	---	39	---	34	---	30	---	31	31	---
MEAN	---	---	---	---	37	---	32	30	---	---	31	31
MAX	---	---	---	---	39	---	34	30	---	---	31	32
MIN	---	---	---	---	35	---	31	30	---	---	30	31

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2001 to current year.

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, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)	Temper-ature, 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)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, water, fltrd, mg/L (00940)
NOV 14...	1515	2.8	5.5	126	16.7	31	7.75	2.71	4.65	12.0	24	0.03	7.89
Date	Silica, water, fltrd, mg/L (00955)	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-phosphate, water, fltrd, mg/L as P (00671)	Alum-inum, 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)
NOV 14...	27.1	2.4	110	0.19	E.03	5.64	<0.008	0.03	4	<0.30	<2	74	0.13
Date	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, 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)	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)
NOV 14...	<13	0.05	E.5	0.068	1.5	<10	<0.08	11.0	1.0	2.38	<3	<0.2	3
Date	Alpha radio-activty water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)									
NOV 14...	1.3	7.6	4,810	0.85									

GROUND-WATER LEVELS

WAKE COUNTY—Continued

354356078403502. County number, WK-278; DENR Lake Wheeler Research Station MW-11 (Transition zone well).

LOCATION.--Lat 35°43'55.8", long 78°40'34.5", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER.--Regolith (saprolitic Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 41.5 ft, diameter 4 in., cased to 31.5 ft, screened interval from 31.5 to 41.5 ft, sand filter packed from 26.5 to 42 ft.

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

DATUM.--Land-surface datum is 335.36 ft above NGVD of 1929. Measuring point: Top of instrument shelter floor, 1.87 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

PERIOD OF RECORD.--July 2001 to current year. Continuous record began December 2001. Periodic water level measurements made by DENR, July 2001 to December 2001.

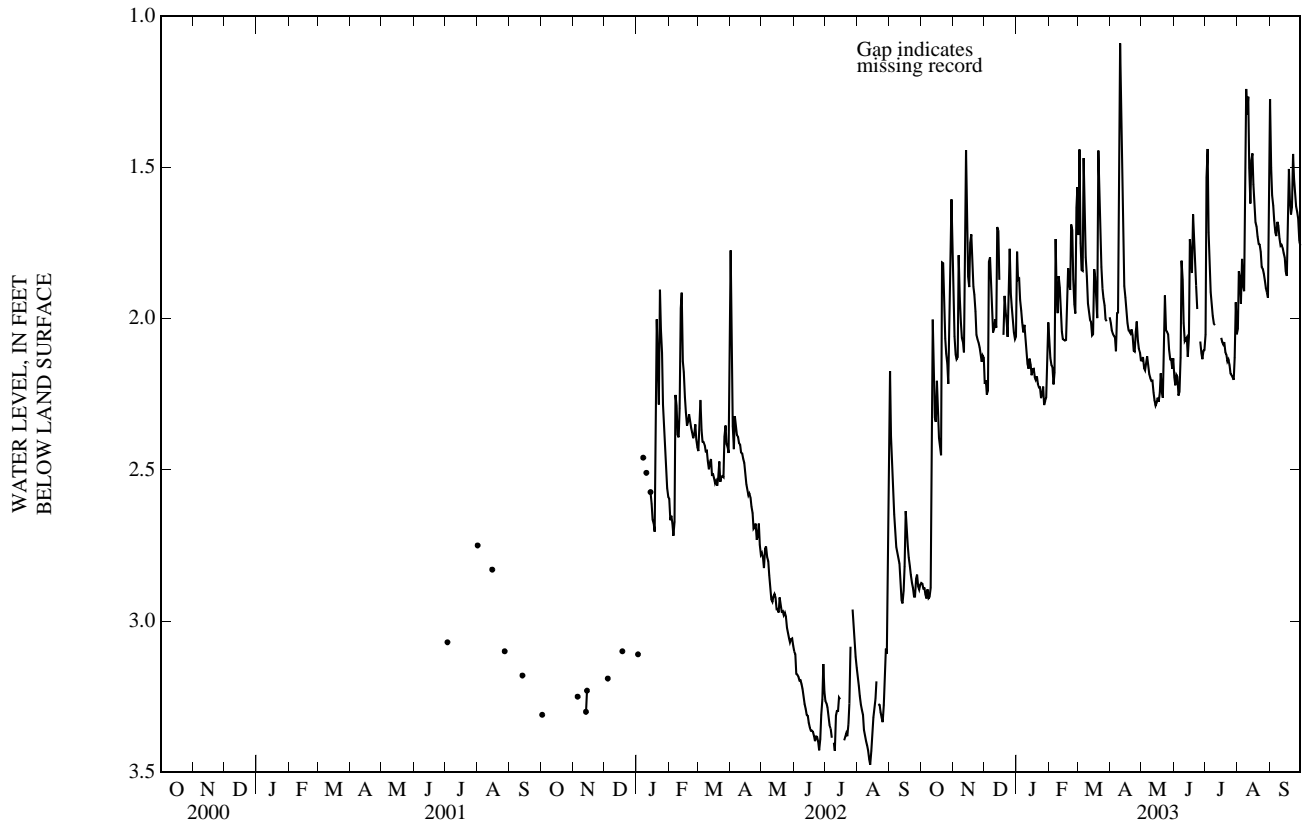
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.56 ft below land-surface datum, July 2, 2003; lowest water level recorded 3.57 ft below land-surface datum, Aug. 13, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.87	1.97	2.22	1.78	2.07	1.72	2.02	2.14	2.19	2.05	2.03	1.27
2	2.88	2.06	2.20	1.87	2.13	1.44	2.04	2.13	2.22	1.53	1.84	1.50
3	2.89	2.12	2.25	1.87	2.15	1.75	2.05	2.16	2.19	1.44	1.87	1.59
4	2.89	2.13	2.24	1.94	2.16	1.84	2.06	2.17	2.19	1.72	1.95	1.63
5	2.91	2.13	1.81	1.97	2.22	1.84	2.06	2.15	2.25	1.84	1.80	1.68
6	2.93	1.79	1.80	2.01	2.18	1.47	2.11	2.12	2.24	1.91	1.89	1.72
7	2.90	1.93	1.88	2.05	1.74	1.69	1.98	2.16	2.13	1.96	1.91	1.73
8	2.92	2.01	1.97	2.02	1.91	1.80	1.98	2.18	1.81	1.99	1.46	1.68
9	2.92	2.06	2.05	2.06	1.98	1.86	1.57	2.20	1.87	2.02	1.24	1.69
10	2.89	2.08	2.03	2.11	1.86	1.95	1.09	2.21	2.01	2.02	1.33	1.74
11	2.21	2.11	2.00	2.15	1.90	1.98	1.42	2.21	2.08	---	1.27	1.76
12	2.00	1.77	2.03	2.17	1.97	2.00	1.66	2.25	2.07	---	1.50	1.76
13	2.20	1.44	1.70	2.13	2.04	2.01	1.81	2.27	2.06	---	1.62	1.77
14	2.33	1.74	1.71	2.15	2.07	2.06	1.89	2.29	2.13	---	1.48	1.78
15	2.34	1.86	1.87	2.19	2.07	2.05	1.93	2.28	2.06	---	1.45	1.80
16	2.21	1.90	---	2.17	2.07	1.84	1.97	2.26	1.74	2.06	1.56	1.84
17	2.31	1.75	---	2.17	2.07	1.86	2.01	2.28	1.80	2.08	1.63	1.86
18	2.39	1.72	---	2.19	1.95	1.93	2.04	2.25	1.85	2.09	1.68	1.65
19	2.42	1.81	2.05	2.20	1.83	2.00	2.04	2.18	1.66	2.08	1.70	1.51
20	2.45	1.89	1.93	2.19	1.88	1.44	2.05	2.24	1.71	2.11	1.73	1.61
21	1.81	1.92	1.97	2.22	1.91	1.54	2.04	2.26	1.79	2.12	1.75	1.66
22	1.82	1.98	2.01	2.23	1.69	1.72	2.06	2.04	1.89	2.14	1.76	1.63
23	1.95	2.05	2.06	2.23	1.71	1.83	2.11	1.92	1.97	2.14	1.78	1.46
24	2.07	2.07	1.91	2.26	1.87	1.90	2.11	2.04	---	2.15	1.83	1.54
25	2.12	2.08	1.77	2.25	1.95	1.93	2.04	2.04	---	2.18	1.84	1.59
26	2.15	2.10	1.92	2.23	1.98	1.96	2.01	2.05	2.08	2.19	1.85	1.63
27	2.22	2.12	1.96	2.29	1.63	2.00	2.07	2.10	2.11	2.19	1.88	1.65
28	2.08	2.14	2.00	2.27	1.57	2.01	2.10	2.13	2.13	2.20	1.90	1.67
29	1.82	2.12	2.05	2.26	---	---	2.11	2.13	2.11	2.13	1.91	1.74
30	1.61	2.13	2.07	2.16	---	---	2.14	2.17	2.10	1.95	1.93	1.76
31	1.84	---	2.06	2.01	---	2.00	---	2.13	---	2.05	1.48	---

WTR YR 2003 MEAN 1.98 HIGH 1.09 LOW 2.93

354356078403502. County number, WK-278; DENR Lake Wheeler Research Station MW-II (Transition zone well).



354356078403502 WK-278 DENR Lake Wheeler Research Station MW-II (Transition zone well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2002 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 2001 to August 2002, October 2002 to September 2003.

pH: December 2001 to August 2002, October 2002 to September 2003.

WATER TEMPERATURE: December 2001 to August 2002, October 2002 to September 2003.

DISSOLVED OXYGEN: January to August 2002, October 2002 to September 2003.

DISSOLVED OXYGEN, PERCENT SATURATION: January to August 2002, October 2002 to September 2003.

INSTRUMENTATION.-- Water-quality monitor with satellite telemetry from December 2001 to August 2002, October 2002 to present.

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 760 mm Hg.

EXTREMES FOR PERIOD OF DAILY RECORD.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	209, September 18, 2003	118, January 17, 2002
pH, standard units	5.8, October 14, 15, 2002	5.0, on many days during the period
WATER TEMPERATURE, °C	16.2, on several days during the period	15.9, on many days during the period
DISSOLVED OXYGEN, mg/L	3.8, November 14, 2002	1.2, September 18, 2003
DISSOLVED OXYGEN, PERCENT SATURATION,%	39, November 14, 2002	12, September 18, 2003

EXTREMES FOR CURRENT YEAR.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	209, September 18	132, October 11
pH, standard units	5.8, October 14, 15	5.0, on many days during the year
WATER TEMPERATURE, °C	16.2, on several days during the year	16.0, on many days during the year
DISSOLVED OXYGEN, mg/L	3.8, November 14	1.2, September 18
DISSOLVED OXYGEN, PERCENT SATURATION,%	39, November 14	12, September 18

354356078403502 WK-278 DENR Lake Wheeler Research Station MW-II (Transition zone well)—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	150	162	162	175	171	180	180	181	186	183	194
2	---	151	164	160	171	171	181	179	182	186	182	194
3	---	152	166	161	170	171	181	179	181	186	182	194
4	---	153	168	162	182	172	181	179	182	187	182	194
5	---	153	167	164	179	173	181	180	182	187	182	194
6	---	153	166	165	176	173	181	180	183	187	182	195
7	---	153	168	166	166	173	182	179	182	188	182	195
8	---	153	170	166	163	174	181	179	182	188	183	196
9	---	154	171	167	163	174	181	179	182	188	183	197
10	---	154	171	166	163	174	180	179	182	188	184	198
11	132	154	171	167	164	175	181	179	182	---	184	200
12	136	155	169	168	164	176	181	178	182	---	185	202
13	138	160	168	169	164	176	182	178	182	---	185	203
14	141	154	165	169	165	176	181	179	181	---	185	203
15	143	142	168	169	165	176	182	180	181	---	186	204
16	142	147	---	170	165	177	183	180	181	189	186	206
17	142	149	---	171	165	177	183	180	181	188	187	206
18	143	152	---	171	166	---	182	179	181	188	188	207
19	144	154	165	172	166	178	182	179	181	188	189	207
20	145	155	165	172	167	177	182	179	181	188	190	206
21	144	157	164	173	168	177	182	178	182	187	190	205
22	145	158	164	174	168	178	182	178	182	187	191	204
23	146	161	163	175	168	178	181	178	183	187	192	204
24	145	161	163	177	169	178	181	178	---	187	193	204
25	145	161	160	179	170	---	181	179	---	185	193	203
26	147	161	159	181	170	---	181	179	184	185	194	203
27	148	161	161	182	171	178	181	179	184	185	194	203
28	148	161	162	183	170	179	180	179	184	184	194	202
29	149	161	163	183	---	---	180	179	184	184	194	203
30	149	162	163	182	---	---	180	180	185	183	194	203
31	150	---	163	179	---	180	---	181	---	183	194	---
MEAN	---	155	---	171	168	---	181	179	---	---	188	201
MAX	---	162	---	183	182	---	183	181	---	---	194	207
MIN	---	142	---	160	163	---	180	178	---	---	182	194

354356078403502 WK-278 DENR Lake Wheeler Research Station MW-II (Transition zone well)—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	5.5	5.4	5.3	5.3	5.3	5.2	5.1	5.2	5.1	5.1	5.1
2	---	5.5	5.4	5.3	5.4	5.3	5.2	5.1	5.1	5.1	5.1	5.1
3	---	5.5	5.4	5.3	5.4	5.3	5.2	5.1	5.1	5.1	5.1	5.1
4	---	5.5	5.4	5.3	5.3	5.3	5.2	5.1	5.1	5.1	5.1	5.1
5	---	5.4	5.4	5.3	5.3	5.3	5.2	5.1	5.1	5.1	5.1	5.1
6	---	5.4	5.3	5.3	5.3	5.3	5.2	5.1	5.1	5.1	5.1	5.1
7	---	5.4	5.3	5.3	5.4	5.3	5.2	5.1	5.1	5.1	5.1	5.1
8	---	5.4	5.4	5.3	5.4	5.3	5.2	5.1	5.1	5.1	5.1	5.1
9	---	5.4	5.4	5.3	5.4	5.3	5.2	5.1	5.1	5.1	5.1	5.1
10	---	5.4	5.4	5.3	5.4	5.3	5.2	5.1	5.1	5.0	5.1	5.1
11	---	5.4	5.4	5.3	5.4	5.3	5.2	5.1	5.1	---	5.1	5.1
12	---	5.4	5.4	5.3	5.4	5.3	5.2	5.1	5.1	---	5.1	5.1
13	---	5.4	5.4	5.3	5.4	5.3	5.2	5.1	5.1	---	5.1	5.1
14	---	5.5	5.4	5.3	5.4	5.3	5.2	5.1	5.1	---	5.0	5.1
15	5.8	5.5	5.4	5.3	5.4	5.3	5.2	5.1	5.1	---	5.0	5.1
16	5.7	5.5	---	5.3	5.4	5.3	5.2	5.1	5.1	5.1	5.0	5.1
17	5.7	5.5	---	5.3	5.4	5.3	5.2	5.1	5.1	5.1	5.0	5.1
18	5.7	5.5	---	5.3	5.4	---	5.2	5.1	5.1	5.1	5.0	5.1
19	5.7	5.5	5.3	5.3	5.4	5.2	5.2	5.1	5.1	5.1	5.0	5.1
20	5.7	5.5	5.3	5.3	5.4	5.2	5.2	5.2	5.1	5.1	5.0	5.1
21	5.6	5.5	5.3	5.3	5.4	5.2	5.2	5.2	5.1	5.1	5.0	5.1
22	5.6	5.5	5.3	5.3	5.4	5.2	5.2	5.2	5.1	5.1	5.0	5.1
23	5.7	5.5	5.3	5.3	5.4	5.2	5.2	5.2	5.1	5.1	5.0	5.1
24	5.6	5.4	5.3	5.3	5.4	5.2	5.2	5.2	---	5.1	5.0	5.1
25	5.6	5.4	5.3	5.3	5.3	---	5.2	5.2	---	5.1	5.0	5.1
26	5.5	5.4	5.3	5.3	5.3	---	5.2	5.2	5.1	5.1	5.0	5.1
27	5.5	5.4	5.3	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.1
28	5.5	5.4	5.3	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.1
29	5.5	5.4	5.3	5.3	---	---	5.2	5.2	5.1	5.1	5.1	5.0
30	5.5	5.4	5.3	5.3	---	---	5.1	5.2	5.1	5.1	5.1	5.0
31	5.5	---	5.3	5.3	---	5.2	---	5.2	---	5.1	5.1	---
MEAN	---	5.4	---	5.3	5.4	---	5.2	5.1	---	---	5.1	5.1
MAX	---	5.5	---	5.3	5.4	---	5.2	5.2	---	---	5.1	5.1
MIN	---	5.4	---	5.3	5.3	---	5.1	5.1	---	---	5.0	5.0

354356078403502 WK-278 DENR Lake Wheeler Research Station MW-II (Transition zone well)—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
2	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
3	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
4	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
5	---	16.1	16.1	16.1	16.2	16.0	16.0	16.0	16.0	16.0	16.0	16.0
6	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
7	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
8	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
9	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
10	---	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0
11	16.0	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	---	16.0	16.0
12	16.1	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	---	16.0	16.0
13	16.0	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	---	16.0	16.0
14	16.1	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	---	16.0	16.0
15	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	---	16.0	16.0
16	16.1	16.1	---	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
17	16.1	16.1	---	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
18	16.1	16.1	---	16.1	16.0	---	16.0	16.0	16.0	16.0	16.0	16.0
19	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
20	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
21	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
22	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
23	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
24	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	---	16.0	16.0	16.0
25	16.1	16.1	16.1	16.1	16.0	---	16.0	16.0	---	16.0	16.0	16.0
26	16.1	16.1	16.1	16.1	16.0	---	16.0	16.0	16.0	16.0	16.0	16.0
27	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
28	16.1	16.1	16.1	16.1	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
29	16.1	16.1	16.1	16.2	---	---	16.0	16.0	16.0	16.0	16.0	16.0
30	16.1	16.1	16.1	16.2	---	---	16.0	16.0	16.0	16.0	16.0	16.0
31	16.1	---	16.1	16.2	---	16.0	---	16.0	---	16.0	16.0	---
MEAN	---	16.1	---	16.1	16.1	---	16.0	16.0	---	---	16.0	16.0
MAX	---	16.1	---	16.2	16.2	---	16.0	16.0	---	---	16.0	16.0
MIN	---	16.1	---	16.1	16.0	---	16.0	16.0	---	---	16.0	16.0

354356078403502 WK-278 DENR Lake Wheeler Research Station MW-II (Transition zone well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.7	1.6	2.4	2.0	2.5	2.4	2.4	1.8	1.6	2.2	1.9
2	---	2.7	1.8	2.4	2.2	2.5	2.4	2.3	1.8	1.6	2.2	2.0
3	---	2.7	1.9	2.4	2.3	2.5	2.4	2.3	1.8	1.6	2.2	2.0
4	---	2.7	1.9	2.3	2.1	2.5	2.4	2.3	1.7	1.6	2.2	2.0
5	---	2.7	2.1	2.3	2.1	2.5	2.4	2.2	1.7	1.6	2.2	2.0
6	---	2.7	2.1	2.3	2.2	2.5	2.4	2.2	1.7	1.6	2.2	2.0
7	---	2.6	2.2	2.3	2.7	2.5	2.3	2.2	1.7	1.7	2.2	2.0
8	---	2.6	2.3	2.2	2.9	2.4	2.4	2.2	1.7	1.7	2.2	1.9
9	---	2.6	2.3	2.3	2.9	2.5	2.4	2.2	1.6	1.7	2.2	1.8
10	---	2.6	2.3	2.3	2.9	2.5	2.5	2.2	1.6	1.7	2.1	1.8
11	2.6	2.6	2.3	2.3	2.9	2.5	2.5	2.1	1.6	---	2.1	1.6
12	2.9	2.6	2.2	2.2	2.9	2.5	2.5	2.1	1.7	---	2.1	1.5
13	2.8	2.6	2.1	2.2	2.9	2.5	2.6	2.1	1.6	---	2.1	1.5
14	2.8	2.9	2.1	2.2	2.9	2.5	2.6	2.1	1.7	---	2.0	1.4
15	2.7	3.3	2.1	2.2	2.8	2.5	2.6	2.1	1.7	---	2.0	1.4
16	2.6	3.0	---	2.2	2.9	2.5	2.6	2.1	1.7	1.7	2.0	1.4
17	2.6	2.8	---	2.2	2.9	2.6	2.5	2.2	1.7	1.7	1.9	1.3
18	2.5	2.6	---	2.2	2.9	---	2.5	2.2	1.8	1.8	1.9	1.3
19	2.5	2.5	2.2	2.2	2.9	2.5	2.5	2.2	1.8	1.8	1.8	1.3
20	2.5	2.4	2.2	2.2	2.9	2.5	2.5	2.2	1.7	1.8	1.8	1.4
21	2.5	2.4	2.3	2.1	2.8	2.6	2.5	2.2	1.7	1.9	1.8	1.4
22	2.6	2.3	2.3	2.1	2.8	2.5	2.5	2.2	1.6	1.9	1.8	1.6
23	2.6	2.1	2.3	2.1	2.8	2.5	2.4	2.1	1.6	1.9	1.7	1.6
24	2.6	1.7	2.3	2.0	2.7	2.5	2.4	2.1	---	2.0	1.7	1.6
25	2.6	1.4	2.4	2.0	2.5	---	2.4	2.1	---	2.0	1.8	1.7
26	2.7	1.4	2.4	2.0	2.5	---	2.4	2.0	1.6	2.0	1.8	1.7
27	2.8	1.3	2.4	1.9	2.5	2.4	2.4	2.0	1.7	2.1	1.8	1.7
28	2.8	1.3	2.4	1.9	2.5	2.4	2.4	2.0	1.7	2.1	1.8	1.8
29	2.8	1.4	2.3	2.0	---	---	2.4	1.9	1.7	2.1	1.8	1.8
30	2.7	1.5	2.3	2.0	---	---	2.4	1.8	1.6	2.2	1.9	1.8
31	2.7	---	2.3	2.0	---	2.3	---	1.8	---	2.2	1.9	---
MEAN	---	2.4	---	2.2	2.7	---	2.5	2.1	---	---	2.0	1.7
MAX	---	3.3	---	2.4	2.9	---	2.6	2.4	---	---	2.2	2.0
MIN	---	1.3	---	1.9	2.0	---	2.3	1.8	---	---	1.7	1.3

354356078403502 WK-278 DENR Lake Wheeler Research Station MW-II (Transition zone well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	27	16	24	20	25	24	24	18	16	22	19
2	---	27	18	24	22	25	24	23	18	16	22	20
3	---	27	19	24	23	25	24	23	18	16	22	20
4	---	27	19	23	21	25	24	23	17	16	22	20
5	---	27	21	23	21	25	24	22	17	16	22	20
6	---	27	21	23	22	25	24	22	17	16	22	20
7	---	26	22	23	28	25	23	22	17	17	22	20
8	---	26	23	22	30	24	24	22	17	17	22	19
9	---	26	23	23	30	25	24	22	16	17	22	18
10	---	26	23	23	30	25	25	22	16	17	21	18
11	26	26	23	23	30	25	25	21	16	---	21	16
12	30	26	22	22	29	25	25	21	17	---	21	15
13	28	26	21	22	29	25	26	21	16	---	21	15
14	28	29	21	22	29	25	26	21	17	---	20	14
15	27	34	21	22	28	25	26	21	17	---	20	14
16	26	30	---	22	29	25	26	21	17	17	20	14
17	26	28	---	22	29	26	25	22	17	17	19	13
18	25	26	---	22	29	---	25	22	18	18	19	13
19	25	25	22	22	29	25	25	22	18	18	18	13
20	25	24	22	22	29	25	25	22	17	18	18	14
21	25	24	23	21	28	26	25	22	17	19	18	14
22	26	23	23	21	28	25	25	22	16	19	18	16
23	26	21	23	21	28	25	24	21	16	19	17	16
24	26	17	23	20	27	25	24	21	---	20	17	16
25	26	14	24	20	25	---	24	21	---	20	18	17
26	27	14	24	20	25	---	24	20	16	20	18	17
27	28	13	24	19	25	24	24	20	17	21	18	17
28	28	13	24	19	25	24	24	20	17	21	18	18
29	28	14	23	20	---	---	24	19	17	21	18	18
30	27	15	23	20	---	---	24	18	16	22	19	18
31	27	---	23	20	---	23	---	18	---	22	19	---
MEAN	---	24	---	22	27	---	25	21	---	---	20	17
MAX	---	34	---	24	30	---	26	24	---	---	22	20
MIN	---	13	---	19	20	---	23	18	---	---	17	13

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2001 to current year.

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, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)	Temper-ature, 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)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, water, fltrd, mg/L (00940)
NOV 14...	1545	2.7	5.4	143	16.1	32	9.33	2.15	2.98	12.7	26	0.05	11.0
Date	Silica, water, fltrd, mg/L (00955)	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-phosphate, water, fltrd, mg/L as P (00671)	Alum-inum, 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)
NOV 14...	29.4	1.4	115	0.11	0.09	6.67	<0.008	0.05	7	<0.30	<2	61	0.33
Date	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, 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)	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)
NOV 14...	<13	0.05	<0.8	0.271	0.2	38	<0.08	41.0	0.7	0.97	<3	<0.2	4
Date	Alpha radio-activty water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)									
NOV 14...	2.2	7.3	11,600	0.05									

GROUND-WATER LEVELS

WAKE COUNTY—Continued

354356078403504. County number, WK-279A; DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well).

LOCATION.--Lat 35°43'56.2", long 78°40'34.1", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER.--Raleigh Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 75 ft, diameter 6 in., cased to 47 ft, open hole from 47 to 75 ft.

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

DATUM.--Land-surface datum is 339.36 ft above NGVD of 1929. Measuring point: Top of instrument shelter floor, 2.60 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project. Inflatable packer installed on July 16, 2001. Packer set at 75 ft below land surface. Well is upper zone of MW-1D (WK-279, 354356078403503).

PERIOD OF RECORD.--July 2002 to September 2002.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.05 ft below land-surface datum, Apr. 10, 2003; lowest water level recorded 6.02 ft below land-surface datum, Aug. 13, 29, 2002.

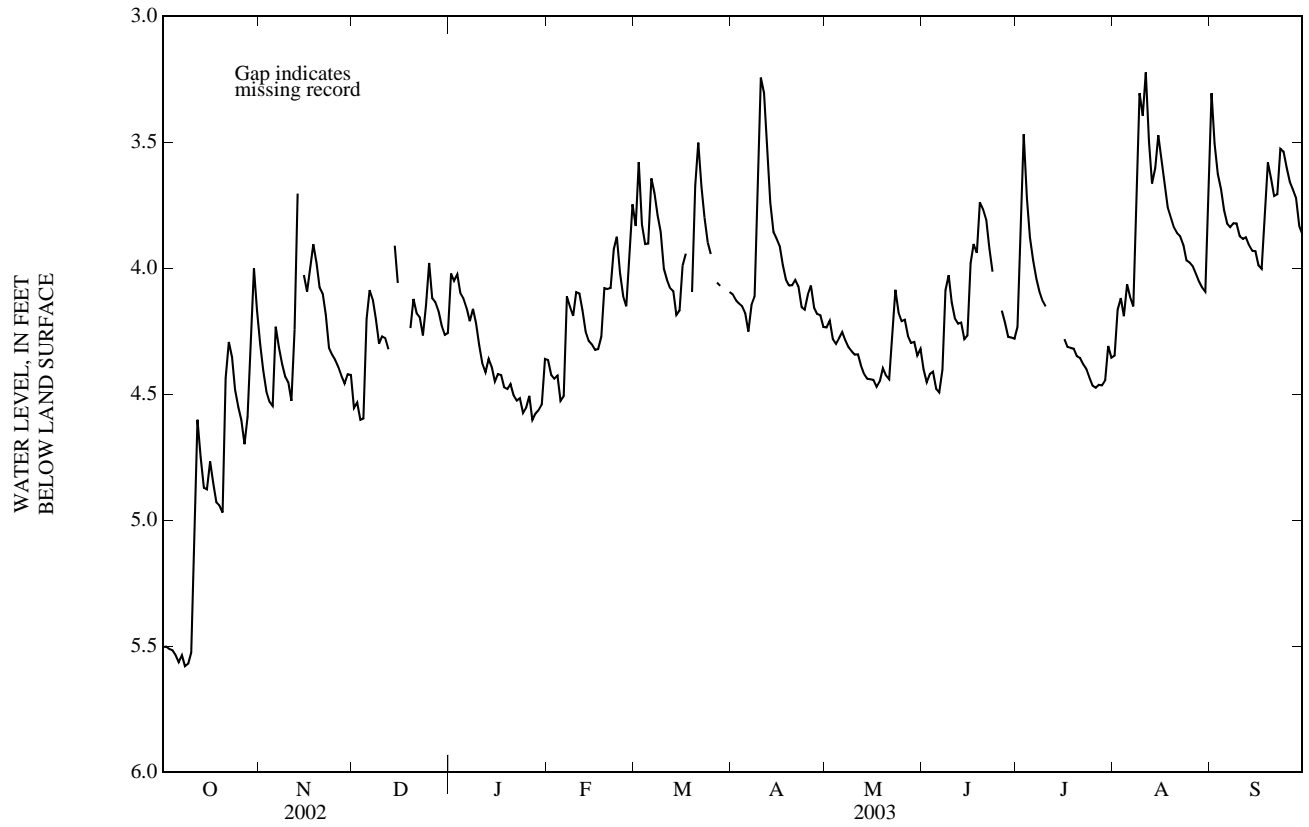
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.50	4.30	4.55	4.02	4.36	3.83	4.10	4.24	4.40	4.23	4.35	3.31
2	5.50	4.41	4.53	4.05	4.42	3.58	4.13	4.21	4.45	3.81	4.16	3.51
3	5.51	4.49	4.60	4.03	4.44	3.83	4.14	4.28	4.42	3.47	4.12	3.63
4	5.52	4.53	4.60	4.10	4.43	3.90	4.15	4.30	4.41	3.72	4.19	3.69
5	5.54	4.55	4.20	4.12	4.53	3.90	4.18	4.28	4.48	3.88	4.06	3.77
6	5.56	4.23	4.09	4.16	4.51	3.64	4.25	4.25	4.49	3.97	4.11	3.82
7	5.54	4.31	4.13	4.21	4.11	3.70	4.15	4.29	4.40	4.04	4.15	3.84
8	5.58	4.38	4.20	4.16	4.15	3.79	4.11	4.31	4.09	4.09	3.81	3.82
9	5.57	4.43	4.30	4.22	4.19	3.86	3.73	4.33	4.03	4.13	3.31	3.82
10	5.52	4.45	4.27	4.31	4.10	4.00	3.24	4.34	4.14	4.15	3.40	3.87
11	5.03	4.53	4.28	4.38	4.10	4.05	3.31	4.34	4.20	---	3.22	3.88
12	4.60	4.24	4.32	4.41	4.17	4.08	3.53	4.39	4.22	---	3.50	3.88
13	4.75	3.70	---	4.36	4.25	4.09	3.74	4.42	4.22	---	3.66	3.91
14	4.87	---	3.91	4.39	4.29	4.19	3.86	4.44	4.28	---	3.60	3.93
15	4.88	4.03	4.06	4.45	4.30	4.17	3.88	4.44	4.27	---	3.47	3.93
16	4.77	4.09	---	4.42	4.32	3.99	3.91	4.44	3.98	4.28	3.57	3.99
17	4.85	3.99	---	4.42	4.32	3.94	3.99	4.47	3.90	4.31	3.67	4.00
18	4.93	3.91	---	4.47	4.27	---	4.05	4.45	3.94	4.32	3.76	3.79
19	4.94	3.98	4.24	4.48	4.08	4.10	4.07	4.40	3.74	4.32	3.80	3.58
20	4.97	4.08	4.12	4.46	4.08	3.67	4.07	4.43	3.77	4.35	3.84	3.65
21	4.44	4.10	4.18	4.50	4.08	3.50	4.05	4.44	3.81	4.36	3.86	3.71
22	4.29	4.19	4.19	4.53	3.92	3.68	4.07	4.26	3.92	4.38	3.87	3.71
23	4.35	4.32	4.27	4.52	3.88	3.80	4.16	4.09	4.01	4.40	3.91	3.53
24	4.48	4.34	4.15	4.57	4.02	3.90	4.17	4.18	---	4.43	3.97	3.54
25	4.55	4.36	3.98	4.55	4.11	3.94	4.11	4.21	---	4.47	3.98	3.60
26	4.60	4.39	4.12	4.51	4.15	---	4.07	4.21	4.17	4.47	3.99	3.66
27	4.70	4.43	4.13	4.60	3.93	4.06	4.16	4.27	4.22	4.46	4.02	3.69
28	4.59	4.46	4.17	4.58	3.75	4.07	4.18	4.30	4.27	4.46	4.05	3.72
29	4.25	4.42	4.23	4.56	---	---	4.19	4.29	4.28	4.45	4.08	3.83
30	4.00	4.42	4.26	4.54	---	---	4.23	4.35	4.28	4.31	4.09	3.86
31	4.17	---	4.26	4.36	---	4.10	---	4.32	---	4.36	3.79	---

WTR YR 2003 MEAN 4.19 HIGH 3.22 LOW 5.58

WAKE COUNTY—Continued

354356078403504. County number, WK-279A; DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well).



354356078403504 WK-279A DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well)—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2002 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 2002 to current year.

pH: July 2002 to current year.

WATER TEMPERATURE: July 2002 to current year.

DISSOLVED OXYGEN: July 2002 to current year.

DISSOLVED OXYGEN, PERCENT SATURATION: July 2002 to current year.

INSTRUMENTATION.-- Water-quality monitor with satellite telemetry from July 2002 to present.

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. Inflatable packer was installed on July 16, 2002. Packer was set at a depth of 75 ft below land surface. Well is upper zone of MW-1D (WK-279, station number 354356078403503). Dissolved oxygen, percent saturation, is computed using a barometric pressure of 760 mm Hg.

EXTREMES FOR PERIOD OF DAILY RECORD.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	719, May 15, 2003	599, September 7, 2002
pH, standard units	6.1, on many days during the period	5.5, September 19, 20, 2003
WATER TEMPERATURE, °C	16.1, on many days during the period	16.1, on many days during the period
DISSOLVED OXYGEN, mg/L	3.1, March 9, 2003	0.2, on many days during the period
DISSOLVED OXYGEN, PERCENT SATURATION,%	32, March 9, 2003	2, on many days during the peirod

EXTREMES FOR CURRENT YEAR.--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	719, May 15	509, December 13
pH, standard units	6.1, on many days during the year	5.5, September 19, 20
WATER TEMPERATURE, °C	16.1, on many days during the year	16.1, on many days during the year
DISSOLVED OXYGEN, mg/L	3.1, March 9	0.2, on many days during the year
DISSOLVED OXYGEN, PERCENT SATURATION,%	32, March 9	2, on many days during the year

354356078403504 WK-279A DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well)—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	669	584	592	643	672	644	674	689	684	673	700	686
2	669	583	594	651	671	643	682	693	678	667	704	695
3	669	577	596	652	667	649	682	692	681	677	705	696
4	669	577	597	639	658	656	682	690	684	682	701	694
5	669	572	578	658	643	660	682	690	684	682	700	689
6	670	563	582	658	632	636	679	691	679	683	699	686
7	671	570	594	651	605	649	678	693	679	678	694	686
8	672	574	602	661	619	651	676	697	667	676	677	687
9	673	581	593	673	624	651	653	697	670	675	690	688
10	674	583	596	676	662	656	640	699	679	677	698	690
11	672	580	595	654	648	655	681	698	680	---	696	694
12	664	571	584	648	656	655	690	694	679	---	694	699
13	646	602	554	665	652	656	683	694	676	---	685	700
14	640	616	584	668	654	654	678	703	672	---	674	702
15	633	616	595	668	653	664	675	714	671	---	672	701
16	632	614	---	670	650	660	675	713	655	692	675	702
17	626	613	---	664	655	673	675	709	664	693	675	702
18	622	613	---	667	643	---	670	708	670	690	676	703
19	623	610	643	668	639	668	676	705	667	689	677	712
20	621	608	650	666	649	639	677	711	668	688	678	714
21	594	606	633	666	652	671	682	712	666	690	679	712
22	601	601	634	666	642	678	682	711	663	690	681	711
23	603	598	638	663	644	676	682	709	661	690	683	709
24	600	600	636	671	652	673	682	708	---	694	684	710
25	596	599	625	676	652	---	687	701	---	699	687	710
26	594	595	640	682	653	---	692	698	658	699	688	708
27	588	597	648	677	623	665	690	693	659	702	688	707
28	590	592	652	682	626	670	689	691	661	703	688	705
29	589	597	650	690	---	---	691	690	662	699	691	705
30	584	602	650	679	---	---	692	687	665	692	692	705
31	588	---	657	668	---	672	---	684	---	695	675	---
MEAN	633	593	---	665	646	---	679	699	---	---	687	700
MAX	674	616	---	690	672	---	692	714	---	---	705	714
MIN	584	563	---	639	605	---	640	684	---	---	672	686

354356078403504 WK-279A DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well)—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	5.7	5.8	6.0	6.1	6.0	6.0	5.8	5.7	5.7	5.6	5.6
2	5.6	5.7	5.8	6.0	6.1	6.0	5.9	5.8	5.8	5.6	5.6	5.6
3	5.6	5.7	5.8	6.1	6.1	6.0	5.9	5.8	5.8	5.6	5.7	5.6
4	5.6	5.7	5.8	6.1	6.0	6.0	5.9	5.8	5.8	5.6	5.7	5.6
5	5.6	5.7	5.8	6.0	6.0	6.0	5.9	5.8	5.7	5.6	5.7	5.6
6	5.6	5.7	5.8	6.0	6.0	6.0	5.9	5.8	5.7	5.6	5.7	5.6
7	5.6	5.7	5.8	6.0	5.9	6.0	5.9	5.7	5.7	5.6	5.7	5.6
8	5.6	5.7	5.8	6.1	6.0	6.0	5.9	5.7	5.7	5.7	5.7	5.6
9	5.7	5.7	5.8	6.0	6.0	6.0	5.9	5.7	5.7	5.7	5.7	5.6
10	5.7	5.7	5.8	6.1	6.0	6.0	5.9	5.7	5.7	5.7	5.6	5.6
11	5.7	5.7	5.8	6.0	6.0	6.0	5.8	5.7	5.7	---	5.6	5.6
12	5.7	5.7	5.8	6.0	6.0	6.0	5.8	5.7	5.7	---	5.6	5.6
13	5.7	5.7	5.8	6.0	6.0	6.0	5.8	5.7	5.7	---	5.6	5.6
14	5.7	5.7	5.8	6.0	6.0	6.0	5.8	5.7	5.7	---	5.6	5.6
15	5.7	5.7	5.8	6.0	6.0	6.0	5.8	5.8	5.7	---	5.6	5.6
16	5.7	5.7	---	6.0	6.0	6.0	5.8	5.8	5.7	5.7	5.6	5.6
17	5.7	5.7	---	6.0	6.0	6.0	5.8	5.8	5.7	5.7	5.6	5.6
18	5.7	5.7	---	6.0	6.0	---	5.8	5.8	5.7	5.7	5.6	5.6
19	5.7	5.7	6.1	6.0	6.0	6.0	5.8	5.8	5.7	5.7	5.6	5.6
20	5.7	5.7	6.1	6.0	6.0	6.0	5.8	5.8	5.6	5.7	5.6	5.5
21	5.7	5.7	6.1	6.0	6.0	6.0	5.8	5.8	5.6	5.7	5.6	5.6
22	5.7	5.7	6.0	6.1	6.0	6.0	5.8	5.7	5.6	5.7	5.6	5.6
23	5.7	5.7	6.0	6.1	6.0	5.9	5.7	5.7	5.6	5.7	5.6	5.6
24	5.7	5.8	6.1	6.0	6.0	5.9	5.7	5.7	---	5.6	5.6	5.6
25	5.7	5.8	6.1	6.0	6.0	---	5.7	5.7	---	5.6	5.6	5.6
26	5.7	5.8	6.1	6.1	6.0	---	5.7	5.7	5.7	5.6	5.7	5.6
27	5.7	5.8	6.1	6.1	6.0	5.9	5.7	5.7	5.7	5.6	5.6	5.6
28	5.6	5.8	6.1	6.1	6.0	6.0	5.8	5.7	5.7	5.6	5.6	5.6
29	5.6	5.8	6.1	6.1	---	---	5.8	5.7	5.7	5.6	5.6	5.6
30	5.6	5.8	6.1	6.1	---	---	5.8	5.7	5.7	5.6	5.6	5.6
31	5.6	---	6.0	6.1	---	6.0	---	5.7	---	5.6	5.6	---
MEAN	5.7	5.7	---	6.0	6.0	---	5.8	5.7	---	---	5.6	5.6
MAX	5.7	5.8	---	6.1	6.1	---	6.0	5.8	---	---	5.7	5.6
MIN	5.6	5.7	---	6.0	5.9	---	5.7	5.7	---	---	5.6	5.5

354356078403504 WK-279A DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well)—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
2	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
3	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
4	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
5	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
6	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
7	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
8	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
9	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
10	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
11	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1
12	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1
13	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1
14	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1
15	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1
16	16.1	16.1	---	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
17	16.1	16.1	---	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
18	16.1	16.1	---	16.1	16.1	---	16.1	16.1	16.1	16.1	16.1	16.1
19	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
20	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
21	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
22	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
23	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
24	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1	16.1
25	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1	---	16.1	16.1	16.1
26	16.1	16.1	16.1	16.1	16.1	---	16.1	16.1	16.1	16.1	16.1	16.1
27	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
28	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
29	16.1	16.1	16.1	16.1	---	---	16.1	16.1	16.1	16.1	16.1	16.1
30	16.1	16.1	16.1	16.1	---	---	16.1	16.1	16.1	16.1	16.1	16.1
31	16.1	---	16.1	16.1	---	16.1	---	16.1	---	16.1	16.1	---
MEAN	16.1	16.1	---	16.1	16.1	---	16.1	16.1	---	---	16.1	16.1
MAX	16.1	16.1	---	16.1	16.1	---	16.1	16.1	---	---	16.1	16.1
MIN	16.1	16.1	---	16.1	16.1	---	16.1	16.1	---	---	16.1	16.1

354356078403504 WK-279A DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.2	0.7	1.0	0.7	0.9	1.0	0.7	0.7	0.5	0.6	0.3	0.5
2	0.2	0.7	1.0	0.8	0.9	0.7	0.6	0.6	0.6	0.7	0.2	0.4
3	0.2	0.7	1.0	0.8	0.9	0.6	0.6	0.7	0.5	0.6	0.2	0.4
4	0.2	0.7	1.0	1.0	0.8	0.5	0.6	0.7	0.5	0.6	0.2	0.4
5	0.2	0.8	1.2	0.6	1.0	0.7	0.7	0.7	0.5	0.5	0.2	0.4
6	0.2	0.9	1.1	0.7	1.0	0.9	0.7	0.6	0.5	0.5	0.2	0.4
7	0.2	0.8	1.0	1.0	1.0	0.8	0.7	0.6	0.5	0.6	0.2	0.3
8	0.2	0.8	0.9	1.0	0.9	1.5	0.7	0.5	0.6	0.6	0.4	0.3
9	0.2	0.8	1.0	0.8	0.7	1.8	0.9	0.5	0.6	0.6	0.3	0.3
10	0.2	0.8	0.9	0.8	0.8	0.9	1.0	0.6	0.6	0.6	0.3	0.3
11	0.2	0.8	0.9	0.7	0.7	0.7	0.7	0.6	0.6	---	0.3	0.3
12	0.2	1.0	1.0	0.6	0.6	0.8	0.7	0.6	0.5	---	0.3	0.3
13	0.3	1.0	1.3	0.8	0.5	0.7	0.8	---	0.5	---	0.3	0.3
14	0.4	0.9	1.0	0.8	0.4	0.6	0.8	---	0.6	---	0.4	0.3
15	0.4	0.9	0.9	0.7	0.4	0.7	0.7	---	0.6	---	0.4	0.3
16	0.3	0.9	---	0.7	0.4	0.7	0.7	---	0.7	0.4	0.3	0.3
17	0.3	0.8	---	0.7	0.4	0.7	0.7	---	0.6	0.4	0.3	0.3
18	0.4	0.8	---	0.7	0.4	---	0.8	---	0.5	0.4	0.3	0.3
19	0.3	0.9	0.7	0.8	0.5	0.8	0.8	---	0.6	0.4	0.3	0.2
20	0.3	0.9	0.4	0.8	0.4	1.0	0.8	---	0.6	0.4	0.3	0.2
21	0.6	0.9	0.4	0.8	0.5	0.7	0.8	---	0.6	0.4	0.3	0.2
22	0.6	1.0	0.5	0.8	0.7	0.8	0.8	0.4	0.6	0.4	0.3	0.2
23	0.6	1.0	0.4	0.8	0.5	0.8	0.8	0.5	0.6	0.4	0.3	0.2
24	0.6	1.0	0.5	0.8	0.5	0.8	0.8	0.5	---	0.4	0.3	0.2
25	0.6	1.0	0.6	0.9	0.5	---	0.7	0.5	---	0.3	0.3	0.2
26	0.6	1.0	0.7	0.9	0.6	---	0.7	0.5	0.8	0.3	0.3	0.3
27	0.6	1.0	0.7	0.9	0.9	0.7	0.6	0.5	0.8	0.3	0.4	0.3
28	0.6	1.0	0.6	0.8	1.0	0.7	0.7	0.5	0.7	0.3	0.4	0.3
29	0.6	1.0	0.6	0.8	---	---	0.6	0.5	0.7	0.3	0.4	0.3
30	0.7	0.9	0.7	0.8	---	---	0.7	0.5	0.7	0.4	0.4	0.3
31	0.6	---	0.7	0.8	---	0.7	---	0.5	---	0.3	0.6	---
MEAN	0.4	0.9	---	0.8	0.7	---	0.7	---	---	---	0.3	0.3
MAX	0.7	1.0	---	1.0	1.0	---	1.0	---	---	---	0.6	0.5
MIN	0.2	0.7	---	0.6	0.4	---	0.6	---	---	---	0.2	0.2

354356078403504 WK-279A DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well)—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

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

GROUND-WATER LEVELS

WAKE COUNTY—Continued

354356078403505. County number, WK-279B; DENR Lake Wheeler Research Station MW-1D Lower Zone (Bedrock well).

LOCATION.--Lat 35°43'56.2", long 78°40'34.1", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Raleigh Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 302 ft, diameter 6 in., cased to 75 ft, open hole from 75 to 302 ft.

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

DATUM.--Land-surface datum is 339.36 ft above NGVD of 1929. Measuring point: Top of instrument shelter floor, 2.60 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project. Inflatable packer installed on July 16, 2001. Packer set at 75 ft below land surface. Well is lower zone of MW-1D (WK-279, station number 354356078403503).

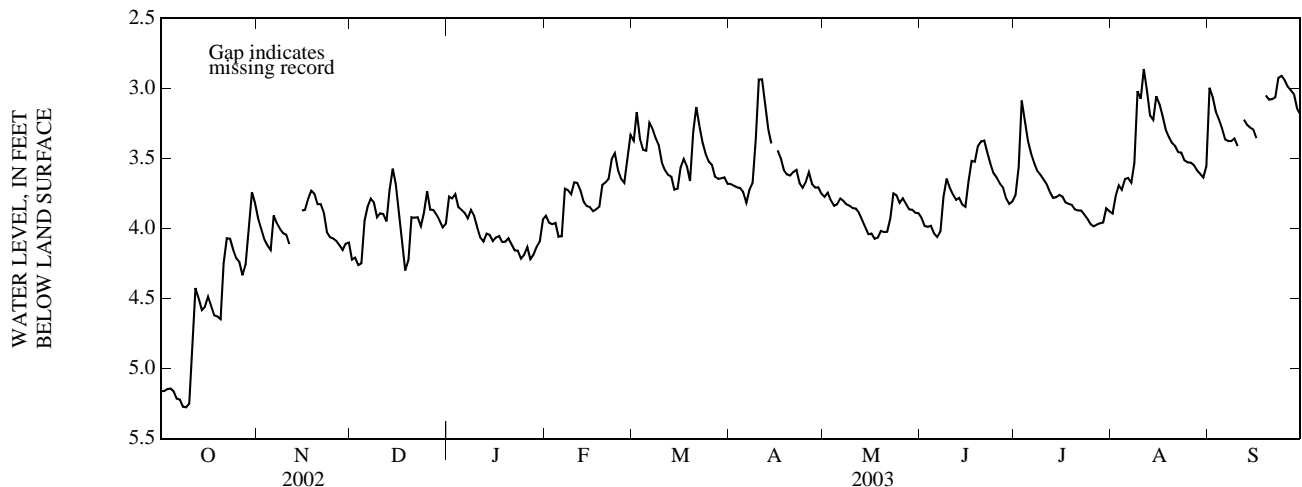
PERIOD OF RECORD.--July 2002 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.80 ft below land-surface datum, Apr. 10, 2003; lowest water level recorded 5.79 ft below land-surface datum, Aug. 15, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.16	3.93	4.22	3.77	3.91	3.37	3.68	3.77	3.92	3.76	3.89	3.00
2	5.16	4.00	4.21	3.79	3.96	3.17	3.69	3.74	3.98	3.56	3.77	3.06
3	5.15	4.08	4.26	3.76	3.97	3.36	3.71	3.80	3.99	3.09	3.69	3.16
4	5.14	4.12	4.25	3.85	3.96	3.44	3.71	3.84	3.98	3.24	3.72	3.22
5	5.16	4.15	3.94	3.87	4.06	3.44	3.74	3.83	4.04	3.37	3.65	3.28
6	5.21	3.91	3.84	3.89	4.05	3.25	3.82	3.79	4.06	3.47	3.64	3.36
7	5.22	3.96	3.79	3.93	3.72	3.29	3.72	3.80	4.02	3.53	3.67	3.38
8	5.27	4.00	3.81	3.87	3.73	3.35	3.67	3.83	3.77	3.59	3.53	3.38
9	5.28	4.03	3.92	3.91	3.75	3.40	3.36	3.84	3.64	3.62	3.02	3.36
10	5.25	4.04	3.89	3.99	3.67	3.53	2.94	3.85	3.71	3.65	3.07	3.41
11	4.86	4.11	3.90	4.06	3.67	3.58	2.94	3.86	3.76	3.69	2.86	---
12	4.42	---	3.95	4.09	3.73	3.62	3.10	3.89	3.79	3.74	3.02	3.22
13	4.50	---	3.73	4.04	3.81	3.63	3.29	3.94	3.78	3.78	3.19	3.26
14	4.58	---	3.57	4.05	3.84	3.72	3.39	3.99	3.83	3.78	3.22	3.28
15	4.56	3.87	3.68	4.09	3.85	3.72	---	4.04	3.85	3.76	3.06	3.29
16	4.49	3.87	3.88	4.06	3.88	3.57	3.44	4.04	3.66	3.77	3.11	3.35
17	4.55	3.79	4.09	4.05	3.86	3.50	3.50	4.07	3.52	3.81	3.20	---
18	4.62	3.73	4.30	4.10	3.85	3.55	3.58	4.07	3.52	3.82	3.29	---
19	4.63	3.75	4.23	4.09	3.69	3.66	3.61	4.02	3.41	3.83	3.35	3.05
20	4.65	3.83	3.92	4.07	3.67	3.31	3.62	4.03	3.38	3.86	3.39	3.08
21	4.25	3.83	3.92	4.11	3.65	3.13	3.60	4.02	3.37	3.87	3.41	3.08
22	4.07	3.89	3.92	4.16	3.50	3.27	3.58	3.93	3.46	3.87	3.45	3.06
23	4.07	4.03	3.98	4.16	3.46	3.38	3.68	3.75	3.54	3.90	3.46	2.92
24	4.15	4.06	3.89	4.21	3.58	3.47	3.71	3.76	3.60	3.93	3.51	2.91
25	4.21	4.07	3.73	4.19	3.65	3.52	3.67	3.82	3.64	3.97	3.53	2.94
26	4.24	4.09	3.86	4.13	3.67	3.55	3.60	3.78	3.68	3.98	3.53	2.99
27	4.33	4.12	3.87	4.22	3.50	3.63	3.68	3.83	3.71	3.97	3.55	3.01
28	4.26	4.15	3.90	4.19	3.33	3.65	3.71	3.86	3.79	3.96	3.58	3.04
29	3.98	4.11	3.94	4.13	---	3.64	3.71	3.87	3.83	3.96	3.61	3.15
30	3.74	4.10	3.99	4.09	---	3.63	3.75	3.89	3.81	3.86	3.63	3.19
31	3.82	---	3.97	3.93	---	3.68	---	3.89	---	3.88	3.56	---

WTR YR 2003 MEAN 3.78 HIGH 2.86 LOW 5.28



GROUND-WATER LEVELS
WAKE COUNTY—Continued

354359078403101. County number, WK-280; DENR Lake Wheeler Research Station MW-2S (Regolith well).

LOCATION.--Lat 35°43'59.7", long 78°40'31.4", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 40 ft, diameter 4 in., cased to 20 ft, screened interval from 20 to 40 ft, sand filter packed from 17 to 40 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 362 ft above NGVD of 1929. Measuring point: Top of 4-inch casing, 1.81 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

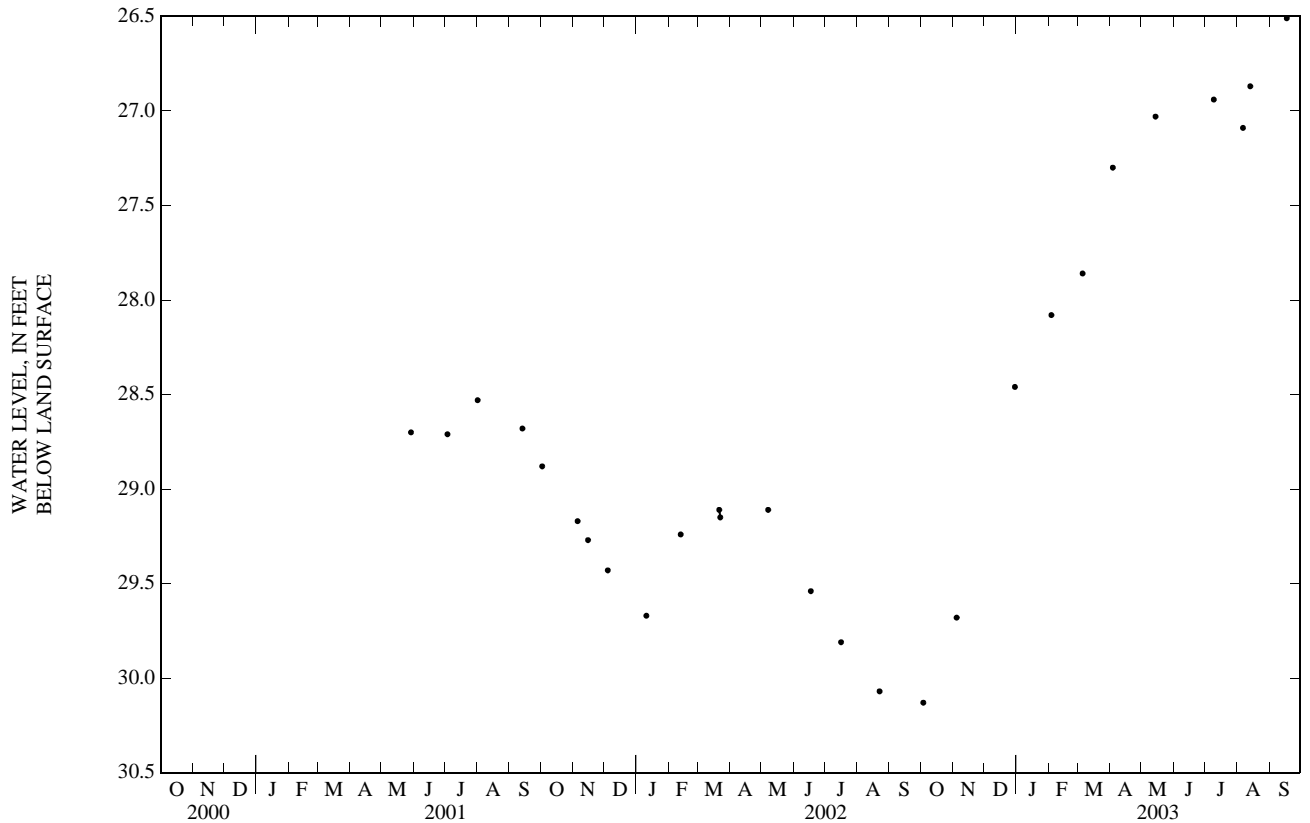
PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.51 ft below land-surface datum, Sept. 17, 2003; lowest water level measured 30.13 ft below land-surface datum, Oct. 3, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	30.13*	DEC 30	28.46*	MAR 05	27.86*	MAY 14	27.03	AUG 06	27.09	SEP 17	26.51*
NOV 04	29.68*	FEB 03	28.08*	APR 03	27.30*	JUL 09	26.94*	13	26.87*		

*DENR measurements.



WAKE COUNTY—Continued

354359078403102. County number, WK-281; DENR Lake Wheeler Research Station MW-2I (Intermediate well).

LOCATION.--Lat 35°43'59.9", long 78°40'31.5", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 50 ft, diameter 4 in., cased to 40 ft, screened interval from 40 to 50 ft, sand filter packed from 38 to 50 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 361.19 ft above NGVD of 1929. Measuring point: Top of 4-inch casing, 1.82 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

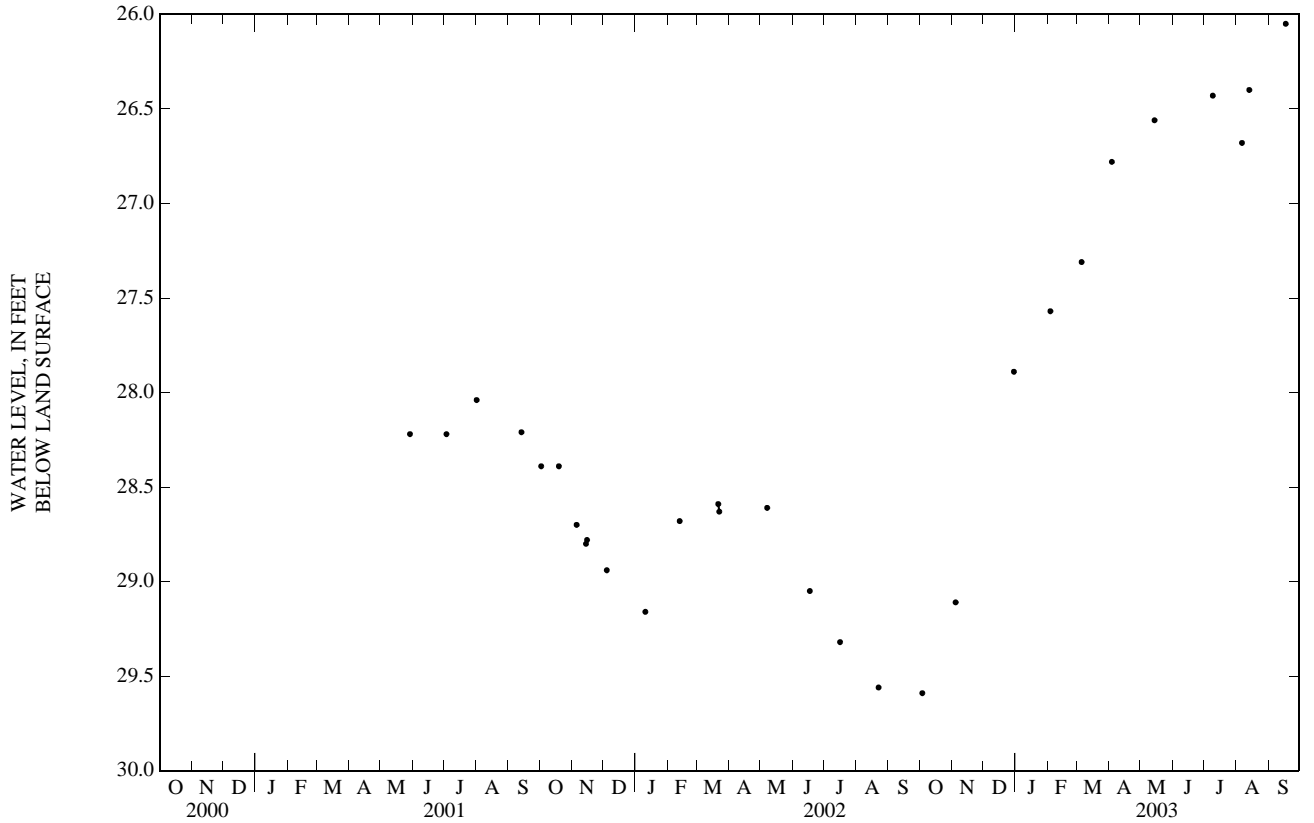
PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.05 ft below land-surface datum, Sept. 17, 2003; lowest water level measured 29.59 ft below land-surface datum, Oct. 3, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	29.59*	DEC 30	27.89*	MAR 05	27.31*	MAY 14	26.56	AUG 06	26.68	SEP 17	26.05*
NOV 04	29.11*	FEB 03	27.57*	APR 03	26.78*	JUL 09	26.43*	13	26.40*		

*DENR measurements.



GROUND-WATER LEVELS

WAKE COUNTY—Continued

354359078403103. County number, WK-282; DENR Lake Wheeler Research Station MW-2T (Transition zone well).

LOCATION.--Lat 35°43'59.0", long 78°40'31.5", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 80 ft, diameter 6 in., cased to 50 ft, open hole from 50 to 80 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 360.44 ft above NGVD of 1929. Measuring point: Top of 4-inch casing, 1.88 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

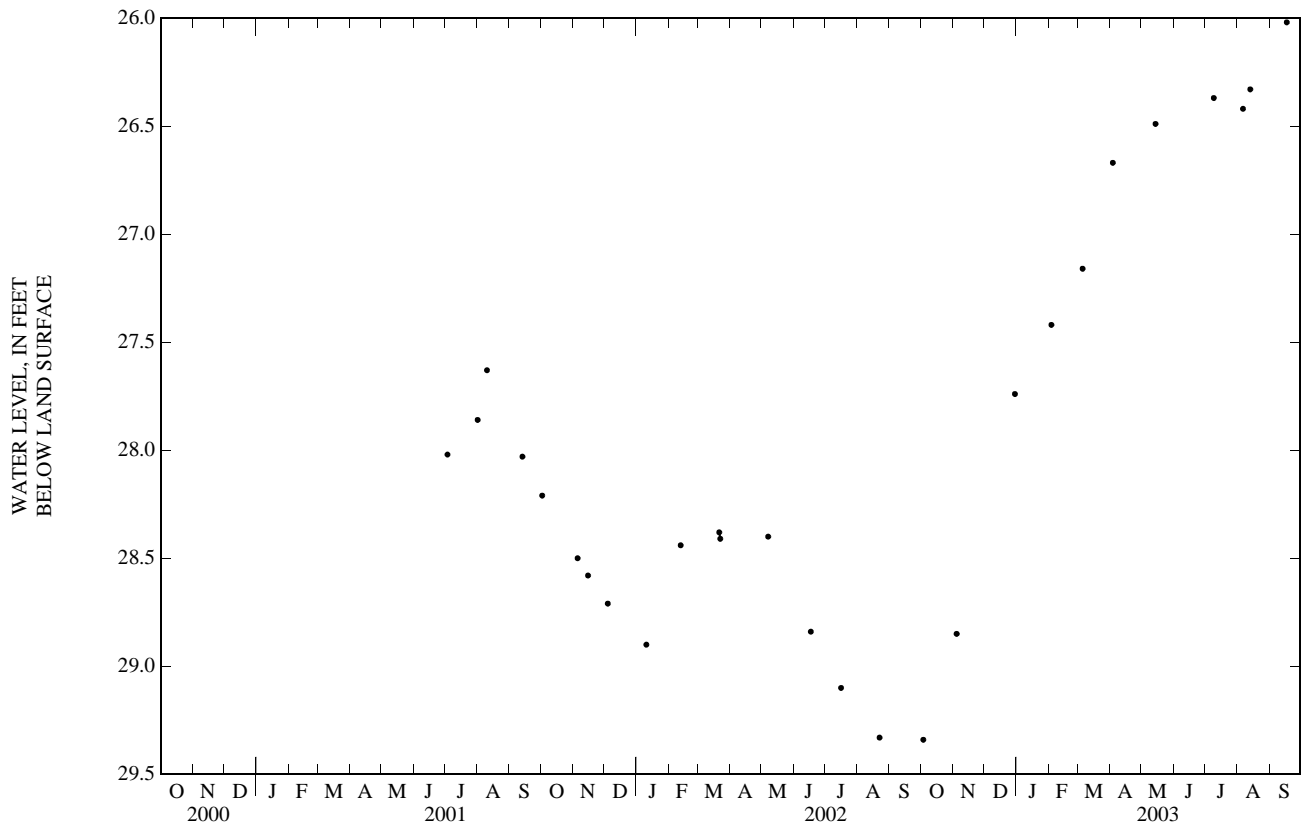
PERIOD OF RECORD.--July 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.02 ft below land-surface datum, Sept. 17, 2003; lowest water level measured 29.34 ft below land-surface datum, Oct. 3, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	29.34*	DEC 30	27.74*	MAR 05	27.16*	MAY 14	26.49	AUG 06	26.42	SEP 17	26.02*
NOV 04	28.85*	FEB 03	27.42*	APR 03	26.67*	JUL 09	26.37*	13	26.33*		

*DENR measurements.



WAKE COUNTY—Continued

354359078403104. County number, WK-283; DENR Lake Wheeler Research Station MW-2D (Bedrock well).

LOCATION.--Lat 35°43'59.0", long 78°40'31.6", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Raleigh Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 601 ft, diameter 6 in., cased to 80 ft, open hole from 80 to 447 ft, hole collapsed from 447 to 601 ft.

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

DATUM.--Land-surface datum is 359.77 ft above NGVD of 1929. Measuring point: Top of casing, 1.90 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

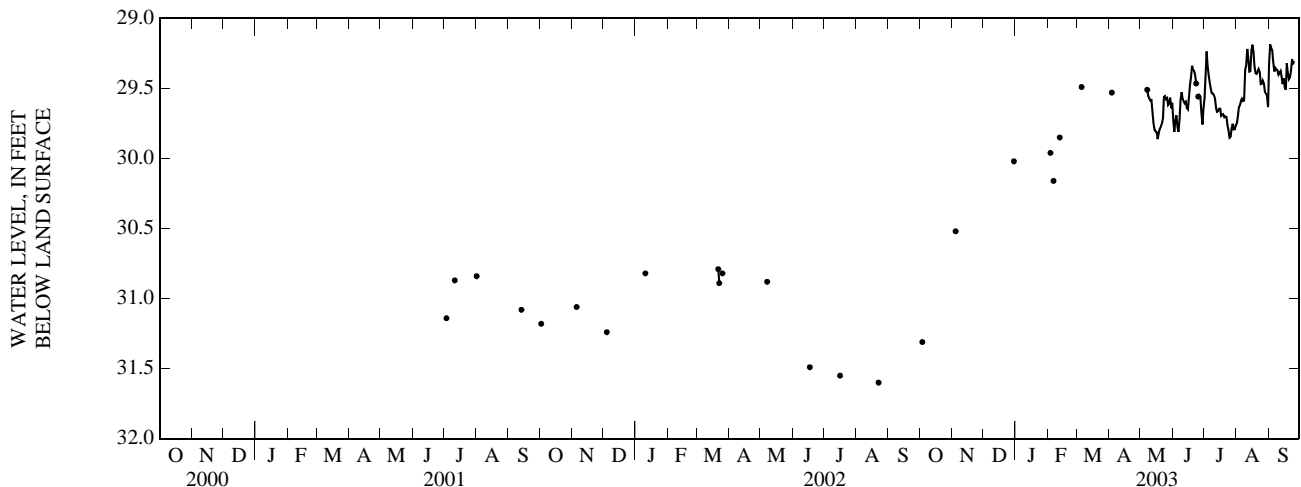
PERIOD OF RECORD.--July 2001 to current year. Continuous record began May 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 29.02 ft below land-surface datum, Sept. 18, 2003; lowest water level measured 31.60 ft below land-surface datum, Aug. 22, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	29.73	29.57	29.75	29.33
2	---	---	---	---	---	---	---	---	29.81	29.44	29.70	29.19
3	---	---	---	---	---	---	---	---	29.73	29.24	29.63	29.21
4	---	---	---	---	---	---	---	---	29.69	29.34	29.62	29.23
5	---	---	---	---	---	---	---	---	29.78	29.41	29.59	29.31
6	---	---	---	---	---	---	---	---	29.81	29.45	29.57	29.38
7	---	---	---	---	---	---	---	---	29.72	29.50	29.59	29.35
8	---	---	---	---	---	---	---	29.55	29.58	29.53	29.59	29.37
9	---	---	---	---	---	---	---	29.57	29.53	29.54	29.36	29.37
10	---	---	---	---	---	---	---	29.59	29.58	29.55	29.34	29.40
11	---	---	---	---	---	---	---	29.58	29.59	29.57	29.22	29.39
12	---	---	---	---	---	---	---	29.67	29.61	29.64	29.28	29.37
13	---	---	---	---	---	---	---	29.75	29.60	29.67	29.38	29.42
14	---	---	---	---	---	---	---	29.80	29.64	29.66	29.38	29.47
15	---	---	---	---	---	---	---	29.80	29.65	29.65	29.23	29.43
16	---	---	---	---	---	---	---	29.81	29.57	29.64	29.19	29.49
17	---	---	---	---	---	---	---	29.86	29.48	29.70	29.24	29.51
18	---	---	---	---	---	---	---	29.82	29.42	29.69	29.34	29.32
19	---	---	---	---	---	---	---	29.79	29.34	29.68	29.39	29.40
20	---	---	---	---	---	---	---	29.77	29.37	29.71	29.40	29.43
21	---	---	---	---	---	---	---	29.75	29.37	29.70	29.38	29.42
22	---	---	---	---	---	---	---	29.71	29.40	29.70	29.36	29.38
23	---	---	---	---	---	---	---	29.56	29.46	29.76	29.38	29.29
24	---	---	---	---	---	---	---	29.55	---	29.80	29.47	29.33
25	---	---	---	---	---	---	---	29.58	29.56	29.85	29.47	29.31
26	---	---	---	---	---	---	---	29.57	29.55	29.84	29.44	---
27	---	---	---	---	---	---	---	29.62	29.56	29.79	29.46	---
28	---	---	---	---	---	---	---	29.61	29.67	29.75	29.52	---
29	---	---	---	---	---	---	---	29.57	29.76	29.79	29.54	---
30	---	---	---	---	---	---	---	29.64	29.65	29.79	29.55	---
31	---	---	---	---	---	---	---	29.60	---	29.76	29.63	---

WTR YR 2003 MEAN 29.54 HIGH 29.19 LOW 29.86



GROUND-WATER LEVELS

WAKE COUNTY—Continued

354404078403101. County number, WK-284; DENR Lake Wheeler Research Station MW-3S (Regolith well).

LOCATION.--Lat 35°44'04.3", long 78°40'30.7", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 35 ft, diameter 4 in., cased to 20 ft, screened interval from 20 to 35 ft, sand filter packed from 17 to 35 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 375.02 ft above NGVD of 1929. Measuring point: Top of 4-inch casing, 1.91 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

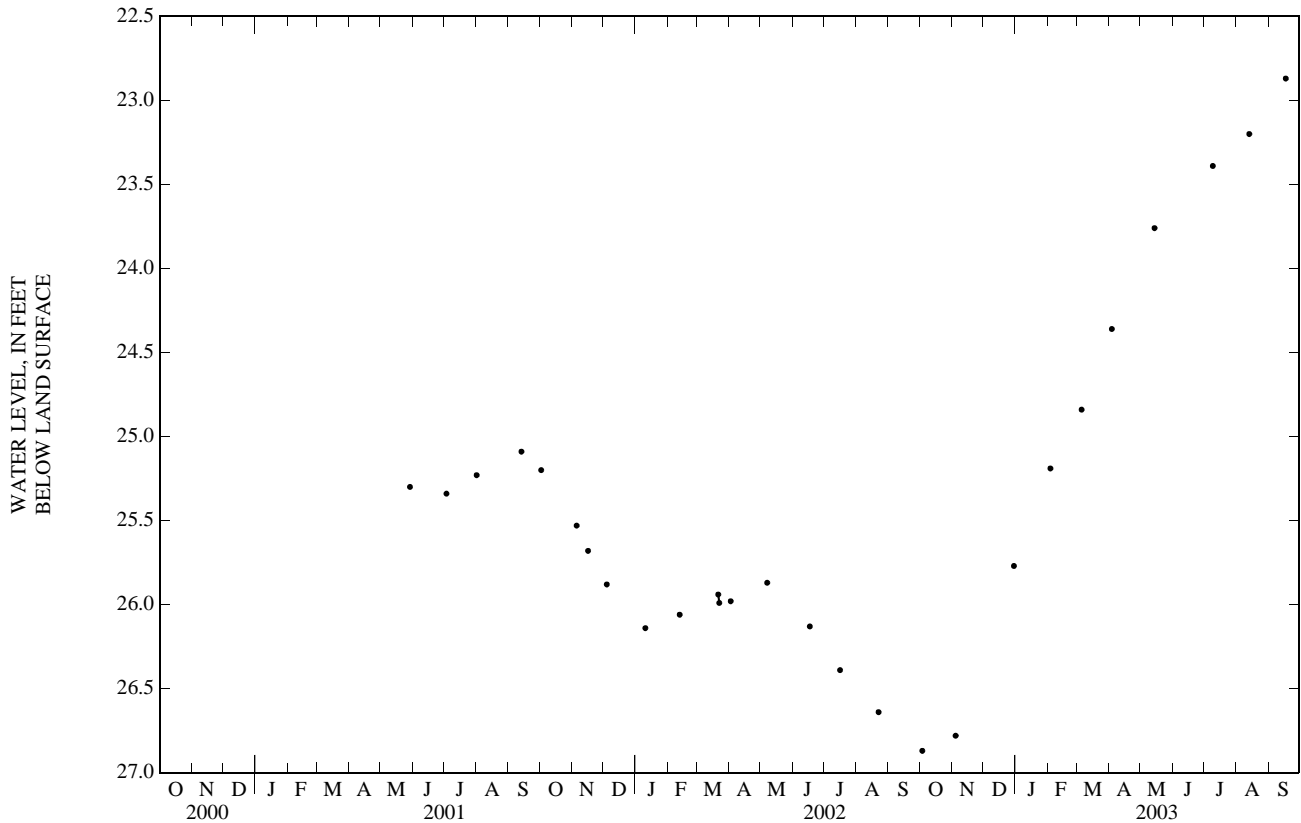
PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.87 ft below land-surface datum, Sept. 17, 2003; lowest water level recorded 26.87 ft below land-surface datum, Oct. 3, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	26.87*	DEC 30	25.77*	MAR 05	24.84*	MAY 14	23.76*	AUG 13	23.20*
NOV 04	26.78*	FEB 03	25.19*	APR 03	24.36*	JUL 09	23.39*	SEP 17	22.87*

*DENR measurements.



WAKE COUNTY—Continued

354404078403102. County number, WK-285; DENR Lake Wheeler Research Station MW-3I (Transition zone well).

LOCATION.--Lat 35°44'04.5", long 78°40'30.7", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Transition zone (Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 60 ft, diameter 4 in., cased to 45 ft, screened interval from 45 to 60 ft, sand filter packed from 33 to 60 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 375.57 ft above NGVD of 1929. Measuring point: Top of 4-inch casing, 1.91 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

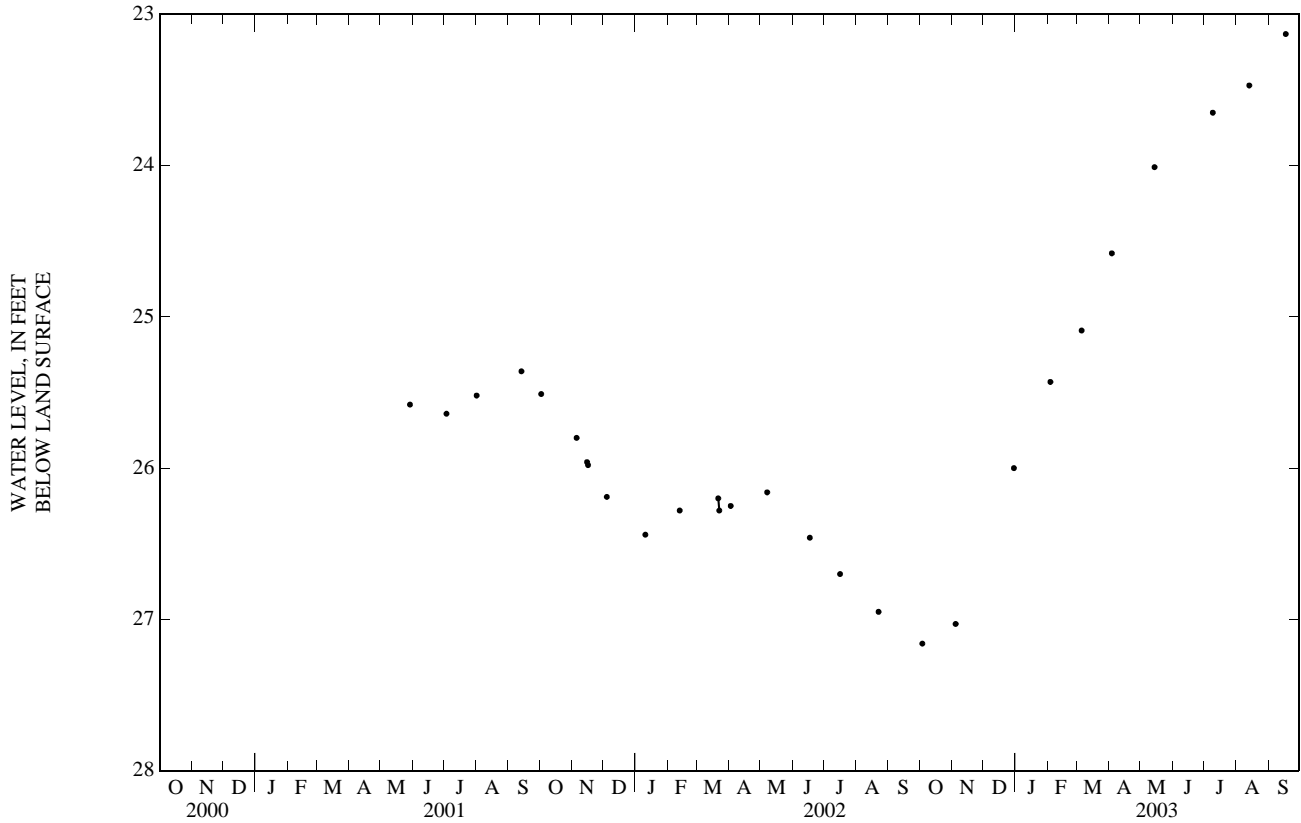
PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.13 ft below land-surface datum, Sept. 17, 2003; lowest water level measured 27.16 ft below land-surface datum, Oct. 3, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	27.16*	DEC 30	26.00*	MAR 05	25.09*	MAY 14	24.01	AUG 13	23.47*
NOV 04	27.03*	FEB 03	25.43*	APR 03	24.58*	JUL 09	23.65*	SEP 17	23.13*

*DENR measurements.



GROUND-WATER LEVELS

WAKE COUNTY—Continued

354404078403103. County number, WK-286; DENR Lake Wheeler Research Station MW-3D (Bedrock well).

LOCATION.--Lat 35°44'04.7", long 78°40'30.7", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Raleigh Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 301 ft, diameter 6 in., cased to 66 ft, open hole from 66 to 301 ft.

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

DATUM.--Land-surface datum is 376.35 ft above NGVD of 1929. Measuring point: Top of 6-inch casing, 1.73 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

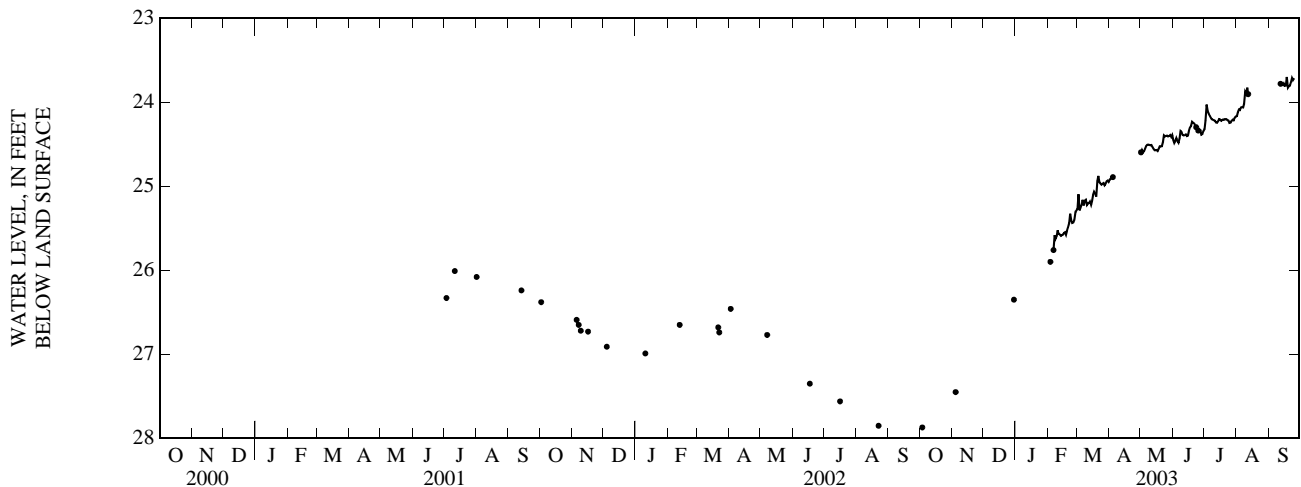
PERIOD OF RECORD.--July 2001 to current year. Continuous record began February 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 23.55 ft below land-surface datum, Sept. 18, 2003; lowest water level measured 27.87 ft below land-surface datum, Oct. 3, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	25.27	24.92	24.60	24.45	24.32	24.17	---
2	---	---	---	---	---	25.10	24.91	24.57	24.49	24.22	24.12	---
3	---	---	---	---	---	25.29	24.90	24.60	24.46	24.03	24.09	---
4	---	---	---	---	---	25.26	24.89	24.59	24.43	24.10	24.09	---
5	---	---	---	---	---	25.22	---	24.55	24.47	24.13	24.06	---
6	---	---	---	---	---	25.16	---	24.52	24.48	24.16	24.06	---
7	---	---	---	---	25.58	25.23	---	24.51	24.43	24.18	24.06	---
8	---	---	---	---	25.62	25.17	---	24.50	24.34	24.20	24.02	---
9	---	---	---	---	25.59	25.16	---	24.51	24.36	24.21	23.88	---
10	---	---	---	---	25.53	25.22	---	24.51	24.39	24.22	23.90	---
11	---	---	---	---	25.57	25.21	---	24.51	24.40	24.22	23.83	---
12	---	---	---	---	25.57	25.20	---	24.54	24.39	24.24	23.91	23.78
13	---	---	---	---	25.59	25.18	---	24.56	24.38	24.25	---	23.79
14	---	---	---	---	25.58	25.22	---	24.57	24.40	24.23	---	23.80
15	---	---	---	---	25.58	25.18	---	24.57	24.40	24.20	---	23.78
16	---	---	---	---	25.56	25.10	---	24.57	24.35	24.21	---	23.80
17	---	---	---	---	25.55	25.07	---	24.58	24.30	24.22	---	23.80
18	---	---	---	---	25.58	25.09	---	24.55	24.29	24.21	---	23.70
19	---	---	---	---	25.53	25.13	---	24.53	24.23	24.21	---	23.83
20	---	---	---	---	25.49	24.94	---	24.53	24.25	24.21	---	23.81
21	---	---	---	---	25.44	24.88	---	24.52	24.25	24.20	---	23.80
22	---	---	---	---	25.33	24.95	---	24.48	24.27	24.20	---	23.77
23	---	---	---	---	25.41	24.97	---	24.40	24.30	24.21	---	23.71
24	---	---	---	---	25.44	24.98	---	24.41	---	24.22	---	23.74
25	---	---	---	---	25.43	24.97	---	24.40	24.34	24.25	---	23.72
26	---	---	---	---	25.40	24.96	---	24.40	24.34	24.24	---	---
27	---	---	---	---	25.31	24.99	---	24.41	24.34	24.22	---	---
28	---	---	---	---	25.29	24.97	---	24.40	24.39	24.21	---	---
29	---	---	---	---	---	24.94	---	24.39	24.38	24.22	---	---
30	---	---	---	---	---	24.93	---	24.42	24.34	24.19	---	---
31	---	---	---	---	---	24.95	---	24.39	---	24.17	---	---

WTR YR 2003 MEAN 24.57 HIGH 23.70 LOW 25.62



WAKE COUNTY—Continued

354401078403401. County number, WK-287; DENR Lake Wheeler Research Station PW-1.

LOCATION.--Lat 35°44'00.9", long 78°40'33.7", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Raleigh Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, depth 302 ft, diameter 6 in., cased to 62.5 ft, open hole from 62.5 to 302 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 358.07 ft above NGVD of 1929. Measuring point: Top of 6-inch casing, 0.89 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

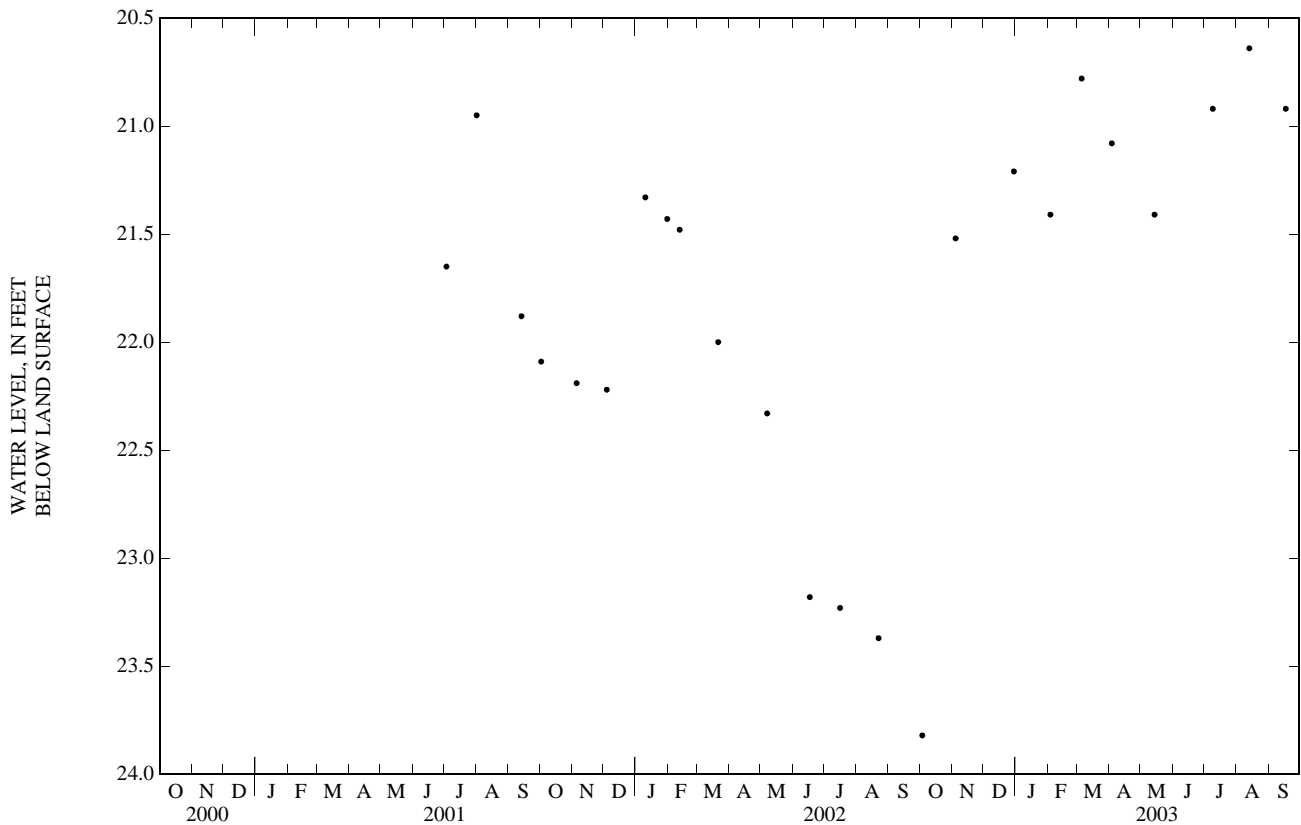
PERIOD OF RECORD.--July 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.64 ft below land-surface datum, Aug. 13, 2003; lowest water level measured 23.82 ft below land-surface datum, Oct. 3, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	23.82*	DEC 30	21.21*	MAR 05	20.78*	MAY 14	21.41	AUG 13	20.64*
NOV 04	21.52*	FEB 03	21.41*	APR 03	21.08*	JUL 09*	20.92	SEP 17	20.92*

*DENR measurements.



GROUND-WATER LEVELS
WAKE COUNTY—Continued

354400078403401. County number, WK-288; DENR Lake Wheeler Research Station PZ-1.

LOCATION.--Lat 35°44'00.3", long 78°40'34.0", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 50 ft, diameter 2 in., cased to 30 ft, screened interval from 30 to 50 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 354.87 ft above NGVD of 1929. Measuring point: Top of 2-inch casing, 1.97 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

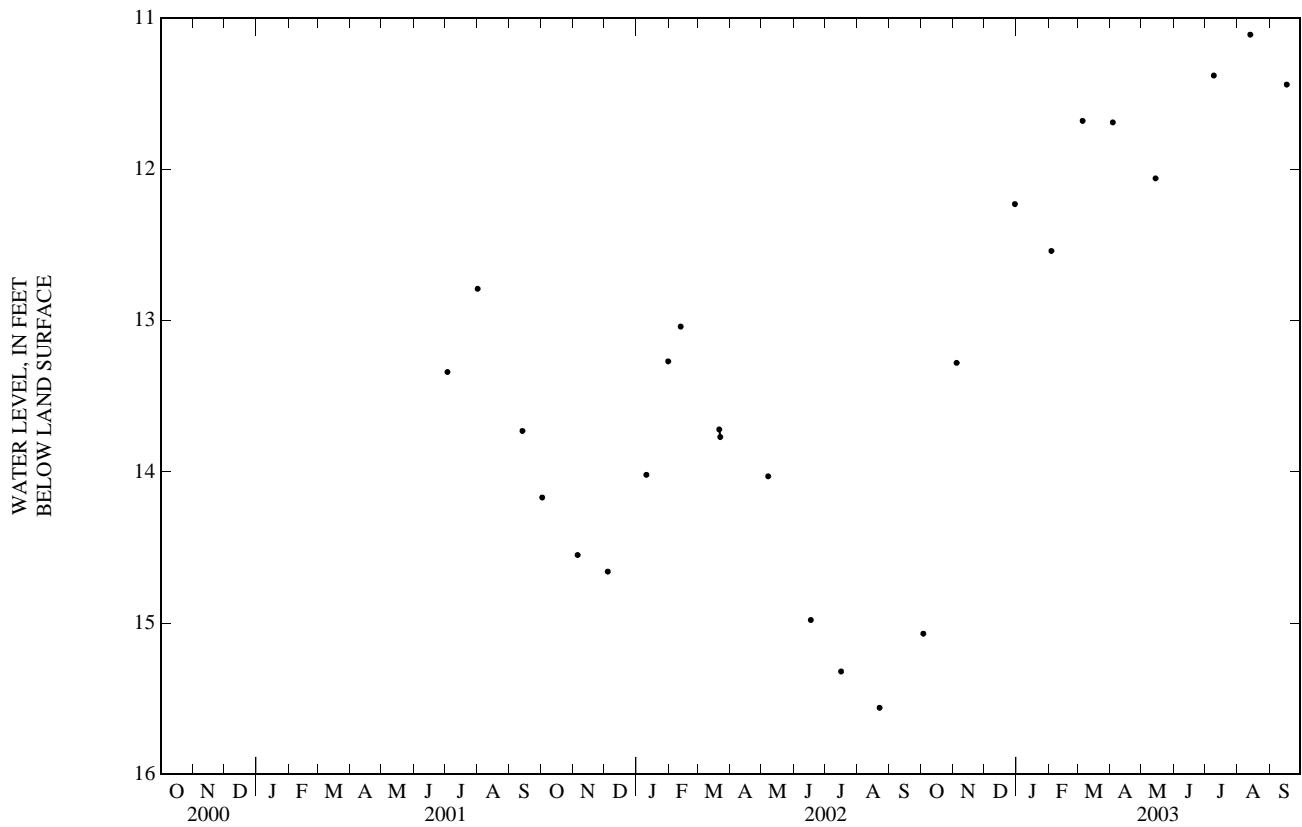
PERIOD OF RECORD.--July 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.11 ft below land-surface datum, Aug. 13, 2003; lowest water level measured 15.56 ft below land-surface datum, Aug. 22, 2002.

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

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	15.07*	DEC 30	12.23*	MAR 05	11.68*	MAY 14	12.06	AUG 13	11.11*
NOV 04	13.28*	FEB 03	12.54*	APR 03	11.69*	JUL 09	11.38*	SEP 17	11.44*

*DENR measurements.



WAKE COUNTY—Continued

354402078403401. County number, WK-289; DENR Lake Wheeler Research Station PZ-2.

LOCATION.--Lat 35°44'01.8", long 78°40'34.0", Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

AQUIFER.--Regolith (saprolitic Raleigh Gneiss).

WELL CHARACTERISTICS.--Drilled observation well, depth 37 ft, diameter 2 in., cased to 17 ft, screened interval from 17 to 37 ft.

INSTRUMENTATION.--Measured periodically with electric tape (by DENR and USGS).

DATUM.--Land-surface datum is 359.09 ft above NGVD of 1929. Measuring point: Top of 2-inch casing, 1.75 ft above land-surface datum.

REMARKS.--Well is part of Piedmont/Mountains groundwater project.

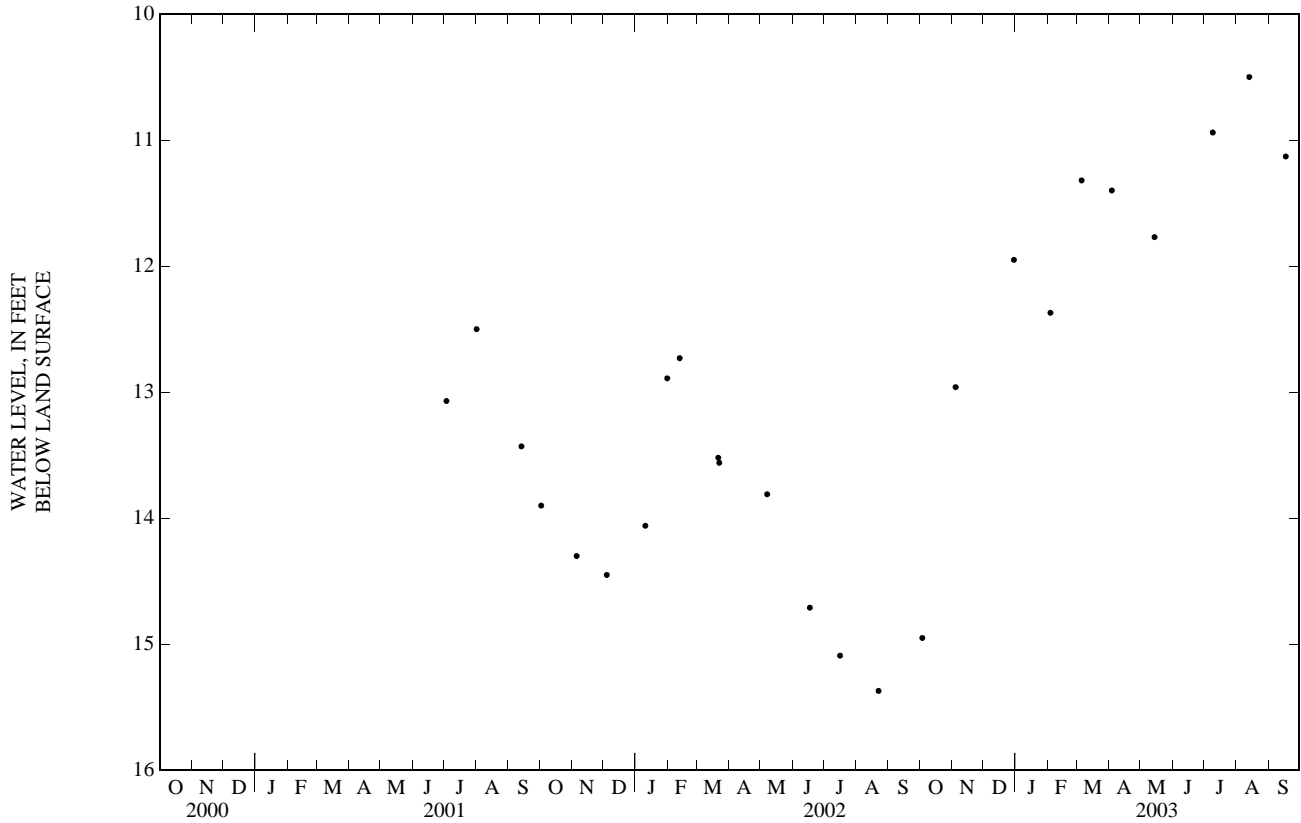
PERIOD OF RECORD.--July 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.50 ft below land-surface datum, Aug. 13, 2003; lowest water level measured 15.37 ft below land-surface datum, Aug. 22, 2002.

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

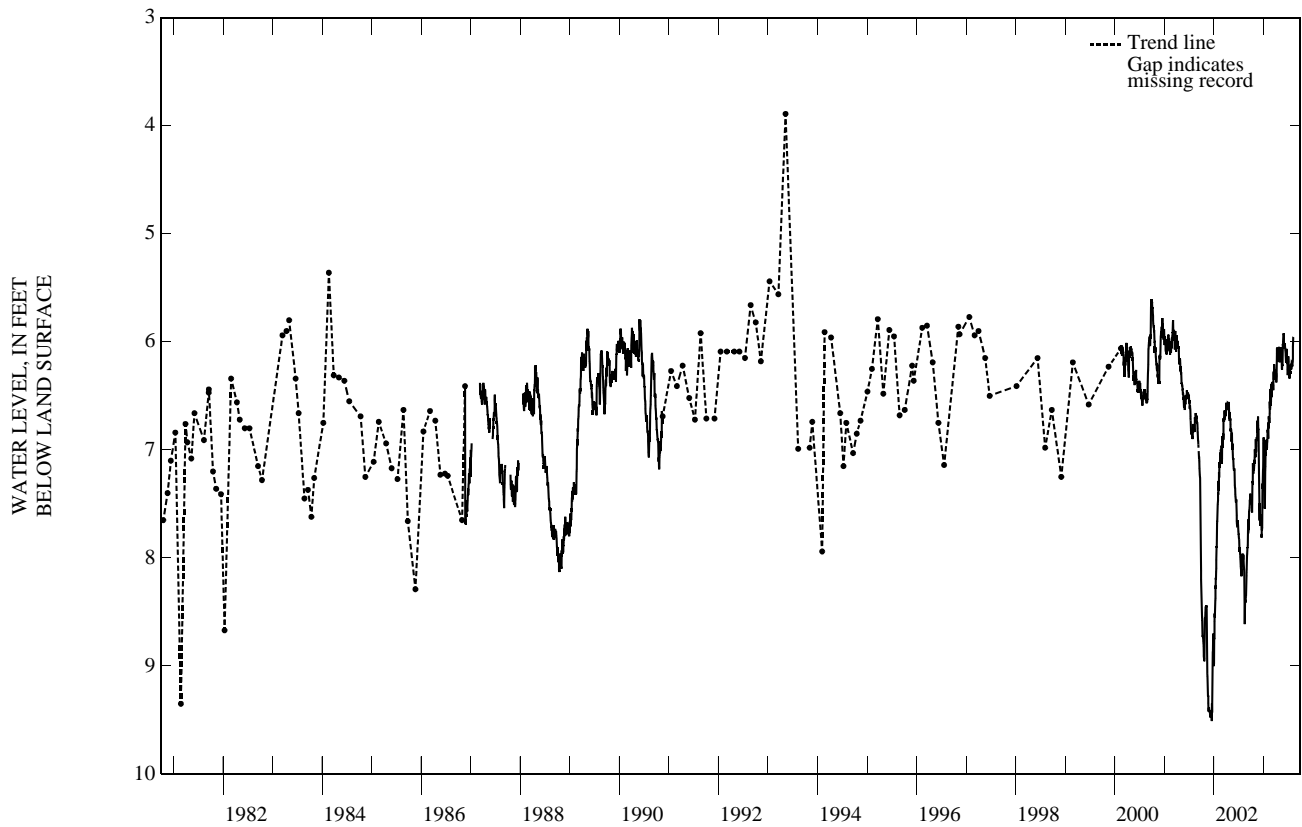
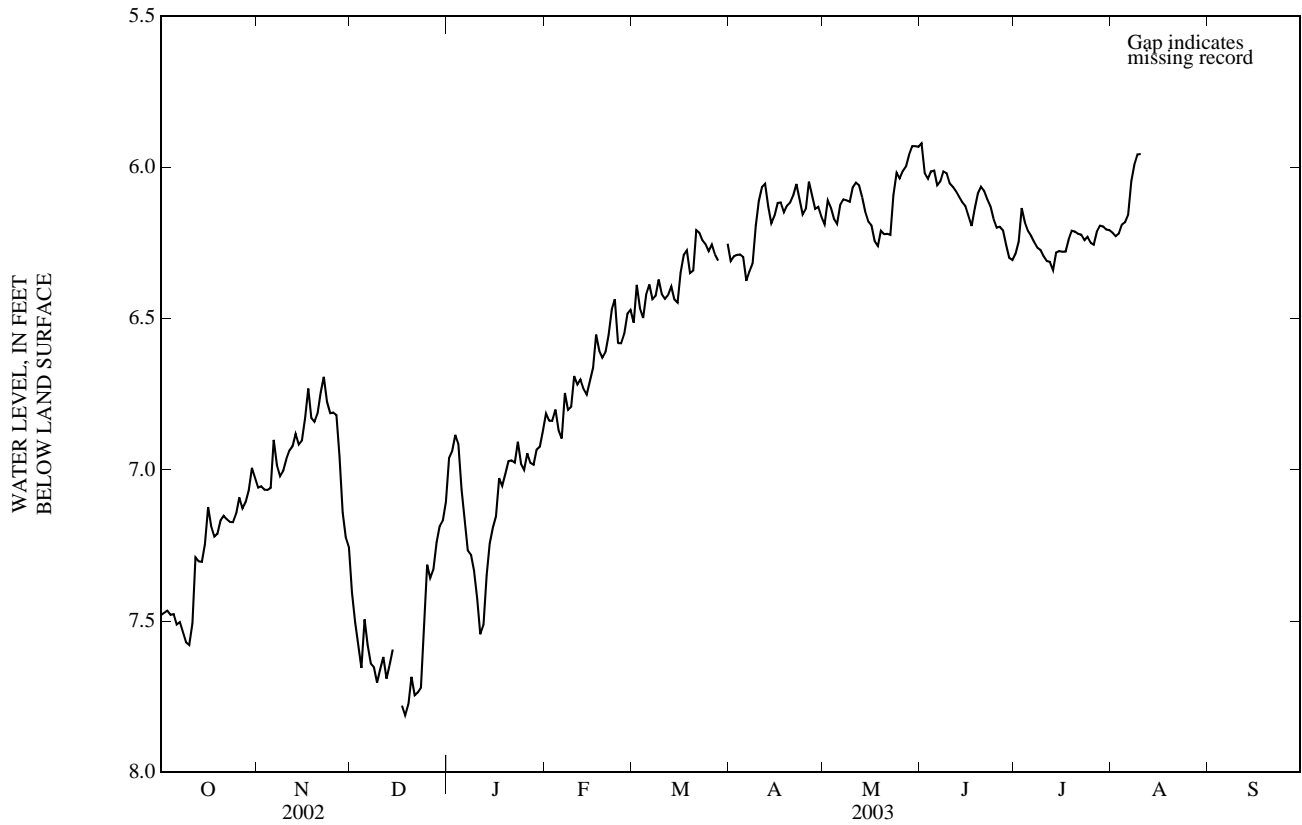
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	14.95*	DEC 30	11.95*	MAR 05	11.32*	MAY 14	11.77	AUG 13	10.50*
NOV 04	12.96*	FEB 03	12.37*	APR 03	11.40*	JUL 09	10.94*	SEP 17	11.13*

*DENR measurements.



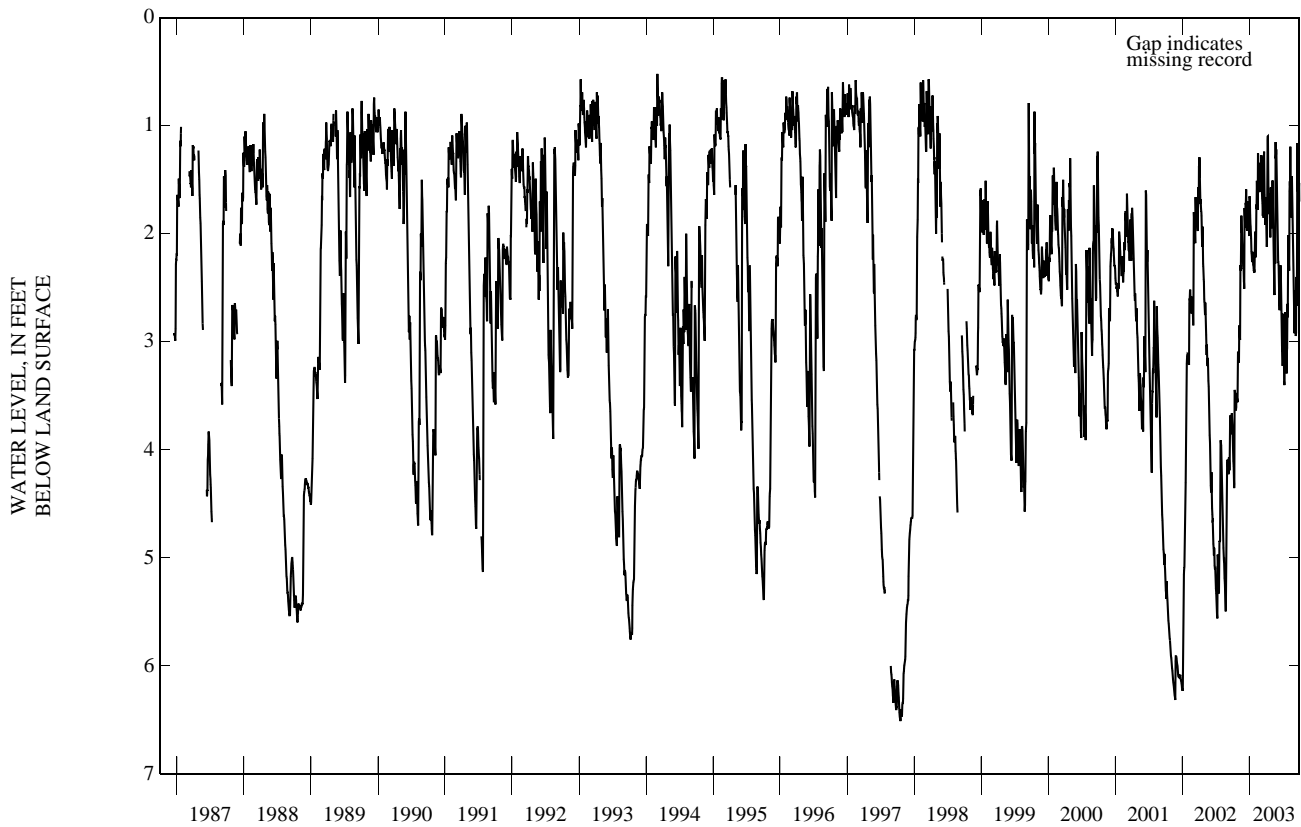
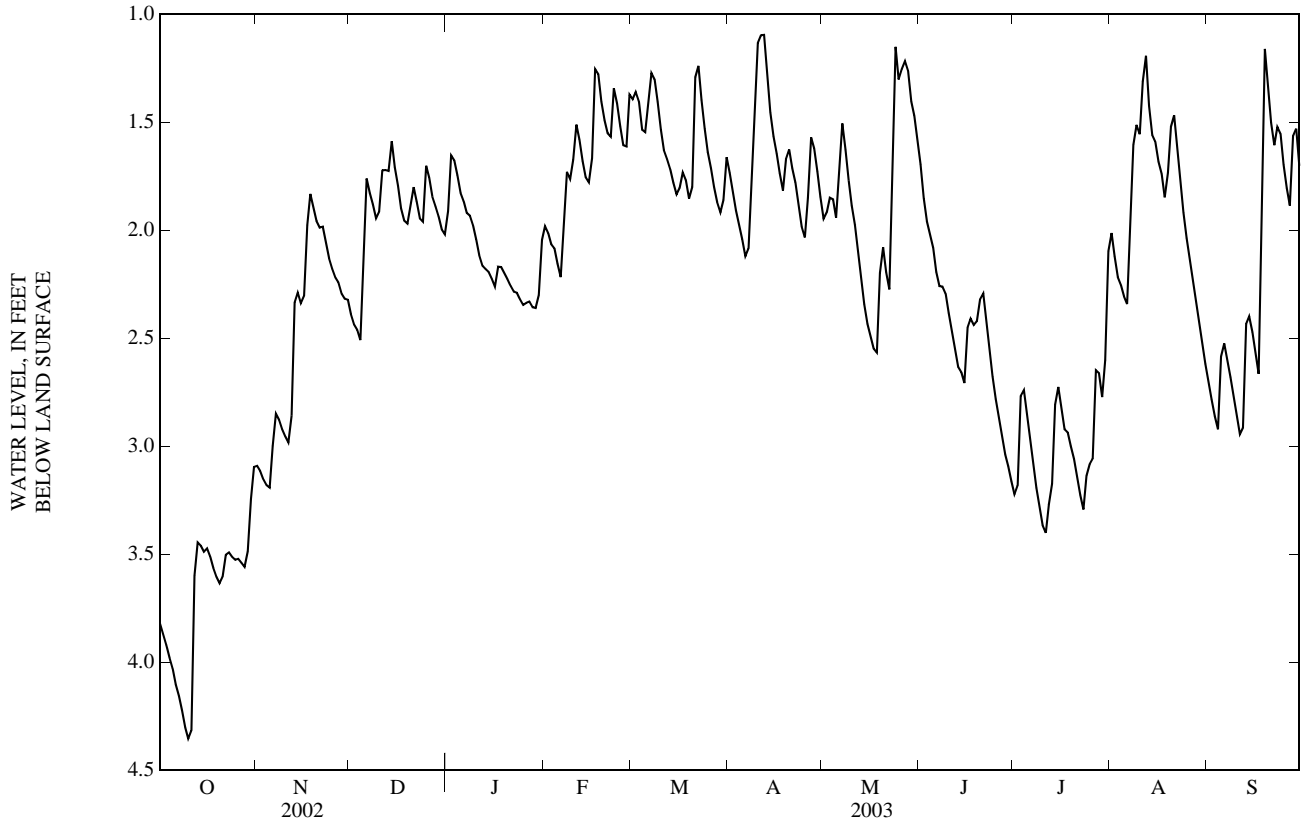
WASHINGTON COUNTY—Continued

354351076260502. Local number, NC-157; DENR Lake Phelps Research Station well L13i2; County number, WS-099.



WASHINGTON COUNTY—Continued

354418076463601. Local number, NC-158; County number, WS-100.



GROUND-WATER LEVELS

WAYNE COUNTY

351849078163901. Local number, NC-148; County number, WA-154.

LOCATION.--Lat 35°18'35.4", long 78°16'21.7", Hydrologic Unit 03020201, 0.5 mi south of Johnston county line on Secondary Road 1009, and 6 mi west of Grantham. Owner: U.S. Geological Survey.

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Bored observation well, augered to 10.4 ft, diameter 3 in., cased to 5.4 ft, screened interval from 5.4 to 10.4 ft.

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

DATUM.--Land-surface datum is 190 ft above NGVD of 1929 (from topographic map). Measuring point: File cut on top of casing, 1.80 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--February 1980 to current year. Records for June 17 to Sept. 30, 1987, published in Water Resources Data, North Carolina, NC-87-1, are unreliable and should not be used.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.04 ft above land-surface datum, May 2, 1989; lowest water level recorded, 8.65 ft below land-surface datum, Sept. 24, 25, 1997.

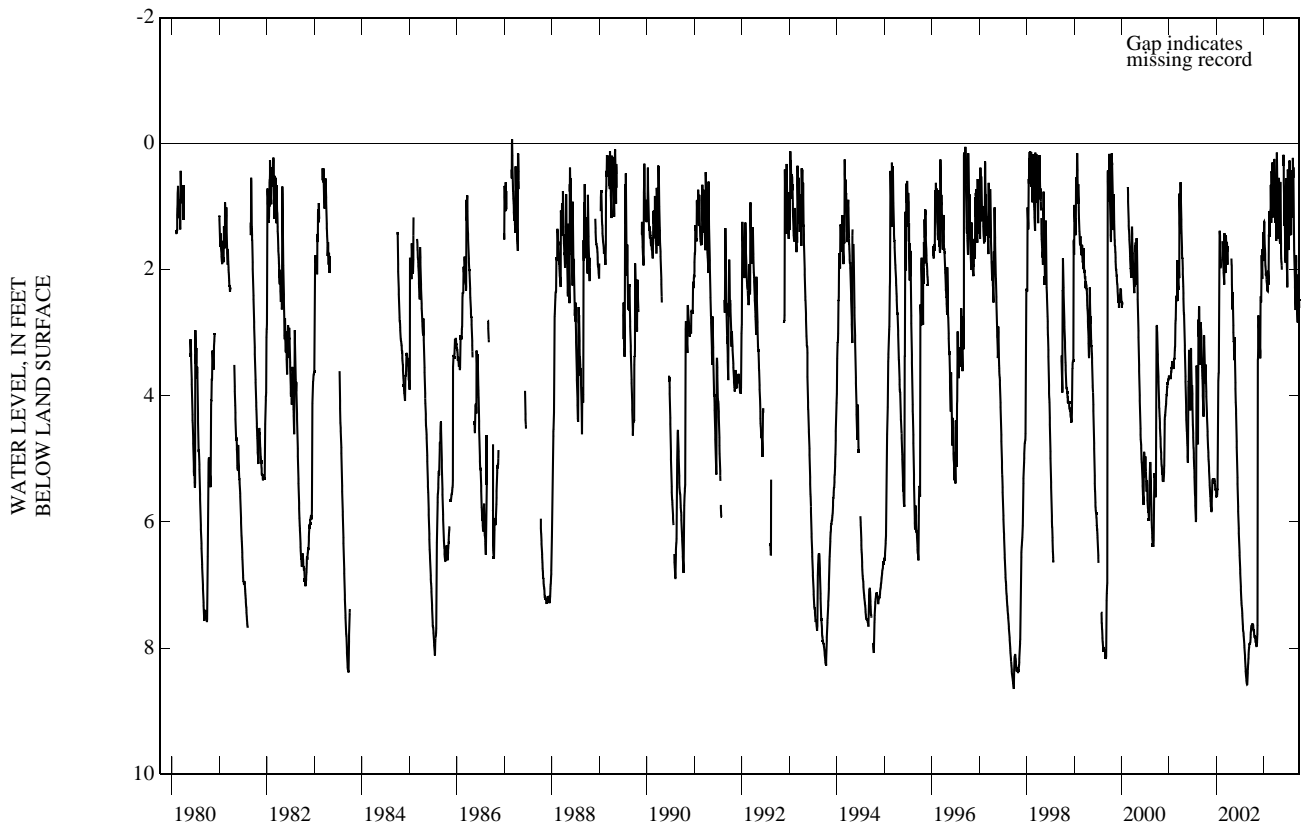
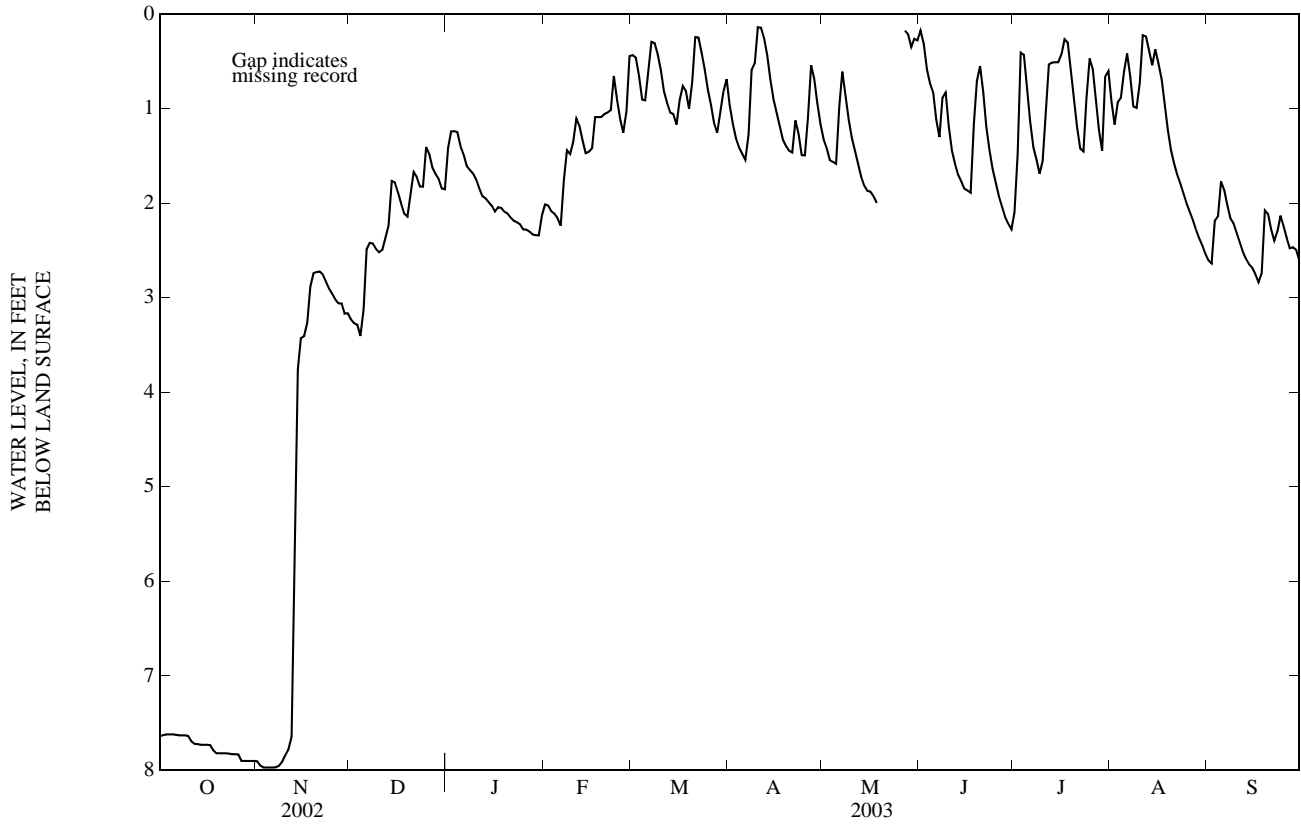
DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.64	7.90	3.23	1.42	2.01	0.44	0.96	1.32	0.18	2.10	0.94	2.61
2	7.63	7.95	3.27	1.24	2.03	0.46	1.16	1.42	0.31	1.48	1.17	2.64
3	7.62	7.97	3.29	1.24	2.09	0.65	1.31	1.54	0.59	0.41	0.93	2.19
4	7.62	7.97	3.41	1.25	2.11	0.90	1.41	1.56	0.73	0.43	0.89	2.14
5	7.62	7.97	3.13	1.40	2.16	0.91	1.48	1.58	0.83	0.76	0.61	1.77
6	7.62	7.97	2.49	1.49	2.24	0.58	1.54	0.98	1.12	1.14	0.42	1.86
7	7.63	7.97	2.42	1.61	1.75	0.30	1.28	0.61	1.30	1.41	0.67	2.02
8	7.63	7.95	2.43	1.65	1.44	0.31	0.59	0.85	0.88	1.54	0.98	2.16
9	7.63	7.91	2.49	1.69	1.48	0.42	0.52	1.12	0.83	1.69	0.99	2.21
10	7.64	7.84	2.52	1.75	1.35	0.59	0.14	1.30	1.18	1.56	0.73	2.32
11	7.70	7.78	2.49	1.84	1.11	0.82	0.14	1.45	1.44	0.97	0.23	2.42
12	7.72	7.64	2.36	1.93	1.18	0.94	0.25	1.59	1.59	0.53	0.24	2.52
13	7.72	5.63	2.24	1.95	1.34	1.04	0.44	1.72	1.70	0.51	0.39	2.59
14	7.73	3.76	1.77	1.99	1.47	1.06	0.69	1.82	1.77	0.51	0.54	2.65
15	7.73	3.43	1.78	2.03	1.46	1.17	0.90	1.87	1.85	0.51	0.37	2.69
16	7.73	3.41	1.89	2.09	1.42	0.91	1.04	1.88	1.87	0.42	0.52	2.75
17	7.73	3.26	2.00	2.04	1.09	0.76	1.18	1.93	1.89	0.27	0.69	2.84
18	7.79	2.88	2.11	2.05	1.09	0.81	1.33	2.00	1.17	0.30	0.97	2.74
19	7.82	2.74	2.14	2.09	1.09	1.00	1.40	---	0.71	0.59	1.23	2.08
20	7.82	2.73	1.92	2.11	1.06	0.72	1.45	---	0.55	0.90	1.44	2.12
21	7.82	2.72	1.67	2.15	1.04	0.24	1.47	---	0.83	1.19	1.58	2.28
22	7.82	2.75	1.72	2.19	1.02	0.25	1.13	---	1.19	1.42	1.70	2.40
23	7.82	2.83	1.82	2.20	0.65	0.41	1.27	---	1.44	1.45	1.79	2.30
24	7.83	2.91	1.83	2.22	0.91	0.59	1.49	---	1.63	0.89	1.90	2.13
25	7.83	2.96	1.41	2.28	1.12	0.79	1.49	---	1.78	0.47	2.00	2.24
26	7.83	3.02	1.48	2.28	1.25	0.96	1.10	---	1.92	0.58	2.09	2.37
27	7.90	3.06	1.62	2.30	1.03	1.15	0.54	0.18	2.04	0.91	2.18	2.48
28	7.90	3.06	1.69	2.33	0.44	1.26	0.68	0.21	2.15	1.23	2.28	2.47
29	7.90	3.17	1.74	2.34	---	1.02	0.95	0.35	2.22	1.45	2.37	2.49
30	7.90	3.17	1.85	2.34	---	0.82	1.16	0.26	2.28	0.66	2.45	2.61
31	7.90	---	1.85	2.13	---	0.69	---	0.28	---	0.60	2.53	---

WTR YR 2003 MEAN 2.29 HIGH 0.14 LOW 7.97

WAYNE COUNTY—Continued

351849078163901. Local number, NC-148; County number, WA-154.



GROUND-WATER LEVELS

YADKIN COUNTY

361307080293101. Local number NC-221; DENR East Bend Research Station well F61f3; County number, YD-200.

LOCATION.--Lat 36°13'07.89", long 80°29'31.54", Hydrologic Unit 03040101, near East Bend. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Mafic Gneiss.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 400 ft, diameter 6 in., cased to 54 ft.

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

DATUM.--Land-surface datum is 1,009.00 ft above NGVD of 1929 (levels by DENR). Measuring point: Top of instrument shelf, 0.56 ft above land-surface datum.

REMARKS.--Well is part of terrane-effects network.

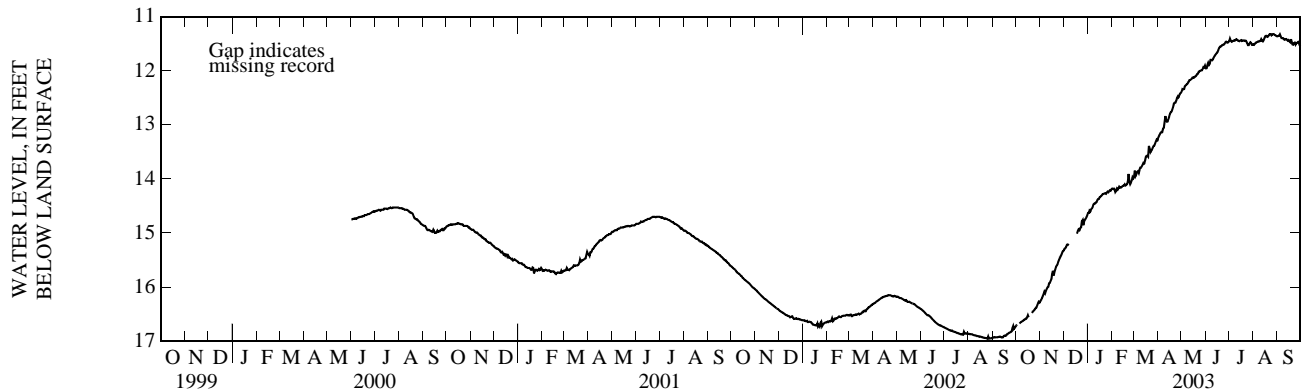
PERIOD OF RECORD.--June 2000 to current year. Records from June 1972 to May 2000 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.30 ft below land-surface datum, Aug. 22, 23, 25, 26, 27, Sept. 4; lowest water level recorded, 16.97 ft below land-surface datum, Aug. 25, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.72	16.26	15.32	14.63	14.18	13.96	13.23	12.38	11.95	11.45	11.51	11.36
2	16.70	16.23	15.29	14.63	14.19	13.85	13.21	12.34	11.95	11.40	11.52	11.36
3	---	16.21	15.28	14.59	14.18	13.95	13.18	12.34	11.89	11.44	11.50	11.35
4	---	16.17	15.26	14.60	14.20	13.91	13.15	12.34	11.85	11.46	11.48	11.32
5	16.68	16.13	15.22	14.56	14.24	13.87	13.13	12.29	11.89	11.45	11.47	11.36
6	16.66	16.09	15.22	14.55	14.22	13.86	13.14	12.27	11.87	11.44	11.47	11.40
7	16.65	16.12	15.20	14.52	14.18	13.89	13.07	12.26	11.80	11.44	11.46	11.39
8	16.64	16.07	---	14.47	14.20	13.83	13.06	12.25	11.80	11.44	11.46	11.40
9	16.63	16.04	---	14.46	14.17	13.79	12.95	12.22	11.81	11.43	11.46	11.42
10	16.63	16.01	---	14.45	14.14	13.79	12.84	12.20	11.79	11.42	11.45	11.43
11	16.61	16.00	---	14.44	14.16	13.76	12.91	12.17	11.76	11.42	11.42	11.42
12	16.60	15.93	---	14.43	14.16	13.74	12.94	12.17	11.73	11.44	11.45	11.41
13	16.59	15.93	---	14.39	14.16	13.70	12.94	12.16	11.71	11.44	11.46	11.42
14	16.58	15.89	---	14.37	14.14	13.71	12.90	12.15	11.69	11.45	11.44	11.44
15	16.56	15.85	---	14.37	14.13	13.66	12.84	12.13	11.67	11.44	11.40	11.43
16	16.52	15.76	---	14.34	14.12	13.59	12.80	12.12	11.65	11.43	11.36	11.46
17	16.56	15.70	---	14.33	14.10	13.57	12.77	12.13	11.62	11.45	11.35	11.47
18	---	15.79	15.01	14.32	14.12	13.57	12.76	12.11	11.58	11.44	11.37	11.41
19	---	15.72	14.97	14.30	14.11	13.59	12.72	12.10	11.55	11.44	11.37	11.47
20	---	15.68	14.93	14.28	14.10	13.39	12.68	12.08	11.55	11.44	11.36	11.51
21	16.48	15.63	14.95	14.28	14.06	13.44	12.61	12.06	11.54	11.44	11.34	11.52
22	16.46	15.60	14.91	14.27	13.91	13.50	12.59	12.06	11.52	11.44	11.32	11.49
23	16.45	15.57	14.90	14.26	14.05	13.48	12.59	12.02	11.52	11.46	11.32	11.48
24	16.43	15.53	14.78	14.28	14.10	13.46	12.55	12.01	11.52	11.49	11.34	11.52
25	16.41	15.49	14.76	14.25	14.07	13.43	12.50	12.00	11.50	11.52	11.33	11.49
26	16.39	15.46	14.86	14.24	14.03	13.39	12.47	11.99	11.47	11.52	11.32	11.48
27	16.38	15.43	14.79	14.25	13.97	13.38	12.49	11.99	11.46	11.49	11.32	11.46
28	16.34	15.40	14.76	14.22	13.99	13.35	12.46	11.96	11.48	11.47	11.34	11.46
29	16.30	15.36	14.74	14.21	---	13.31	12.42	11.93	11.48	11.48	11.34	11.52
30	16.27	15.33	14.71	14.22	---	13.27	12.41	11.94	11.47	11.52	11.35	11.54
31	16.29	---	14.68	14.19	---	13.29	---	11.90	---	11.52	11.36	---

WTR YR 2003 MEAN 13.27 HIGH 11.32 LOW 16.72



PERIOD OF RECORD HIGH WATER LEVELS FOR SELECTED WELLS IN NORTH CAROLINA

The following wells reached period of record high water levels in the 2003 water year. Only wells having at least 5 years of record and currently operating are reported. Water levels are in feet below land surface datum. Page numbers are provided for convenience in viewing the entire record.

LOCAL IDENTIFIER	NEW PERIOD OF RECORD HIGH	YEARS OF RECORD	PAGE NUMBER
<u>Natural Effects Wells</u>			
CR-552 Cherry Point RS U18q5	16.20	15	
LN-105 (NC-223) Graingers RS Q25d11	10.26	18	
ME-301 (NC-146) Hornets Nest Park	2.28	9	170
ON-291 Ragged Point Well	14.48	9	
ON-294 Town Creek Well 1 at Verona, NC	3.55	9	200
PK-190 (NC-203) Morgans Corner RS C12w2	0.81	23	
SC-040 Laurinburg Well 4	5.95	35	

PERIOD OF RECORD LOW WATER LEVELS FOR SELECTED WELLS IN NORTH CAROLINA

The following wells reached period of record low water levels in the 2003 water year. Only wells having at least 5 years of record and currently operating are reported. Water levels are in feet below land surface datum. Page numbers are provided for convenience in viewing the entire record.

Natural Effects Wells

BR-080 (NC-182) Sunset Harbor RS GG34s7	9.86	8	
JO-035 (NC-173) Comfort RS U26j8	10.14	17	
PI-532 (NC-160) nr Simpson, NC	8.87	28	
SC-080 (NC-194)	34.67	17	

Induced Effects Wells

BL-086 E.I. du Pont de Nemours and Company	232.10	15	55
BL-101 (NC-178) Bladenboro RS Z41u3	9.90	28	62
CO-089 (NC-179) Carver Moore RS AA39v2	50.32	28	100
CO-102 Clarendon RS DD42n4	64.87	28	94
CO-117 Lake Waccamaw RS CC38b8	18.96	29	96
HO-032 McCain RS T48i2	4.94	33	124
ON-256 Hadnot Point RS X24s2	42.88	9	184
RB-168 Rex Rennert RS V45u4	8.50	22	222
RB-184 Littlefield RS Y42f10	46.41	22	224
RB-188 Boardman RS AA43q1	62.59	22	228
RB-199 Lumberton well 3	44.47	16	230
RB-264 nr Maxton, NC	15.47	11	234

WATER QUALITY DATA
MISCELLANEOUS STATION ANALYSES

Ground-water-quality data were collected in Buncombe County during April 2003 for the ongoing Piedmont/Mountains ground-water study in cooperation with the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. Well locations for sites listed in the following table are shown in figure 8.

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)	Temper- ature, 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)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., mg/L as CaCO3 (00419)	Bromide water, fltrd, mg/L (71870)	Chlor- ide, water, fltrd, mg/L (00940)
352840082381001 BU-068 BENT CREEK RS MW-1S (REGOLITH WELL) (LAT 35 28 39N LONG 082 38 10W)													
APR 2003 21...	1130	6.0	5.3	10	11.8	4	0.76	0.538	0.28	1.06	6	E.01	0.61
352840082381002 BU-069 BENT CREEK RS MW-1I (TRANSITION ZONE WELL) (LAT 35 28 40N LONG 082 38 10W)													
APR 2003 21...	1030	6.9	5.4	10	12.6	4	0.72	0.510	0.25	1.06	6	E.01	0.57
352840082381003 BU-070 BENT CREEK RS MW-1D (BEDROCK WELL) (LAT 35 28 40N LONG 082 38 11W)													
APR 2003 21...	1100	0.1	7.0	69	13.7	24	7.49	1.31	0.85	5.18	25	0.05	2.11
352854082380502 BU-072 BENT CREEK RS MW-2I (TRANSITION ZONE WELL) (LAT 35 28 54N LONG 082 38 05W)													
APR 2003 21...	1445	5.0	5.3	21	12.4	9	1.69	1.08	0.34	0.89	8	0.02	1.22
352854082380503 BU-073 BENT CREEK RS MW-2D (BEDROCK WELL) (LAT 35 28 53N LONG 082 38 06W)													
APR 2003 21...	1530	0.1	8.7	314	14.3	89	34.2	0.813	2.01	23.9	32	0.14	15.3
352856082381201 BU-074 BENT CREEK RS MW-3S (REGOLITH WELL) (LAT 35 28 56N LONG 082 38 12W)													
APR 2003 22...	1100	6.3	5.1	12	12.0	4	0.62	0.555	0.61	1.54	5	E.01	0.76
352856082381202 BU-075 BENT CREEK RS MW-3I (TRANSITION ZONE WELL) (LAT 35 28 57N LONG 082 38 11W)													
APR 2003 22...	1030	7.8	5.7	13	12.6	6	1.38	0.575	1.08	1.18	7	E.01	0.90
352856082381203 BU-076 BENT CREEK RS MW-3D (BEDROCK WELL) (LAT 35 28 56N LONG 082 38 12W)													
APR 2003 22...	1045	0.1	8.5	135	14.4	46	16.0	1.41	5.68	5.85	53	E.01	1.25
352808082382601 BU-077 BENT CREEK RS MW-4S (REGOLITH WELL) (LAT 35 28 08N LONG 082 38 26W)													
APR 2003 22...	1430	7.5	4.8	8	11.6	3	0.43	0.435	0.50	0.62	4	<0.02	0.33
352808082382602 BU-078 BENT CREEK RS MW-4I (TRANSITION ZONE WELL) (LAT 35 28 08N LONG 082 38 26W)													
APR 2003 22...	1445	9.0	5.5	6	13.2	3	0.66	0.420	0.73	0.81	4	<0.02	0.34
352808082382603 BU-079 BENT CREEK RS MW-4D (BEDROCK WELL) (LAT 35 28 07N LONG 082 38 25W)													
APR 2003 22...	1500	0.1	8.3	127	13.5	49	17.6	1.18	4.63	3.64	46	E.01	0.43
352810082383501 BU-080 BENT CREEK RS MW-5S (REGOLITH WELL) (LAT 35 28 10N LONG 082 38 34W)													
APR 2003 23...	1645	3.8	6.7	20	10.7	7	1.10	0.928	1.17	1.51	8	E.01	1.00
352810082383502 BU-081 BENT CREEK RS MW-5I (TRANSITION ZONE WELL) (LAT 35 28 10N LONG 082 38 35W)													
APR 2003 23...	1630	4.6	5.0	16	12.6	4	0.70	0.474	0.63	1.64	8	<0.02	0.56

MISCELLANEOUS STATION ANALYSES—Continued

Date	Silica, water, fltrd, mg/L (00955)	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)	Alum- inum, 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)
	352840082381001 BU-068 BENT CREEK RS MW-1S (REGOLITH WELL) (LAT 35 28 39N LONG 082 38 10W)												
APR 2003 21...	8.97	0.6	13	<0.10	<0.04	<0.06	<0.008	<0.02	2	<0.30	<2	3	<0.06
	352840082381002 BU-069 BENT CREEK RS MW-II (TRANSITION ZONE WELL) (LAT 35 28 40N LONG 082 38 10W)												
APR 2003 21...	8.90	0.7	12	<0.10	<0.04	<0.06	<0.008	<0.02	E1	<0.30	<2	2	<0.06
	352840082381003 BU-070 BENT CREEK RS MW-1D (BEDROCK WELL) (LAT 35 28 40N LONG 082 38 11W)												
APR 2003 21...	23.3	7.6	60	<0.10	<0.04	<0.06	<0.008	<0.02	<2	<0.30	<2	1	<0.06
	352854082380502 BU-072 BENT CREEK RS MW-2I (TRANSITION ZONE WELL) (LAT 35 28 54N LONG 082 38 05W)												
APR 2003 21...	7.02	1.7	15	<0.10	<0.04	0.09	<0.008	<0.02	13	<0.30	<2	7	<0.06
	352854082380503 BU-073 BENT CREEK RS MW-2D (BEDROCK WELL) (LAT 35 28 53N LONG 082 38 06W)												
APR 2003 21...	16.5	79.0	201	0.13	<0.04	<0.06	<0.008	<0.02	12	<0.30	<2	2	<0.06
	352856082381201 BU-074 BENT CREEK RS MW-3S (REGOLITH WELL) (LAT 35 28 56N LONG 082 38 12W)												
APR 2003 22...	9.60	0.9	13	<0.10	<0.04	<0.06	<0.008	<0.02	3	<0.30	<2	8	<0.06
	352856082381202 BU-075 BENT CREEK RS MW-3I (TRANSITION ZONE WELL) (LAT 35 28 57N LONG 082 38 11W)												
APR 2003 22...	9.10	0.9	16	<0.10	<0.04	E.05	<0.008	E.01	E2	<0.30	<2	10	<0.06
	352856082381203 BU-076 BENT CREEK RS MW-3D (BEDROCK WELL) (LAT 35 28 56N LONG 082 38 12W)												
APR 2003 22...	14.7	11.4	83	<0.10	<0.04	<0.06	<0.008	<0.02	7	<0.30	<2	5	<0.06
	352808082382601 BU-077 BENT CREEK RS MW-4S (REGOLITH WELL) (LAT 35 28 08N LONG 082 38 26W)												
APR 2003 22...	6.64	E.2	<10	<0.10	<0.04	<0.06	<0.008	<0.02	5	<0.30	<2	13	E.05
	352808082382602 BU-078 BENT CREEK RS MW-4I (TRANSITION ZONE WELL) (LAT 35 28 08N LONG 082 38 26W)												
APR 2003 22...	7.42	0.3	14	<0.10	<0.04	<0.06	<0.008	<0.02	4	<0.30	<2	12	<0.06
	352808082382603 BU-079 BENT CREEK RS MW-4D (BEDROCK WELL) (LAT 35 28 07N LONG 082 38 25W)												
APR 2003 22...	12.2	13.3	81	<0.10	<0.04	<0.06	<0.008	<0.02	10	E.20	<2	11	<0.06
	352810082383501 BU-080 BENT CREEK RS MW-5S (REGOLITH WELL) (LAT 35 28 10N LONG 082 38 34W)												
APR 2003 23...	9.92	1.2	30	<0.10	<0.04	0.25	<0.008	<0.02	4	<0.30	<2	22	<0.06
	352810082383502 BU-081 BENT CREEK RS MW-5I (TRANSITION ZONE WELL) (LAT 35 28 10N LONG 082 38 35W)												
APR 2003 23...	11.2	0.4	18	<0.10	<0.04	<0.06	<0.008	<0.02	4	<0.30	<2	11	<0.06

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Boron, water, flt'd, ug/L (01020)	Cadmium, water, flt'd, ug/L (01025)	Chrom- ium, water, flt'd, ug/L (01030)	Cobalt water, flt'd, ug/L (01035)	Copper, water, flt'd, ug/L (01040)	Iron, water, flt'd, ug/L (01046)	Lead, water, flt'd, ug/L (01049)	Mangan- ese, water, flt'd, ug/L (01056)	Molyb- denum, water, flt'd, ug/L (01060)	Nickel, water, flt'd, ug/L (01065)	Selen- ium, water, flt'd, ug/L (01145)	Silver, water, flt'd, ug/L (01075)	Zinc, water, flt'd, ug/L (01090)
	352840082381001 BU-068 BENT CREEK RS MW-1S (REGOLITH WELL) (LAT 35 28 39N LONG 082 38 10W)												
APR 2003 21...	<13	<0.04	<0.8	0.258	0.6	<10	0.09	14.7	<0.3	0.28	<3	<0.2	17
	352840082381002 BU-069 BENT CREEK RS MW-1I (TRANSITION ZONE WELL) (LAT 35 28 40N LONG 082 38 10W)												
APR 2003 21...	<13	<0.04	<0.8	E.010	<0.2	<10	<0.08	1.2	<0.3	0.13	<3	<0.2	M
	352840082381003 BU-070 BENT CREEK RS MW-1D (BEDROCK WELL) (LAT 35 28 40N LONG 082 38 11W)												
APR 2003 21...	<13	<0.04	<0.8	0.978	<0.2	407	<0.08	19.8	<0.3	3.36	<3	<0.2	117
	352854082380502 BU-072 BENT CREEK RS MW-2I (TRANSITION ZONE WELL) (LAT 35 28 54N LONG 082 38 05W)												
APR 2003 21...	<13	<0.04	<0.8	0.570	0.4	<10	<0.08	9.7	<0.3	1.07	<3	<0.2	2
	352854082380503 BU-073 BENT CREEK RS MW-2D (BEDROCK WELL) (LAT 35 28 53N LONG 082 38 06W)												
APR 2003 21...	<13	<0.04	<0.8	0.070	0.3	<10	<0.08	3.8	1.3	1.23	<3	<0.2	M
	352856082381201 BU-074 BENT CREEK RS MW-3S (REGOLITH WELL) (LAT 35 28 56N LONG 082 38 12W)												
APR 2003 22...	<13	<0.04	<0.8	0.851	<0.2	<10	0.11	16.7	<0.3	0.32	<3	<0.2	M
	352856082381202 BU-075 BENT CREEK RS MW-3I (TRANSITION ZONE WELL) (LAT 35 28 57N LONG 082 38 11W)												
APR 2003 22...	<13	<0.04	<0.8	0.143	<0.2	<10	<0.08	8.5	<0.3	0.77	<3	<0.2	<1
	352856082381203 BU-076 BENT CREEK RS MW-3D (BEDROCK WELL) (LAT 35 28 56N LONG 082 38 12W)												
APR 2003 22...	<13	<0.04	<0.8	0.049	<0.2	34	E.04	28.2	2.8	0.73	<3	<0.2	199
	352808082382601 BU-077 BENT CREEK RS MW-4S (REGOLITH WELL) (LAT 35 28 08N LONG 082 38 26W)												
APR 2003 22...	<13	<0.04	<0.8	0.078	1.2	<10	E.04	19.9	<0.3	0.24	<3	<0.2	5
	352808082382602 BU-078 BENT CREEK RS MW-4I (TRANSITION ZONE WELL) (LAT 35 28 08N LONG 082 38 26W)												
APR 2003 22...	<13	<0.04	<0.8	0.033	<0.2	<10	<0.08	1.4	<0.3	0.28	<3	<0.2	M
	352808082382603 BU-079 BENT CREEK RS MW-4D (BEDROCK WELL) (LAT 35 28 07N LONG 082 38 25W)												
APR 2003 22...	<13	<0.04	<0.8	0.269	<0.2	E9	<0.08	39.3	6.5	1.70	<3	<0.2	35
	352810082383501 BU-080 BENT CREEK RS MW-5S (REGOLITH WELL) (LAT 35 28 10N LONG 082 38 34W)												
APR 2003 23...	<13	<0.04	<0.8	0.099	0.4	<10	E.05	42.8	<0.3	0.46	<3	<0.2	1
	352810082383502 BU-081 BENT CREEK RS MW-5I (TRANSITION ZONE WELL) (LAT 35 28 10N LONG 082 38 35W)												
APR 2003 23...	<13	<0.04	<0.8	0.041	0.7	<10	E.08	3.7	<0.3	0.14	<3	<0.2	3

WATER QUALITY DATA

401

MISCELLANEOUS STATION ANALYSES—Continued

Date	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
352840082381001 BU-068 BENT CREEK RS MW-1S (REGOLITH WELL) (LAT 35 28 39N LONG 082 38 10W)				
APR 2003 21...	0.1	1.1	4,090	<0.02
352840082381002 BU-069 BENT CREEK RS MW-1I (TRANSITION ZONE WELL) (LAT 35 28 40N LONG 082 38 10W)				
APR 2003 21...	0.2	1.1	5,310	<0.02
352840082381003 BU-070 BENT CREEK RS MW-1D (BEDROCK WELL) (LAT 35 28 40N LONG 082 38 11W)				
APR 2003 21...	1.2	1.9	2,730	0.26
352854082380502 BU-072 BENT CREEK RS MW-2I (TRANSITION ZONE WELL) (LAT 35 28 54N LONG 082 38 05W)				
APR 2003 21...	0.6	1.1	2,910	<0.02
352854082380503 BU-073 BENT CREEK RS MW-2D (BEDROCK WELL) (LAT 35 28 53N LONG 082 38 06W)				
APR 2003 21...	0.1	2.9	130	0.15
352856082381201 BU-074 BENT CREEK RS MW-3S (REGOLITH WELL) (LAT 35 28 56N LONG 082 38 12W)				
APR 2003 22...	0.2	0.6	900	<0.02
352856082381202 BU-075 BENT CREEK RS MW-3I (TRANSITION ZONE WELL) (LAT 35 28 57N LONG 082 38 11W)				
APR 2003 22...	0.1	1.1	2,360	0.03
352856082381203 BU-076 BENT CREEK RS MW-3D (BEDROCK WELL) (LAT 35 28 56N LONG 082 38 12W)				
APR 2003 22...	0.4	7.5	200	0.07
352808082382601 BU-077 BENT CREEK RS MW-4S (REGOLITH WELL) (LAT 35 28 08N LONG 082 38 26W)				
APR 2003 22...	0.6	1.2	1,650	<0.02
352808082382602 BU-078 BENT CREEK RS MW-4I (TRANSITION ZONE WELL) (LAT 35 28 08N LONG 082 38 26W)				
APR 2003 22...	0.2	0.7	1,260	<0.02
352808082382603 BU-079 BENT CREEK RS MW-4D (BEDROCK WELL) (LAT 35 28 07N LONG 082 38 25W)				
APR 2003 22...	6.1	10.2	1,300	4.99
352810082383501 BU-080 BENT CREEK RS MW-5S (REGOLITH WELL) (LAT 35 28 10N LONG 082 38 34W)				
APR 2003 23...	0.1	1.7	950	<0.02
352810082383502 BU-081 BENT CREEK RS MW-5I (TRANSITION ZONE WELL) (LAT 35 28 10N LONG 082 38 35W)				
APR 2003 23...	0.6	0.8	2,760	<0.02

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

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)	Temper- ature, 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)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Bromide water, fltrd, mg/L (71870)	Chlor- ide, water, fltrd, mg/L (00940)	
352810082383503 BU-082 BENT CREEK RS MW-5D (BEDROCK WELL) (LAT 35 28 10N LONG 082 38 34W)														
APR 2003	23...	1730	2.4	6.6	15	14.1	24	7.20	1.38	3.25	2.75	34	E.01	0.93
352827082383901 BU-083 BENT CREEK RS MW-7S (REGOLITH WELL) (LAT 35 28 27N LONG 082 38 39W)														
APR 2003	23...	1000	5.7	4.7	21	12.2	5	0.80	0.703	1.62	0.89	10	<0.02	0.81
352827082383902 BU-084 BENT CREEK RS MW-7I (TRANSITION ZONE WELL) (LAT 35 28 27N LONG 082 38 38W)														
APR 2003	23...	1130	6.9	5.2	12	13.7	4	0.60	0.722	0.74	0.63	6	E.01	0.62
352827082383903 BU-085 BENT CREEK RS MW-7D (BEDROCK WELL) (LAT 35 28 27N LONG 082 38 38W)														
APR 2003	23...	1200	0.2	8.6	213	15.3	54	17.4	2.59	9.26	14.1	57	E.01	1.00
Date		Silica, water, fltrd, mg/L (00955)	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)	Alum- inum, 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)
352810082383503 BU-082 BENT CREEK RS MW-5D (BEDROCK WELL) (LAT 35 28 10N LONG 082 38 34W)														
APR 2003	23...	14.7	3.0	53	<0.10	<0.04	<0.06	<0.008	<0.02	<2	<0.30	<2	23	<0.06
352827082383901 BU-083 BENT CREEK RS MW-7S (REGOLITH WELL) (LAT 35 28 27N LONG 082 38 39W)														
APR 2003	23...	6.44	0.2	14	<0.10	<0.04	<0.06	<0.008	<0.02	10	<0.30	<2	19	<0.06
352827082383902 BU-084 BENT CREEK RS MW-7I (TRANSITION ZONE WELL) (LAT 35 28 27N LONG 082 38 38W)														
APR 2003	23...	7.47	0.2	<10	<0.10	<0.04	<0.06	<0.008	<0.02	E1	<0.30	<2	6	<0.06
352827082383903 BU-085 BENT CREEK RS MW-7D (BEDROCK WELL) (LAT 35 28 27N LONG 082 38 38W)														
APR 2003	23...	11.8	41.6	123	<0.10	<0.04	<0.06	<0.008	<0.02	19	0.36	<2	16	<0.06
Date		Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, 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)	Mangan- ese, water, fltrd, ug/L (01056)	Molyb- denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen- ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)
352810082383503 BU-082 BENT CREEK RS MW-5D (BEDROCK WELL) (LAT 35 28 10N LONG 082 38 34W)														
APR 2003	23...	<13	<0.04	<0.8	0.755	E.2	31	0.26	206	0.9	1.64	<3	<0.2	2,420
352827082383901 BU-083 BENT CREEK RS MW-7S (REGOLITH WELL) (LAT 35 28 27N LONG 082 38 39W)														
APR 2003	23...	E11	<0.04	<0.8	0.273	2.0	<10	0.08	12.7	<0.3	0.54	<3	<0.2	9
352827082383902 BU-084 BENT CREEK RS MW-7I (TRANSITION ZONE WELL) (LAT 35 28 27N LONG 082 38 38W)														
APR 2003	23...	<13	E.02	<0.8	0.347	E.2	<10	<0.08	16.2	<0.3	2.71	<3	<0.2	2
352827082383903 BU-085 BENT CREEK RS MW-7D (BEDROCK WELL) (LAT 35 28 27N LONG 082 38 38W)														
APR 2003	23...	E9.7	<0.04	<0.8	0.120	0.3	<10	0.09	22.4	4.7	0.21	<3	<0.2	227

WATER QUALITY DATA

403

MISCELLANEOUS STATION ANALYSES—Continued

Date	Alpha radio- activity water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
352810082383503 BU-082 BENT CREEK RS MW-5D (BEDROCK WELL) (LAT 35 28 10N LONG 082 38 34W)				
APR 2003 23...	1.2	4.0	3,030	0.05
352827082383901 BU-083 BENT CREEK RS MW-7S (REGOLITH WELL) (LAT 35 28 27N LONG 082 38 39W)				
APR 2003 23...	0.2	1.9	810	<0.02
352827082383902 BU-084 BENT CREEK RS MW-7I (TRANSITION ZONE WELL) (LAT 35 28 27N LONG 082 38 38W)				
APR 2003 23...	0.2	1.3	750	<0.02
352827082383903 BU-085 BENT CREEK RS MW-7D (BEDROCK WELL) (LAT 35 28 27N LONG 082 38 38W)				
APR 2003 23...	2.5	10.8	90	1.60

Remark codes used in this table:

< -- Less than

E -- Estimated value

M-- Presence verified, not quantified

MISCELLANEOUS STATION ANALYSES

Ground-water-quality data were collected for the Albemarle-Pamlico Drainage Basin study unit for the National Water Quality Assessment Program during the 2003 water year. Objectives of the study are to provide data primarily for characterizing water quality of shallow aquifers in the Coastal Plain of North Carolina and for evaluating trends in ground-water quality. Well locations for sites listed in the following tables are shown in figure 9.

Date	Time	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Altitude of land surface feet (72000)	Water level, depth below MP, feet (61055)	Flow rate, instantaneous gal/min (00059)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfiltered, uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)														
APR 2003	28...	1200	16.00	3.37	76.96	5.63	0.20	763	3.3	34	4.5	175	16.4	27
353122077334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)														
APR 2003	29...	0900	10.00	6.72	64.39	9.29	0.10	763	2.3	22	4.6	481	14.7	150
353111077334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)														
FEB 2003	13...	1345	7.0	0.52	73.38	--	--	775	2.8	24	4.3	777	8.9	170
APR	11...	1425	7.0	0.04	73.38	--	--	756	0.8	8	3.5	705	12.6	160
	22...	1000	7.0	0.64	73.38	3.60	0.10	756	0.9	9	4.2	743	16.9	160
JUN	05...	1405	7.0	0.31	73.38	--	--	763	0.6	5	4.4	822	13.4	150
AUG	20...	1410	7.0	-0.22	73.38	--	--	772	0.7	8	4.3	671	23.2	120
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)														
APR 2003	28...	1330	40.70	3.43	76.96	6.39	0.30	763	0.2	2	5.3	83	18.7	8
353111077334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)														
APR 2003	22...	0900	18.00	0.02	73.37	1.95	0.30	756	0.2	2	4.4	90	15.5	9
353142077332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)														
APR 2003	22...	1300	22.80	15.40	61.81	16.86	0.20	756	7.3	76	4.3	160	17.7	40
353142077332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)														
APR 2003	22...	1230	36.70	17.36	62.03	19.81	0.30	756	3.7	40	4.8	184	19.0	62
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)														
APR 2003	23...	1000	46.30	4.50	47.13	6.99	0.50	763	0.1	2	6.2	224	17.5	85
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)														
APR 2003	22...	1500	8.50	4.45	47.86	5.94	0.10	756	5.8	58	4.9	275	15.5	90
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)														
APR 2003	23...	0900	23.00	4.47	47.55	5.94	0.30	763	4.5	46	4.5	212	16.7	60
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)														
APR 2003	21...	1000	56.60	24.21	73.07	26.65	0.05	760	0.7	7	7.6	305	18.8	140

MISCELLANEOUS STATION ANALYSES—Continued

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO ₃ (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Bromide water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)													
APR 2003 28...	4.63	3.70	1.22	15.5	--	--	0.07	20.8	5.43	25.3	--	91	E.09
3531220773334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)													
APR 2003 29...	42.2	10.5	7.90	11.9	--	--	0.04	39.6	5.52	43.1	--	288	0.19
3531110773334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)													
FEB 2003 13...	43.2	15.9	12.7	48.7	--	--	--	110	--	21.4	--	--	0.38
APR 11...	38.9	14.6	14.1	46.0	--	--	--	96.8	--	19.8	--	--	0.90
22...	39.7	14.9	13.0	44.8	--	--	0.04	98.9	9.02	20.7	--	405	0.42
JUN 05...	36.6	13.2	12.5	42.3	--	--	--	98.4	--	18.6	--	--	0.40
AUG 20...	28.6	12.0	9.75	35.1	--	--	--	85.7	--	15.0	--	--	0.47
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)													
APR 2003 28...	2.41	0.468	2.21	4.85	5	6	0.09	11.6	17.5	9.1	57	56	<0.10
3531110773334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)													
APR 2003 22...	2.35	0.681	1.79	7.34	--	--	0.13	9.64	13.4	18.5	--	56	<0.10
353142077332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	7.26	5.39	4.04	2.18	--	--	0.03	14.8	6.50	6.1	--	81	E.07
353142077332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	13.9	6.54	4.83	2.37	--	--	0.03	16.7	6.56	16.1	--	114	0.11
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	31.7	1.44	1.69	4.71	38	47	0.04	13.2	12.0	37.4	128	145	<0.10
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 22...	27.2	5.32	6.90	4.79	1	1	0.04	22.8	3.70	8.8	167	167	E.08
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	14.6	5.79	7.17	3.44	--	--	0.06	22.5	3.55	16.0	--	116	<0.10
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	54.4	2.19	1.10	3.96	119	145	0.05	8.91	15.0	18.6	177	188	E.06

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Ammonia water, fltrd, mg/L (71846)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate water, fltrd, mg/L (71851)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L (71856)	Nitrite water, fltrd, mg/L as N (00613)	Organic nitro- gen, water, fltrd, mg/L (00607)	Ortho- phos- phate, water, fltrd, mg/L (00660)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, fltrd, mg/L (00666)	Total nitro- gen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)													
APR 2003 28...	--	<0.04	--	--	3.40	--	<0.008	--	--	<0.02	--	--	1.1
3531220773334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)													
APR 2003 29...	--	<0.04	--	--	<0.60	--	<0.008	--	--	<0.02	--	--	1.3
3531110773334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)													
FEB 2003 13...	--	<0.04	--	--	41.9	--	<0.008	--	0.058	0.02	0.022	42	2.3
APR 11...	0.73	0.56	164	37.0	37.0	0.056	0.017	0.34	0.058	0.02	0.024	38	--
22...	0.22	0.17	--	--	45.1	--	E.004	0.26	--	E.01	--	46	2.2
JUN 05...	0.10	0.08	169	38.2	38.2	0.046	0.014	0.32	--	--	0.025	39	2.0
AUG 20...	0.15	0.12	143	32.4	32.4	0.043	0.013	0.35	--	<0.18	0.030	33	--
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)													
APR 2003 28...	--	<0.04	--	--	0.07	--	<0.008	--	--	<0.02	--	--	E.3
3531110773334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)													
APR 2003 22...	--	<0.04	--	--	0.06	--	<0.008	--	--	<0.02	--	--	0.4
3531420773332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	--	<0.04	--	--	9.35	--	<0.008	--	0.138	0.04	--	--	0.4
3531420773332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	--	<0.04	--	--	9.26	--	<0.008	--	1.84	0.60	--	9.4	0.4
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	--	<0.04	--	--	<0.06	--	<0.008	--	0.825	0.27	--	--	0.6
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 22...	--	<0.04	--	--	19.6	--	<0.008	--	--	<0.02	--	--	0.7
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	--	<0.04	--	--	9.32	--	<0.008	--	0.110	0.04	--	--	0.5
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	--	<0.04	--	--	0.12	--	<0.008	--	--	<0.02	--	--	0.4

MISCELLANEOUS STATION ANALYSES—Continued

Date	Iron, water, fltrd, ug/L (01046)	Mangan- ese, water, fltrd, ug/L (01056)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto- chlor ESA, water, fltrd 0.7u GF ug/L (61029)	Aceto- chlor OA, water, fltrd 0.7u GF ug/L (61030)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor ESA, water, fltrd 0.7u GF ug/L (50009)	Ala- chlor OA, water, fltrd 0.7u GF ug/L (61031)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- HCH, water, fltrd, ug/L (34253)	Atra- zine, water, fltrd, ug/L (39632)	Azin- phos- methyl, water, fltrd 0.7u GF ug/L (82686)
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)													
APR 2003 28...	13	4.0	<0.006	E.004	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	0.007	<0.050
3531220773334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)													
APR 2003 29...	<10	160	<0.006	E.087	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	0.296	<0.050
3531110773334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)													
FEB 2003 13...	E5	--	--	--	--	--	--	--	--	--	--	--	--
APR 11...	20	--	--	--	--	--	--	--	--	--	--	--	--
22...	38	172	<0.006	E.004	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	0.033	<0.050
JUN 05...	39	--	--	--	--	--	--	--	--	--	--	--	--
AUG 20...	37	--	--	--	--	--	--	--	--	--	--	--	--
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)													
APR 2003 28...	5,690	10.9	<0.006	<0.006	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	E.004	<0.050
3531110773334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)													
APR 2003 22...	1,050	22.4	<0.006	<0.006	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	0.011	<0.050
353142077332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	18	21.0	<0.006	E.007	<0.05	<0.05	<0.006	0.21	0.13	0.141	<0.005	<0.007	<0.050
353142077332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	E6	46.6	<0.006	E.018	<0.05	<0.05	<0.006	<0.05	<0.05	0.006	<0.005	E.006	<0.050
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	853	55.7	<0.006	<0.006	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	<0.007	<0.050
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 22...	<10	71.2	<0.006	E.009	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	0.008	<0.050
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	<10	34.6	<0.006	E.005	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	E.004	<0.050
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	352	64.3	<0.006	<0.006	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	<0.007	<0.050

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Ben-flu- alin, water, fltrd 0.7u GF ug/L (82673)	Butyl- ate, water, fltrd, ug/L (04028)	Car- baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo- furan, water, fltrd 0.7u GF ug/L (82674)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF ug/L (82687)	Cyana- zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf- inyl fipro- nil, water, fltrd, ug/L (62170)	Diazi- non, water, fltrd, ug/L (39572)	Diel- drin, water, fltrd, ug/L (39381)	Dimeth- enamid ESA, water, fltrd, ug/L (61951)	Dimeth- enamid OA, water, fltrd, ug/L (62482)
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)													
APR 2003 28...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353122077334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)													
APR 2003 29...	<0.010	<0.002	E.005	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353111077334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)													
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 11...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 20...	--	--	--	--	--	--	--	--	--	--	--	--	--
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)													
APR 2003 28...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353111077334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)													
APR 2003 22...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353142077332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353142077332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 22...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05

MISCELLANEOUS STATION ANALYSES—Continued

Date	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Desulfinylfipronil amide, wat flt ug/L (62169)	Fipronil sulfide, water, fltrd, ug/L (62167)	Fipronil sulfone, water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Flufenacet ESA, water, fltrd, ug/L (61952)	Flufenacet OA, water, fltrd, ug/L (62483)	Fonofos, water, fltrd, ug/L (04095)	Lindane, water, fltrd, ug/L (39341)	Linuron, water, fltrd 0.7u GF ug/L (82666)
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)													
APR 2003 28...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
3531220773334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)													
APR 2003 29...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
3531110773334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)													
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 11... 22...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
JUN 05... AUG 20...	--	--	--	--	--	--	--	--	--	--	--	--	--
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)													
APR 2003 28...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
3531110773334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)													
APR 2003 22...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353142077332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353142077332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 22...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Mala- thion, water, fltrd, ug/L (39532)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor ESA, water, fltrd 0.7u GF ug/L (61043)	Metola- chlor OA, water, fltrd 0.7u GF ug/L (61044)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p'- DDE, water, fltrd, ug/L (34653)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)													
APR 2003 28...	<0.027	<0.006	0.14	<0.05	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353122077334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)													
APR 2003 29...	<0.027	<0.006	9.15	<0.05	1.16	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353111077334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)													
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 11...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	<0.027	<0.006	1.03	0.05	E.007	<0.006	<0.002	<0.007	0.004	<0.010	<0.004	<0.022	<0.011
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 20...	--	--	--	--	--	--	--	--	--	--	--	--	--
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)													
APR 2003 28...	<0.027	<0.006	<0.05	<0.05	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353111077334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)													
APR 2003 22...	<0.027	<0.006	<0.05	<0.05	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353142077332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	<0.027	<0.006	1.36	<0.05	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353142077332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)													
APR 2003 22...	<0.027	<0.006	0.83	<0.05	E.004	<0.006	<0.002	<0.020	<0.003	<0.010	<0.004	<0.022	<0.011
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	<0.027	<0.006	<0.05	<0.05	<0.013	<0.006	<0.002	<0.015	<0.003	<0.010	<0.004	<0.022	<0.011
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 22...	<0.027	<0.006	2.69	<0.05	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)													
APR 2003 23...	<0.027	<0.006	<0.05	<0.05	E.003	<0.006	<0.002	<0.020	<0.003	<0.010	<0.004	<0.022	<0.011
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	<0.027	<0.006	<0.05	<0.05	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd, ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd, ug/L (82679)	Propargite, water, fltrd, ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd, ug/L (82670)	Terbacil, water, fltrd, ug/L (82665)	Terbufos, water, fltrd, ug/L (82675)	Thio-bencarb water fltrd, ug/L (82681)	Tri-allate, water, fltrd, ug/L (82678)	Tri-fluralin, water, fltrd, ug/L (82661)
353103077333401 GR-082 L2 LIZZIE N26q2 (SURFICIAL) (LAT 35 31 03N LONG 077 33 33W)												
APR 2003 28...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
3531220773334901 GR-083 L4 LIZZIE N26q4 (LAT 35 31 21N LONG 077 33 49W)												
APR 2003 29...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
3531110773334402 GR-085 L6 LIZZIE N26q6 (LAT 35 31 11N LONG 077 33 44W)												
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--
APR 11...	--	--	--	--	--	--	--	--	--	--	--	--
APR 22...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 20...	--	--	--	--	--	--	--	--	--	--	--	--
353103077333403 GR-090 L3 (LAT 35 31 02N LONG 077 33 33W)												
APR 2003 28...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
3531110773334404 GR-094 L6D (LAT 35 31 11N LONG 077 33 44W)												
APR 2003 22...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
353142077332702 GR-097 L8S (LAT 35 31 42N LONG 077 33 26W)												
APR 2003 22...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
353142077332703 GR-098 L8D (LAT 35 31 42N LONG 077 33 26W)												
APR 2003 22...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
353148077332101 GR-100 L10 (LAT 35 31 48N LONG 077 33 21W)												
APR 2003 23...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
353148077332103 GR-102 L11S (LAT 35 31 48N LONG 077 33 21W)												
APR 2003 22...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
353148077332102 GR-103 L11D (LAT 35 31 48N LONG 077 33 21W)												
APR 2003 23...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
353127077333701 GR-106 L14 (LAT 35 31 26N LONG 077 33 36W)												
APR 2003 21...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Time	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Altitude of land surface feet (72000)	Water level, depth below MP, feet (61055)	Flow rate, instantaneous gal/min (00059)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfiltered uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)														
APR 2003	21...	1130	21.50	3.55	72.95	5.95	0.10	760	1.2	12	4.1	380	15.3	120
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)														
FEB 2003	13...	1845	23	3.99	73.59	--	--	775	2.3	23	5.2	228	16.2	76
APR	10...	1235	23	2.10	73.59	--	--	759	1.1	11	6.0	244	15.3	81
	21...	1400	23	4.10	73.59	5.46	0.10	760	0.6	6	5.2	222	15.9	77
JUN	05...	1305	23	3.73	73.59	--	--	763	0.6	6	5.7	246	11.2	70
AUG	21...	1520	23	3.47	73.59	--	--	769	1.8	19	5.5	250	17.8	80
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)														
APR 2003	29...	1130	26.50	9.42	72.69	10.85	0.05	763	2.6	27	5.4	165	17.8	45
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)														
APR 2003	09...	1820	7.8	0.51	79.00	--	--	766	11.0	102	4.5	1,320	12.5	380
	30...	0830	7.8	2.81	79.00	4.68	0.10	763	6.7	67	4.2	1,210	15.8	360
JUN	05...	0945	7.8	1.98	79.00	--	--	763	7.0	75	4.3	1,200	18.5	300
AUG	21...	1825	7.8	1.58	79.00	--	--	757	3.8	45	4.2	1,180	23.9	320
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)														
APR 2003	09...	1740	14.6	0.13	78.97	--	--	766	0.8	8	4.6	361	12.7	92
	29...	1330	14.6	2.76	78.97	4.83	0.30	763	0.6	6	4.3	363	16.4	94
JUN	05...	1040	14.6	1.97	78.97	--	--	763	0.5	6	4.6	388	16.4	98
AUG	21...	1755	14.6	1.61	78.97	--	--	757	0.8	9	4.5	432	18.0	100
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)														
APR 2003	10...	0930	14.2	1.46	73.31	--	--	760	4.8	46	4.3	179	13.2	35
	30...	1100	14.2	3.40	73.31	5.87	0.05	762	5.0	54	4.5	138	17.6	30
JUN	03...	1230	14.2	3.03	73.31	--	--	765	0.9	10	4.8	154	16.6	27
AUG	21...	1950	14.2	2.90	73.31	--	--	768	0.5	6	5.0	131	20.2	23
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)														
APR 2003	17...	1330	3.50	--	45	--	0.10	762	0.1	1	5.8	140	14.8	33

MISCELLANEOUS STATION ANALYSES—Continued

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO ₃ (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Bromide water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	27.9	12.3	5.39	5.20	--	--	0.05	33.9	6.12	13.1	--	214	0.19
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)													
FEB 2003 13...	21.2	5.62	1.70	4.86	--	--	--	25.3	--	43.0	119	--	E.08
APR 10...	22.0	6.21	1.81	5.25	--	--	--	28.5	--	43.3	127	--	0.10
21...	21.4	5.80	1.73	5.07	5	7	0.07	24.7	10.6	47.7	136	126	E.06
JUN 05...	19.8	5.00	1.74	4.64	--	--	--	23.4	--	48.7	112	--	<0.10
AUG 21...	22.7	5.67	2.09	5.66	--	--	--	31.6	--	42.5	127	--	E.05
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)													
APR 2003 29...	15.8	1.34	2.26	8.16	7	9	0.05	12.6	8.81	36.0	97	101	E.07
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	105	27.8	26.1	55.3	--	--	--	125	--	64.7	--	--	0.45
30...	99.5	27.0	20.1	51.1	--	--	0.10	122	7.20	60.6	--	746	0.38
JUN 05...	83.9	23.1	23.5	46.6	--	--	--	127	--	57.2	--	--	0.41
AUG 21...	90.2	22.8	19.8	40.6	--	--	--	119	--	53.3	--	--	0.52
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	26.4	6.46	2.50	16.4	--	--	--	50.0	--	9.4	--	--	0.11
29...	26.7	6.68	2.52	17.3	--	--	0.11	53.2	14.7	9.7	--	218	0.12
JUN 05...	27.6	6.94	2.78	17.2	--	--	--	53.4	--	10.2	--	--	0.15
AUG 21...	28.3	7.51	3.32	18.0	--	--	--	56.1	--	12.2	--	--	0.13
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)													
APR 2003 10...	6.90	4.28	2.28	9.51	--	--	--	24.9	--	8.5	--	--	E.07
30...	6.14	3.59	2.12	7.89	--	--	0.08	21.9	12.8	8.9	--	85	<0.10
JUN 03...	5.82	3.14	2.17	7.48	--	--	--	21.5	--	11.0	--	--	<0.10
AUG 21...	5.23	2.48	2.17	7.43	--	--	--	21.1	--	10.9	--	--	<0.10
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)													
APR 2003 17...	10.3	1.75	2.09	4.86	33	40	0.31	20.6	4.94	1.7	78	110	2.9

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Ammonia water, fltrd, mg/L (71846)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate water, fltrd, mg/L (71851)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L (71856)	Nitrite water, fltrd, mg/L as N (00613)	Organic nitro- gen, water, fltrd, mg/L (00607)	Ortho- phos- phate, water, fltrd, mg/L (00660)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, fltrd, mg/L (00666)	Total nitro- gen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	--	<0.04	--	--	26.6	--	<0.008	--	--	<0.02	--	27	1.5
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)													
FEB 2003 13...	--	<0.04	--	--	3.45	--	E.007	--	--	<0.02	0.006	--	0.4
APR 10...	--	<0.04	18.4	4.17	4.17	0.030	0.009	--	--	<0.04	0.010	4.3	--
APR 21...	--	<0.04	--	--	3.26	--	E.006	--	0.172	0.06	--	--	0.5
JUN 05...	--	<0.04	--	--	1.49	--	E.005	--	--	--	0.009	--	E.3
AUG 21...	--	<0.04	--	--	3.30	--	E.006	--	--	<0.18	0.007	--	--
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)													
APR 2003 29...	--	<0.04	--	--	1.49	--	<0.008	--	0.371	0.12	--	--	0.6
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	0.08	0.06	394	89.1	89.1	0.026	0.008	0.39	--	<0.04	0.007	90	2.6
APR 30...	--	<0.04	--	--	90.5	--	<0.008	--	--	<0.02	--	91	2.5
JUN 05...	--	E.02	--	--	96.3	--	<0.008	--	--	--	E.003	97	2.6
AUG 21...	--	<0.04	--	--	80.5	--	<0.008	--	--	<0.18	0.004	81	--
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	0.05	0.04	--	--	16.2	--	E.007	0.07	--	<0.04	E.003	16	0.7
APR 29...	--	E.04	--	--	19.8	--	<0.008	--	--	<0.02	--	20	0.7
JUN 05...	--	E.02	--	--	19.1	--	E.005	--	--	--	<0.004	19	0.7
AUG 21...	--	<0.04	--	--	19.9	--	<0.008	--	--	<0.18	<0.004	20	--
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)													
APR 2003 10...	--	<0.04	--	--	7.18	--	E.006	--	--	<0.04	<0.004	--	0.4
APR 30...	--	<0.04	22.1	4.99	5.01	0.066	0.020	--	--	<0.02	--	--	0.5
JUN 03...	--	<0.04	--	--	3.65	--	E.004	--	--	--	<0.004	--	E.3
AUG 21...	--	<0.04	--	--	2.60	--	<0.008	--	--	<0.18	<0.004	--	--
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)													
APR 2003 17...	2.80	2.17	--	--	<0.06	--	<0.008	0.73	1.73	0.56	--	--	17.3

MISCELLANEOUS STATION ANALYSES—Continued

Date	Iron, water, fltrd, ug/L (01046)	Mangan- ese, water, fltrd, ug/L (01056)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto- chlor ESA, water, fltrd 0.7u GF ug/L (61029)	Aceto- chlor OA, water, fltrd 0.7u GF ug/L (61030)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor ESA, water, fltrd 0.7u GF ug/L (50009)	Ala- chlor OA, water, fltrd 0.7u GF ug/L (61031)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- HCH, water, fltrd, ug/L (34253)	Atra- zine, water, fltrd, ug/L (39632)	Azin- phos- methyl, water, fltrd 0.7u GF ug/L (82686)
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	21	39.4	E.001	E.022	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	0.049	<0.050
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)													
FEB 2003 13...	63	--	--	--	--	--	--	--	--	--	--	--	--
APR 10...	43	--	--	--	--	--	--	--	--	--	--	--	--
21...	21	135	<0.006	<0.006	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	<0.007	<0.050
JUN 05...	28	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	19	--	--	--	--	--	--	--	--	--	--	--	--
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)													
APR 2003 29...	E7	102	<0.006	E.008	<0.05	<0.05	<0.006	0.18	<0.05	<0.004	<0.005	E.004	<0.050
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	100	--	--	--	--	--	--	--	--	--	--	--	--
30...	52	73.5	<0.006	E.023	<0.05	<0.05	<0.006	0.14	<0.05	<0.004	<0.005	0.166	<0.050
JUN 05...	40	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	41	--	--	--	--	--	--	--	--	--	--	--	--
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	112	--	--	--	--	--	--	--	--	--	--	--	--
29...	102	76.8	<0.006	E.004	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	0.025	<0.050
JUN 05...	119	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	211	--	--	--	--	--	--	--	--	--	--	--	--
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)													
APR 2003 10...	93	--	--	--	--	--	--	--	--	--	--	--	--
30...	169	44.7	<0.006	E.003	<0.05	<0.05	<0.006	<0.05	<0.05	<0.004	<0.005	<0.007	<0.050
JUN 03...	225	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	217	--	--	--	--	--	--	--	--	--	--	--	--
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)													
APR 2003 17...	7,170	48.2	<0.006	<0.006	<0.05	<0.05	<0.006	0.07	<0.05	<0.004	<0.005	E.003	<0.050

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Ben- flur- alin, water, fltrd 0.7u GF (82673)	Butyl- ate, water, fltrd, ug/L (04028)	Car- baryl, water, fltrd 0.7u GF (82680)	Carbo- furan, water, fltrd 0.7u GF (82674)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF (82687)	Cyana- zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF (82682)	Desulf- inyl fipro- nil, water, fltrd, ug/L (62170)	Diazi- non, water, fltrd, ug/L (39572)	Diel- drin, water, fltrd, ug/L (39381)	Dimeth- enamid ESA, water, fltrd, ug/L (61951)	Dimeth- enamid OA, water, fltrd, ug/L (62482)
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)													
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 10... 21...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)													
APR 2003 29...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09... 30...	-- <0.010	-- <0.002	-- <0.041	-- <0.020	-- <0.005	-- <0.006	-- <0.018	-- <0.003	-- <0.004	-- <0.005	-- <0.005	-- <0.05	-- <0.05
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09... 29...	-- <0.010	-- <0.002	-- <0.041	-- <0.020	-- <0.005	-- <0.006	-- <0.018	-- <0.003	-- <0.004	-- <0.005	-- <0.005	-- <0.05	-- <0.05
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)													
APR 2003 10... 30...	-- <0.010	-- <0.002	-- <0.041	-- <0.020	-- <0.005	-- <0.006	-- <0.018	-- <0.003	-- <0.004	-- <0.005	-- <0.005	-- <0.05	-- <0.05
JUN 03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)													
APR 2003 17...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05

MISCELLANEOUS STATION ANALYSES—Continued

Date	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Desulfinylfipronil amide, wat flt ug/L (62169)	Fipronil sulfide, water, fltrd, ug/L (62167)	Fipronil sulfone, water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Flufenacet ESA, water, fltrd, ug/L (61952)	Flufenacet OA, water, fltrd, ug/L (62483)	Fonofos, water, fltrd, ug/L (04095)	Lindane, water, fltrd, ug/L (39341)	Linuron, water, fltrd 0.7u GF ug/L (82666)
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)													
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 10... 21...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)													
APR 2003 29...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09... 30...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09... 29...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)													
APR 2003 10... 30...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035
JUN 03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)													
APR 2003 17...	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Mala- thion, water, fltrd, ug/L (39532)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor ESA, water, fltrd 0.7u GF ug/L (61043)	Metola- chlor OA, water, fltrd 0.7u GF ug/L (61044)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p-' DDE, water, fltrd, ug/L (34653)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)													
APR 2003 21...	<0.027	<0.006	2.35	0.24	E.006	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)													
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<0.027	<0.006	<0.05	<0.05	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)													
APR 2003 29...	<0.027	<0.006	<0.05	<0.05	E.002	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<0.027	<0.006	17.2	4.52	0.019	<0.006	<0.002	<0.007	<0.010	<0.010	<0.004	<0.022	<0.011
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)													
APR 2003 09...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	<0.027	<0.006	0.68	0.06	E.011	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)													
APR 2003 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<0.027	<0.006	<0.05	<0.05	E.008	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
JUN 03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)													
APR 2003 17...	<0.027	<0.006	1.93	0.32	E.003	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011

MISCELLANEOUS STATION ANALYSES—Continued

Date	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd, ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd, ug/L (82679)	Propargite, water, fltrd, ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd, ug/L (82670)	Terbacil, water, fltrd, ug/L (82665)	Terbufos, water, fltrd, ug/L (82675)	Thio-bencarb water fltrd, ug/L (82681)	Tri-allate, water, fltrd, ug/L (82678)	Tri-fluralin, water, fltrd, ug/L (82661)
353127077333702 GR-107 L15 LIZZIE (LAT 35 31 26N LONG 077 33 36W)												
APR 2003 21...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
353127077333704 GR-109 L15D (LAT 35 31 26N LONG 077 33 36W)												
FEB 2003 13...	--	--	--	--	--	--	--	--	--	--	--	--
APR 2003 10... 21...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUN 2003 05...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 2003 21...	--	--	--	--	--	--	--	--	--	--	--	--
353135077332704 GR-113 L18D (LAT 35 31 35N LONG 077 33 27W)												
APR 2003 29...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	E.006	<0.02	<0.005	<0.002	<0.009
353114077333101 GR-168 LWQ70S (LAT 35 31 13N LONG 077 33 31W)												
APR 2003 09... 30...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUN 2003 05...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 2003 21...	--	--	--	--	--	--	--	--	--	--	--	--
353114077333102 GR-169 LWQ70D (LAT 35 31 13N LONG 077 33 31W)												
APR 2003 09... 29...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUN 2003 05...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 2003 21...	--	--	--	--	--	--	--	--	--	--	--	--
353126077332102 GR-171 LWQ71D (LAT 35 31 25N LONG 077 33 21W)												
APR 2003 10... 30...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009
JUN 2003 03...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 2003 21...	--	--	--	--	--	--	--	--	--	--	--	--
353153077333206 GR-153 BW-SR-BANK 3.5 PIEZOMETER NR SANDY RUN (LAT 35 31 53N LONG 077 33 32W)												
APR 2003 17...	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Time	Depth of well, feet below LSD (72008)	Flow rate, instantaneous gal/min (00059)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	1030	3.00	0.10	762	0.7	6	5.4	242	14.7	50	14.7	3.16	5.04
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	1145	5.50	0.10	762	2.8	29	4.5	212	16.4	53	9.96	6.85	3.75
Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Bromide, water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	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 (71846)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	10.2	21	26	0.04	39.0	9.19	23.3	131	132	1.5	1.59	1.23	0.17
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	8.30	--	--	0.04	25.7	6.20	12.5	--	116	0.20	--	<0.04	8.94
Date	Nitrite water, fltrd, mg/L as N (00613)	Organic nitrogen, water, fltrd, mg/L (00607)	Orthophosphate, water, fltrd, mg/L (00660)	Orthophosphate, water, fltrd, mg/L as P (00671)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)	2,6-Diethyl-aniline water, fltrd, 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor ESA, water, fltrd, 0.7u GF ug/L (61029)	Aceto-chlor OA, water, fltrd, 0.7u GF ug/L (61030)	Aceto-chlor, water, fltrd, ug/L (49260)	
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	E.004	0.26	0.080	0.03	1.7	5.2	10,800	39.4	<0.006	<0.006	<0.05	<0.05	<0.006
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	<0.008	--	--	<0.02	9.1	1.8	<10	47.6	<0.006	E.005	<0.05	<0.05	<0.006
Date	Ala-chlor ESA, water, fltrd, 0.7u GF ug/L (50009)	Ala-chlor OA, water, fltrd, 0.7u GF ug/L (61031)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd, 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd, 0.7u GF ug/L (82674)	Chlor-pyri-fos water, fltrd, ug/L (38933)	cis-Per-methrin water, fltrd, 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	--	<0.05	<0.004	<0.005	0.042	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)														
APR 2003	17...	<0.05	<0.05	<0.004	<0.005	0.011	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018

MISCELLANEOUS STATION ANALYSES—Continued

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Dimeth- enamid ESA, water, fltrd, ug/L (61951)	Dimeth- enamid OA, water, fltrd, ug/L (62482)	Disul- foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Desulf- inyl- fipronil amide, wat flt ug/L (62169)	Fipro- nil sulfide water, fltrd, ug/L (62167)	Fipro- nil sulfone water, fltrd, ug/L (62168)
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...	<0.003	<0.004	<0.005	<0.005	<0.05	<0.05	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005
Date	Fipro- nil, water, fltrd, ug/L (62166)	Flufen- acet ESA, water, fltrd, ug/L (61952)	Flufe- nacet OA, water, fltrd, ug/L (62483)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p'- DDE, water, fltrd, ug/L (34653)
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035	<0.027	<0.006	E.007	<0.006	<0.002	<0.007	<0.003
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...	<0.007	<0.05	<0.05	<0.003	<0.004	<0.035	<0.027	<0.006	E.007	<0.006	<0.002	<0.007	<0.003
Date	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome- ton, water, fltrd, ug/L (04037)	Pron- amide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02
Date						Thio- bencarb water fltrd 0.7u GF ug/L (82681)		Tri- allate, water, fltrd 0.7u GF ug/L (82678)			Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)		
353104077334307 GR-155 STREAMBED UT 3.0 AT LIZZIE (PIEZOMETER) (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...				<0.005				<0.002		<0.009			
353104077334309 GR-157 SANDY R FIELD PIEZOMETER NR WELL GR-085 (LAT 35 31 04N LONG 077 33 43W)													
APR 2003 17...				<0.005				<0.002		<0.009			

WATER QUALITY DATA
MISCELLANEOUS STATION ANALYSES

Ground-water-quality data were collected in Iredell County during the 2003 water year for the ongoing Piedmont/Mountains ground-water study in cooperation with the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. Well locations for sites listed in the following table are shown in figure 8.

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)	Temper- ature, 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)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., mg/L as CaCO3 (00419)	Bromide water, fltrd, mg/L (71870)	Chlor- ide, water, fltrd, mg/L (00940)
353141080524702 IR-146 LANGTREE RS MW-1I (TRANSITION ZONE WELL) (LAT 35 31 40N LONG 080 52 46W)													
MAR 2003 04...	0945	5.0	6.8	84	15.5	28	5.27	3.58	1.51	3.53	27	0.02	0.90
353141080524703 IR-147 LANGTREE RS MW-1D (BEDROCK WELL) (LAT 35 31 40N LONG 080 52 46W)													
MAR 2003 03...	1200	2.0	7.5	168	17.4	68	23.1	2.57	2.43	6.42	64	0.02	1.70
353157080525301 IR-148 LANGTREE RS MW-3 (REGOLITH WELL) (LAT 35 31 57N LONG 080 52 53W)													
MAR 2003 05...	1100	6.3	6.0	85	17.8	4	0.94	0.478	0.70	15.7	26	E.02	3.12
353157080525302 IR-149 LANGTREE RS MW-3I (TRANSITION ZONE WELL) (LAT 35 31 57N LONG 080 52 53W)													
MAR 2003 04...	1530	10.8	6.2	76	16.6	33	6.77	3.89	0.93	2.39	38	E.01	2.57
353145080524703 IR-153 LANGTREE RS MW-4D (BEDROCK WELL) (LAT 35 31 45N LONG 080 52 47W)													
MAR 2003 03...	1430	7.8	7.0	199	16.5	91	33.5	1.65	1.79	8.18	40	0.02	2.81
353148080524702 IR-155 LANGTREE RS MW-5I (TRANSITION ZONE WELL) (LAT 35 31 48N LONG 080 52 46W)													
MAR 2003 03...	1530	6.3	7.1	274	16.1	26	7.17	1.94	2.41	2.79	29	E.01	2.31
353151080524601 IR-157 LANGTREE RS MW-6S (REGOLITH WELL) (LAT 35 31 51N LONG 080 52 45W)													
MAR 2003 05...	0945	4.5	6.0	30	14.6	8	1.83	0.868	0.60	1.23	6	E.01	1.99
353151080524604 IR-160 LANGTREE RS MW-6I B (TRANSITION ZONE WELL) (LAT 35 31 51N LONG 080 52 45W)													
MAR 2003 05...	1115	6.9	6.2	44	15.9	15	3.76	1.48	0.60	1.84	16	0.02	1.68

MISCELLANEOUS STATION ANALYSES—Continued

Date	Silica, water, fltrd, mg/L (00955)	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)	Alum- inum, 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)
353141080524702 IR-146 LANGTREE RS MW-1I (TRANSITION ZONE WELL) (LAT 35 31 40N LONG 080 52 46W)													
MAR 2003 04...	28.7	1.0	66	<0.10	<0.04	1.09	<0.008	0.02	<2	<0.30	<2	6	<0.06
353141080524703 IR-147 LANGTREE RS MW-1D (BEDROCK WELL) (LAT 35 31 40N LONG 080 52 46W)													
MAR 2003 03...	33.1	22.8	127	<0.10	<0.04	0.24	<0.008	0.03	4	<0.30	E1	9	<0.06
353157080525301 IR-148 LANGTREE RS MW-3 (REGOLITH WELL) (LAT 35 31 57N LONG 080 52 53W)													
MAR 2003 05...	7.92	8.5	59	<0.10	<0.04	<0.06	<0.008	<0.02	12	E.20	<2	6	<0.06
353157080525302 IR-149 LANGTREE RS MW-3I (TRANSITION ZONE WELL) (LAT 35 31 57N LONG 080 52 53W)													
MAR 2003 04...	25.0	1.3	67	<0.10	<0.04	0.14	<0.008	E.01	<2	<0.30	<2	24	<0.06
353145080524703 IR-153 LANGTREE RS MW-4D (BEDROCK WELL) (LAT 35 31 45N LONG 080 52 47W)													
MAR 2003 03...	26.6	65.5	170	<0.10	<0.04	0.71	<0.008	E.01	E1	<0.30	<2	13	<0.06
353148080524702 IR-155 LANGTREE RS MW-5I (TRANSITION ZONE WELL) (LAT 35 31 48N LONG 080 52 46W)													
MAR 2003 03...	22.8	1.4	71	<0.10	<0.04	1.17	<0.008	<0.02	5	<0.30	<2	8	<0.06
353151080524601 IR-157 LANGTREE RS MW-6S (REGOLITH WELL) (LAT 35 31 51N LONG 080 52 45W)													
MAR 2003 05...	8.40	0.7	26	<0.10	<0.04	0.13	<0.008	<0.02	5	<0.30	<2	6	<0.06
353151080524604 IR-160 LANGTREE RS MW-6I B (TRANSITION ZONE WELL) (LAT 35 31 51N LONG 080 52 45W)													
MAR 2003 05...	16.4	0.6	42	<0.10	<0.04	0.52	<0.008	<0.02	M	<0.30	<2	3	<0.06

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Boron, water, flt'd, ug/L (01020)	Cadmium water, flt'd, ug/L (01025)	Chrom- ium, water, flt'd, ug/L (01030)	Cobalt water, flt'd, ug/L (01035)	Copper, water, flt'd, ug/L (01040)	Iron, water, flt'd, ug/L (01046)	Lead, water, flt'd, ug/L (01049)	Mangan- ese, water, flt'd, ug/L (01056)	Molyb- denum, water, flt'd, ug/L (01060)	Nickel, water, flt'd, ug/L (01065)	Selen- ium, water, flt'd, ug/L (01145)	Silver, water, flt'd, ug/L (01075)	Zinc, water, flt'd, ug/L (01090)
	353141080524702 IR-146 LANGTREE RS MW-1I (TRANSITION ZONE WELL) (LAT 35 31 40N LONG 080 52 46W)												
MAR 2003 04...	<13	E.03	1.4	0.025	1.0	<10	0.71	1.4	E.2	0.42	<3	<0.2	7
	353141080524703 IR-147 LANGTREE RS MW-1D (BEDROCK WELL) (LAT 35 31 40N LONG 080 52 46W)												
MAR 2003 03...	15	0.06	<0.8	0.081	0.5	<10	<0.08	0.8	18.4	1.03	4	<0.2	1
	353157080525301 IR-148 LANGTREE RS MW-3 (REGOLITH WELL) (LAT 35 31 57N LONG 080 52 53W)												
MAR 2003 05...	<13	E.02	<0.8	0.118	0.6	<10	<0.08	6.6	E.3	0.38	<3	<0.2	2
	353157080525302 IR-149 LANGTREE RS MW-3I (TRANSITION ZONE WELL) (LAT 35 31 57N LONG 080 52 53W)												
MAR 2003 04...	<13	<0.04	3.5	0.058	E.2	<10	<0.08	4.6	E.2	1.44	<3	<0.2	3
	353145080524703 IR-153 LANGTREE RS MW-4D (BEDROCK WELL) (LAT 35 31 45N LONG 080 52 47W)												
MAR 2003 03...	25	0.05	<0.8	0.132	1.4	<10	0.21	5.5	8.4	1.91	4	<0.2	2
	353148080524702 IR-155 LANGTREE RS MW-5I (TRANSITION ZONE WELL) (LAT 35 31 48N LONG 080 52 46W)												
MAR 2003 03...	<13	<0.04	<0.8	0.071	0.6	E8	<0.08	16.8	0.5	0.45	<3	<0.2	<1
	353151080524601 IR-157 LANGTREE RS MW-6S (REGOLITH WELL) (LAT 35 31 51N LONG 080 52 45W)												
MAR 2003 05...	<13	0.10	<0.8	0.088	<0.2	<10	<0.08	10.4	<0.3	0.26	<3	<0.2	2
	353151080524604 IR-160 LANGTREE RS MW-6I B (TRANSITION ZONE WELL) (LAT 35 31 51N LONG 080 52 45W)												
MAR 2003 05...	<13	<0.04	<0.8	0.049	1.0	<10	<0.08	4.5	0.9	0.25	<3	<0.2	<1

MISCELLANEOUS STATION ANALYSES—Continued

Date	Alpha radio- activity water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
353141080524702 IR-146 LANGTREE RS MW-1I (TRANSITION ZONE WELL) (LAT 35 31 40N LONG 080 52 46W)				
MAR 2003 04...	0.1	1.9	260	<0.02
353141080524703 IR-147 LANGTREE RS MW-1D (BEDROCK WELL) (LAT 35 31 40N LONG 080 52 46W)				
MAR 2003 03...	3.8	4.9	220	5.05
353157080525301 IR-148 LANGTREE RS MW-3 (REGOLITH WELL) (LAT 35 31 57N LONG 080 52 53W)				
MAR 2003 05...	0.1	0.4	80	0.04
353157080525302 IR-149 LANGTREE RS MW-3I (TRANSITION ZONE WELL) (LAT 35 31 57N LONG 080 52 53W)				
MAR 2003 04...	-0.1	1.2	180	E.01
353145080524703 IR-153 LANGTREE RS MW-4D (BEDROCK WELL) (LAT 35 31 45N LONG 080 52 47W)				
MAR 2003 03...	0.6	3.0	70	1.93
353148080524702 IR-155 LANGTREE RS MW-5I (TRANSITION ZONE WELL) (LAT 35 31 48N LONG 080 52 46W)				
MAR 2003 03...	M	2.1	20	0.03
353151080524601 IR-157 LANGTREE RS MW-6S (REGOLITH WELL) (LAT 35 31 51N LONG 080 52 45W)				
MAR 2003 05...	M	0.9	330	<0.02
353151080524604 IR-160 LANGTREE RS MW-6I B (TRANSITION ZONE WELL) (LAT 35 31 51N LONG 080 52 45W)				
MAR 2003 05...	0.1	0.4	270	<0.02

Remark codes used in this table:

< -- Less than

E -- Estimated value

M-- Presence verified, not quantified

WATER QUALITY DATA
MISCELLANEOUS STATION ANALYSES

Ground-water-quality data were collected in Rockingham County during December 2003 for the ongoing Piedmont/Mountains ground-water study in cooperation with the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. Well locations for sites listed in the following table are shown in figure 9.

Date	Time	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat un- f uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Hard- ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, unfltrd mg/L (00915)	Magnes- ium, water, unfltrd, mg/L (00925)	Potas- sium, water, unfltrd, mg/L (00935)	Sodium, water, unfltrd, mg/L (00930)	Bromide water, unfltrd, mg/L (71870)	Chlor- ide, water, unfltrd, mg/L (00940)	Silica, water, unfltrd, mg/L (00955)	
362334079421601 RK-227 UPPER PIEDMONT RS MW-NIS (LAT 36 23 34N LONG 079 42 17W)														
DEC 2002	11...	1500	4.0	5.9	150	15.1	55	12.2	6.10	1.45	4.39	E.01	2.73	34.9
362334079421602 RK-228 UPPER PIEDMONT RS MW-N1I (LAT 36 23 34N LONG 079 42 16W)														
DEC 2002	12...	1230	2.2	6.7	416	14.8	69	14.7	7.88	1.67	65.9	0.04	8.38	21.2
362334079421603 RK-229 UPPER PIEDMONT RS MW-N1D (LAT 36 23 34N LONG 079 42 16W)														
DEC 2002	11...	1445	0.2	7.8	238	15.4	85	26.0	4.86	0.72	18.5	0.02	3.09	18.7
362331079421601 RK-230 UPPER PIEDMONT RS MW-N2S (LAT 36 23 31N LONG 079 42 16W)														
DEC 2002	12...	1115	6.2	5.5	120	11.0	29	6.70	2.87	3.70	6.32	0.07	6.12	23.7
362331079421602 RK-231 UPPER PIEDMONT RS MW-N2I (LAT 36 23 32N LONG 079 42 16W)														
DEC 2002	12...	1030	0.3	6.3	192	13.9	81	20.4	7.30	1.75	6.76	0.02	5.35	29.1
362331079421603 RK-232 UPPER PIEDMONT RS MW-N2D (LAT 36 23 31N LONG 079 42 16W)														
DEC 2002	11...	1615	0.2	7.1	281	14.8	110	32.0	7.15	2.23	9.31	0.02	3.86	26.6
362328079421702 RK-234 UPPER PIEDMONT RS MW-N3D (LAT 36 23 28N LONG 079 42 17W)														
DEC 2002	12...	1515	0.2	7.7	192	14.9	75	21.0	5.52	2.19	9.50	0.03	4.18	25.9
362323079421201 RK-235 UPPER PIEDMONT RS MW-N4I (LAT 36 23 23N LONG 079 42 12W)														
DEC 2002	09...	1115	2.2	6.4	183	15.6	48	13.4	3.59	3.94	11.4	0.06	11.4	33.8
362323079421202 RK-236 UPPER PIEDMONT RS MW-N4D (LAT 36 23 23N LONG 079 42 12W)														
DEC 2002	09...	1100	3.4	6.4	194	14.6	41	7.11	5.64	0.84	13.9	0.08	10.8	41.0
362240079411801 RK-237 UPPER PIEDMONT RS MW-S1I (LAT 36 22 40N LONG 079 41 18W)														
DEC 2002	10...	0900	6.6	6.9	191	9.8	45	10.2	4.64	1.68	14.5	0.03	9.46	32.1
362240079411802 RK-238 UPPER PIEDMONT RS MW-S1D (LAT 36 22 40N LONG 079 41 18W)														
DEC 2002	09...	1545	0.1	7.8	299	15.7	110	31.2	7.84	6.11	14.3	0.06	21.9	28.5
362231079410801 RK-239 UPPER PIEDMONT RS MW-S3S (LAT 36 22 31N LONG 079 41 08W)														
DEC 2002	10...	1345	7.2	6.0	124	15.2	18	4.68	1.64	1.93	14.4	0.02	5.94	37.8
362231079410802 RK-240 UPPER PIEDMONT RS MW-S3UI (LAT 36 22 31N LONG 079 41 08W)														
DEC 2002	10...	1245	--	6.4	142	13.5	27	6.93	2.29	1.65	15.0	0.03	6.09	41.0

WATER QUALITY DATA
MISCELLANEOUS STATION ANALYSES—Continued

Date	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, 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)	Mangan- ese, water, fltrd, ug/L (01056)	Molyb- denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen- ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	Alpha radio- activity water, fltrd, Th-230, pCi/L (04126)
	362334079421601 RK-227 UPPER PIEDMONT RS MW-NIS (LAT 36 23 34N LONG 079 42 17W)												
DEC 2002 11...	<0.04	1.0	1.34	0.4	<10	<0.08	87.5	<0.3	1.67	<3	<0.2	3	M
	362334079421602 RK-228 UPPER PIEDMONT RS MW-N1I (LAT 36 23 34N LONG 079 42 16W)												
DEC 2002 12...	0.06	<0.8	0.082	0.5	<10	0.10	49.8	4.3	1.34	<3	<0.2	18	1.1
	362334079421603 RK-229 UPPER PIEDMONT RS MW-N1D (LAT 36 23 34N LONG 079 42 16W)												
DEC 2002 11...	<0.04	<0.8	0.056	E.2	<10	<0.08	8.9	3.0	0.62	<3	<0.2	14	10.0
	362331079421601 RK-230 UPPER PIEDMONT RS MW-N2S (LAT 36 23 31N LONG 079 42 16W)												
DEC 2002 12...	0.10	<0.8	2.54	E.2	4,970	<0.08	631	0.4	2.86	<3	<0.2	8	1.1
	362331079421602 RK-231 UPPER PIEDMONT RS MW-N2I (LAT 36 23 32N LONG 079 42 16W)												
DEC 2002 12...	<0.04	<0.8	0.044	<0.2	<10	<0.08	2.1	0.8	1.13	<3	<0.2	M	0.3
	362331079421603 RK-232 UPPER PIEDMONT RS MW-N2D (LAT 36 23 31N LONG 079 42 16W)												
DEC 2002 11...	<0.04	<0.8	0.353	0.3	65	0.11	360	1.9	1.17	<3	<0.2	7,490	-0.3
	362328079421702 RK-234 UPPER PIEDMONT RS MW-N3D (LAT 36 23 28N LONG 079 42 17W)												
DEC 2002 12...	E.03	<0.8	0.114	E.1	<10	E.05	153	10.2	1.25	<3	<0.2	M	10.2
	362323079421201 RK-235 UPPER PIEDMONT RS MW-N4I (LAT 36 23 23N LONG 079 42 12W)												
DEC 2002 09...	E.03	<1.6	2.19	0.4	667	0.11	2,480	7.7	7.77	<3	<0.2	6	1.4
	362323079421202 RK-236 UPPER PIEDMONT RS MW-N4D (LAT 36 23 23N LONG 079 42 12W)												
DEC 2002 09...	0.04	<0.8	0.098	0.8	<10	0.71	16.2	1.0	1.03	<3	<0.2	12,900	0.8
	362240079411801 RK-237 UPPER PIEDMONT RS MW-S1I (LAT 36 22 40N LONG 079 41 18W)												
DEC 2002 10...	0.18	0.9	0.376	E.2	46	<0.08	128	1.7	6.57	<3	<0.2	33	1.3
	362240079411802 RK-238 UPPER PIEDMONT RS MW-S1D (LAT 36 22 40N LONG 079 41 18W)												
DEC 2002 09...	E.03	<0.8	0.105	0.2	E8	E.07	117	7.7	1.23	<3	<0.2	843	5.8
	362231079410801 RK-239 UPPER PIEDMONT RS MW-S3S (LAT 36 22 31N LONG 079 41 08W)												
DEC 2002 10...	0.04	1.5	0.028	<0.2	<10	<0.08	33.2	<0.3	1.14	<3	<0.2	4	0.3
	362231079410802 RK-240 UPPER PIEDMONT RS MW-S3UI (LAT 36 22 31N LONG 079 41 08W)												
DEC 2002 10...	<0.04	3.5	0.075	<0.2	<10	<0.08	14.9	<0.3	1.31	<3	<0.2	2	0.9

WATER QUALITY DATA

429

MISCELLANEOUS STATION ANALYSES—Continued

Date	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
362334079421601 RK-227 UPPER PIEDMONT RS MW-NIS (LAT 36 23 34N LONG 079 42 17W)			
DEC 2002 11...	1.8	170	<0.02
362334079421602 RK-228 UPPER PIEDMONT RS MW-N1I (LAT 36 23 34N LONG 079 42 16W)			
DEC 2002 12...	2.2	260	0.82
362334079421603 RK-229 UPPER PIEDMONT RS MW-N1D (LAT 36 23 34N LONG 079 42 16W)			
DEC 2002 11...	4.2	3,390	3.73
362331079421601 RK-230 UPPER PIEDMONT RS MW-N2S (LAT 36 23 31N LONG 079 42 16W)			
DEC 2002 12...	5.2	760	0.03
362331079421602 RK-231 UPPER PIEDMONT RS MW-N2I (LAT 36 23 32N LONG 079 42 16W)			
DEC 2002 12...	3.5	3,120	0.35
362331079421603 RK-232 UPPER PIEDMONT RS MW-N2D (LAT 36 23 31N LONG 079 42 16W)			
DEC 2002 11...	3.2	970	0.38
362328079421702 RK-234 UPPER PIEDMONT RS MW-N3D (LAT 36 23 28N LONG 079 42 17W)			
DEC 2002 12...	7.8	--	4.29
362323079421201 RK-235 UPPER PIEDMONT RS MW-N4I (LAT 36 23 23N LONG 079 42 12W)			
DEC 2002 09...	5.8	2,530	0.61
362323079421202 RK-236 UPPER PIEDMONT RS MW-N4D (LAT 36 23 23N LONG 079 42 12W)			
DEC 2002 09...	7.0	18,600	0.14
362240079411801 RK-237 UPPER PIEDMONT RS MW-S1I (LAT 36 22 40N LONG 079 41 18W)			
DEC 2002 10...	6.1	5,290	0.03
362240079411802 RK-238 UPPER PIEDMONT RS MW-S1D (LAT 36 22 40N LONG 079 41 18W)			
DEC 2002 09...	14.0	480	6.64
362231079410801 RK-239 UPPER PIEDMONT RS MW-S3S (LAT 36 22 31N LONG 079 41 08W)			
DEC 2002 10...	3.1	1,620	0.02
362231079410802 RK-240 UPPER PIEDMONT RS MW-S3UI (LAT 36 22 31N LONG 079 41 08W)			
DEC 2002 10...	3.0	3,780	E.01

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Time	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unfltrd uS/cm 25 degC (00095)	Temper- ature, 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)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Bromide water, fltrd, mg/L (71870)	Chlor- ide, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)
362231079310803 RK-241 UPPER PIEDMONT RS MW-S3LI (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...	1215	8.0	5.7	119	15.5	24	6.21	2.13	1.14	12.4	0.03	5.19	43.5
362231079310804 RK-242 UPPER PIEDMONT RS MW-S3D (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...	1145	5.2	6.3	164	15.6	43	10.3	4.27	0.88	11.5	0.03	4.91	41.3
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)	Alum- inum, 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)
362231079310803 RK-241 UPPER PIEDMONT RS MW-S3LI (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...	0.2	124	<0.10	<0.04	6.59	<0.008	0.03	<2	<0.30	<2	17	0.11	<13
362231079310804 RK-242 UPPER PIEDMONT RS MW-S3D (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...	1.9	149	<0.10	<0.04	7.67	0.042	0.03	<2	<0.30	<2	2	<0.06	<13
Date	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, 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)	Mangan- ese, water, fltrd, ug/L (01056)	Molyb- denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen- ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	Alpha radio- activity water, fltrd, Th-230, pCi/L (04126)
362231079310803 RK-241 UPPER PIEDMONT RS MW-S3LI (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...	<0.04	1.1	0.127	<0.2	E6	<0.08	40.6	E.3	2.03	<3	<0.2	M	0.6
362231079310804 RK-242 UPPER PIEDMONT RS MW-S3D (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...	<0.04	<0.8	0.737	0.4	<10	0.34	1.5	0.8	0.90	<3	<0.2	4,400	M
Date				Grossbeta radioac water,fltrd, Cs-137, pCi/L (03515)				Rn-222, water, unfltrd pCi/L (82303)				Uranium natural water,fltrd, ug/L (22703)	
362231079310803 RK-241 UPPER PIEDMONT RS MW-S3LI (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...				3.1				5,270				E.01	
362231079310804 RK-242 UPPER PIEDMONT RS MW-S3D (LAT 36 22 31N LONG 079 31 08W)													
DEC 2002 10...				3.7				5,510				0.11	

Remark codes used in this table:

< -- Less than

E -- Estimated value

M-- Presence verified, not quantified

MISCELLANEOUS STATION ANALYSES

Ground-water-quality data were collected in Wake County during the 2003 water year for the ongoing Piedmont/Mountains ground-water study in cooperation with the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. Well locations for sites listed in the following tables are shown in figure 9.

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)	Temper-ature, 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)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, water, fltrd, mg/L (00940)	
354359078403101 WK-280 LAKE WHEELER MW-2S (REGOLITH WELL) (LAT 35 43 59N LONG 078 40 31W)														
NOV 2002	14...	1000	5.2	5.2	248	18.1	62	16.8	4.90	3.48	17.0	7	0.04	17.0
354359078403102 WK-281 LAKE WHEELER RS MW-2I (INTERMEDIATE WELL) (LAT 35 43 59N LONG 078 40 31W)														
NOV 2002	13...	1600	5.6	5.6	215	17.0	56	15.4	4.14	3.46	13.2	16	0.03	13.2
354359078403103 WK-282 LAKE WHEELER RS MW-2T (TRANSITION ZONE WELL) (LAT 35 43 59N LONG 078 40 31W)														
NOV 2002	14...	1015	7.2	5.7	223	17.4	61	17.9	4.04	3.43	13.7	34	0.04	11.6
354404078403101 WK-284 LAKE WHEELER RS MW-3S (REGOLITH WELL) (LAT 35 44 04N LONG 078 40 30W)														
NOV 2002	13...	1015	8.7	5.1	81	17.1	15	1.65	2.50	1.89	8.05	3	0.04	7.04
354404078403102 WK-285 LAKE WHEELER RS MW-3I (TRANSITION ZONE WELL) (LAT 35 44 04N LONG 078 40 30W)														
NOV 2002	13...	1145	7.0	5.8	82	17.5	19	4.89	1.56	2.14	7.51	18	0.03	3.55
354401078403401 WK-287 LAKE WHEELER RS PW-1 (LAT 35 44 00N LONG 078 40 33W)														
NOV 2002	14...	1100	0.1	7.8	195	17.4	75	24.6	3.32	2.65	9.80	75	E.02	3.09
Date	Silica, water, fltrd, mg/L (00955)	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)	Alum-inum, 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)	
354359078403101 WK-280 LAKE WHEELER MW-2S (REGOLITH WELL) (LAT 35 43 59N LONG 078 40 31W)														
NOV 2002	14...	20.5	E.1	185	<0.10	<0.04	21.1	<0.008	<0.02	2	<0.30	<2	210	0.33
354359078403102 WK-281 LAKE WHEELER RS MW-2I (INTERMEDIATE WELL) (LAT 35 43 59N LONG 078 40 31W)														
NOV 2002	13...	26.5	0.2	165	<0.10	<0.04	15.9	E.004	E.01	<2	<0.30	<2	126	E.06
354359078403103 WK-282 LAKE WHEELER RS MW-2T (TRANSITION ZONE WELL) (LAT 35 43 59N LONG 078 40 31W)														
NOV 2002	14...	30.1	0.6	170	<0.10	<0.04	15.3	<0.008	0.04	4	<0.30	<2	158	E.05
354404078403101 WK-284 LAKE WHEELER RS MW-3S (REGOLITH WELL) (LAT 35 44 04N LONG 078 40 30W)														
NOV 2002	13...	9.93	E.1	60	<0.10	<0.04	5.90	<0.008	<0.02	18	<0.30	<2	124	0.20
354404078403102 WK-285 LAKE WHEELER RS MW-3I (TRANSITION ZONE WELL) (LAT 35 44 04N LONG 078 40 30W)														
NOV 2002	13...	27.5	2.4	74	<0.10	<0.04	2.69	0.008	E.02	<2	<0.30	<2	42	0.07
354401078403401 WK-287 LAKE WHEELER RS PW-1 (LAT 35 44 00N LONG 078 40 33W)														
NOV 2002	14...	27.4	6.8	126	<0.10	<0.04	<0.06	<0.008	<0.02	3	<0.30	<2	16	<0.06

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, 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)	Mangan- ese, water, fltrd, ug/L (01056)	Molyb- denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen- ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)
354359078403101 WK-280 LAKE WHEELER MW-2S (REGOLITH WELL) (LAT 35 43 59N LONG 078 40 31W)													
NOV 2002 14...	<13	0.15	E.6	0.761	0.9	13	0.13	157	0.5	5.72	<3	<0.2	6
354359078403102 WK-281 LAKE WHEELER RS MW-2I (INTERMEDIATE WELL) (LAT 35 43 59N LONG 078 40 31W)													
NOV 2002 13...	E6.0	E.03	<0.8	0.438	0.3	<10	<0.08	40.6	<0.3	2.21	<3	<0.2	3
354359078403103 WK-282 LAKE WHEELER RS MW-2T (TRANSITION ZONE WELL) (LAT 35 43 59N LONG 078 40 31W)													
NOV 2002 14...	<13	E.03	E.6	0.101	0.4	<10	<0.08	10.8	0.6	1.49	<3	<0.2	1
354404078403101 WK-284 LAKE WHEELER RS MW-3S (REGOLITH WELL) (LAT 35 44 04N LONG 078 40 30W)													
NOV 2002 13...	<13	E.03	E.4	2.19	0.6	E8	E.06	34.6	<0.3	1.99	<3	<0.2	6
354404078403102 WK-285 LAKE WHEELER RS MW-3I (TRANSITION ZONE WELL) (LAT 35 44 04N LONG 078 40 30W)													
NOV 2002 13...	<13	E.03	2.2	0.279	2.0	<10	<0.08	48.0	<0.3	8.68	<3	<0.2	5
354401078403401 WK-287 LAKE WHEELER RS PW-1 (LAT 35 44 00N LONG 078 40 33W)													
NOV 2002 14...	E10	0.05	<0.8	0.046	0.2	19	0.34	83.6	20.2	0.57	<3	<0.2	39

Date	Alpha radio- activty water, fltrd, Th-230, pCi/L (04126)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
354359078403101 WK-280 LAKE WHEELER MW-2S (REGOLITH WELL) (LAT 35 43 59N LONG 078 40 31W)				
NOV 2002 14...	1.4	5.4	1,490	E.01
354359078403102 WK-281 LAKE WHEELER RS MW-2I (INTERMEDIATE WELL) (LAT 35 43 59N LONG 078 40 31W)				
NOV 2002 13...	1.0	5.9	4,220	E.01
354359078403103 WK-282 LAKE WHEELER RS MW-2T (TRANSITION ZONE WELL) (LAT 35 43 59N LONG 078 40 31W)				
NOV 2002 14...	0.2	5.2	1,820	0.02
354404078403101 WK-284 LAKE WHEELER RS MW-3S (REGOLITH WELL) (LAT 35 44 04N LONG 078 40 30W)				
NOV 2002 13...	1.2	2.8	680	0.03
354404078403102 WK-285 LAKE WHEELER RS MW-3I (TRANSITION ZONE WELL) (LAT 35 44 04N LONG 078 40 30W)				
NOV 2002 13...	0.4	2.5	1,360	E.01
354401078403401 WK-287 LAKE WHEELER RS PW-1 (LAT 35 44 00N LONG 078 40 33W)				
NOV 2002 14...	6.7	10.8	980	2.03

MISCELLANEOUS STATION ANALYSES

Ground-water-quality data were collected for the Albemarle-Pamlico Drainage Basin study unit for the National Water Quality Assessment Program during the 2003 water year. Objectives of the study are to provide data primarily for characterizing water-quality of the Castle Hayne aquifer in the Coastal Plain of North Carolina and for evaluating trends in ground-water quality. Well locations for sites listed in the following tables are shown in figure 9.

Date	Time	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Altitude of land surface feet (72000)	Water level, depth below MP, feet (61055)	Flow rate, instantaneous gal/min (00059)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm (00095)	Temperature, water, deg C (00010)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	1030	73.38	8.19	42.5	8.19	1.0	0.6	766	0.5	5	7.5	310	18.1
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	1100	45.80	7.00	37.5	6.70	1.0	0.2	763	0.1	2	7.2	416	18.8
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	1000	21.75	9.29	37.5	12.04	0.10	87	770	0.4	4	7.0	720	17.7
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	1000	59.00	26.64	36.0	27.49	1.2	7.9	763	0.1	1	8.2	139	18.9
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	1300	90.00	17.66	45	18.45	5.1	3.2	755	0.1	1	7.5	308	21.9
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	1115	90.00	16.93	25	17.95	3.0	0.9	773	0.1	0.0	8.1	238	18.5
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	1500	105.00	9.00	44	10.25	6.0	5.6	755	0.2	2	7.3	354	20.3
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	1100	80.00	--	12.5	--	3.0	0.5	771	0.1	1	7.4	368	17.7
FEB 05...	0930	80.00	5.18	12.5	6.96	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	1500	--	--	--	--	--	0.4	761	1.5	16	7.5	370	19.1
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	1100	110.60	8.38	22.5	9.48	0.50	20	756	0.2	2	8.2	721	17.3
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	1500	182.00	--	--	--	--	0.2	763	0.2	2	7.3	363	17.8
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	1430	240.00	--	--	--	0.30	--	762	3.3	37	7.3	421	20.7

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Hardness, water, unfltrd mg/L as CaCO ₃ (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, field, mg/L as CaCO ₃ (39086)	Bicarbonate, water, titr., field, mg/L (00453)	Bromide water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)
	341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)												
FEB 2003 12...	160	62.9	1.49	0.54	4.93	136	166	0.03	5.52	7.24	0.6	166	187
	342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)												
OCT 2002 29...	230	89.0	1.99	0.82	7.12	200	244	0.04	22.3	11.3	4.8	261	269
	342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)												
MAR 2003 12...	380	145	4.18	2.16	6.75	252	307	0.06	10.5	7.53	118	449	466
	343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)												
OCT 2002 30...	74	29.0	0.475	2.01	2.24	90	110	E.01	2.70	1.25	3.1	96	84
	342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)												
SEP 2002 11...	150	57.7	1.73	0.68	6.04	136	166	--	10.0	8.32	0.5	169	186
	342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)												
FEB 2003 06...	110	40.0	1.71	0.90	7.21	68	83	0.06	11.9	9.87	27.2	141	146
	342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)												
SEP 2002 11...	180	70.4	1.54	0.73	5.32	174	212	--	8.47	12.4	0.2	205	216
	342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)												
JAN 2003 15...	190	73.2	1.87	0.94	7.34	185	226	0.05	8.74	22.9	<0.2	--	242
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
	343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)												
SEP 2002 18...	190	68.3	3.57	4.77	7.21	192	234	--	6.38	41.3	<0.1	--	271
	344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)												
JAN 2003 09...	62	17.6	4.47	11.7	144	312	381	0.18	50.8	35.9	4.4	459	466
	350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)												
SEP 2002 12...	190	71.2	2.06	2.04	6.07	131	160	0.05	9.19	13.8	11.9	196	220
	344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)												
OCT 2002 02...	220	83.4	1.90	1.30	7.60	215	262	0.04	7.53	19.9	0.4	253	261

MISCELLANEOUS STATION ANALYSES—Continued

Date	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L (71846)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Ortho-phosphate, water, fltrd, mg/L (00660)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	E coli, MI MF, water, col/100 mL (90901)	Total coliform, MI MF, water, col/100 mL (90900)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)
	341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)												
FEB 2003 12...	<0.10	--	E.03	<0.06	<0.008	--	0.123	0.04	1.0	--	--	E2	<0.30
	342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)												
OCT 2002 29...	E.06	--	<0.04	<0.06	E.005	--	0.175	0.06	0.9	--	--	M	<0.30
	342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)												
MAR 2003 12...	0.25	0.16	0.12	<0.06	<0.008	0.12	0.092	0.03	6.6	--	--	3	<0.30
	343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)												
OCT 2002 30...	<0.10	--	<0.04	0.16	<0.008	--	--	<0.02	0.7	--	--	2	E.17
	342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)												
SEP 2002 11...	0.30	0.29	0.23	<0.05	<0.008	0.07	0.310	0.10	4.7	<1	<1	1	<0.05
	342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)												
FEB 2003 06...	<0.10	--	<0.04	<0.06	<0.008	--	0.316	0.10	0.4	<1	24	<2	<0.30
	342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)												
SEP 2002 11...	0.26	0.23	0.18	<0.05	<0.008	0.08	0.337	0.11	4.8	<1	<1	1	<0.05
	342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)												
JAN 2003 15...	0.18	0.18	0.14	<0.06	<0.008	0.04	0.454	0.15	2.9	<1	K1	<2	<0.30
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
	343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)												
SEP 2002 18...	0.25	0.23	0.18	<0.05	<0.008	0.08	--	<0.02	5.5	<1	K3	<1	<0.05
	344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)												
JAN 2003 09...	0.22	0.22	0.17	<0.06	<0.008	0.05	0.064	0.02	1.6	--	--	<2	<0.30
	350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)												
SEP 2002 12...	E.05	--	<0.04	<0.05	<0.008	--	0.598	0.20	0.6	<1	<1	<1	E.04
	344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)												
OCT 2002 02...	0.30	0.11	0.09	<0.06	<0.008	0.22	0.071	0.02	2.5	<1	<1	<2	<0.30

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	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)	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, 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)	Lithium water, fltrd, ug/L (01130)	Mangan- ese, water, fltrd, ug/L (01056)	Molyb- denum, water, fltrd, ug/L (01060)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.3	16	<0.06	18	<0.04	<0.8	0.082	E.1	251	<0.08	0.7	17.3	<0.3
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	0.5	31	<0.06	12	<0.04	<0.8	0.191	E.2	3,030	<0.08	2.6	249	0.4
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.3	44	<0.06	19	<0.04	<0.8	0.415	1.8	2,950	0.70	2.3	135	0.8
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.3	14	<0.06	16	0.72	<0.8	0.072	0.4	<10	4.83	2.0	3.7	0.7
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.2	23	<0.06	18	<0.04	<0.8	0.112	E.1	1,210	E.05	1.5	20.4	<0.2
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.3	9	<0.06	29	<0.04	<0.8	0.062	0.3	288	<0.08	2.1	15.5	1.4
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.2	21	<0.06	11	<0.04	<0.8	0.137	E.1	958	<0.08	2.0	22.2	<0.2
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.3	13	<0.06	16	<0.04	<0.8	0.134	0.6	2,020	0.27	6.1	48.2	<0.3
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	E.1	<1	<0.06	20	<0.04	<0.8	0.125	E.2	236	0.30	19.9	14.3	E.1
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	E.2	M	<0.06	1,300	<0.04	<4.0	0.041	<0.2	<10	<0.08	12.2	0.2	0.8
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.2	<1	<0.06	20	<0.04	<0.8	0.130	E.2	376	<0.08	1.9	19.7	E.1
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.3	M	<0.06	11	<0.04	<0.8	0.171	E.2	1,230	E.04	4.0	37.4	<0.3

WATER QUALITY DATA

437

MISCELLANEOUS STATION ANALYSES—Continued

Date	Nickel, water, fltrd, ug/L (01065)	Selen- ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Stront- ium, water, fltrd, ug/L (01080)	Thall- ium, water, fltrd, ug/L (01057)	Vanad- ium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- HCH, water, fltrd, ug/L (34253)	Atra- zine, water, fltrd, ug/L (39632)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	3.17	<0.5	<0.2	144	<0.04	1.4	2	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	2.02	<0.5	<0.2	138	<0.04	0.3	6	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	7.71	<0.5	<0.2	208	<0.04	1.2	4	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	1.17	<0.5	<0.2	85.4	<0.04	E.1	661	<0.006	<0.006	<0.006	<0.004	<0.005	E.004
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	2.28	<0.3	<1.0	119	0.30	2.3	1	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	1.32	<0.5	<0.2	97.1	<0.04	0.3	3	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	2.43	<0.3	<1.0	97.2	E.03	2.3	2	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	2.31	0.5	<0.2	164	<0.04	0.3	3	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	2.15	<0.3	<1.0	218	<0.04	1.0	4	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	0.67	0.7	<0.2	81.1	<0.04	0.1	3	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	2.37	<0.3	<1.0	206	<0.04	0.8	3	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	0.23	<0.5	<0.2	260	<0.04	0.7	67	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyri-fos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disulf-oton, water, fltrd 0.7u GF ug/L (82677)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	--	<0.005	<0.005	<0.02
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	--	<0.005	<0.005	<0.02
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	--	<0.005	<0.005	<0.02
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	--	<0.005	<0.005	<0.02
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	--	<0.005	<0.005	<0.02

MISCELLANEOUS STATION ANALYSES—Continued

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Desulf- inyl- fipro- nil amide, wat flt ug/L (62169)	Fipro- nil sulfide water, fltrd, ug/L (62167)	Fipro- nil sulfone water, fltrd, ug/L (62168)	Fipro- nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala- thion, water, fltrd, ug/L (39532)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor, water, fltrd, ug/L (39415)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.002	<0.009	<0.005	--	--	--	--	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.002	<0.009	<0.005	--	--	--	--	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.002	<0.009	<0.005	--	--	--	--	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.002	<0.009	<0.005	--	--	--	--	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.002	<0.009	<0.005	--	--	--	--	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p-' DDE, water, fltrd, ug/L (34653)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome- ton, water, fltrd, ug/L (04037)	Pron- amide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	1,1,1,2- Tetra- chloro- ethane, water, unfltrd ug/L (77562)	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	1,1,2,2- Tetra- chloro- ethane, water, unfltrd ug/L (34516)	CFC-113 water unfltrd ug/L (77652)	1,1,2- Tri- chloro- ethane, water, unfltrd ug/L (34511)	1,1-Di- chloro- ethane, water unfltrd ug/L (34496)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	0.370	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)	1,1-Di- chloro- propene water unfltrd ug/L (77168)	1,2,3,4 Tetra- methyl- benzene water unfltrd ug/L (49999)	1,2,3,5 Tetra- methyl- benzene water unfltrd ug/L (50000)	1,2,3- Tri- chloro- benzene water unfltrd ug/L (77613)	1,2,3- Tri- chloro- propane water unfltrd ug/L (77443)	1,2,3- Tri- methyl- benzene water unfltrd ug/L (77221)	1,2,4- Tri- chloro- benzene water unfltrd ug/L (34551)	1,2,4- Tri- methyl- benzene water unfltrd ug/L (77222)	Dibromo- chloro- propane water unfltrd ug/L (82625)	1,2-Di- bromo- ethane, water, unfltrd ug/L (77651)	1,2-Di- chloro- benzene water unfltrd ug/L (34536)	1,2-Di- chloro- ethane, water, unfltrd ug/L (32103)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	3.48	<0.5	<0.04	<0.03	<0.1
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	0.94	<0.5	<0.04	<0.03	<0.1
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03	<0.1
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03	<0.1
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03	<0.1
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	1.15	<0.5	<0.04	<0.03	<0.1
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03	<0.1
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	0.10	<0.5	<0.04	<0.03	<0.1
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03	<0.1
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	2.92	<0.5	<0.04	<0.03	<0.1
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03	<0.1
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.04	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.04	<0.5	<0.04	<0.03	<0.1

MISCELLANEOUS STATION ANALYSES—Continued

Date	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3,5-Tri-methyl-benzene water unfltrd ug/L (77226)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,3-Di-chloro-propane water unfltrd ug/L (77173)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	2,2-Di-chloro-propane water unfltrd ug/L (77170)	2-Chloro-toluene water unfltrd ug/L (77275)	2-Ethyl-toluene water unfltrd ug/L (77220)	3-Chloro-propene water unfltrd ug/L (78109)	4-Chloro-toluene water unfltrd ug/L (77277)	4-Iso-propyl-toluene water unfltrd ug/L (77356)	Acetone water unfltrd ug/L (81552)	Acrylo-nitrile water unfltrd ug/L (34215)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.03	<0.06	<0.07	<0.05	<0.07	<7	<1
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.03	<0.06	<0.07	<0.05	<0.07	<7	<1
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.03	<0.06	<0.07	<0.05	<0.07	<7	<1
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.03	<0.06	<0.07	<0.05	<0.07	<7	<1
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.03	<0.04	<0.03	<0.1	<0.05	<0.05	<0.03	<0.06	<0.07	<0.05	<0.07	<7	<1

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Benzene water unfltrd ug/L (34030)	Bromo- benzene water unfltrd ug/L (81555)	Bromo- chloro- methane water unfltrd ug/L (77297)	Bromo- di- chloro- methane water unfltrd ug/L (32101)	Bromo- ethene, water, unfltrd ug/L (50002)	Bromo- methane water unfltrd ug/L (34413)	Carbon di- sulfide water unfltrd ug/L (77041)	Chloro- benzene water unfltrd ug/L (34301)	Chloro- ethane, water, unfltrd ug/L (34311)	Chloro- methane water unfltrd ug/L (34418)	cis- 1,2-Di- chloro- ethene, water, unfltrd ug/L (77093)	cis- 1,3-Di- chloro- propene water unfltrd ug/L (34704)	Di- bromo- chloro- methane water unfltrd ug/L (32105)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.04	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.04	<0.04	<0.12	<0.05	<0.1	<0.3	0.14	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.04	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.04	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.04	<0.04	<0.07	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.04	<0.04	<0.12	<0.05	<0.1	<0.3	0.92	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.04	<0.04	<0.07	<0.05	<0.1	<0.3	0.61	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.04	<0.04	<0.12	<0.05	<0.1	<0.3	0.21	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.04	<0.04	<0.07	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.04	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.04	<0.04	<0.07	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.04	<0.04	<0.07	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2

MISCELLANEOUS STATION ANALYSES—Continued

Date	Di-bromo-methane water unfltrd ug/L (30217)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl methacrylate, water, unfltrd ug/L (73570)	Ethyl methyl ketone, water, unfltrd ug/L (81595)	Ethyl-benzene water unfltrd ug/L (34371)	Hexa-chloro-buta-diene, water, unfltrd ug/L (39702)	Hexa-chloro-ethane, water, unfltrd ug/L (34396)	Iodo-methane water unfltrd ug/L (77424)	Iso-butyl methyl ketone, water, unfltrd ug/L (78133)	Iso-propyl-benzene water unfltrd ug/L (77223)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.05	<0.18	<0.2	<0.2	2.07	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.25	<0.4	<0.06
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	6.1	<0.03	<0.1	<0.2	<0.25	<0.4	<0.06
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.25	<0.4	<0.06
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.05	<0.18	M	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.25	<0.4	<0.06
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.05	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.25	<0.4	<0.06

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Methyl acrylonitrile water unfltrd ug/L (81593)	Methyl acrylate, water, unfltrd ug/L (49991)	Methyl methacrylate, water, unfltrd ug/L (81597)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta- + para-Xylene, water, unfltrd ug/L (85795)	Naphthalene, water, unfltrd ug/L (34696)	Methyl n-butyl ketone, water, unfltrd ug/L (77103)	n-Butyl benzene water unfltrd ug/L (77342)	n-propylbenzene water unfltrd ug/L (77224)	o-Xylene, water, unfltrd ug/L (77135)	sec-Butylbenzene water unfltrd ug/L (77350)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.6	<2.0	<0.3	<0.08	E.04	<0.5	<0.7	<0.2	<0.04	<0.07	<0.03	<0.04	<0.05
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.03	<0.04	<0.05
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.03	<0.04	<0.05
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.03	<0.04	<0.05
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.6	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.03	<0.04	<0.05

MISCELLANEOUS STATION ANALYSES—Continued

Date	Methyl t-butyl ether, water, unfltrd ug/L (78032)	tert- Butyl- benzene water unfltrd ug/L (77353)	Tetra- chloro- ethene, water, unfltrd ug/L (34475)	Tetra- chloro- methane water unfltrd ug/L (32102)	Tetra- hydro- furan, water, unfltrd ug/L (81607)	Toluene water unfltrd ug/L (34010)	trans- 1,2-Di- chloro- ethene, water, unfltrd ug/L (34546)	trans- 1,3-Di- chloro- propene water unfltrd ug/L (34699)	trans- 1,4-Di- chloro- 2- butene, wat unfltrd ug/L (73547)	Tri- bromo- methane water unfltrd ug/L (32104)	Tri- chloro- ethene, water, unfltrd ug/L (39180)	Tri- chloro- fluoro- methane water unfltrd ug/L (34488)	Tri- chloro- methane water unfltrd ug/L (32106)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)													
FEB 2003 12...	<0.2	<0.10	<0.03	<0.06	M	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)													
OCT 2002 29...	<0.2	<0.10	<0.03	<0.06	14	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)													
MAR 2003 12...	<0.2	<0.10	<0.03	<0.06	E1	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)													
OCT 2002 30...	<0.2	<0.10	<0.03	<0.06	<2	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)													
SEP 2002 11...	<0.2	<0.05	<0.03	<0.06	<2	<0.05	<0.03	<0.09	<0.7	<0.06	<0.04	<0.09	E.05
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)													
FEB 2003 06...	<0.2	<0.10	<0.03	<0.06	M	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)													
SEP 2002 11...	<0.2	<0.05	<0.03	<0.06	7	0.56	<0.03	<0.09	<0.7	<0.06	<0.04	<0.09	E.03
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)													
JAN 2003 15...	<0.2	<0.10	<0.03	<0.06	E2	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	E.03
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)													
SEP 2002 18...	<0.2	<0.05	<0.03	<0.06	<2	E.01	<0.03	<0.09	<0.7	<0.06	<0.04	<0.09	<0.02
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)													
JAN 2003 09...	<0.2	<0.10	<0.03	<0.06	3	E.03	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)													
SEP 2002 12...	<0.2	<0.05	<0.03	<0.06	<2	E.01	<0.03	<0.09	<0.7	<0.06	<0.04	<0.09	<0.02
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)													
OCT 2002 02...	<0.2	<0.05	<0.03	<0.06	<2	<0.05	<0.03	<0.09	<0.7	<0.06	<0.04	<0.09	<0.02

WATER QUALITY DATA
MISCELLANEOUS STATION ANALYSES—Continued

Date	Vinyl chlor- ide, water, unfltrd ug/L (39175)	Rn-222 2-sigma water unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Tritium 2-sigma water unfltrd pCi/L (75985)	Tritium water unfltrd pCi/L (07000)	Uranium natural water, fltrd, ug/L (22703)
341346077522601 NH-526 MAS 4 AT WILMINGTON, NC (LAT 34 13 46N LONG 077 52 26W)						
FEB 2003 12...	<0.1	17	60	--	--	<0.02
342302077534501 PE-096 MAS 5 NR CASTLE HAYNE AT ROCKY POINT, NC (LAT 34 23 02N LONG 077 53 45W)						
OCT 2002 29...	<0.1	18	170	1.0	14	0.20
342511077520701 PE-100 MAS 5B NR ROCKY POINT, NC (LAT 34 25 11N LONG 077 52 07W)						
MAR 2003 12...	<0.1	18	120	--	--	0.02
343308077484501 PE-097 MAS 10 NR HOLLY SHELTER NR WALKERS, NC (LAT 34 33 08N LONG 077 48 45W)						
OCT 2002 30...	<0.1	16	M	1.9	33	<0.02
342142077430701 PE-094 MAS 12 AT HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 07W)						
SEP 2002 11...	<0.1	18	120	1.6	28	<0.02
342435077365401 PE-099 MAS 12B NR ANNANDALE, NC (LAT 34 24 35N LONG 077 36 54W)						
FEB 2003 06...	<0.1	16	20	--	--	0.03
342610077371401 PE-095 MAS 13 NR HAMPSTEAD, NC (LAT 34 21 42N LONG 077 43 08W)						
SEP 2002 11...	<0.1	16	40	1.0	4	<0.02
342515077353901 PE-098 MAS 13B AT WATTS LANDING, NC (LAT 34 25 15N LONG 077 35 39W)						
JAN 2003 15...	<0.1	16	M	--	--	<0.02
FEB 05...	--	--	--	--	--	--
343400077292201 ON-308 MAS 14 NR DIXON, NC (LAT 34 34 00N LONG 077 29 22W)						
SEP 2002 18...	<0.1	19	150	1.0	M	<0.02
344537077283601 ON-310 MAS 15 IN JACKSONVILLE, NC (LAT 34 45 37N LONG 077 28 36W)						
JAN 2003 09...	<0.1	27	700	--	--	<0.02
350012077131101 JO-076 MAS 21 AT POLLOCKSVILLE, NC (LAT 35 00 12N LONG 077 13 11W)						
SEP 2002 12...	<0.1	18	90	1.0	12	<0.02
344244077135801 ON-309 MAS-25 AT HUBERT, NC (LAT 34 42 44N LONG 077 13 58W)						
OCT 2002 02...	<0.1	16	50	1.0	M	<0.02

WATER QUALITY DATA

449

MISCELLANEOUS STATION ANALYSES—Continued

Date	Time	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Altitude of land surface feet (72000)	Water level, depth below MP, feet (61055)	Flow rate, instantaneous gal/min (00059)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	
344620077094301 ON-311 MAS 26 NR STELLA, NC (LAT 34 46 20N LONG 077 09 43W)														
JAN 2003	14...	1100	80.00	--	12.5	--	3.0	0.3	770	0.1	0.0	7.4	370	17.5
352233077091901 CR-624 MAS 30 NR VANCEBORO, NC (LAT 35 22 33N LONG 077 09 19W)														
SEP 2002	12...	1000	160.00	22.15	43	23.60	9.0	0.1	763	0.3	3	7.5	307	18.4
335631078003605 BR-082 (NC-198) SOUTHPORT RS GG32t5 (CASTLE HAYNE) (LAT 33 56 31N LONG 078 00 35W)														
MAY 2003	27...	1230	74.00	21.39	28.26	23.49	1.2	1.1	761	0.1	1	7.4	460	20.0
AUG	20...	1103	74.00	21.87	28.26	24.02	1.2	0.4	767	M	0.0	7.4	468	20.1
352252077050706 BO-358 WILMAR RS 6 (LAT 35 22 52N LONG 077 05 07W)														
MAY 2003	06...	1445	200.00	6.16	40.48	7.06	1.5	--	762	M	0.0	7.3	386	17.2
352832076470102 BO-384 BATH RS 2 (LAT 35 28 32N LONG 076 47 01W)														
AUG 2003	11...	1400	190.00	25.09	7.97	26.12	1.2	1.4	763	0.1	1	7.2	790	18.1
353747077052001 B0-419 RSK NR WASHINGTON, NC (LAT 35 37 47N LONG 077 05 20W)														
AUG 2003	14...	1000	82.00	13.21	35.85	16.85	1.2	4.2	770	M	0.0	7.4	333	17.5
340052078045901 BR-112 BOILING SPRINGS RS2 FF32 Y-1 (LAT 34 00 51N LONG 078 04 58W)														
MAR 2003	26...	1000	150.00	3.86	51.66	6.19	1.5	0.2	759	0.1	0.0	7.1	580	17.9
350816077101805 CR-533 CLARKS RS 5 (LAT 35 08 16N LONG 077 10 18W)														
OCT 2002	31...	1100	80.00	24.80	27.36	26.37	1.2	3.0	766	0.2	2	7.5	414	17.4
351019077184102 CR-543 COVE CITY RS 2 (LAT 35 10 19N LONG 077 18 41W)														
OCT 2002	30...	1330	92.80	9.16	46	10.37	1.2	3.6	759	0.1	1	7.2	519	17.5
352226077080701 CR-626 P21N1 NR PURSER, NC (LAT 35 22 26N LONG 077 08 07W)														
AUG 2003	13...	1100	172.00	16.50	43.98	18.42	1.2	6.5	769	M	0.0	7.3	358	18.0
344922077484705 DU-128 CHINQUAPIN RS 5 (LAT 34 49 22N LONG 077 48 47W)														
AUG 2003	19...	1030	130.00	6.00	42.62	5.35	1.2	8.2	765	M	0.0	7.3	419	18.9
345051078012103 DU-134 (NC-224) ROSE HILL RS V32v3 (CASTLE HAYNE) (LAT 34 50 51N LONG 078 01 21W)														
JUN 2003	02...	1100	46.00	10.32	84.42	11.62	1.2	2.9	762	0.1	0.0	7.1	482	17.7
AUG	19...	1306	46.00	9.86	84.42	11.08	1.2	4.5	763	0.1	1	7.1	490	18.1

WATER QUALITY DATA
MISCELLANEOUS STATION ANALYSES—Continued

Date	Vinyl chloride, water, unfltrd ug/L (39175)	Rn-222 2-sigma water unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Tritium 2-sigma water unfltrd pCi/L (75985)	Tritium water unfltrd pCi/L (07000)	Uranium natural water, fltrd, ug/L (22703)
344620077094301 ON-311 MAS 26 NR STELLA, NC (LAT 34 46 20N LONG 077 09 43W)						
JAN 2003 14...	<0.1	17	50	1.0	0.0	<0.02
352233077091901 CR-624 MAS 30 NR VANCEBORO, NC (LAT 35 22 33N LONG 077 09 19W)						
SEP 2002 12...	<0.1	20	170	1.0	M	<0.02
335631078003605 BR-082 (NC-198) SOUTHPORT RS GG32t5 (CASTLE HAYNE) (LAT 33 56 31N LONG 078 00 35W)						
MAY 2003 27...	<0.1	--	--	--	--	<0.02
AUG 2003 20...	--	24	420	--	--	--
352252077050706 BO-358 WILMAR RS 6 (LAT 35 22 52N LONG 077 05 07W)						
MAY 2003 06...	<0.1	16	40	--	--	<0.02
352832076470102 BO-384 BATH RS 2 (LAT 35 28 32N LONG 076 47 01W)						
AUG 2003 11...	<0.1	15	40	--	--	<0.02
353747077052001 BO-419 RSK NR WASHINGTON, NC (LAT 35 37 47N LONG 077 05 20W)						
AUG 2003 14...	0.2	20	210	--	--	E.01
340052078045901 BR-112 BOILING SPRINGS RS2 FF32 Y-1 (LAT 34 00 51N LONG 078 04 58W)						
MAR 2003 26...	<0.1	20	230	--	--	<0.02
350816077101805 CR-533 CLARKS RS 5 (LAT 35 08 16N LONG 077 10 18W)						
OCT 2002 31...	<0.1	17	120	--	--	<0.02
351019077184102 CR-543 COVE CITY RS 2 (LAT 35 10 19N LONG 077 18 41W)						
OCT 2002 30...	<0.1	18	100	1.0	14	E.01
352226077080701 CR-626 P21N1 NR PURSER, NC (LAT 35 22 26N LONG 077 08 07W)						
AUG 2003 13...	<0.1	20	220	--	--	<0.02
344922077484705 DU-128 CHINQUAPIN RS 5 (LAT 34 49 22N LONG 077 48 47W)						
AUG 2003 19...	<0.1	17	30	--	--	<0.02
345051078012103 DU-134 (NC-224) ROSE HILL RS V32v3 (CASTLE HAYNE) (LAT 34 50 51N LONG 078 01 21W)						
JUN 2003 02...	<0.1	--	--	--	--	E.01
AUG 2003 19...	--	18	70	--	--	--

MISCELLANEOUS STATION ANALYSES—Continued

Date	Time	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Altitude of land surface feet (72000)	Water level, depth below MP, feet (61055)	Flow rate, instantaneous gal/min (00059)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002	1200	60.00	14.75	70	--	1.2	1.1	764	0.1	1	7.0	344	15.8
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003	1300	185.00	32.18	33.38	33.38	1.2	--	762	M	0.0	7.6	716	18.4
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002	1100	40.00	19.19	24.06	20.12	1.2	11	771	3.5	38	6.0	235	18.7
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003	1330	80.00	5.95	46.20	8.36	1.2	2.5	765	0.1	0.0	7.0	540	17.8
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003	1100	87.00	8.13	39.73	10.66	1.2	8.7	764	0.1	0.0	7.8	399	18.3
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003	1330	191.00	12.78	8.72	15.63	1.2	5.5	762	0.1	0.0	7.3	534	20.5
Date	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002	180	68.2	1.57	0.78	3.59	178	217	0.05	5.68	14.4	0.2	204	214
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003	260	47.3	34.0	21.4	36.2	299	365	0.14	45.9	27.2	1.6	400	407
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002	61	4.95	11.7	2.04	10.2	30	37	0.12	27.7	6.21	E.1	--	132
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003	280	106	2.47	1.49	7.00	286	349	0.02	6.57	49.5	<0.2	--	369
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003	120	28.9	10.9	12.2	40.8	204	249	0.02	4.54	16.0	1.8	240	240
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003	230	83.2	5.68	6.05	10.1	264	322	E.01	11.3	42.2	<0.2	--	338

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L (71846)	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)	Organic nitrogen, water, fltrd, mg/L (00607)	Ortho-phosphate, water, fltrd, mg/L (00660)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Total nitrogen, water, fltrd, mg/L (00602)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	E.10	0.09	0.07	0.08	<0.008	--	0.506	0.17	--	2.1	<2	E.16	<0.3
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	1.0	1.05	0.82	<0.06	<0.008	0.21	--	<0.02	--	3.4	M	<0.30	E.1
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	1.1	1.31	1.02	11.4	0.012	0.05	--	<0.02	12	0.6	14	<0.30	0.4
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	0.20	0.15	0.12	<0.06	0.016	0.08	1.21	0.40	--	4.6	<2	<0.30	<0.3
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	0.47	0.43	0.33	<0.06	<0.008	0.13	--	<0.02	--	2.6	3	<0.30	<0.3
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	0.83	1.00	0.78	<0.06	<0.008	0.06	--	<0.09	--	4.1	<2	<0.30	<0.3
Date	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	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)	Lithium, water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	17	<0.06	8	<0.04	<0.8	0.169	E.1	1,640	<0.08	2.0	34.8	<0.3	2.85
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	14	<0.06	284	<0.04	<0.8	0.258	0.3	3,830	<0.08	31.3	92.7	1.7	1.03
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	157	0.15	12	0.45	<0.8	3.09	0.6	3,200	1.78	1.7	248	<0.3	24.2
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	45	<0.06	22	<0.04	<0.8	0.211	E.2	9,080	<0.08	12.8	139	<0.3	2.66
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	5	<0.06	674	<0.04	<0.8	0.065	<0.2	78	<0.08	7.0	5.5	1.2	0.93
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	2	<0.06	32	<0.04	<0.8	0.205	0.3	1,740	<0.08	16.4	11.7	<0.3	3.20

MISCELLANEOUS STATION ANALYSES—Continued

Date	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Thallium, water, fltrd, ug/L (01057)	Vanadium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Diethyl- aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- HCH, water, fltrd, ug/L (34253)	Atra- zine, water, fltrd, ug/L (39632)	Azin- phos- methyl, water, fltrd 0.7u GF (82686)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.5	<0.2	73.3	<0.04	0.8	M	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.5	<0.2	602	<0.04	2.1	86	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	0.6	<0.2	71.6	0.05	E.1	9,500	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.5	<0.2	407	<0.04	1.9	M	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.5	<0.2	219	<0.04	1.1	<1	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.5	<0.2	565	<0.04	0.7	<1	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050
Date	Ben- flur- alin, water, fltrd 0.7u GF (82673)	Butyl- ate, water, fltrd, ug/L (04028)	Car- baryl, water, fltrd 0.7u GF (82680)	Carbo- furan, water, fltrd 0.7u GF (82674)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF (82687)	Cyana- zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF (82682)	Desulf- inyl fipro- nil, water, fltrd, ug/L (62170)	Diazi- non, water, fltrd, ug/L (39572)	Diel- drin, water, fltrd, ug/L (39381)	Disul- foton, water, fltrd 0.7u GF (82677)	EPTC, water, fltrd 0.7u GF (82668)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02	<0.002
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02	<0.002
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02	<0.002
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02	<0.002
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02	<0.002
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005	<0.005	<0.02	<0.002

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	Ethal-flur- alin, water, fltrd 0.7u GF ug/L (82663)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Desulf- inyl- fipro- nil amide, wat flt ug/L (62169)	Fipro- nil sulfide water, fltrd, ug/L (62167)	Fipro- nil sulfone water, fltrd, ug/L (62168)	Fipro- nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006
Date	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p'- DDE, water, fltrd, ug/L (34653)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome- ton, water, fltrd, ug/L (04037)	Pron- amide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Sim- zine, water, fltrd, ug/L (04035)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005

MISCELLANEOUS STATION ANALYSES—Continued

Date	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	1,1,1,2- Tetra- chloro- ethane, water, unfltrd ug/L (77562)	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	1,1,2,2- Tetra- chloro- ethane, water, unfltrd ug/L (34516)	CFC-113 water unfltrd ug/L (77652)	1,1,2- Tri- chloro- ethane, water, unfltrd ug/L (34511)	1,1-Di- chloro- ethane, water unfltrd ug/L (34496)	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	<0.03	<0.03	<0.09	<0.06	<0.06	<0.04	<0.04
Date	1,1-Di- chloro- propene water unfltrd ug/L (77168)	1,2,3,4 Tetra- methyl- benzene water unfltrd ug/L (49999)	1,2,3,5 Tetra- methyl- benzene water unfltrd ug/L (50000)	1,2,3- Tri- chloro- benzene water unfltrd ug/L (77613)	1,2,3- Tri- chloro- propane water unfltrd ug/L (77443)	1,2,3- Tri- methyl- benzene water unfltrd ug/L (77221)	1,2,4- Tri- chloro- benzene water unfltrd ug/L (34551)	1,2,4- Tri- methyl- benzene water unfltrd ug/L (77222)	Dibromo chloro- propane water unfltrd ug/L (82625)	1,2-Di- bromo- ethane, water, unfltrd ug/L (77651)	1,2-Di- chloro- benzene water, unfltrd ug/L (34536)	1,2-Di- chloro- ethane, water, unfltrd ug/L (32103)	1,2-Di- chloro- propane water unfltrd ug/L (34541)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.05	<0.5	<0.04	<0.03	<0.1	<0.03
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	0.18	<0.5	<0.04	<0.03	<0.1	<0.03
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.06	<0.5	<0.04	<0.03	<0.1	<0.03
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	E.02	<0.5	<0.04	<0.03	<0.1	<0.03
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	<0.06	<0.5	<0.04	<0.03	<0.1	<0.03
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.05	<0.2	<0.2	<0.3	<0.16	<0.1	<0.1	2.13	<0.5	<0.04	<0.03	<0.1	<0.03

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	1,3,5-Tri-methyl-benzene water unfltrd ug/L (77226)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,3-Di-chloro-propane water unfltrd ug/L (77173)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	2,2-Di-chloro-propane water unfltrd ug/L (77170)	2-Chloro-toluene water unfltrd ug/L (77275)	2-Ethyl-toluene water unfltrd ug/L (77220)	3-Chloro-propene water unfltrd ug/L (78109)	4-Chloro-toluene water unfltrd ug/L (77277)	4-Iso-propyl-toluene water unfltrd ug/L (77356)	Acetone water unfltrd ug/L (81552)	Acrylo-nitrile water unfltrd ug/L (34215)	Benzene water unfltrd ug/L (34030)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.04	<0.03	<0.1	<0.05	<0.05	<0.04	<0.06	<0.12	<0.05	<0.12	<7	<1	<0.04
Date	Bromo-benzene water unfltrd ug/L (81555)	Bromo-chloro-methane water unfltrd ug/L (77297)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Bromo-ethene, water, unfltrd ug/L (50002)	Bromo-methane water unfltrd ug/L (34413)	Carbon di-sulfide water unfltrd ug/L (77041)	Chloro-benzene water unfltrd ug/L (34301)	Chloro-ethane, water, unfltrd ug/L (34311)	Chloro-methane water unfltrd ug/L (34418)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	cis-1,3-Di-chloro-propene water unfltrd ug/L (34704)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-bromo-methane water unfltrd ug/L (30217)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.04	<0.12	<0.05	<0.1	<0.3	<0.07	<0.03	<0.1	<0.2	<0.04	<0.09	<0.2	<0.05

MISCELLANEOUS STATION ANALYSES—Continued

Date	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl methac-rylate, water, unfltrd ug/L (73570)	Ethyl methyl ketone, water, unfltrd ug/L (81595)	Ethyl-benzene water unfltrd ug/L (34371)	Hexa-chloro-buta-diene, water, unfltrd ug/L (39702)	Hexa-chloro-ethane, water, unfltrd ug/L (34396)	Iodo-methane water unfltrd ug/L (77424)	Iso-butyl methyl ketone, water, unfltrd ug/L (78133)	Iso-propyl-benzene water unfltrd ug/L (77223)	Methyl acrylo-nitrile water unfltrd ug/L (81593)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06	<0.6
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06	<0.6
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	E.24	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06	<0.6
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06	<0.6
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06	<0.6
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.18	<0.2	<0.2	<0.10	<0.2	<5.0	<0.03	<0.1	<0.2	<0.35	<0.4	<0.06	<0.6
Date	Methyl acryl-ate, water, unfltrd ug/L (49991)	Methyl methac-rylate, water, unfltrd ug/L (81597)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta- + para-Xylene, water, unfltrd ug/L (85795)	Naphth-alene, water, unfltrd ug/L (34696)	Methyl n-butyl ketone, water, unfltrd ug/L (77103)	n-Butyl benzene water unfltrd ug/L (77342)	n-propyl-benzene water unfltrd ug/L (77224)	o-Xylene, water, unfltrd ug/L (77135)	sec-Butyl-benzene water unfltrd ug/L (77350)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<2.0	<0.3	<0.08	<0.06	1.0	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<2.0	<0.3	<0.08	<0.06	<0.5	<0.7	<0.2	<0.04	<0.07	<0.06	<0.04	<0.05	<0.2

WATER QUALITY DATA

MISCELLANEOUS STATION ANALYSES—Continued

Date	tert-Butylbenzene water unfltrd ug/L (77353)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Tetra-hydro-furan, water, unfltrd ug/L (81607)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	trans-1,3-Di-chloro-propene water unfltrd ug/L (34699)	trans-1,4-Di-chloro-2-butene, wat unfltrd ug/L (73547)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)													
NOV 2002 13...	<0.10	<0.03	<0.06	<2	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)													
MAY 2003 07...	<0.10	<0.03	<0.06	<2	2.98	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)													
NOV 2002 14...	<0.10	<0.03	<0.06	<2	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	E.07	<0.1
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)													
AUG 2003 12...	<0.10	<0.03	<0.06	<2	E.02	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)													
AUG 2003 12...	<0.10	<0.03	<0.06	4	E.02	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)													
AUG 2003 18...	<0.10	<0.03	<0.06	<2	<0.05	<0.03	<0.09	<0.7	<0.10	<0.04	<0.09	<0.02	<0.1

Date	Rn-222 2-sigma water unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
345809077301401 JO-064 COMFORT RS 1 (LAT 34 58 09N LONG 077 30 14W)			
NOV 2002 13...	16	50	<0.02
354926076452901 WS-108 K17A8 AT PLYMOUTH, NC (LAT 35 49 26N LONG 076 45 29W)			
MAY 2003 07...	16	30	<0.02
344139077211207 ON-267 HADNOT POINT RS X24s7 (SURFICIAL) (LAT 34 41 35N LONG 077 21 05W)			
NOV 2002 14...	41	1,710	0.04
352734077111301 PI-612 O22L1 VOICE OF AMERICA NR BLACK JACK, NC (LAT 35 27 34N LONG 077 11 13W)			
AUG 2003 12...	38	1,340	<0.02
352748077163101 PI-613 O23L6 AT CHICOD, NC (LAT 35 27 48N LONG 077 16 31W)			
AUG 2003 12...	31	780	0.02
344323076451301 CT-153 (NC-139) CAMP GLENN RS X17j5 (CASTLE HAYNE) (LAT 34 43 23N LONG 076 45 13W)			
AUG 2003 18...	19	140	<0.02

Remark codes used in this table:

- < -- Less than
- E -- Estimated value
- M -- Presence verified, not quantified
- K -- Counts outside the acceptable range

		Page
A		
AV-074.....	58	
Avery County	58	
B		
BE-080	62	
BE-087	60	
Beaufort County	59	
Bertie County	60-63	
Bladen County.....	64-73	
BL-057	64	
BL-086	65	
BL-094	66	
BL-100	67	
BL-101	72	
BL-121	68	
BL-131	69	
BL-142	70	
BL-147	71	
BO-200.....	59	
BR-078.....	82	
BR-079.....	84	
BR-080.....	86	
BR-081.....	88	
BR-082.....	90	
BR-083.....	92	
BR-099.....	74	
BR-100.....	76	
BR-116.....	78	
BR-123.....	80	
Brunswick County.....	74-93	
Buncombe County.....	94-111	
BU-068.....	94	
BU-069.....	95	
BU-070.....	96	
BU-071.....	97	
BU-072.....	98	
BU-073.....	99	
BU-074.....	100	
BU-075.....	101	
BU-076.....	102	
BU-077.....	103	
BU-078.....	104	
BU-079.....	105	
BU-080.....	106	
BU-081.....	107	
BU-082.....	108	
BU-083.....	109	
BU-084.....	110	
BU-085.....	111	
		C
Carteret County		112-113
CE-028		114
CE-029		116
Cherokee County.....		114-117
CO-089		124
CO-102.....		118
CO-117		120
CO-161		122
CO-163		123
Columbus County.....		118-125
Craven County.....		126-127
CR-552		126
CT-153		112
		D
Davie County.....		128-129
DENR Bent Creek Research Station		
well MW-1S		94
DENR Bent Creek Research Station		
well MW-1I		95
DENR Bent Creek Research Station		
well MW-1D.....		96
DENR Bent Creek Research Station		
well MW-2S		97
DENR Bent Creek Research Station		
well MW-2I		98
DENR Bent Creek Research Station		
well MW-2D.....		99
DENR Bent Creek Research Station		
well MW-3S		100
DENR Bent Creek Research Station		
well MW-3I		101
DENR Bent Creek Research Station		
well MW-3D.....		102
DENR Bent Creek Research Station		
well MW-4S		103
DENR Bent Creek Research Station		
well MW-4I		104
DENR Bent Creek Research Station		
well MW-4D.....		105
DENR Bent Creek Research Station		
well MW-5S		106
DENR Bent Creek Research Station		
well MW-5I		107
DENR Bent Creek Research Station		
well MW-5D.....		108
DENR Bent Creek Research Station		
well MW-7S		109
DENR Bent Creek Research Station		
well MW-7I		110

	Page		Page
DENR Bent Creek Research Station		DENR Lake Phelps Research Station	
well MW-7D.....	111	well L13i2.....	390
DENR Bladenboro Research Station		DENR Lake Waccamaw Research Station	
well Z41u2.....	67	well CC38b8.....	120
DENR Bladenboro Research Station		DENR Lake Wheeler Research Station MW-1S.....	350
well Z41u3.....	72	DENR Lake Wheeler Research Station MW-1I	360
DENR Boardman Research Station		DENR Lake Wheeler Research Station MW-1D	
well AA43q1	278	Upper Zone	370
DENR Bolivia Research Station		DENR Lake Wheeler Research Station MW-1D	
well FF33d1	74	Lower Zone.....	378
DENR Bolivia Research Station		DENR Lake Wheeler Research Station MW-2S.....	380
well FF33d2.....	82	DENR Lake Wheeler Research Station MW-2I	381
DENR Calabash Research Station		DENR Lake Wheeler Research Station MW-2T	382
well HH39j3	78	DENR Lake Wheeler Research Station MW-2D....	383
DENR Calabash Research Station		DENR Lake Wheeler Research Station MW-3S.....	384
well HH39j7	80	DENR Lake Wheeler Research Station MW-3I	385
DENR Camp Glenn Research Station		DENR Lake Wheeler Research Station MW-3D....	386
well X17j5	112	DENR Lake Wheeler Research Station PW-1	387
DENR Carver Moore Research Station		DENR Lake Wheeler Research Station PZ-1	388
well AA39v2	124	DENR Lake Wheeler Research Station PZ-2	389
DENR Cherry Point Research Station		DENR Langtree Research Station MW-2	184
well U18q5	126	DENR Langtree Research Station MW-2I.....	192
DENR Clarendon Research Station		DENR Langtree Research Station MW-2D	195
well DD42n4	118	DENR Langtree Research Station MW-1	203
DENR Comfort Research Station		DENR Langtree Research Station MW-1I.....	204
well U26j8	218	DENR Langtree Research Station MW-1D	205
DENR Como Research Station		DENR Langtree Research Station MW-3	206
well B20u6.....	176	DENR Langtree Research Station MW-3I.....	207
DENR Conley Research Station		DENR Langtree Research Station MW-4	208
well N23p3	266	DENR Langtree Research Station MW-4IA	209
DENR Cremo Research Station		DENR Langtree Research Station MW-4D	210
well G19b6	60	DENR Langtree Research Station MW-5S.....	211
DENR Dixon Tower Research Station		DENR Langtree Research Station MW-5I.....	212
well Y25q3	234	DENR Langtree Research Station MW-5D	213
DENR Dixon Tower Research Station		DENR Langtree Research Station MW-6S.....	214
well Y25q6	236	DENR Langtree Research Station MW-6D	215
DENR East Bend Research Station		DENR Langtree Research Station MW-6IB	216
well F61f3.....	396	DENR Linville Research Station	
DENR Elizabeth City Forest Service Research		well H78d8	58
Station well D11v5	256	DENR Littlefield School Research Station	
DENR Graingers Research Station		well Y42f9	268
well Q25d12	222	DENR Littlefield School Research Station	
DENR Graingers Research Station		well Y42f10	274
well Q25d11	224	DENR Littlefield School Research Station	
DENR Hadnot Point Research Station		well Y42f11	276
well X24s1.....	238	DENR McCain Research Station	
DENR Hadnot Point Research Station		well T48i2.....	178
well X24s2.....	240	DENR Morgans Corner Research Station	
DENR Hadnot Point Research Station		well C12w2.....	260
well X24s6.....	242	DENR Morgans Corner Research Station	
DENR Hadnot Point Research Station		well C12w4.....	262
well X24s7.....	244	DENR Piedmont Research Station	
		well L63t1	330

		Page
DENR Raeford Research Station		
well U46e6.....	182	
DENR Rex Rennert Research Station		
well V45u4.....	272	
DENR Rose Hill Research Station		
well V32v1.....	130	
DENR Rose Hill Research Station		
well V32v6.....	132	
DENR Rose Hill Research Station		
well V32v8.....	134	
DENR Rose Hill Research Station		
well V32v3.....	136	
DENR Rowland Research Station		
well Z47m2.....	270	
DENR Roxobel Research Station		
well F22b7.....	62	
DENR Southport Research Station		
well GG32t4.....	88	
DENR Southport Research Station		
well GG32t5.....	90	
DENR Southport Research Station		
well GG32t6.....	92	
DENR Sunset Harbor Research Station		
well GG34s6.....	84	
DENR Sunset Harbor Research Station		
well GG34s7.....	86	
DENR Upper Piedmont Research Station		
well MW-N1S.....	284	
DENR Upper Piedmont Research Station		
well MW-N1I.....	285	
DENR Upper Piedmont Research Station		
well MW-N1D.....	286	
DENR Upper Piedmont Research Station		
well MW-N2S.....	287	
DENR Upper Piedmont Research Station		
well MW-N2I.....	288	
DENR Upper Piedmont Research Station		
well MW-N2D.....	289	
DENR Upper Piedmont Research Station		
well MW-N3I.....	290	
DENR Upper Piedmont Research Station		
well MW-N3D.....	291	
DENR Upper Piedmont Research Station		
well MW-N4I.....	292	
DENR Upper Piedmont Research Station		
well MW-N4D.....	293	
DENR Upper Piedmont Research Station		
well MW-S1I.....	294	
DENR Upper Piedmont Research Station		
well MW-S1D.....	295	
DENR Upper Piedmont Research Station		
well MW-S3S.....	296	
DENR Upper Piedmont Research Station		
well MW-S3UI.....	297	
DENR Upper Piedmont Research Station		
well MW-S3LI.....	298	
DENR Upper Piedmont Research Station		
well MW-S3D.....	299	
DENR Upper Piedmont Research Station		
well MW-S4S.....	300	
DENR Upper Piedmont Research Station		
well MW-S4I.....	310	
DENR Upper Piedmont Research Station		
well MW-S4D.....	320	
DU-126.....		130
DU-134.....		136
DU-135.....		132
DU-136.....		134
Duplin County.....		130-137
DV-025.....		128
G		
GR-082.....		138
GR-085.....		139
GR-087.....		141
GR-088.....		143
GR-092.....		145
GR-108.....		147
GR-109.....		149
GR-110.....		151
GR-111.....		152
GR-147.....		153
GR-166.....		154
GR-167.....		156
GR-168.....		158
GR-169.....		160
GR-171.....		162
Greene County.....		138-163
H		
Haywood County.....		164-175
Hertford County.....		176-177
HF-085.....		176
HO-032.....		178
HO-037.....		180
HO-047.....		182
Hoke County.....		178-183
HW-047.....		174
HW-066.....		164
HW-067.....		165
HW-068.....		166
HW-069.....		167
HW-070.....		168
HW-071.....		169
HW-072.....		170
HW-073.....		171
HW-074.....		172
I		
IR-130.....		184
IR-131.....		192

	Page		Page
IR-132	195	NC-179	124
IR-145	203	NC-180	82
IR-146	204	NC-181	84
IR-147	205	NC-182	86
IR-148	206	NC-184	266
IR-149	207	NC-185	222
IR-151	208	NC-191	114
IR-152A	209	NC-192	116
IR-153	210	NC-193	330
IR-154	211	NC-194	340
IR-155	212	NC-195	258
IR-156	213	NC-197	88
IR-157	214	NC-198	90
IR-159	215	NC-199	92
IR-160	216	NC-203	260
Iredell County	184-216	NC-204	262
		NC-212	59
J		NC-218	132
JO-035	218	NC-219	345
Jones County	218-219	NC-220	58
		NC-221	396
L		NC-222	134
Lenoir County	220-225	NC-223	224
LN-105	224	NC-224	136
LN-110	222	New Hanover County	228
LN-128	220	NH-525	228
		O	
M		ON-035	230
ME-301	226	ON-218	232
Mecklenburg County	226-227	ON-227	234
		ON-230	236
N		ON-255	238
NC-40	174	ON-256	240
NC-52	230	ON-266	242
NC-126	254	ON-267	244
NC-128	220	ON-291	246
NC-139	112	ON-292	248
NC-142	128	ON-293	250
NC-144	346	ON-294	252
NC-146	226	Onslow County	230-253
NC-147	348	OR-069	254
NC-148	394	Orange County	254-255
NC-150	256		
NC-153	60	P	
NC-154	62	Pasquotank County	256-263
NC-155	176	PI-532	264
NC-157	390	PI-536	266
NC-158	392	Pitt County	264-267
NC-160	264	PK-141	258
NC-173	218	PK-190	260
NC-174	130	PK-191	262
NC-177	268	PK-199	256
NC-178	72		

			Page
R			
RB-148	270		
RB-168	272		
RB-183	268		
RB-184	274		
RB-185	276		
RB-188	278		
RB-199	280		
RB-264	282		
RK-227	284		
RK-228	285		
RK-229	286		
RK-230	287		
RK-231	288		
RK-232	289		
RK-233	290		
RK-234	291		
RK-235	292		
RK-236	293		
RK-237	294		
RK-238	295		
RK-239	296		
RK-240	297		
RK-241	298		
RK-242	299		
RK-243	300		
RK-244	310		
RK-245	320		
Robeson County	268-283		
RO-149	330		
Rockingham County	284-328		
Rowan County	330-332		
S			
SA-134	333		
SA-135	334		
SA-140	336		
SA-144	338		
Sampson County	333-338		
SC-040	342		
SC-080	340		
SC-106	344		
Scotland County	340-344		
SW-036	345		
Swain County	345		
T			
TR-065			346
TR-066			348
Transylvania County			346-349
U			
USGS Paradise Point Well			248
USGS Ragged Point Well			246
USGS Sneads Ferry Road well			250
USGS Town Creek well 1			252
USMC Rifle Range well RR-97A			232
W			
WA-154			394
Wake County			350-389
Washington County			390-393
Wayne County			394-395
WK-277			350
WK-278			360
WK-279A			370
WK-279B			378
WK-280			380
WK-281			381
WK-282			382
WK-283			383
WK-284			384
WK-285			385
WK-286			386
WK-287			387
WK-288			388
WK-289			389
WS-099			390
WS-100			392
Y			
Yadkin County			396
YD-200			396

Conversion Factors

Multiply	By	To obtain
Length		
inch (in.)	2.54×10^1	millimeter (mm)
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^0	kilometer (km)
Area		
acre	4.047×10^3	square meter (m ²)
	4.047×10^{-1}	square hectometer (hm ²)
	4.047×10^{-3}	square kilometer (km ²)
square mile (mi ²)	2.590×10^0	square kilometer (km ²)
Volume		
gallon (gal)	3.785×10^0	liter (L)
	3.785×10^{-3}	cubic meter (m ³)
	3.785×10^0	cubic decimeter (dm ³)
million gallons (Mgal)	3.785×10^3	cubic meter (m ³)
	3.785×10^{-3}	cubic hectometer (hm ³)
cubic foot (ft ³)	2.832×10^{-2}	cubic meter (m ³)
	2.832×10^1	cubic decimeter (dm ³)
cubic-foot-per-second-per-day [(ft ³ /s/d)]	2.447×10^3	cubic meter (m ³)
	2.447×10^{-3}	cubic hectometer (hm ³)
acre-foot (acre-ft)	1.223×10^3	cubic meter (m ³)
	1.223×10^{-3}	cubic hectometer (hm ³)
	1.223×10^{-6}	cubic kilometer (km ³)
Flow rate		
cubic foot per second (ft ³ /s)	2.832×10^1	liter (L/s)
	2.832×10^{-2}	cubic meter per second (m ³ /s)
	2.832×10^1	cubic decimeter per second (dm ³ /s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m ³ /s)
	6.309×10^{-2}	cubic decimeter per second (dm ³ /s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second
	4.381×10^1	cubic decimeter per second (dm ³ /s)
Mass		
ton, short (2,000 lb)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$



1879–2004
