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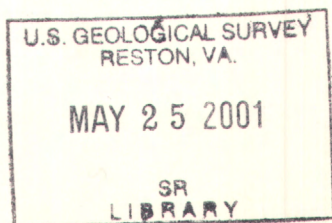
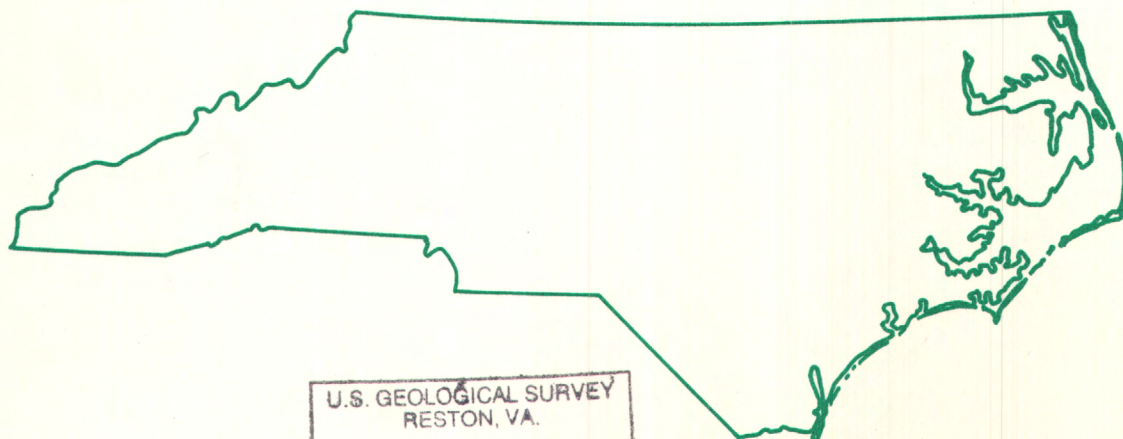
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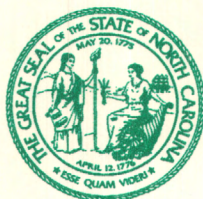
# Water Resources Data North Carolina Water Year 2000

## Volume 2. Ground-Water Records

Water-Data Report NC-00-2



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



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



# CALENDAR FOR WATER YEAR 2000

1999

## OCTOBER

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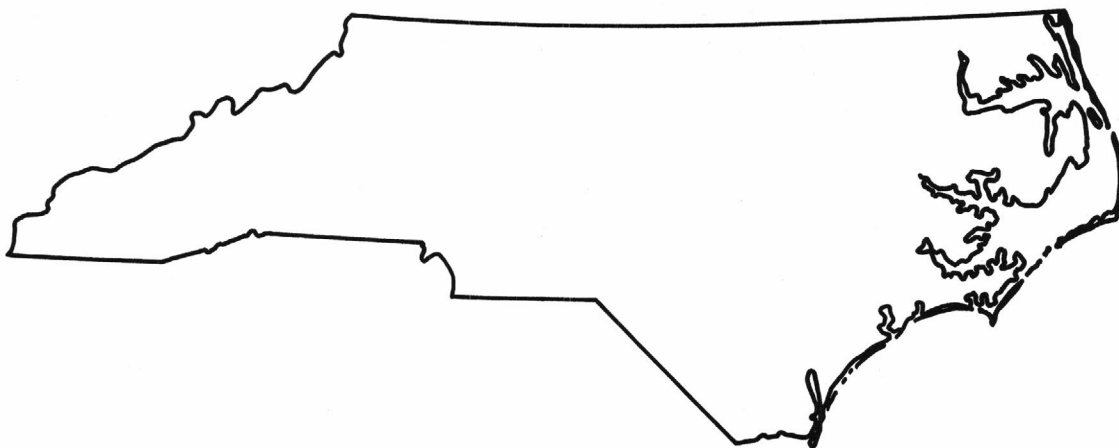
U.S. Department of the Interior  
U.S. Geological Survey

# Water Resources Data North Carolina Water Year 2000

## Volume 2. Ground-Water Records

By S.S. Howe, P.L. Breton

Water-Data Report NC-00-2



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

GALE A. NORTON, Secretary

GEOLOGICAL SURVEY

CHARLES G. GROAT, Director

For information on the water program in North Carolina write to:

District Chief  
U.S. Geological Survey  
3916 Sunset Ridge Road  
Raleigh, NC 27607



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  
Melinda J. Chapman  
W. Scott Caldwell  
Jeffrey L. Corbett  
Laura A. Fauver  
Jason M. Fine

Ronald G. Garrett  
Michael D. Penley  
Bobby C. Ragland  
Jeanne C. Robbins  
Jerald B. Robinson

Kathleen M. Sarver  
Timothy B. Spruill  
A. Gerald Strickland  
Carol A. Tarbox  
Bentley T. Walton

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 Wanda C. Meeks, Regional Hydrologist, Southeastern Region.



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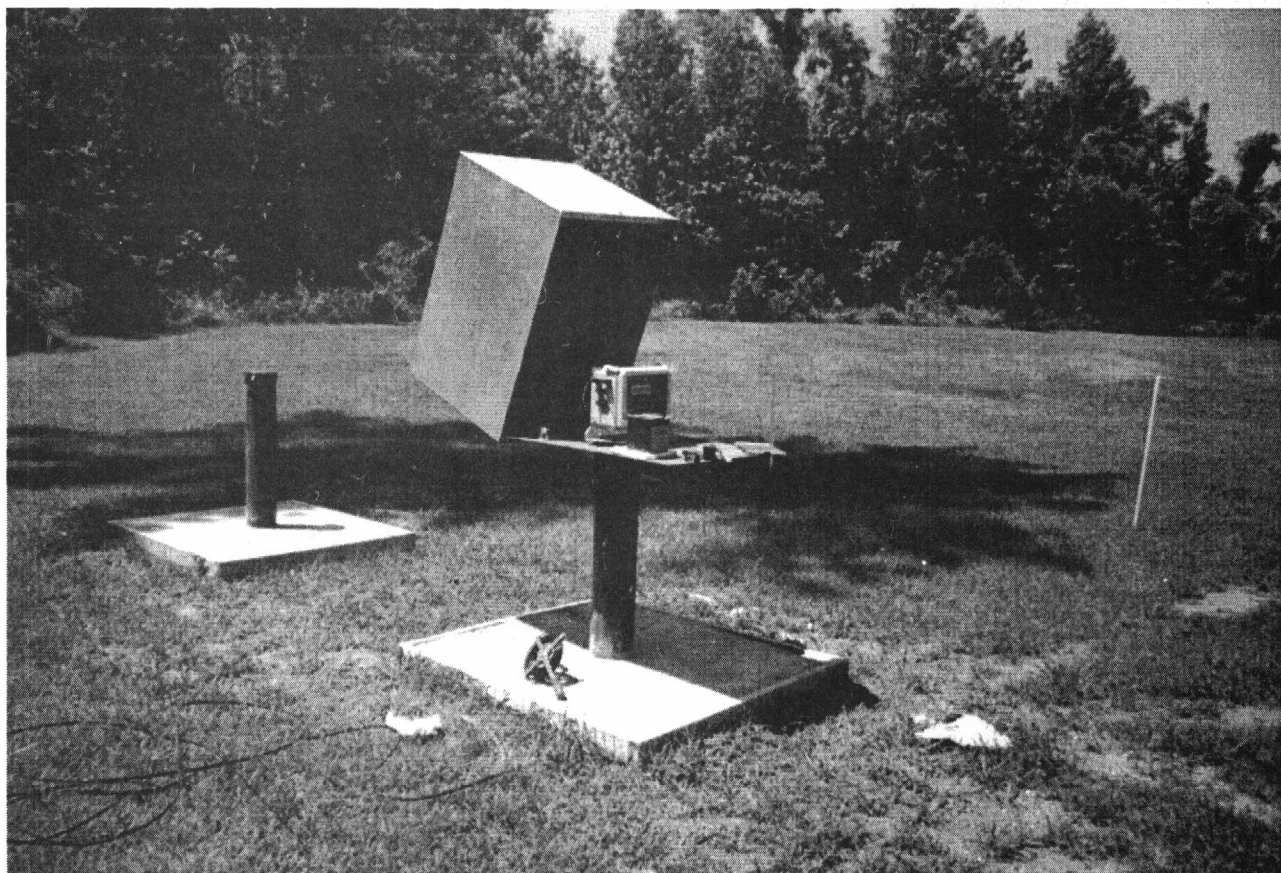
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## INTRODUCTION

Water-resources data for the 2000 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 94 observation wells and ground-water-quality data from 16 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-00-2. Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

## 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  
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. Environmental Protection Agency

## OBJECTIVE CONCEPT FOR GROUND-WATER-LEVEL DATA

The ground-water-level data collected during the 2000 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 the most significant data are obtained from the fewest number of wells in 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 1998 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.
	To define the hydraulic characteristics of aquifers.	Hydrographs showing changes in water levels with time.
	To define effectiveness of confining beds in separating aquifers.	Graphs showing water levels during pumping conditions as a function of pumping rates.
Areal effects	To determine status of storage over the entire areal extent of the aquifer.	Regional water-level maps.
	To define regional continuity of aquifers.	Maps showing net change in storage over a specific time period.
		Define recharge and discharge areas for areal extensive aquifers.

## SUMMARY OF WATER-RESOURCES CONDITIONS

Precipitation

Precipitation amounts for the first quarter, October through December, of the 2000 water year varied from 2.10 inches below average in the western (Asheville) and 4.18 inches below average in the central (Greensboro) parts of the State, respectively, to 2.66 inches above average in the eastern (Elizabeth City) part of the State. Average precipitation amounts represent the computed mean based on data collected from 1961 through 1990, the 30-year base period used by the National Weather Service. Rainfall data collected at six key National Weather Service stations (figs. 1, 2) indicate that rainfall was above average in the northern Coastal Plain and below average in the southern Coastal Plain, Piedmont, and Blue Ridge Provinces of North Carolina.

The second quarter of the 2000 water year, January through March, resulted in drier than average conditions in the Coastal Plain Province, and below-average conditions continued throughout the rest of the State. Despite a record-setting snowfall in excess of 20 inches in January, Raleigh reported below-average precipitation of 0.95 inch for the quarter. The greatest precipitation deficiency was reported in Elizabeth City at 4.34 inches below average. Asheville, Charlotte, and Wilmington all reported precipitation deficiencies of more than 2.50 inches below normal for the quarter.

The third quarter, April through June, resulted in above-average amounts of rainfall across the State except in Asheville and Raleigh, where less-than-average rainfall was reported in May and June, resulting in overall deficits for the quarter at these locations. The greatest rainfall amount was observed in the northern Coastal Plain Province (Elizabeth City), where an above-average rainfall amount of 22.63 inches was recorded, more than 11 inches above average for the quarter. The Western Piedmont and the Southern Coastal Plain recovered a bit from dry conditions. Above-average rainfall totals were reported at Charlotte (0.24 inch above average), Greensboro (0.17 inch above average), and Wilmington (1.32 inches above average) for the third quarter.

During the fourth quarter, July through September, the Blue Ridge Province continued to experience drought conditions with Asheville reporting rainfall at 2.52 inches below average. Charlotte and Elizabeth City also reported below-average conditions for 2 of the 3 months. The Central Piedmont and Southern Coastal Plain Provinces reported above-average rainfall at Greensboro (4.26 inches above average), Raleigh (5.43 inches above average), and Wilmington (3.87 inches above average).

In summary, annual total precipitation was below-average across the State except in the Coastal Plain Province. The National Weather Service reported below-average rainfall amounts in Asheville for every month except April, creating drought conditions in the Blue Ridge Province. Most of the Piedmont and Coastal Plain Provinces recovered somewhat from below-average rainfall amounts during the third or fourth quarter of the water year. The National Weather Service reported the following annual rainfall amounts for the 2000 water year at these selected stations: Asheville, 37.57 inches (10.02 inches below average); Charlotte, 38.90 inches (4.19 inches below average); Greensboro, 41.18 inches (1.44 inches below average); Raleigh, 41.01 inches (0.42 inch below average); Wilmington, 55.96 inches (1.69 inches above average); and Elizabeth City, 56.90 inches (8.42 inches above average).

Ground Water

Ground-water levels in the surficial aquifer of the Coastal Plain Province and in the regolith of the Piedmont and Blue Ridge Provinces of North Carolina respond to climatic influences. The continual discharge of ground water to streams is offset by periodic 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 induced effects, such as pumping.

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 month-end water levels in these index observation wells (fig. 4) include mean month-end water levels for the period of record and record high and low month-end water levels during the 2000 water year.

Water levels in the Blue Ridge index well NC-144 (fig. 4) were below the mean for the period of record (1981-2000) at the beginning of the 2000 water year and considerably below the mean at the end of the water year. This indicates below-average ground-water storage. The water level in the Piedmont index well NC-142 (fig. 4) was approximately 1 foot (ft) lower at the end

of the water year than it was at the beginning. This is the lowest water level in the Piedmont index well in 10 years. This indicates a loss in ground-water storage. In the Coastal Plain index well NC-160 (fig. 4), water levels were about 3 ft above the mean for the period of record (1982-2000) at the beginning of the water year. Water levels decreased nearly 1 ft by the end of the year, indicating a decrease in aquifer storage.

#### Natural-Effects Wells

Ground-water levels in North Carolina were influenced by a wide range of rainfall across the State during the 2000 water year. Water levels in climatic- and terrane-effects wells in the Blue Ridge and Piedmont ended the year lower, indicating losses in aquifer storage. The pattern of declining annual maximum high water levels continued for the fourth year in Blue Ridge well NC-191 (fig. 6). The lowest water level in 10 years was recorded in Blue Ridge well NC-144 (p. 220) and the lowest water level in 10 years was also recorded in Piedmont well NC-142 (p. 112). A 5-year decline continued at Piedmont well NC-193 (fig. 6). Water levels in Coastal Plain climatic-effects well NC-148 (p. 228) ended the year lower, indicating a loss in aquifer storage. Water levels in Coastal Plain terrane-effects well NC-194 (p. 214) ended the year nearly the same, indicating little change in aquifer storage.

#### 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 and Black Creek aquifers (fig. 5), and the upper Cape Fear and lower Cape Fear aquifers (fig. 6).

The record of observation well NC-13 (fig. 5) 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. Water-level fluctuations shown in the records from well NC-13 reflect major pumping activities during the last 35 years. The areal cone of depression resulting from this pumping has covered more than 3,000 mi<sup>2</sup> (Coble and others, 1989). The limits of this regional cone of depression in the Castle Hayne aquifer are shown by seasonal water-level fluctuations in well NC-137 (p. 48) in Beaufort County.

The record of observation well NC-139 (fig. 5) 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 indicates that annual recharge to the aquifer is less than the amount of water withdrawn. Observation well ON-227 (fig. 5), completed in the Castle Hayne aquifer in Onslow County, shows a similar long-term, water-level decline with more recent drawdown resulting from expanding well fields in the area.

Water levels in the Castle Hayne aquifer are not declining everywhere throughout the eastern Coastal Plain. This is especially true in the subcrop areas of the aquifer that are not covered by extensive confining units (Strickland and others, 1992). Water levels in Castle Hayne wells NC-52 (p. 146) in Onslow County and NC-181 (p. 94) in Brunswick County exhibit climatic-effect fluctuations. Although well NC-52 is near water-supply wells at U.S. Marine Corps Camp Geiger, no effects of withdrawals from these wells can be observed in the long-term record. Short-term and minor pumping effects can be observed at well NC-181; however, long-term data show an increasing trend since 1996.

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 (Walters, 1997). The aquifers most affected in this 9,250-mi<sup>2</sup> area, which extends from Bertie County in the north to Pender County in the south, are the Peedee, Black Creek, upper Cape Fear, and lower Cape Fear aquifers. Examples of the long-term effects of these withdrawals can be observed in data from several wells. Well NC-128 (p. 140) shows the effects of pumping from the Black Creek aquifer in Lenoir County. Water-level declines up to 4 ft per year have been recorded in well NC-128 until 1998 when water levels started to recover. Major withdrawals for public supply in Onslow County in the southern part of the central Coastal Plain are from the Peedee and Black Creek aquifers. Hydrographs for well NC-189 in Onslow County (Black Creek aquifer (fig. 5) show water-level declines resulting from these withdrawals. Declines in the Black Creek aquifer at well NC-189 were more than 6 ft per year in the early 1990's, but water-level declines leveled off in 1997. Well ON-256 (p. 158) in Onslow County is also in the Black Creek aquifer. Declines of about 2 ft per year have been observed in this well over the last 6 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 (fig. 6). 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 7 ft per year between late 1992 and 1996. Between late 1996 and 1999, the rate of decline in well NC-177 was about 3 ft per year (Strickland, 1995, 1999).

Water-level declines in well NC-155 (fig. 6), 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 3.5 ft per year occurred in the late 1980's and early 1990's. From 1993 to 1998, the rate of decline decreased to less than 2 ft per year. Since late 1998, water levels have risen slightly more than 3 ft as a result of reduced pumping.

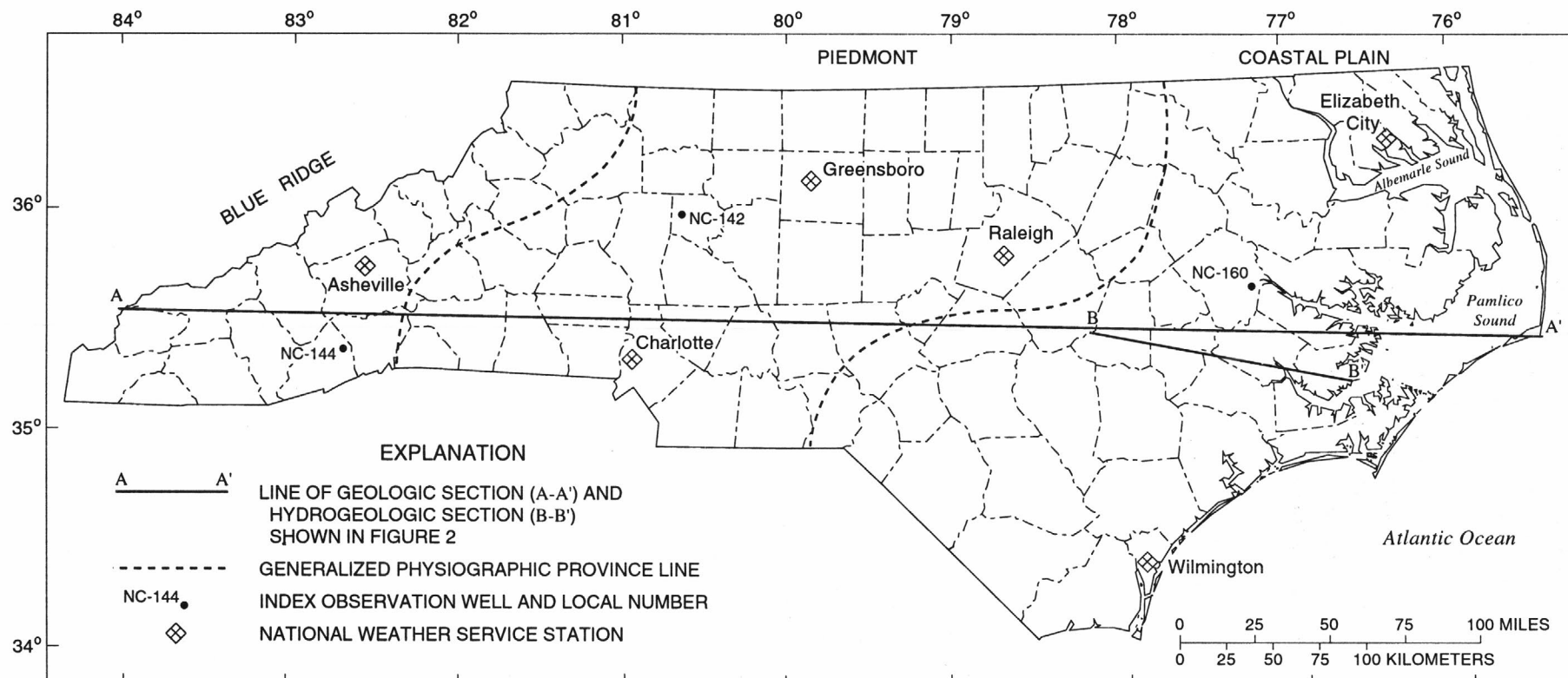


Figure 1.--Locations of weather stations and index wells in North Carolina.

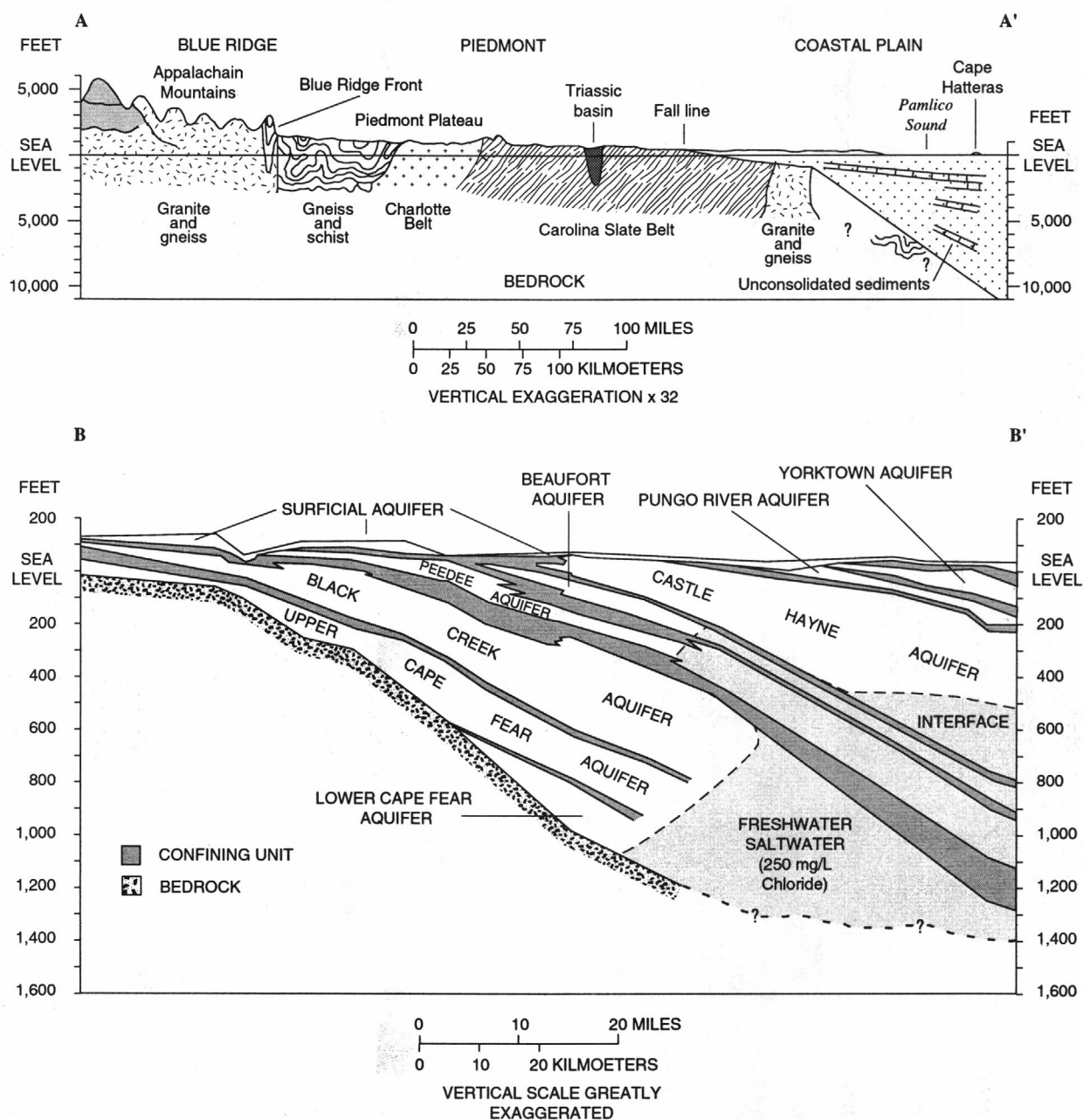


Figure 2.--Geologic section A -A' across North Carolina and hydrogeologic section B - B' in the Coastal Plain of North Carolina (as shown in figure 1).

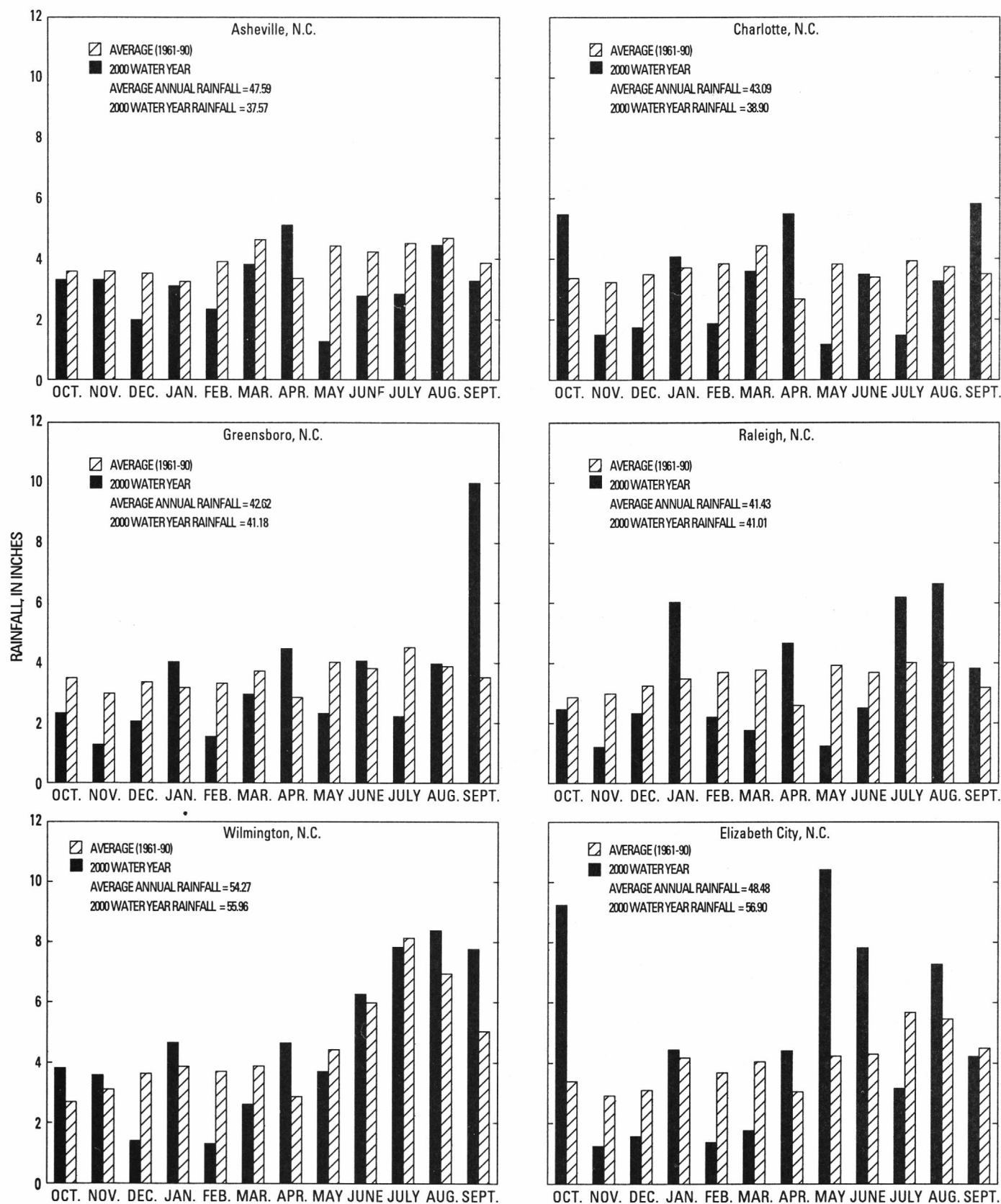


Figure 3.--Monthly rainfall at index stations for 2000 water year and average monthly rainfall for the period 1961-90 (data from National Oceanic and Atmospheric Administration reports).



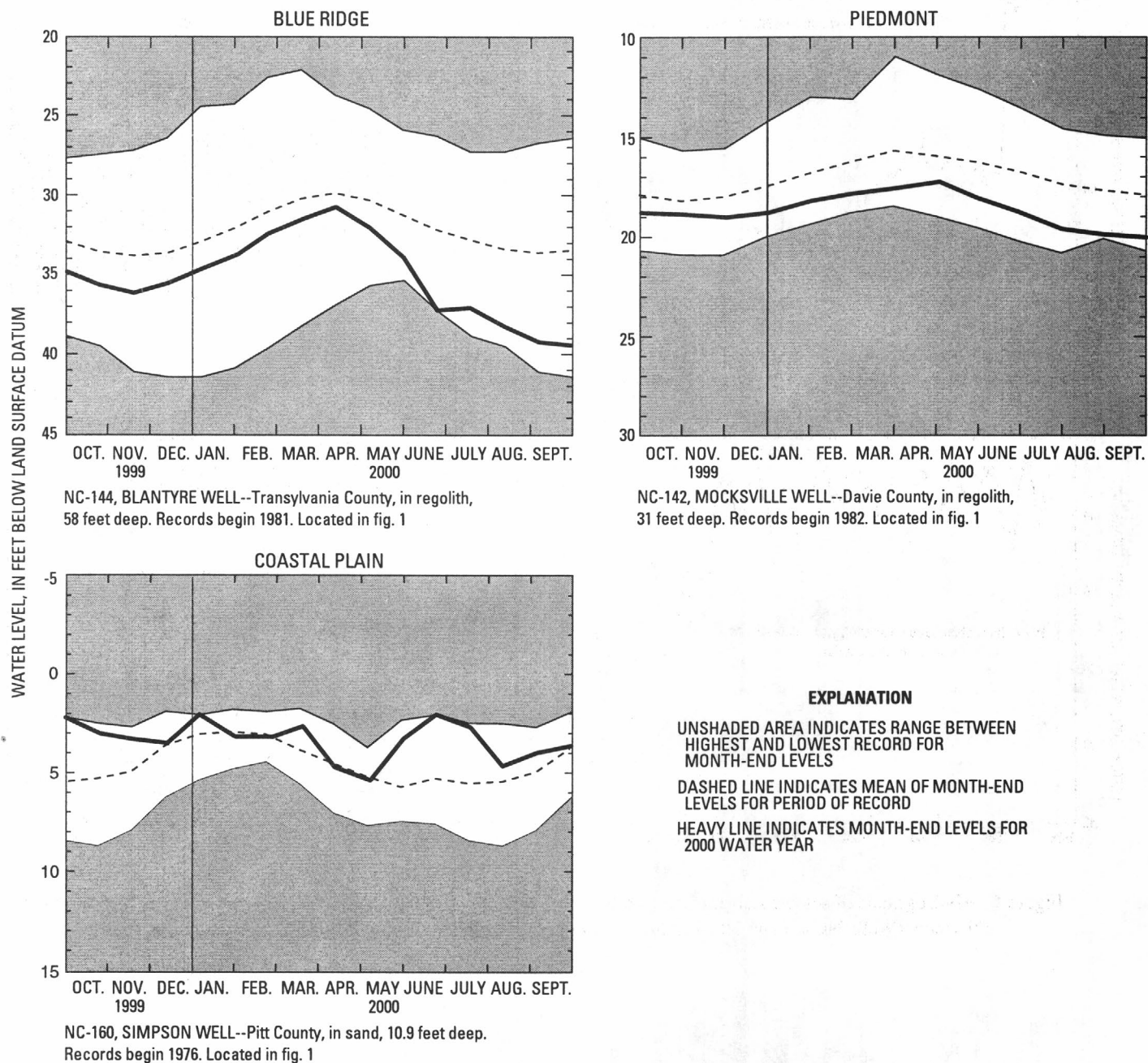


Figure 4.--Water levels in index observation wells in the Blue Ridge, Piedmont, and Coastal Plain Provinces.

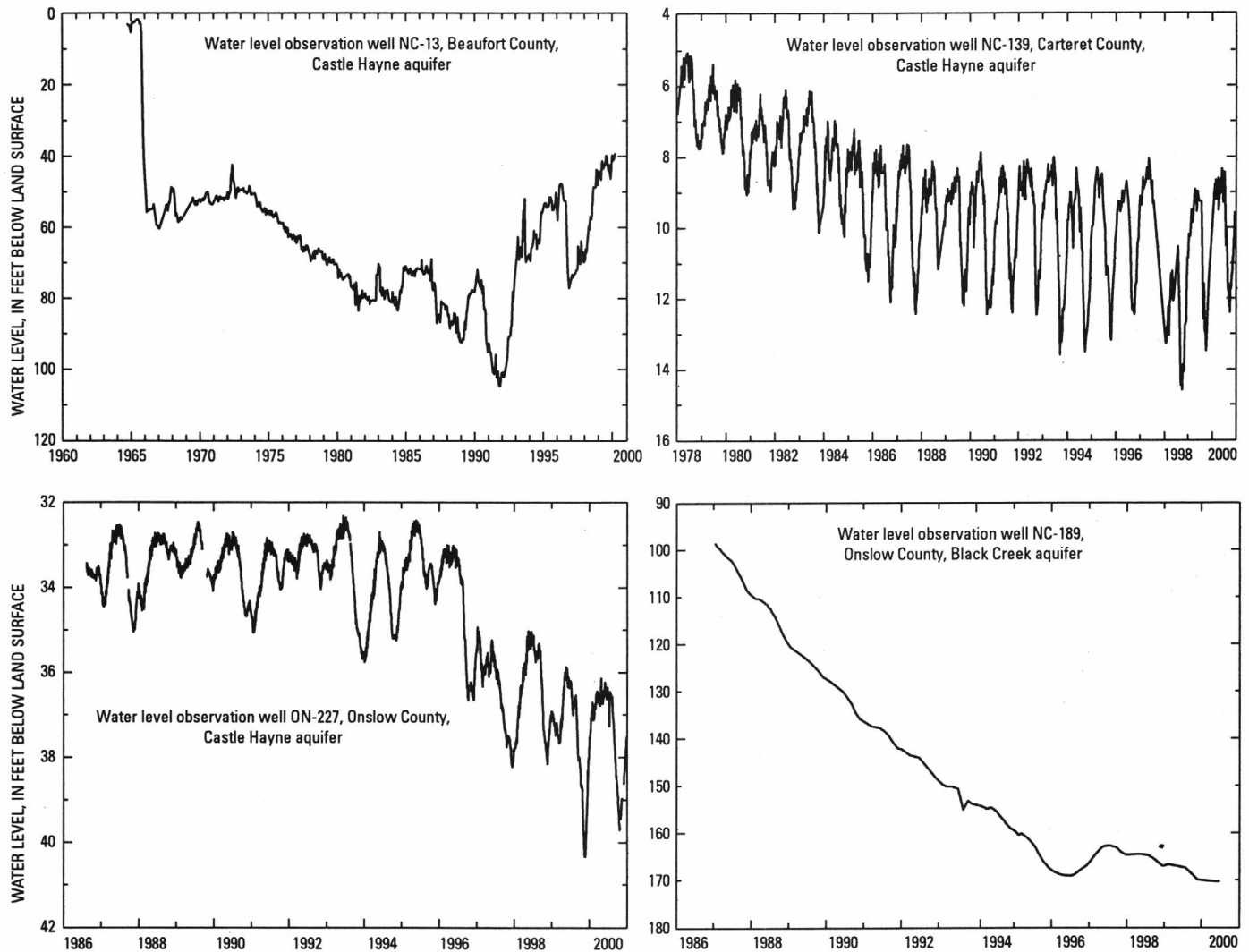


Figure 5.--Hydrographs of selected observation wells in the Castle Hayne, and Black Creek aquifers of the Coastal Plain Province. (Wells NC-13 and NC-139 located in fig. 12 and Wells ON-227 and NC-189 located in fig. 8.)

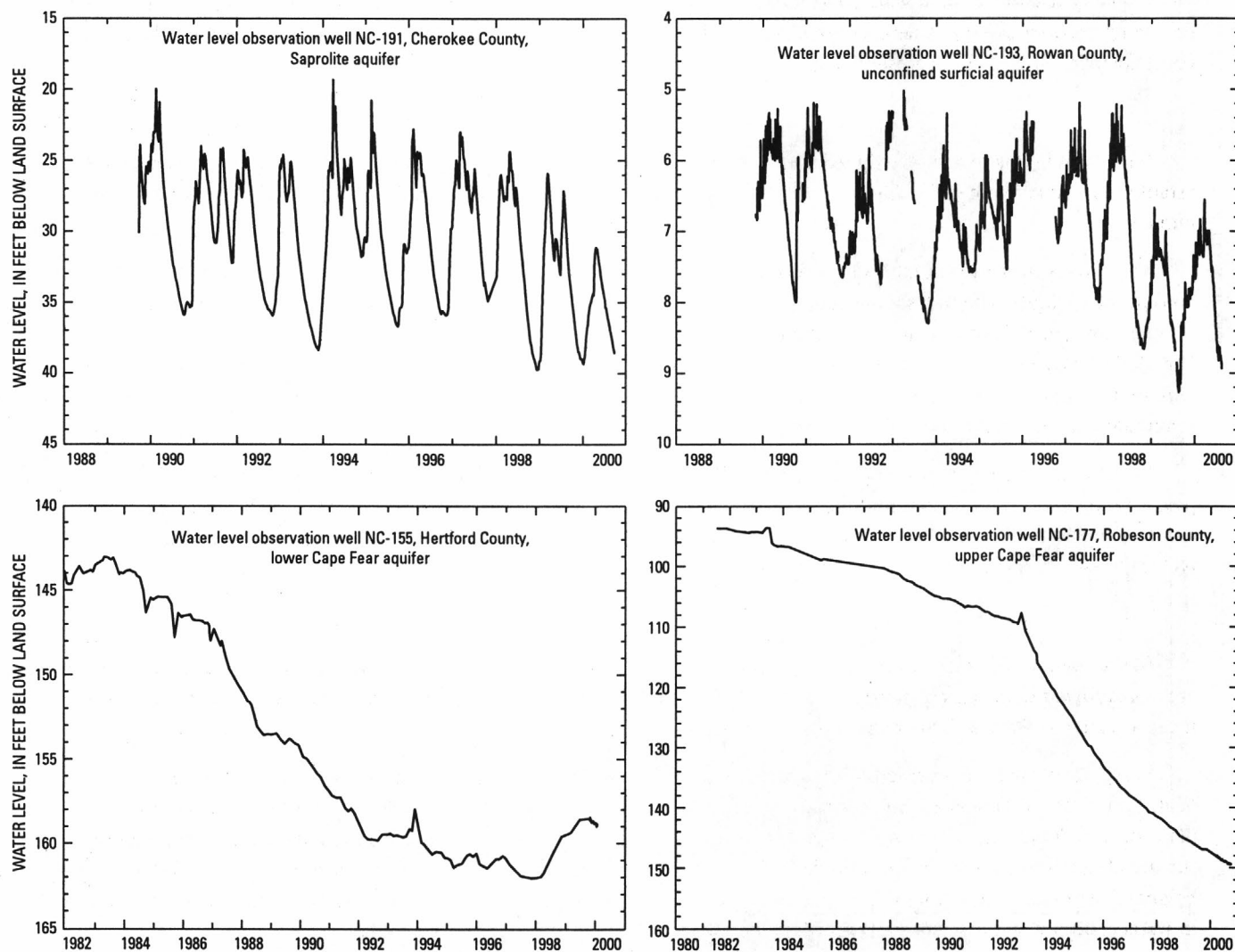


Figure 6.--Hydrographs of selected observation wells in the saprolite aquifer of the Blue Ridge Province, surficial aquifer of the Piedmont Province, and the upper Cape Fear, and lower Cape Fear aquifers of the Coastal Plain Province. (Wells NC-191 and NC-193 located in fig. 11 and Well NC-155, located in fig. 12 and Well NC-177 located in fig. 9.)

## EXPLANATION OF RECORDS

### Ground-Water-Level Data

The ground-water data published in this report are for the 2000 water year that began October 1, 1999, and ended September 30, 2000. A calendar of the water year is provided on the inside of the front cover. These data include water-level and water-quality data for ground water. The locations of the wells where the data were collected are shown in figures 7 and 8. The following sections provide a detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

### Site Identification Numbers

Each well in this report is assigned a unique identification number. This number usually is assigned when a well is first established and is retained for that well indefinitely; all data for that well in USGS data bases are under that site identification number.

The site identification numbers for wells are assigned according to the latitude and longitude location of the well. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells within a 1-second grid. This site identification number, once assigned, has no locational significance. In the rare instance where the initial determination of latitude and longitude is found to be in error, the well will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the well description.

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-251 or RB-185 for wells in Mecklenburg and Robeson Counties, respectively. 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.

### Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are consistently accurate and reliable.

Water-level data are obtained from direct measurements with a steel tape, an electric tape, or a water-level recorder. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum. Sea level is the plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude (referenced to sea level) of the land-surface datum 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. Reported water levels in wells equipped with water-level recorders represent the mean water level for every day.

Water levels are reported to as many significant figures as can be justified by the local conditions. Accordingly, all measurements are reported to a hundredth of a foot.

### Data Presentation

Water-level data are presented by counties arranged in alphabetical order. The prime 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 7-10; each well is identified on these maps by its local or county well number.

Each well record consists of three parts--the well description, 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.



### Description

**LOCATION.**--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds), the hydrologic-unit number, a geographic point of reference, and the owner's name. Latitudes and longitudes used in this report are reported as National American Datum of 1927 unless otherwise specified.

**AQUIFER.**--This entry designates by name and geologic age the aquifer that the well taps. Names of aquifers in the Coastal Plain Province are those mentioned in the "Major Aquifers" section of this report. Aquifers in the Piedmont and Blue Ridge Provinces are identified by the type of the crystalline igneous or metamorphic rock that the well taps, or by the regolith derived from the underlying rock

**WELL CHARACTERISTICS.**--This entry describes the well in terms of depth, casing diameter and depth and (or) screened interval, method of construction, use, and other 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 sea level; 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 on), 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 of 1929); 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. It may describe 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 period for which there are published records for the well. It reports the month and year at the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

**EXTREMES FOR PERIOD OF RECORD.**--This entry contains the highest and lowest 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

The hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year, 10-water-year, and for some wells, period of record hydrographs are shown. Those hydrographs which display periodic water-level measurements are indicated by points which are connected with a dashed line from one measurement to the next. Hydrographs which display recorder data are indicated by 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

Records of ground-water quality data in this report differ from other types of records in that, for most sampling sites, they consist of only one set of measurements for the water year.

#### 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 counties 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 "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in Techniques of Water-Resources Investigations (TWRI), Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chaps. A1, A3, and A4. These references are listed on pages 21-24 of this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the U.S. Geological Survey North Carolina District office in Raleigh.

Chemical-quality data published in this report are considered to be the most representative values available for the wells listed. The values reported represent as much as possible water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis.

#### 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 U.S. Geological Survey laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the U.S. Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; and Book 5, Chap. A1, A3, and A4.

The U.S. Geological Survey 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-MDL's) and laboratory reporting levels (LRL's). 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. The chance of 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 <LRL for samples in which the analyte was either not detected or did not pass identification. Analytes that are detected at concentrations between the LT-MDL and 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.

In March 1990 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1990.

MBAS determinations made from January 1, 1970 through August 29, 1993, at the National Water Quality Laboratory in Denver (Analyzing Agency Code 80020) are positively biased. These data can be corrected on the basis of the following equation, if concentrations of dissolved nitrate plus nitrite, as nitrogen, and dissolved chloride, determined concurrently with the MBAS data, are applied:

## Remarks Codes

The following remarks codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
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 (nonideal 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

## Dissolved Trace-Element Concentrations

NOTE: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter. Present data above the microgram per liter level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes. However, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols in water year 1994.

## Water Quality-Control Data

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 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.

## Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by 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. There are many types of blank samples possible, each 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 whose 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. There are many types of replicate samples 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:

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 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.



### 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). Some water-quality and ground-water data also are available through the WWW. These data may be accessed at

<http://water.usgs.gov>

Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address on the back of the title page.)

### SPECIAL NETWORKS AND PROGRAMS

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey 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; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 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 will be 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 decision making by water-resources managers 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 is available through the world wide web at [http://www.wreres.usgs.gov/nawqa/nawqa\\_home.html](http://www.wreres.usgs.gov/nawqa/nawqa_home.html).

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## DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

**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 the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.

**Adenosine triphosphate** (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it 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.

**Algae** are mostly aquatic single-celled, colonial, or multicelled plants containing chlorophyll and lacking roots, stems, and leaves.

**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.

**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 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, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters

**Cubic foot per second per square mile** [CFSM,  $(\text{ft}^3/\text{s})/\text{mi}^2$ ] 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.

**Inch** (IN., in.) 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 uniformly distributed on it.

**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 weight percent of the hydrogen substituted chlorine.

**Bacteria** are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while 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.

**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 warm-blooded 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 mL of sample.

**Fecal coliform bacteria** are bacteria that are present in the intestine or feces of warm-blooded animals. They are often 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.

## DEFINITION OF TERMS--Continued

**Fecal streptococcal bacteria** are bacteria found in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. 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.

**Enterococcus bacteria** are commonly found in the feces of humans and other warm-blooded 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 and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis*, *Streptococcus feacium*, *Streptococcus avium*, and their variants.

**Escherichia coli (E. coli)** are bacteria present in the intestine and feces of warm-blooded 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. Their concentrations are expressed as number of colonies per 100 mL of sample.

**Base flow** is flow in a channel sustained by ground-water discharge in the absence of direct runoff.

**Bed material** is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

**Benthic organisms** (invertebrates) are the group of animals 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.

**Ash mass** is the mass or amount of residue present after the residue from the 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 ( $\text{g}/\text{m}^3$ ), and periphyton and benthic organisms in grams per square meter ( $\text{g}/\text{m}^2$ ).

**Dry mass** refers to the mass of residue present after drying in an oven at 105 °C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash, and sediment in the sample. Dry mass is expressed in the same units as ash mass.

**Organic mass** or volatile mass of the 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.

**Wet mass** is the mass of living matter plus contained water.

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

**Bottom material:** See "Bed material."

**Cells/volume** refers to the number of plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

**Cells volume (biovolume)** determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used 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 ( $\mu\text{m}^3$ ) is determined by obtaining critical cell measurements on 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:

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



## DEFINITION OF TERMS--Continued

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 over all species.

**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.

**Chlorophyll** refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

**Colloid** is any substance with particles in such a fine state of subdivision dispersed in a medium (for example, water) that they do not settle out; but not in so fine a state of subdivision that they can be said to be truly dissolved.

**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 that meets either of the following conditions:

1. Stage or streamflow are recorded at some interval on a continuous basis. The recording interval is usually 15 minutes, but may be less or more frequent.
2. Water-quality, sediment, or other hydrologic measurements are recorded at least daily.

**Control** designates a feature in the channel downstream from a gaging station that physically influences the water-surface elevation and thereby determines the stage-discharge relation at the station. 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,  $\text{ft}^3/\text{s}$ )** 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, 448.8 gallons per minute, or 0.02832 cubic meters per second.

**Cubic foot per second-day (CFS-DAY, Cfs-day,  $[(\text{ft}^3/\text{s})/\text{d}]$ )** 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, 1.9835 acre-feet, 646,317 gallons, or 2,447 cubic meters.

**Daily record** is a summary of streamflow, sediment, or water-quality values computed from data collected with sufficient frequency to obtain reliable estimates of daily mean values.

**Daily record station** is a site for which daily records of streamflow, sediment, or water-quality values are computed.

**Datum**, as used in this report, is an elevation above mean sea level to which all gage height readings are referenced.

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

**Discharge**, or flow, is the volume of water (or more broadly, volume of fluid including solid- and dissolved-phase material), that passes a given point in a given period of time.

**Annual 7-day minimum** is the lowest mean discharge for 7 consecutive days in a 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.)

## DEFINITION OF TERMS--Continued

**Instantaneous discharge** is the discharge at a particular instant of time.

**Mean discharge** (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

**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 agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

**Dissolved oxygen** (DO) content of water in equilibrium with air 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, with small temperature changes having the more significant offset. Photosynthesis and respiration may cause diurnal variations in dissolved-oxygen concentration in water from some streams.

**Dissolved-solids concentration** of water 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 that analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to reflect the change. Alternatively, alkalinity concentration (as mg/L  $\text{CaCO}_3$ ) can be converted to carbonate concentration by multiplying by 0.60.

**Diversity index** is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$H' = - \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

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. Diversity 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 site on a stream is that area, measured in a horizontal plane, that has a common outlet at the site for its surface runoff. Figures of drainage area 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 is occupied by a drainage system with a common outlet for its surface runoff (see "Drainage area").

**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.

**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 the elevation of the zero point of the reference gage from which gage height is determined as compared to sea level (see "Datum"). This elevation is established by a system of levels from known benchmarks, by approximation from topographic maps, or by geographical positioning system.

**Gage height** (G.H.) is the water-surface elevation referenced to the gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

**Gaging station** is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

**Gas chromatography/flame ionization detector** (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

## DEFINITION OF TERMS--Continued

**Ground-water level** is the elevation of the water table or another potentiometric surface at a particular location.

**Hardness** of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ( $\text{CaCO}_3$ ).

**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>

**Hydrologic benchmark station** is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a benchmark station may be used to separate effects of natural from human-induced changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped benchmark basin.

**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 U.S. Geological Survey. Each hydrologic unit is identified by an 8-digit number.

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

**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,  $\lambda$  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.

**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 are usually 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.

**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.

**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.

## DEFINITION OF TERMS--Continued

**Methylene blue active substances (MBAS)** are apparent detergents. 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,  $\mu\text{g/g}$ )** 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,  $\mu\text{g/kg}$ )** 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.

**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,  $\text{mg/L}$ )** 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  $\text{mg/L}$  and is based on the mass of dry sediment per liter of water-sediment mixture.

**Miscellaneous site**, or miscellaneous station, is a site where streamflow, sediment, and/or water-quality data are collected once, or more often on a random or discontinuous basis.

**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,  $\text{ng/L}$ )** 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 of 1929)** is a geodetic datum derived from a general adjustment of the first order level nets of the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, 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>

**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.

**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 sediments. May be reported as dissolved organic carbon (DOC), suspended organic carbon (SOC), or total organic carbon (TOC).

**Organism** is any living entity.

## DEFINITION OF TERMS--Continued

**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 (m<sup>2</sup>), 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.

**Total organism count** is the total number of organisms collected and enumerated in any particular sample.

**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 U.S. Geological Survey 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 utilizes 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** 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

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

**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, or volume.

**Periodic station** is a site where stage, discharge, sediment, chemical, 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. While 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.



## DEFINITION OF TERMS--Continued

**pH** of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

**Picocurie (PC, pCi)** is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie yields 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).

**Phytoplankton** is the plant part of the plankton. They are usually 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 are commonly known as algae.

**Blue-green algae (*Cyanophyta*)** are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

**Diatoms** are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

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

**Fire algae (*Pyrrhophyta*)** are a group of algae that are free-swimming unicells characterized by a red pigment spot.

**Green algae** have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

**Zooplankton** is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often 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.

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

**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. 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 in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

## DEFINITION OF TERMS--Continued

**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. 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.

**Radioisotopes** are isotopic forms of an element 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.

**Recoverable from 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.

**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 non-exceedance 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 non-exceedances of the  $7Q_{10}$  occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. 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.

**River mile** is the distance of a point on a river measured in miles from the river's mouth along the low-water channel.

**River mileage** is the linear distance along the meandering path of a stream channel determined in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council.

**Runoff in inches (IN., in.)** is the depth, in inches, to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

**Sea level** refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929. *See:* [http://www.co-ops.nos.noaa.gov/glossary/gloss\\_n.html#NGVD](http://www.co-ops.nos.noaa.gov/glossary/gloss_n.html#NGVD)

**Sediment** is solid material that is transported by, suspended in, or deposited from water. It originates mostly from disintegrated rocks; it also 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 influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

## DEFINITION OF TERMS--Continued

**Bed load** is the sediment that is transported in a stream by rolling, sliding, or skipping along or very close to the bed. In this report, bed load is considered to consist of particles in transit from the bed to an elevation equal to the top of the bed-load sampler nozzle (usually within 0.25 ft of the streambed).

**Bed-load discharge** (tons per day) is the quantity of sediment moving as bed load, reported as dry weight, that passes a cross section in a given time.

**Suspended sediment** is the sediment that is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

**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 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The entire sample is used for the analysis.

**Mean concentration of suspended sediment** is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

**Suspended-sediment discharge** (tons/day) is the quantity of sediment moving in suspension, reported as dry weight, 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 (ft<sup>3</sup>/s) x 0.0027.

**Suspended-sediment load** is a term that refers to material in suspension. 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.

**Total sediment discharge** (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, reported as dry weight, that passes a cross section in a given time.

**Total sediment load** or total load is a term that refers to the total sediment (bed load plus suspended-sediment load) that is in transport. 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 total sediment discharge.

**Seven-day 10-year low flow** (7Q<sub>10</sub>, 7Q<sub>10</sub>) is the minimum flow averaged over 7 consecutive days that is expected to occur on average, once in any 10-year period. The 7Q<sub>10</sub> has a 10-percent chance of occurring in any given year.

**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. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

**Solute** is any substance that is dissolved in water.

**Specific conductance** is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific conductance is related to the type and concentration of ions in solution 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 MILL/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 waters, to evaluate mixing of different waters, 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.

## DEFINITION OF TERMS--Continued

**Substrate** is the physical surface upon which an organism lives.

**Artificial substrate** is a device which is purposely 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 taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

**Natural substrate** refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

**Surface area** of a lake or impoundment is that area encompassed by the boundary of the lake or impoundment as shown on USGS topographic maps, or on other available maps or photographs. The computed surface areas reflect the water levels of the lakes or impoundments at the times when the information for the maps or photographs was obtained.

**Surficial bed material** is the top 0.1 to 0.2 ft of the bed material that is sampled using U.S. Series Bed-Material Samplers.

**Suspended** (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with 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-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 analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

**Suspended, total** is the total amount of a given constituent in the part of a representative suspended-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 method used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

**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.

**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>



## DEFINITION OF TERMS--Continued

**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 that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

**Tons per acre-foot** is the dry mass of dissolved solids in 1 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 the rate representing a mass of 1 ton of a constituent in streamflow passing a cross section in 1 day. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

**Total** is the total amount of a given constituent in a representative suspended-sediment 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 suspended-sediment mixture and that the analytical method determined all of the constituent in the sample.)

**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 total 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 recoverable** is the amount of a given constituent that is in solution after a representative suspended-sediment 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, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

**Turbidity** is a measurement of the collective optical properties of a water sample that cause light to be scattered and absorbed rather than transmitted in straight lines; the higher the intensity of scattered light, the higher the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU) or Formazin turbidity units (FTU) depending on the method and equipment used.

**Volatile organic compounds (VOC's)** 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 VOC's are manmade chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often 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 (U.S. Environmental Protection Agency, 1996).

**Water level** is the water-surface elevation or stage of the free surface of a body of water above or below any datum (see "Gage height"), or the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.



## DEFINITION OF TERMS--Continued

**Water table** is the surface of a ground-water body at which the water is at atmospheric pressure.

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

**Water year** in U.S. Geological Survey 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, 1999, is called the "1999 water year."

**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.

**Well** is an excavation (pit, hole, tunnel), generally cylindrical in form and often walled in, drilled, dug, driven, bored, or jetted into the ground to such a depth as to penetrate water-yielding geologic material and allow the water to flow or to be pumped to the surface.

**Wet weight** refers to the weight of animal tissue or other substance including its contained water.

**WSP** is used as an abbreviation for "Water-Supply Paper" in reference to previously published reports

## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals 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.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

**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, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

**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, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

***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, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.

***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, Chapter F1. 1989. 97 pages.

**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, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

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

#### **Section B. Ground-water techniques**

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

- 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, Chapter B4. 1993. 8 pages.
- 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, Chapter B5. 1987. 15 pages.
- 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, Chapter B6. 1987. 28 pages.
- 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, Chapter B7. 1992. 190 pages.
- 3-B8. *System and boundary conceptualization in ground-water flow simulation*, by T.E. Reilly: USGS--TWRI book 3, chap. B8. 2001. 29 pages.

#### ***Section C. Sedimentation and Erosion Techniques***

- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by Thomas K. Edwards and G. Douglass Glysson: USGS--TWRI Book 3, Chapter C2, 1988, 80 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

#### **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, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

##### ***Section B. Surface Water***

- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

##### ***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, Chapter D1. 1970. 17 pages.

#### **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, Chapter A1. 1989. 545 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 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, Chapter A3. 1987. 80 pages.

- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L. J. Britton and P. E. Greenson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.
- 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, Chapter A5. 1977. 95 pages.
- 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, Chapter A6. 1982. 181 pages.

#### **Section C. Sediment Analysis**

- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

### **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, Chapter A1. 1988. 586 pages.
- 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, Chapter A2. 1991. 68 pages.
- 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, Chapter A3. 1993. 136 pages.
- 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, Chapter A4. 1992. 108 pages.
- 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, Chapter A5, 1993. 243 pages.
- 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. 1995. 125 pages.

### **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, Chapter C1. 1976. 116 pages.
- 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, Chapter C2. 1978. 90 pages.
- 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, Chapter C3. 1981. 110 pages.

### **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, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

#### **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, Chapter B2. 1968. 15 pages.

**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 Gibbs, 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 Gibbs, 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 Gibbs, 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 Gibbs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter 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 Gibbs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter 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, Chapter A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D. N. Myers and F. D. Wilde: USGS--TWRI Book 9, Chapter 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, Chapter A8. 1998. 48 pages.
- 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, Chapter A9, 1998. 60 pages.



LOCATION OF BRUNSWICK COUNTY IN NORTH CAROLINA

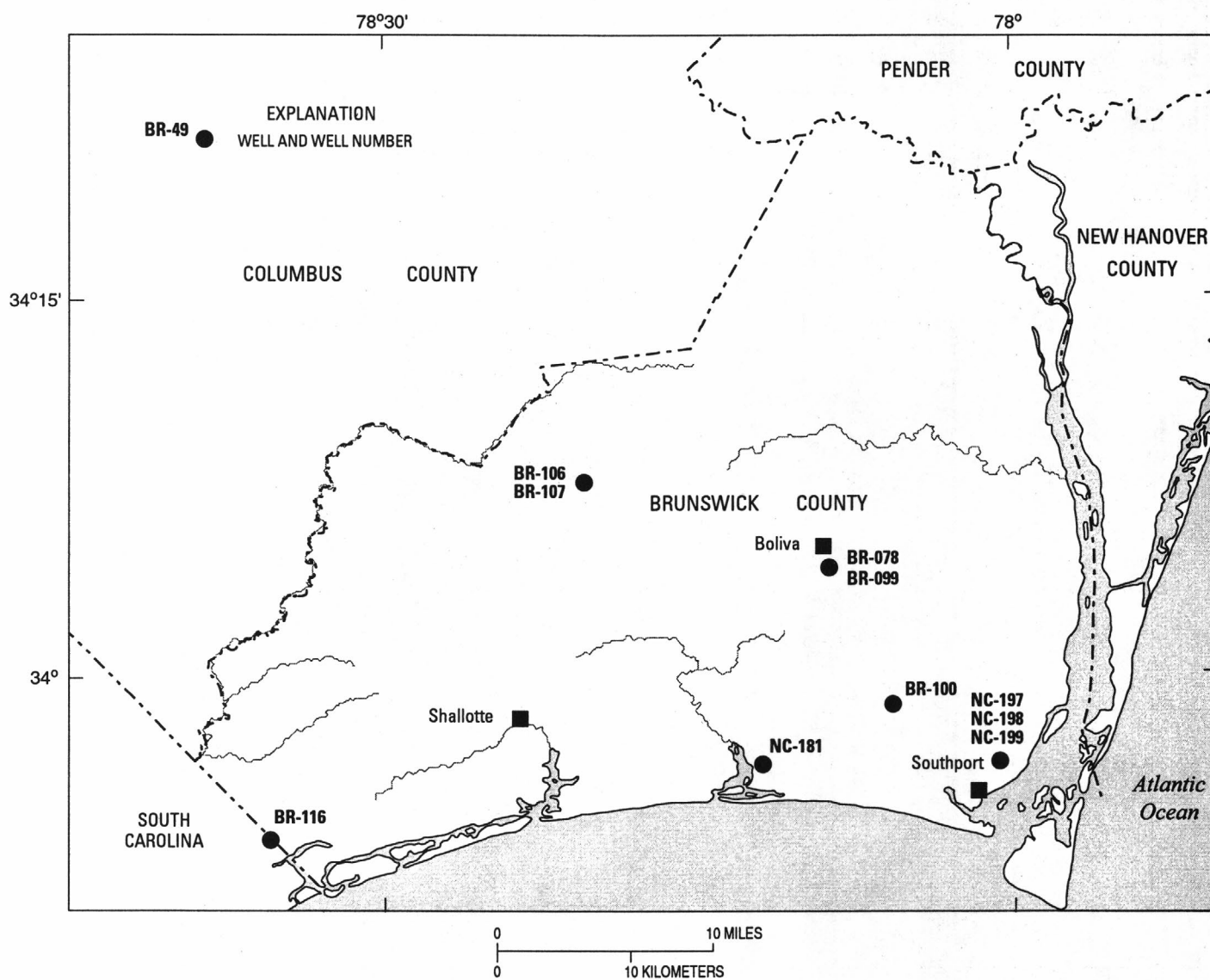


Figure 7.--Location of observation wells in Brunswick County.



LOCATION OF ONSLOW COUNTY IN NORTH CAROLINA

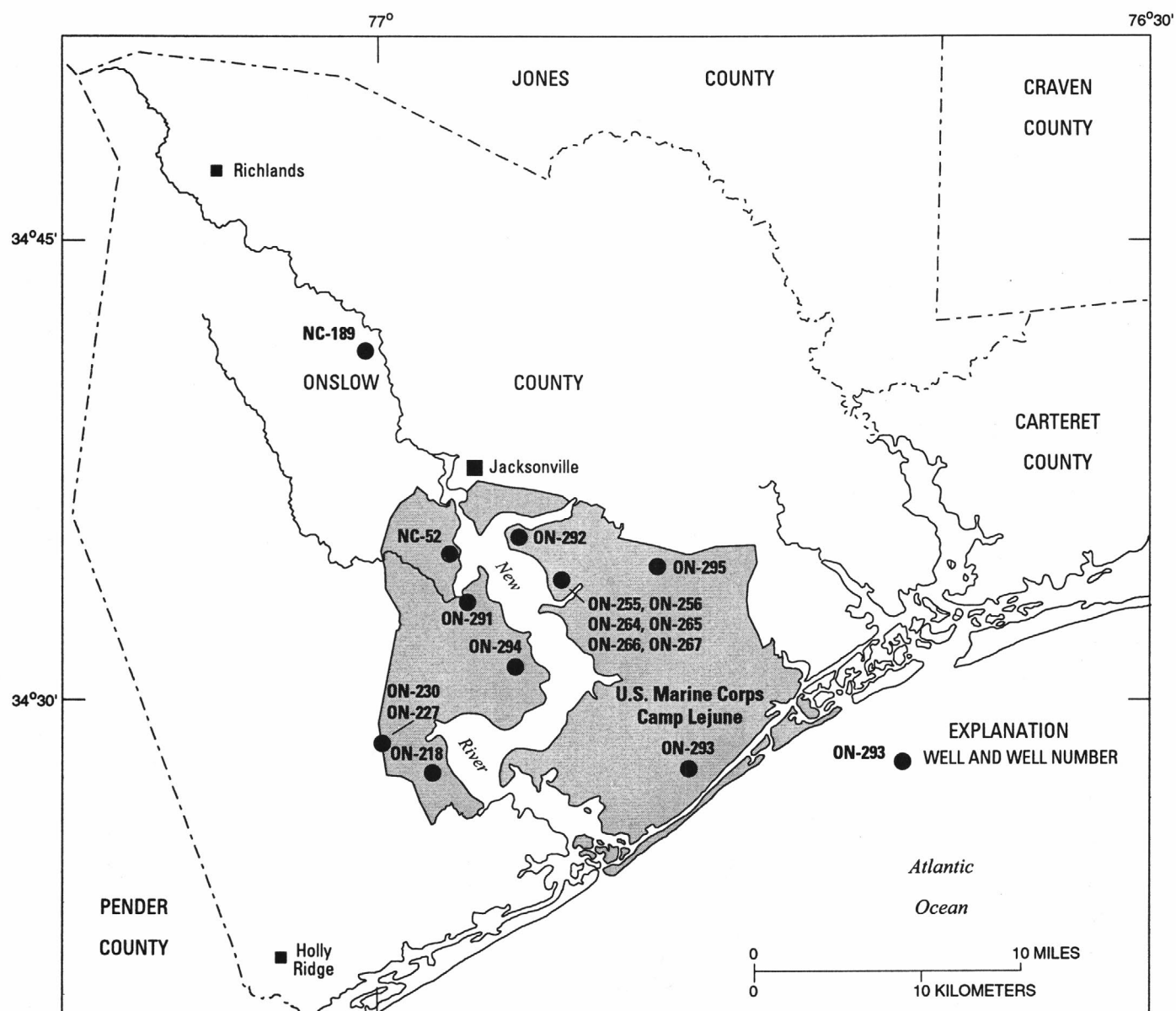


Figure 8.--Location of observation wells in Onslow County.

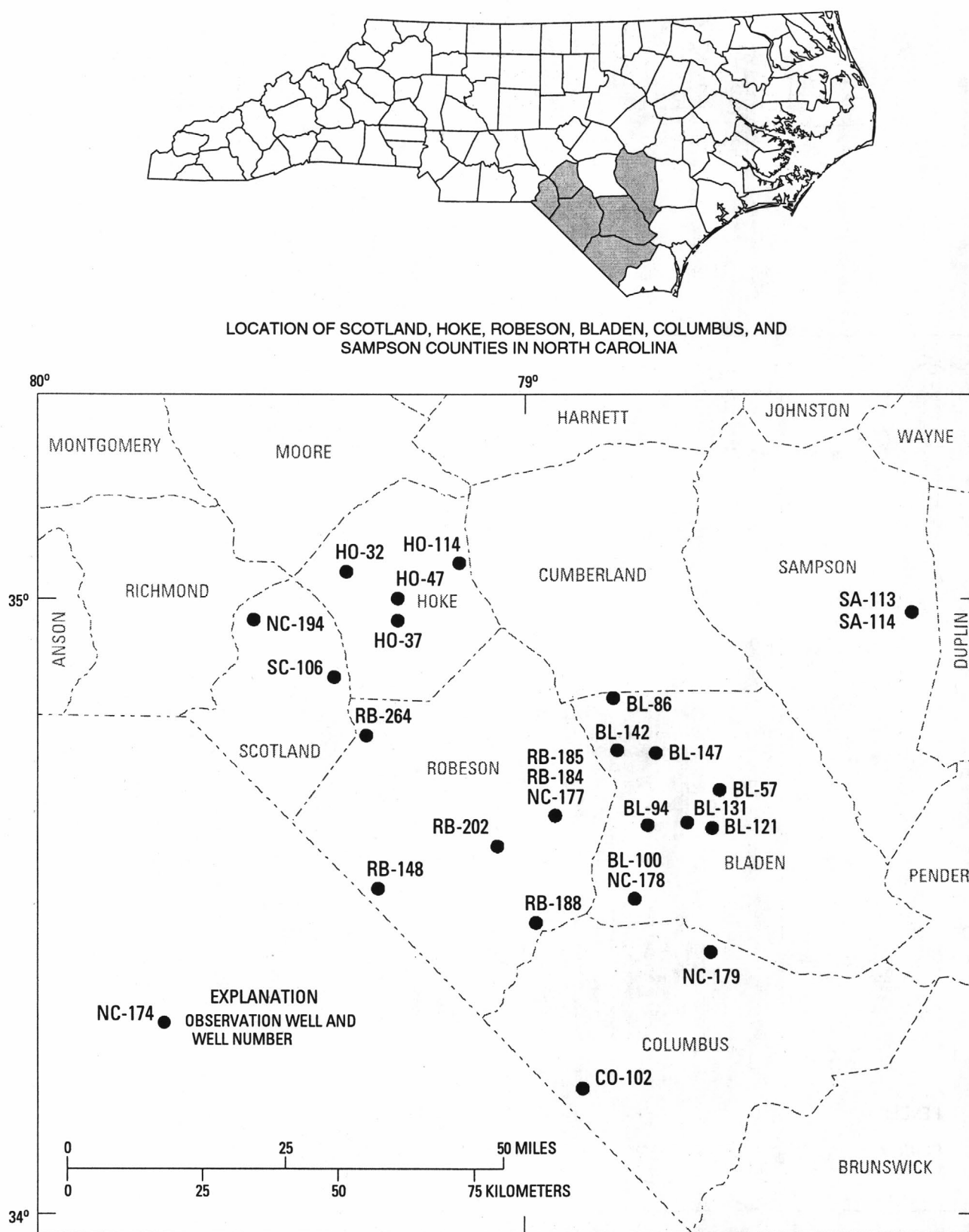


Figure 9.--Location of observation wells in Scotland, Hoke, Robeson, Bladen, Columbus, and Sampson Counties.



LOCATION OF GREENE COUNTY IN NORTH CAROLINA

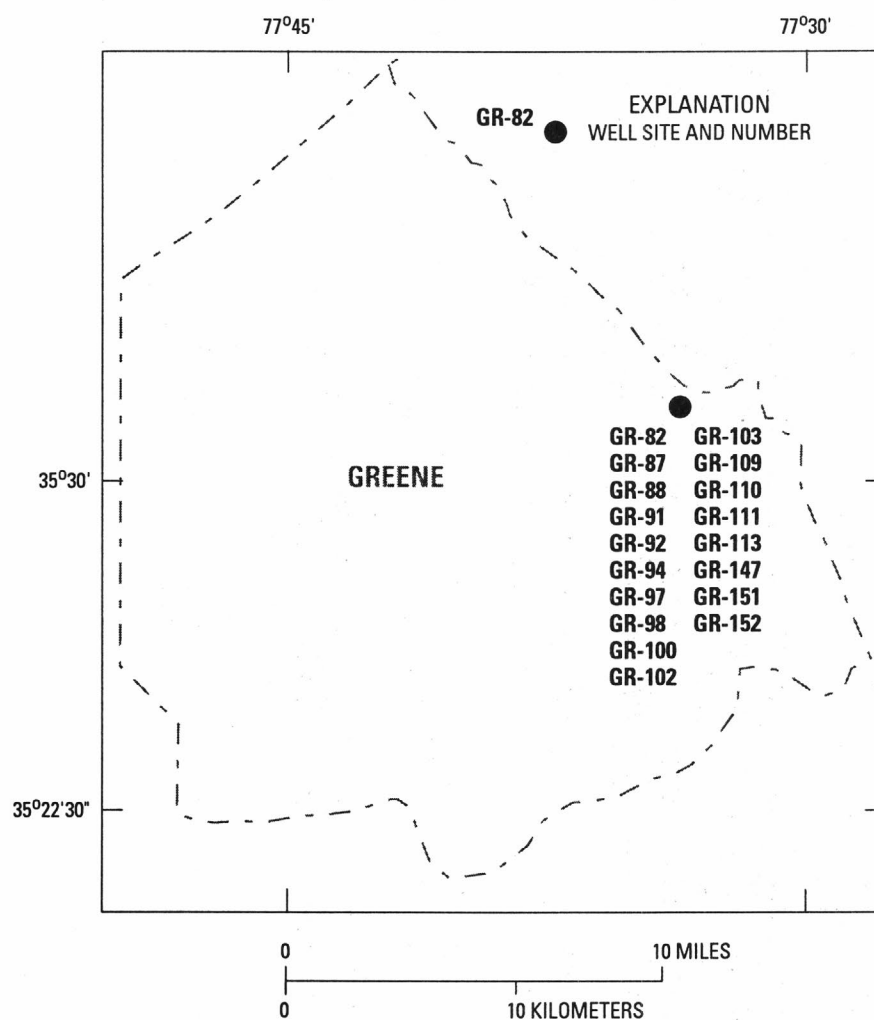


Figure 10.--Location of observation wells in Greene County.



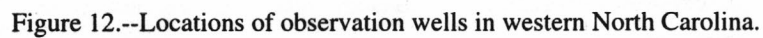


Figure 12.--Locations of observation wells in western North Carolina.

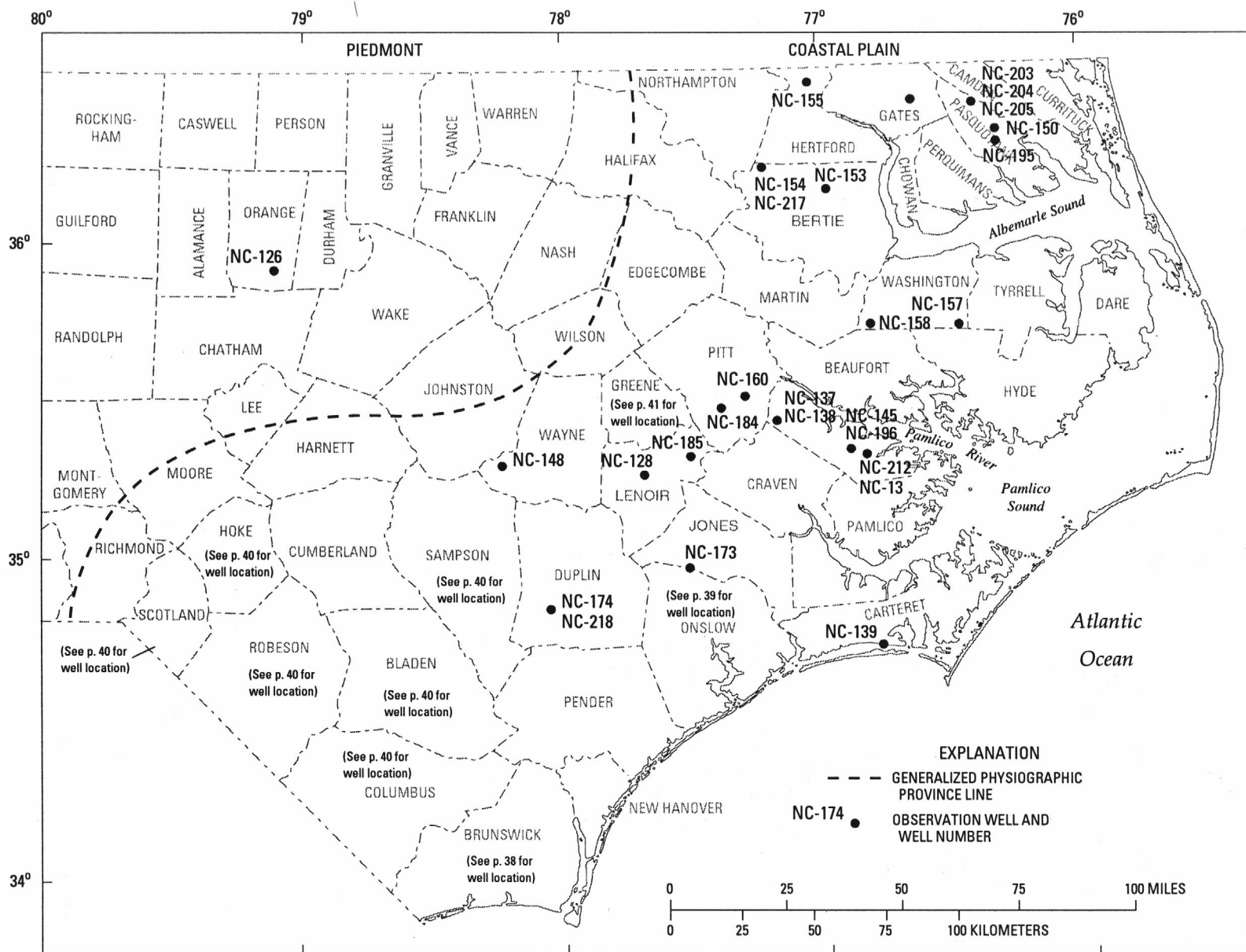


Figure 13.--Locations of observation wells in eastern North Carolina.

## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## AVERY COUNTY

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

LOCATION.--Lat 36°04'55", long 81°53'01", Hydrologic Unit 03050101, nr 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.

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

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

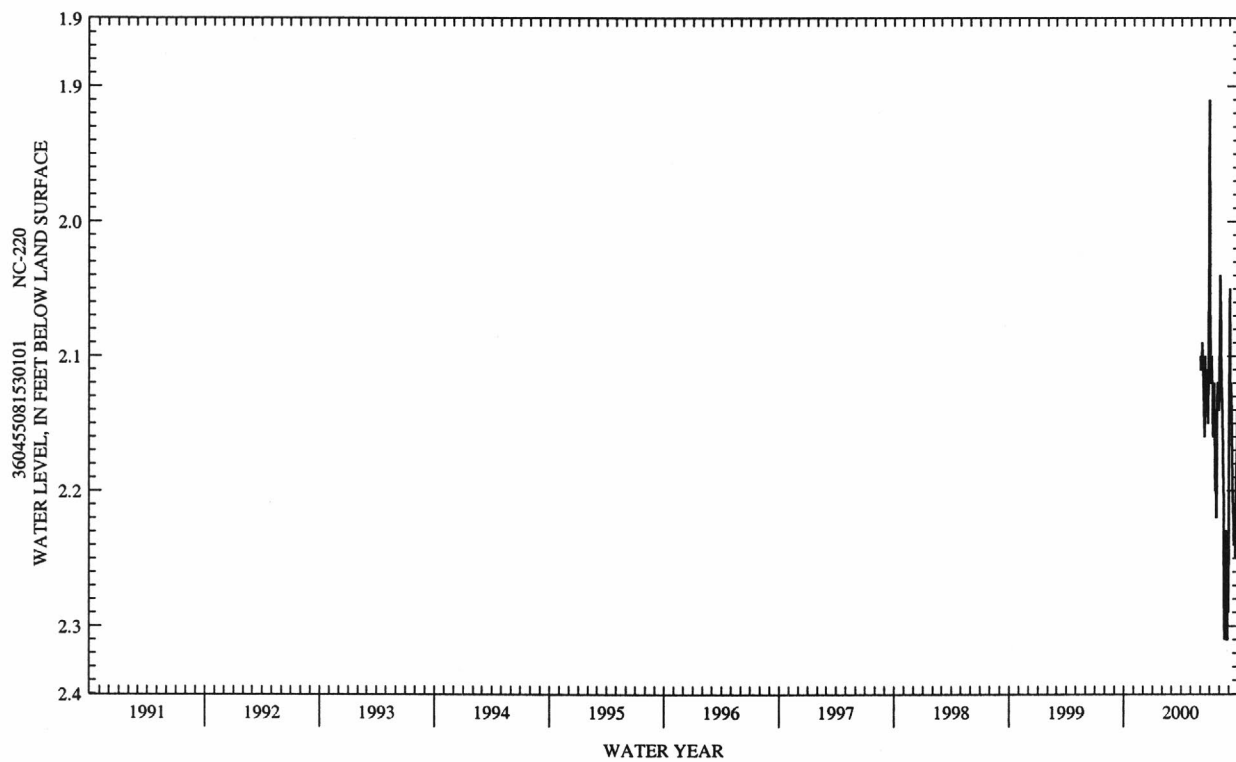
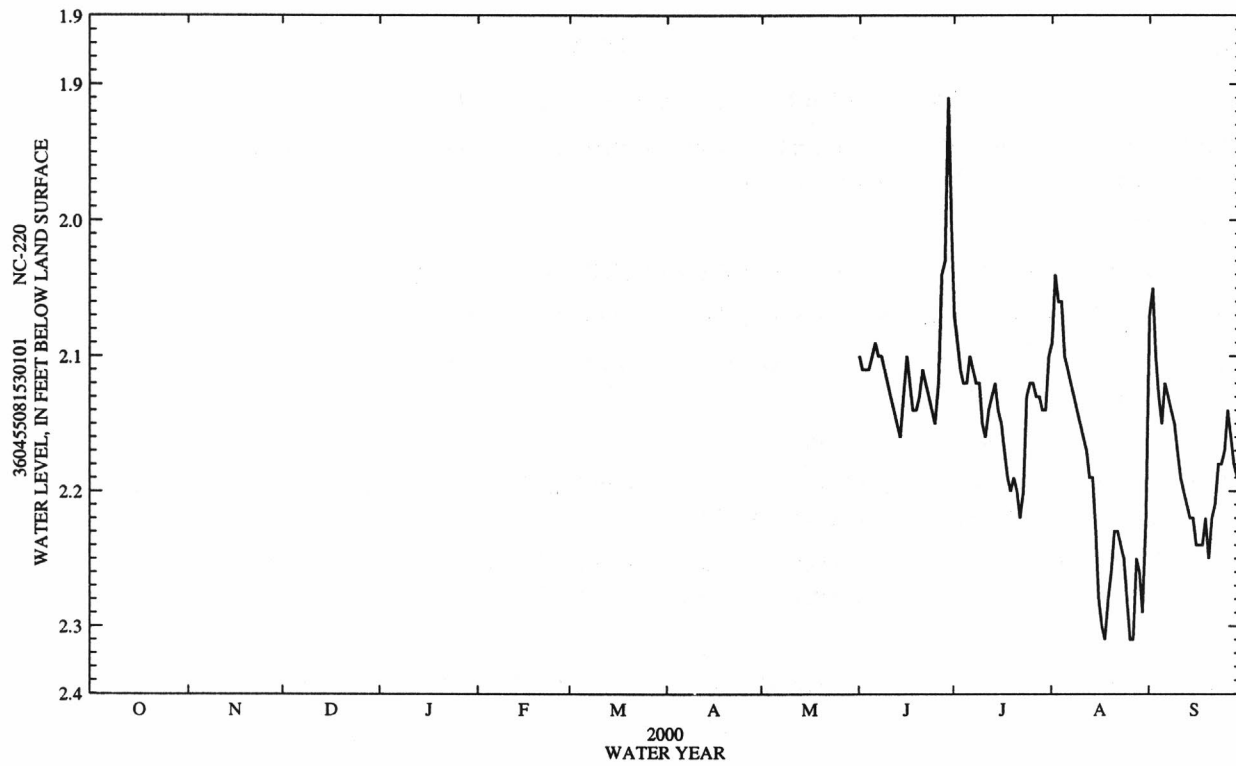
PERIOD OF RECORD.--June 2000 to September 2000. Records from March 1972 to March 2000 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.88 ft below land-surface datum, June 29, 2000; lowest water level recorded, 2.34 ft below land-surface datum, Aug. 27, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR JUNE 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	2.10	2.07	2.09	2.07
2	---	---	---	---	---	---	---	---	2.11	2.09	2.04	2.05
3	---	---	---	---	---	---	---	---	2.11	2.11	2.06	2.10
4	---	---	---	---	---	---	---	---	2.11	2.12	2.06	2.13
5	---	---	---	---	---	---	---	---	2.10	2.12	2.10	2.15
6	---	---	---	---	---	---	---	---	2.09	2.10	2.11	2.12
7	---	---	---	---	---	---	---	---	2.10	2.11	2.12	2.13
8	---	---	---	---	---	---	---	---	2.10	2.12	2.13	2.14
9	---	---	---	---	---	---	---	---	2.11	2.12	2.14	2.15
10	---	---	---	---	---	---	---	---	2.12	2.15	2.15	2.17
11	---	---	---	---	---	---	---	---	2.13	2.16	2.16	2.19
12	---	---	---	---	---	---	---	---	2.14	2.14	2.17	2.20
13	---	---	---	---	---	---	---	---	2.15	2.13	2.19	2.21
14	---	---	---	---	---	---	---	---	2.16	2.12	2.19	2.22
15	---	---	---	---	---	---	---	---	2.13	2.14	2.23	2.22
16	---	---	---	---	---	---	---	---	2.10	2.15	2.28	2.24
17	---	---	---	---	---	---	---	---	2.12	2.17	2.30	2.24
18	---	---	---	---	---	---	---	---	2.14	2.19	2.31	2.24
19	---	---	---	---	---	---	---	---	2.14	2.20	2.28	2.22
20	---	---	---	---	---	---	---	---	2.13	2.19	2.26	2.25
21	---	---	---	---	---	---	---	---	2.11	2.20	2.23	2.22
22	---	---	---	---	---	---	---	---	2.12	2.22	2.23	2.21
23	---	---	---	---	---	---	---	---	2.13	2.20	2.24	2.18
24	---	---	---	---	---	---	---	---	2.14	2.13	2.25	2.18
25	---	---	---	---	---	---	---	---	2.15	2.12	2.28	2.17
26	---	---	---	---	---	---	---	---	2.12	2.12	2.31	2.14
27	---	---	---	---	---	---	---	---	2.04	2.13	2.31	2.16
28	---	---	---	---	---	---	---	---	2.03	2.13	2.25	2.18
29	---	---	---	---	---	---	---	---	1.91	2.14	2.26	2.19
30	---	---	---	---	---	---	---	---	2.00	2.14	2.29	2.18
31	---	---	---	---	---	---	---	---	---	2.10	2.22	---
WTR YR 2000	MEAN 2.16		HIGH 1.91		LOW 2.31							



## BEAUFORT COUNTY

351932076480001. Local number, NC-13; County number, BO-197.

**LOCATION.--**Lat 35°19'32", long 76°48'00", Hydrologic Unit 03020104, 1.5 mi north of Aurora, east of intersection of State Highway 306 and Secondary Road 1942. 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 156 ft, open hole to 168 ft; measured depth 165.5 ft, September 1981.

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

DATUM.--Land-surface datum is 10 ft above sea level (from topographic map). Measuring point: Bottom of angle iron bar, 2.33 ft above land-surface datum; revised from 0.36 ft below land-surface datum, Aug. 25, 1993.

REMARKS.--Since 1965 water levels affected by nearby pumping associated with mining operations. Well is part of local-effects network. Well destroyed Dec. 2, 1999.

PERIOD OF RECORD.--September 1964 to December 1999 (discontinued). Miscellaneous water-level measurements November 1972 to October 1997.

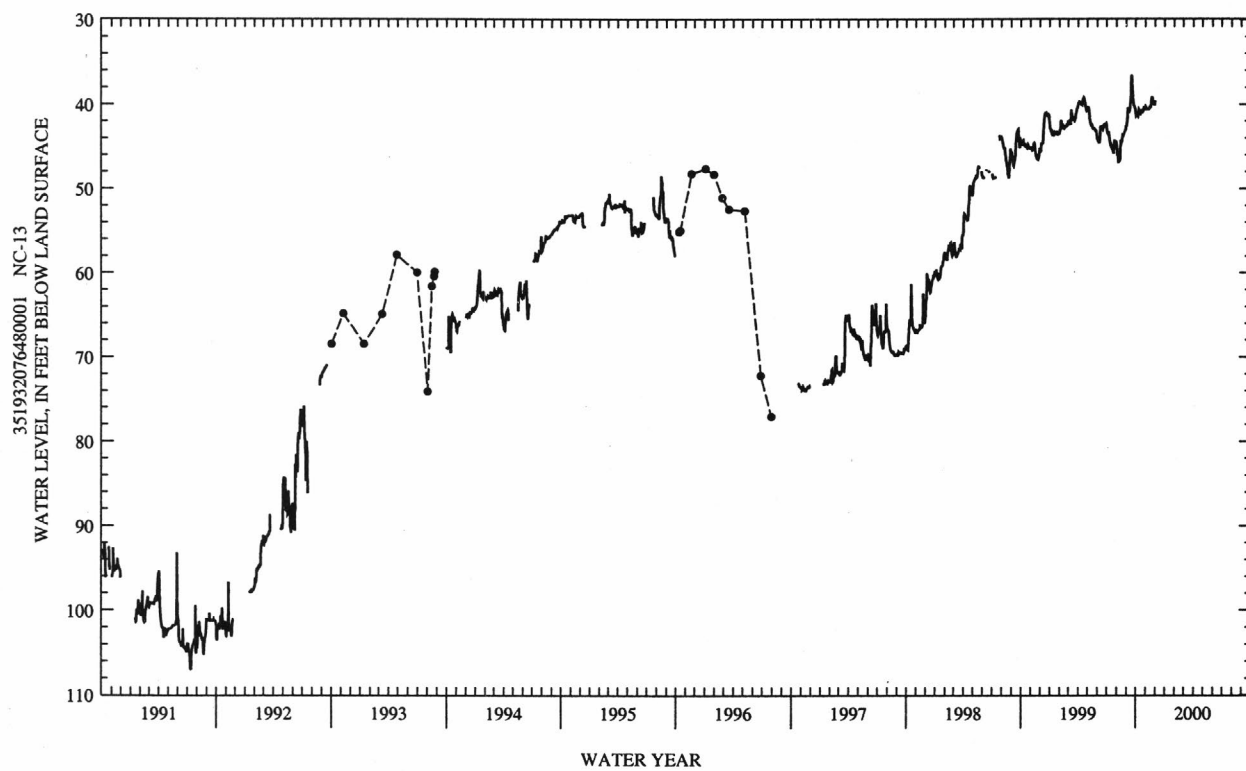
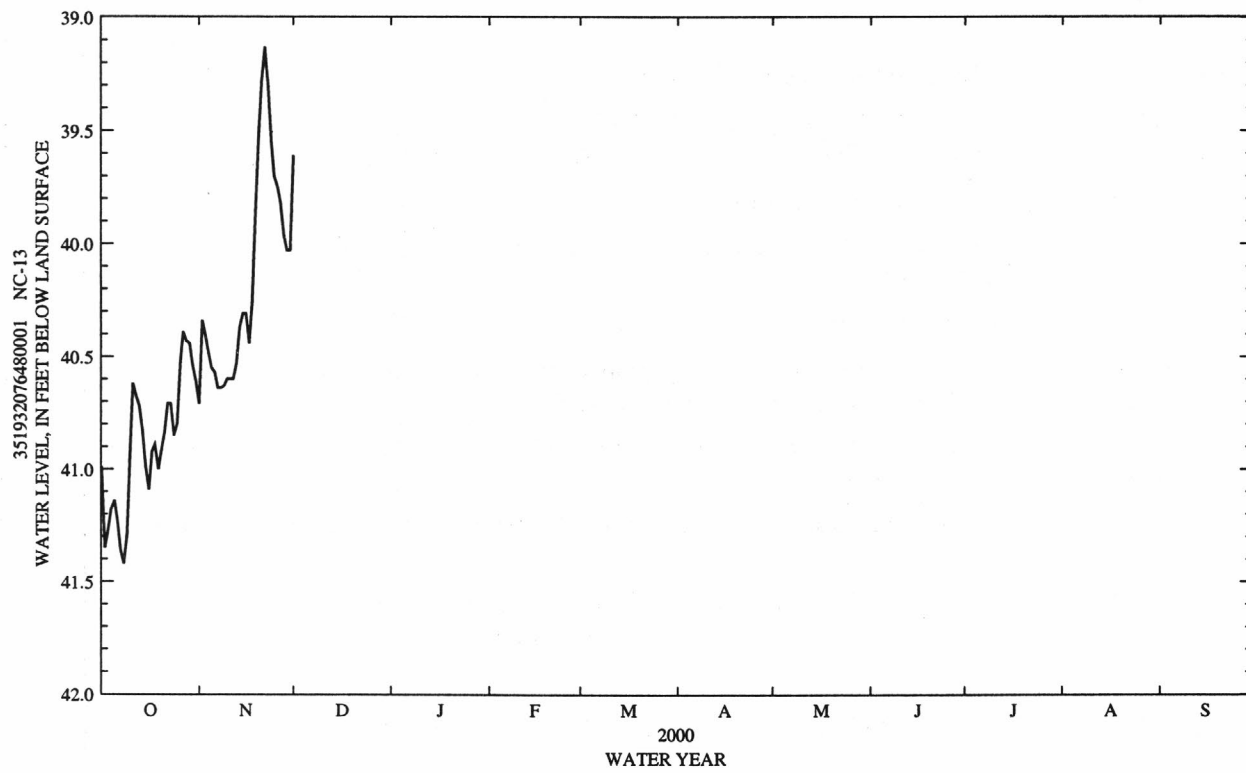
**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 1.38 ft below land-surface datum, Apr. 9, 1965; lowest water level recorded, 107.25 ft below land-surface datum, July 11, 1991.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 1999 TO DECEMBER 1999

### DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.99	40.71	39.61	---	---	---	---	---	---	---	---	---
2	41.35	40.34	---	---	---	---	---	---	---	---	---	---
3	41.27	40.40	---	---	---	---	---	---	---	---	---	---
4	41.18	40.48	---	---	---	---	---	---	---	---	---	---
5	41.14	40.55	---	---	---	---	---	---	---	---	---	---
6	41.23	40.57	---	---	---	---	---	---	---	---	---	---
7	41.36	40.64	---	---	---	---	---	---	---	---	---	---
8	41.42	40.64	---	---	---	---	---	---	---	---	---	---
9	41.29	40.63	---	---	---	---	---	---	---	---	---	---
10	40.92	40.60	---	---	---	---	---	---	---	---	---	---
11	40.62	40.60	---	---	---	---	---	---	---	---	---	---
12	40.68	40.60	---	---	---	---	---	---	---	---	---	---
13	40.72	40.53	---	---	---	---	---	---	---	---	---	---
14	40.83	40.37	---	---	---	---	---	---	---	---	---	---
15	40.99	40.31	---	---	---	---	---	---	---	---	---	---
16	41.09	40.31	---	---	---	---	---	---	---	---	---	---
17	40.92	40.44	---	---	---	---	---	---	---	---	---	---
18	40.89	40.26	---	---	---	---	---	---	---	---	---	---
19	41.00	39.88	---	---	---	---	---	---	---	---	---	---
20	40.92	39.53	---	---	---	---	---	---	---	---	---	---
21	40.84	39.28	---	---	---	---	---	---	---	---	---	---
22	40.71	39.13	---	---	---	---	---	---	---	---	---	---
23	40.71	39.30	---	---	---	---	---	---	---	---	---	---
24	40.85	39.55	---	---	---	---	---	---	---	---	---	---
25	40.80	39.70	---	---	---	---	---	---	---	---	---	---
26	40.53	39.75	---	---	---	---	---	---	---	---	---	---
27	40.39	39.82	---	---	---	---	---	---	---	---	---	---
28	40.43	39.96	---	---	---	---	---	---	---	---	---	---
29	40.44	40.03	---	---	---	---	---	---	---	---	---	---
30	40.54	40.03	---	---	---	---	---	---	---	---	---	---
31	40.61	---	---	---	---	---	---	---	---	---	---	---
WTR YR 2000	MEAN 40.52		HIGH 39.13		LOW 41.42							





## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## BEAUFORT COUNTY--Continued

352615077083401. Local number, NC-137; DENR Creeping Swamp Research Station well O21q1; County number, BO-191.

LOCATION.--Lat 35°26'15", long 77°08'38", Hydrologic Unit 03020202, 1 mi west of U.S. Highway 17 on State Highway 102, and 3 mi north of Wilmar. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, drilled to 143 ft, diameter 4 in., cased to 72 ft, open hole to 143 ft; measured depth 141.6 ft, September 1981.

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

DATUM.--Land-surface datum is 56.84 ft above sea level (levels by DENR). Measuring point: Top of collar on casing, 0.80 ft above land-surface datum.

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

PERIOD OF RECORD.--January 1972 to May 2000 (discontinued).

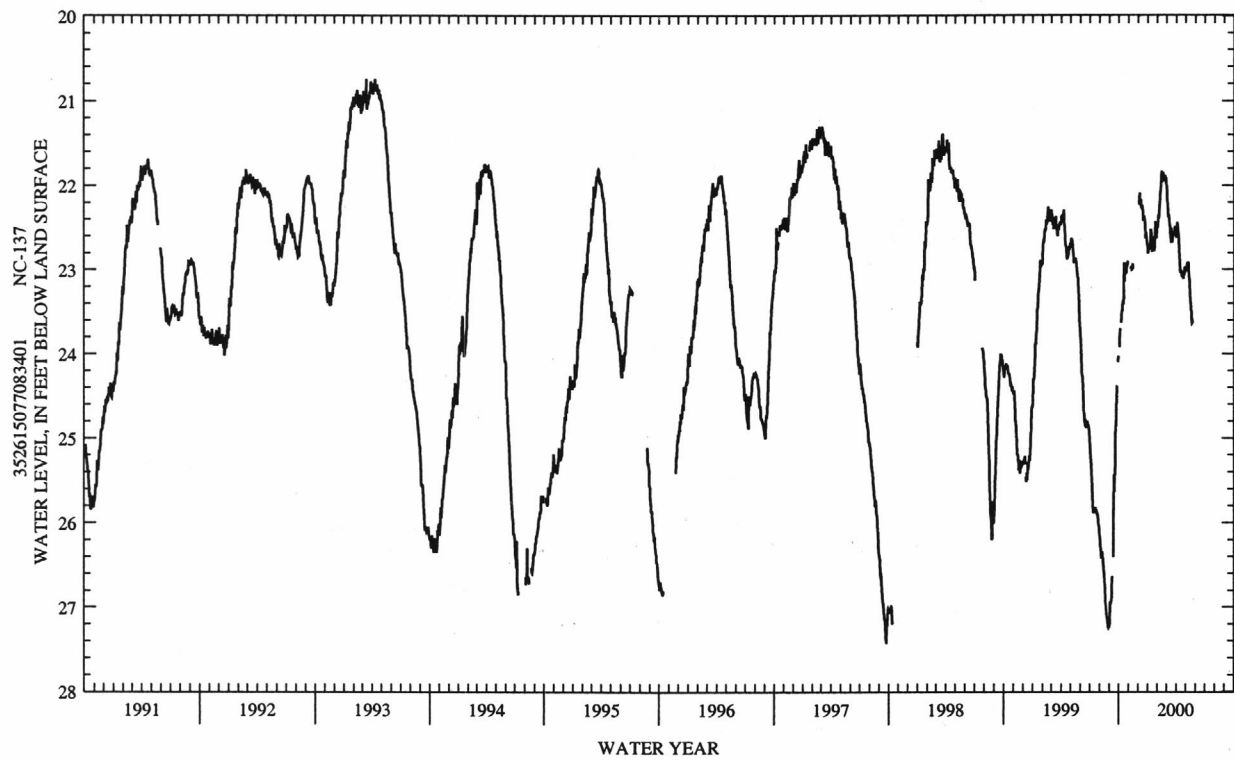
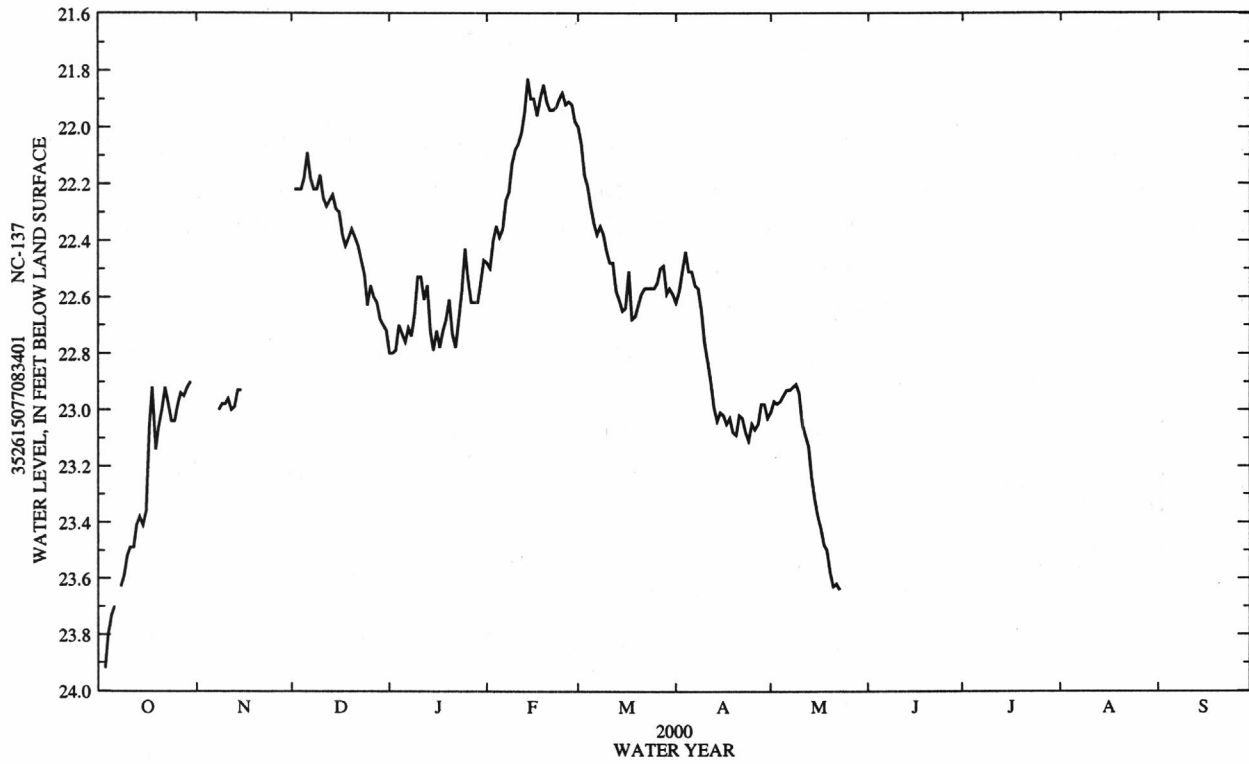
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 19.90 ft below land-surface datum, Feb. 3, 1972; lowest water level recorded, 27.47 ft below land-surface datum, Sept. 24, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 1999 TO MAY 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.03	---	---	22.80	22.48	22.00	22.62	23.01	---	---	---	---
2	---	---	22.22	22.80	22.50	22.06	22.58	22.97	---	---	---	---
3	23.92	---	22.22	22.79	22.40	22.17	22.51	22.98	---	---	---	---
4	23.80	---	22.22	22.70	22.35	22.21	22.44	22.97	---	---	---	---
5	23.73	---	22.18	22.73	22.39	22.28	22.51	22.95	---	---	---	---
6	23.70	---	22.09	22.76	22.36	22.34	22.51	22.93	---	---	---	---
7	---	---	22.18	22.71	22.26	22.38	22.56	22.93	---	---	---	---
8	23.63	23.00	22.22	22.74	22.23	22.35	22.57	22.92	---	---	---	---
9	23.59	22.98	22.22	22.66	22.13	22.38	22.65	22.91	---	---	---	---
10	23.52	22.98	22.17	22.53	22.08	22.44	22.76	22.94	---	---	---	---
11	23.49	22.96	22.25	22.53	22.06	22.48	22.83	23.05	---	---	---	---
12	23.49	23.00	22.28	22.61	22.02	22.48	22.90	23.09	---	---	---	---
13	23.41	22.99	22.26	22.56	21.95	22.58	22.99	23.13	---	---	---	---
14	23.38	22.93	22.24	22.72	21.83	22.61	23.04	23.24	---	---	---	---
15	23.41	22.93	22.29	22.79	21.90	22.65	23.01	23.32	---	---	---	---
16	23.36	---	22.30	22.72	21.90	22.64	23.02	23.38	---	---	---	---
17	23.06	---	22.38	22.78	21.96	22.51	23.05	23.42	---	---	---	---
18	22.92	---	22.42	22.72	21.90	22.68	23.03	23.48	---	---	---	---
19	23.14	---	22.39	22.68	21.85	22.67	23.08	23.50	---	---	---	---
20	23.06	---	22.36	22.61	21.91	22.63	23.09	23.58	---	---	---	---
21	23.00	---	22.39	22.73	21.94	22.59	23.02	23.63	---	---	---	---
22	22.92	---	22.42	22.78	21.94	22.57	23.03	23.62	---	---	---	---
23	22.98	---	22.47	22.68	21.93	22.57	23.08	23.64	---	---	---	---
24	23.04	---	22.52	22.58	21.90	22.57	23.11	---	---	---	---	---
25	23.04	---	22.63	22.43	21.88	22.57	23.05	---	---	---	---	---
26	22.98	---	22.56	22.54	21.92	22.55	23.07	---	---	---	---	---
27	22.94	---	22.60	22.62	21.91	22.50	23.05	---	---	---	---	---
28	22.95	---	22.62	22.62	21.92	22.49	22.98	---	---	---	---	---
29	22.92	---	22.68	22.62	21.98	22.59	22.98	---	---	---	---	---
30	22.90	---	22.70	22.55	---	22.57	23.03	---	---	---	---	---
31	---	---	22.72	22.47	---	22.59	---	---	---	---	---	---

WTR YR 2000      MEAN 22.70      HIGH 21.83      LOW 24.03



## BEAUFORT COUNTY--Continued

352615077083402. Local number, NC-138; DENR Creeping Swamp Research Station well O21q2; County number, BO-192.

**LOCATION.**--Lat 35°26'15", long 77°08'38", Hydrologic Unit 03020202, 1 mi west of U.S. Highway 17 on State Highway 102, and 3 mi north of Wilmar. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 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 56.14 ft above sea level (levels by DENR). Measuring point: Top of instrument shelf, 2.61 ft above land-surface datum.

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

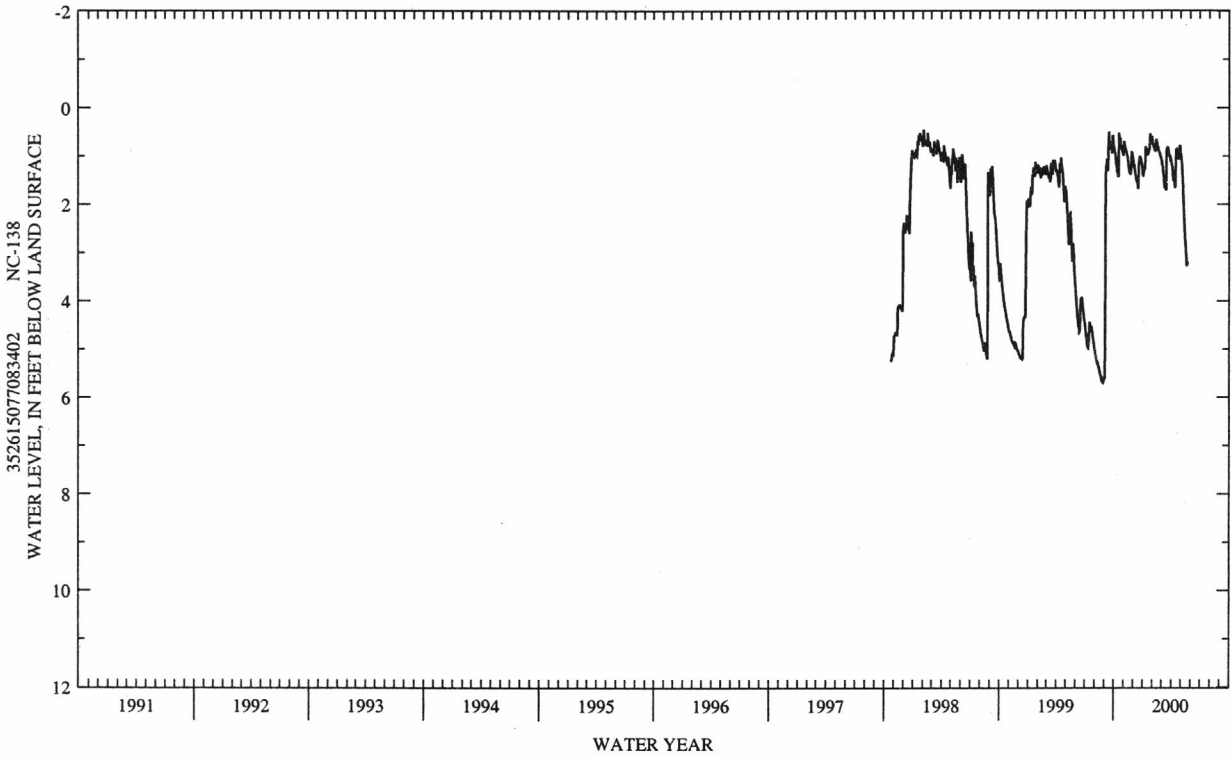
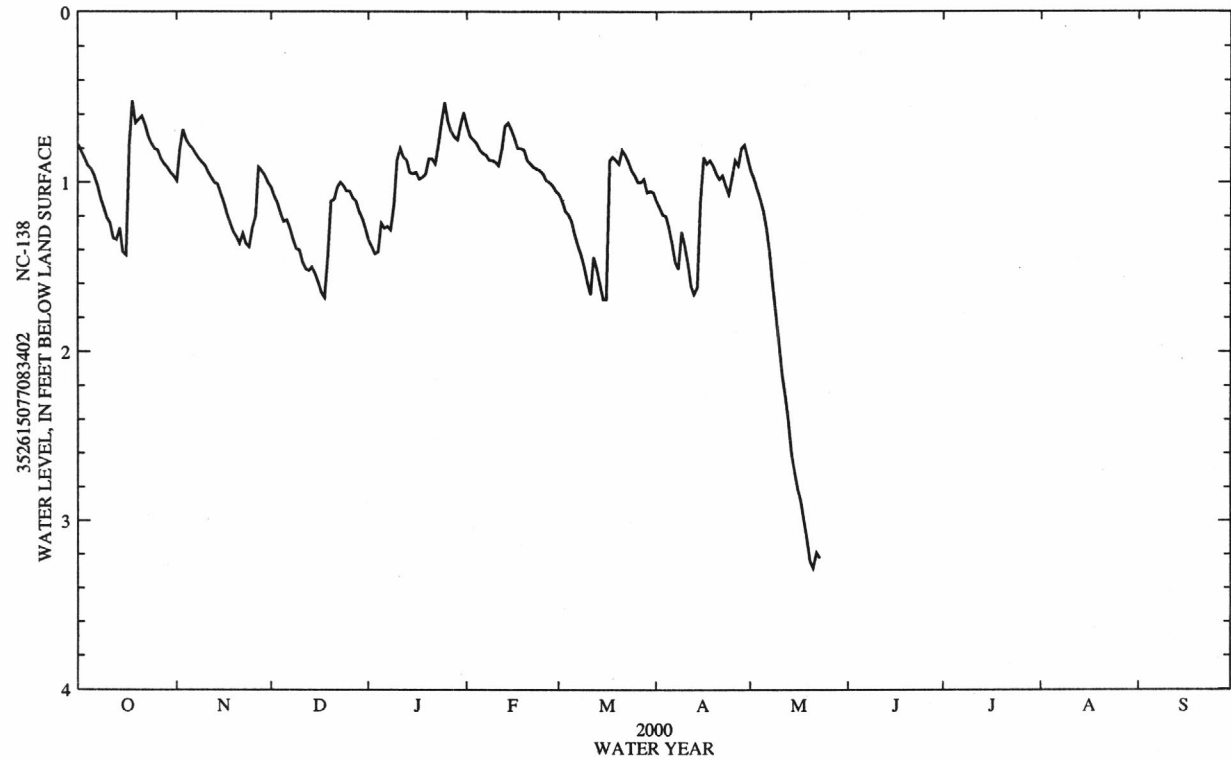
PERIOD OF RECORD.--August 1971 to May 2000 (discontinued). August 1971 to May 1987, continuous record, mean sea level. October 1997 to May 2000, continuous record, below land surface datum.

**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 0.05 ft above land-surface datum, Apr. 26, 27, 1979; lowest water level recorded, 6.40 ft below land-surface datum, Nov. 24-27, 1978.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 1999 TO MAY 2000

### DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	.99	1.03	1.34	.67	1.07	1.11	.93	---	---	---	---
2	.82	.80	1.08	1.38	.73	1.11	1.15	.98	---	---	---	---
3	.86	.69	1.12	1.42	.75	1.17	1.19	1.04	---	---	---	---
4	.90	.75	1.18	1.41	.77	1.19	1.20	1.10	---	---	---	---
5	.92	.78	1.23	1.24	.81	1.23	1.27	1.17	---	---	---	---
6	.96	.80	1.22	1.27	.83	1.31	1.36	1.28	---	---	---	---
7	1.02	.83	1.27	1.26	.84	1.37	1.47	1.42	---	---	---	---
8	1.09	.86	1.34	1.28	.87	1.43	1.51	1.61	---	---	---	---
9	1.15	.88	1.39	1.13	.87	1.50	1.29	1.79	---	---	---	---
10	1.21	.90	1.40	.87	.88	1.59	1.37	1.96	---	---	---	---
11	1.24	.94	1.47	.80	.90	1.66	1.48	2.14	---	---	---	---
12	1.33	.97	1.51	.85	.80	1.44	1.61	2.26	---	---	---	---
13	1.34	1.00	1.52	.87	.67	1.51	1.66	2.41	---	---	---	---
14	1.27	1.01	1.50	.94	.65	1.60	1.62	2.60	---	---	---	---
15	1.41	1.07	1.54	.95	.69	1.69	1.11	2.71	---	---	---	---
16	1.43	1.12	1.59	.94	.74	1.69	.85	2.81	---	---	---	---
17	.78	1.19	1.65	.98	.80	.87	.89	2.88	---	---	---	---
18	.52	1.24	1.68	.97	.80	.85	.87	3.00	---	---	---	---
19	.65	1.29	1.43	.95	.81	.87	.90	3.11	---	---	---	---
20	.63	1.32	1.11	.86	.87	.89	.95	3.24	---	---	---	---
21	.61	1.36	1.10	.86	.89	.81	.98	3.28	---	---	---	---
22	.66	1.30	1.03	.89	.91	.84	.96	3.19	---	---	---	---
23	.73	1.36	1.00	.78	.92	.88	1.02	3.22	---	---	---	---
24	.77	1.38	1.02	.65	.93	.93	1.07	---	---	---	---	---
25	.80	1.27	1.05	.53	.95	.96	.97	---	---	---	---	---
26	.81	1.20	1.05	.64	.99	1.00	.87	---	---	---	---	---
27	.86	.91	1.09	.70	1.00	1.00	.90	---	---	---	---	---
28	.89	.93	1.11	.73	1.02	.98	.80	---	---	---	---	---
29	.91	.96	1.17	.75	1.05	1.06	.78	---	---	---	---	---
30	.94	1.00	1.21	.66	---	1.05	.86	---	---	---	---	---
31	.96	---	1.27	.59	---	1.06	---	---	---	---	---	---
WTR YR 2000	MEAN 1.16			HIGH .52		LOW 3.28						





352037076514101. Local number, NC-145; DENR Bonnerton Research Station well P18v5; County number, BO-374.

Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

**WELL CHARACTERISTICS.**--Drilled observation well, depth 280 ft, diameter 4 in., cased to 169 ft, open hole to 280 ft; measured depth 278 ft, September 1981.

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

DATUM.--Land-surface datum is 36.41 ft above sea level (levels by DENR); revised from 36.64 ft above sea level, October 1987. Measuring point: Top of instrument shelf, 3.11 ft above land-surface datum; revised from 2.70 ft above land-surface datum, April 30, 1998.

REMARKS.--Well is part of local-effects network. Water level is affected by nearby pumping associated with mining operations.

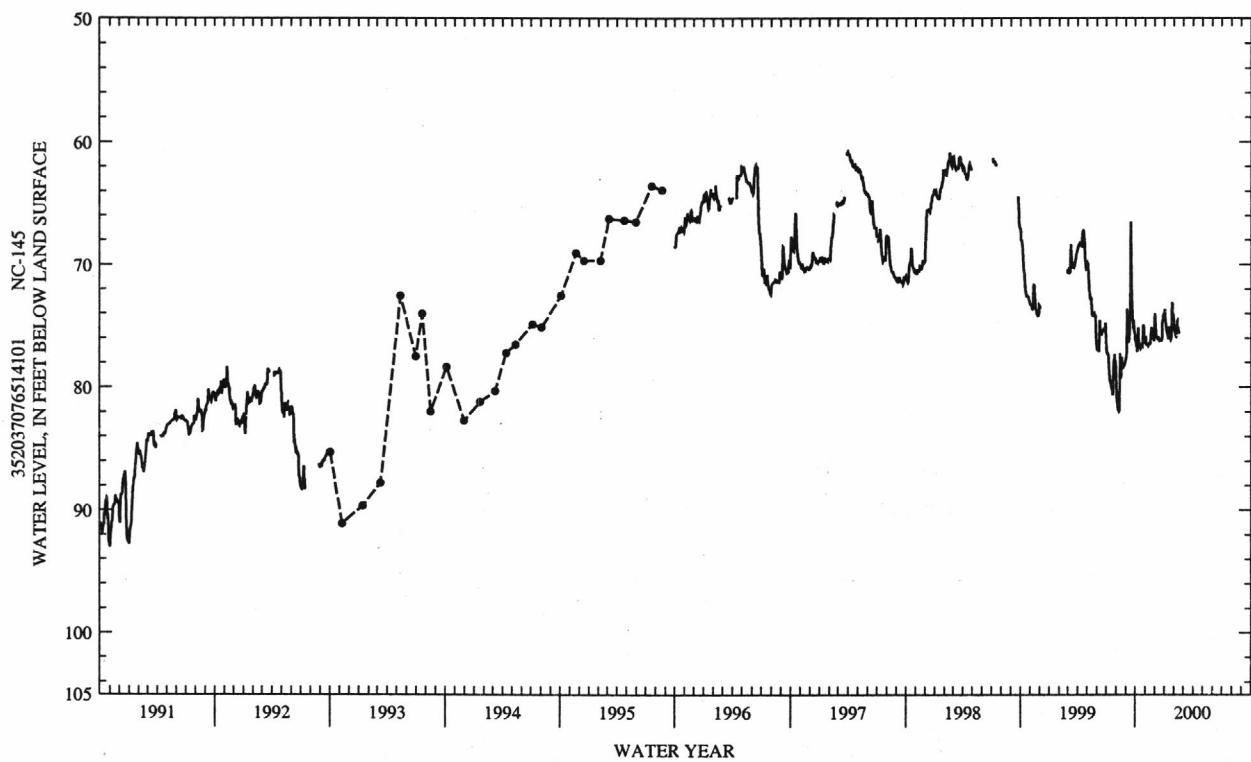
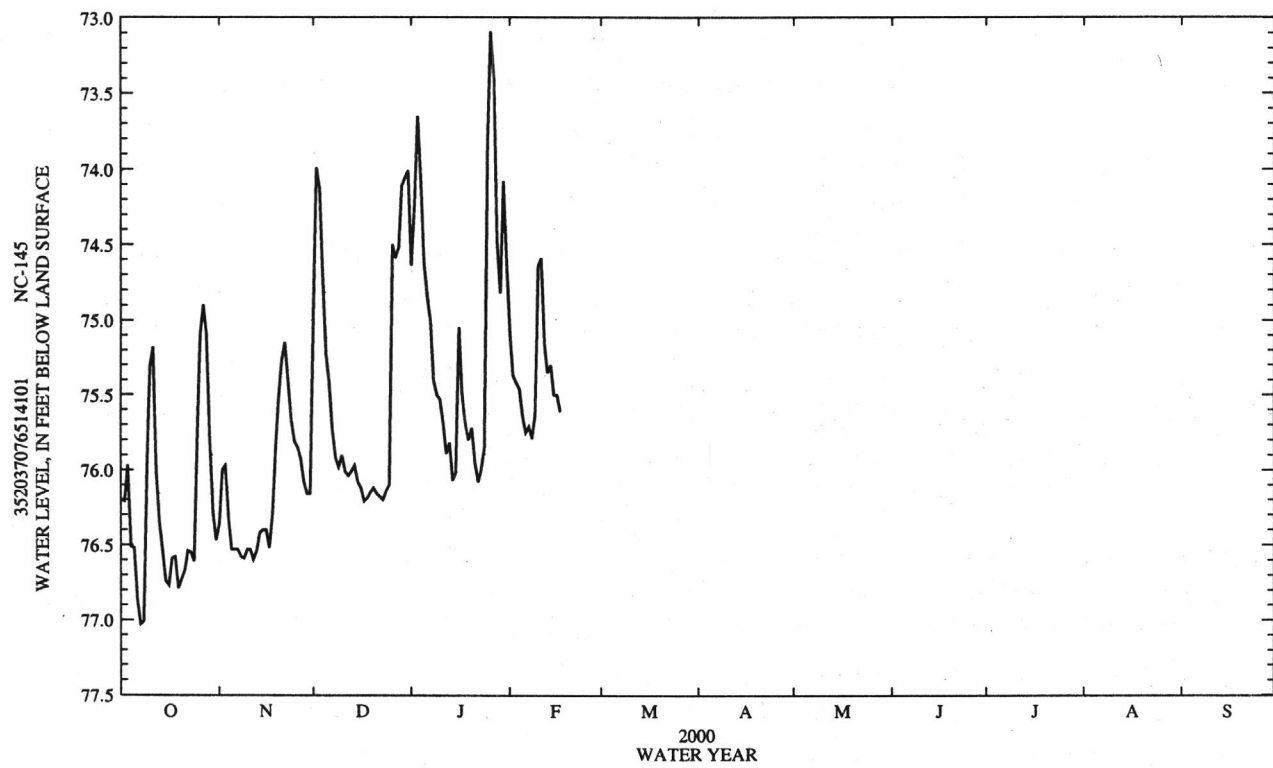
PERIOD OF RECORD.--June 1980 to February 2000 (discontinued). Continuous record July 1984 to September 1992 and October 1995 to February 2000. Miscellaneous water-level measurements June 1980 to October 1999. Records from June 1980 to June 1984 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.77 ft below land-surface datum, Mar. 29, 1997; lowest water level recorded, 100.32 ft below land-surface datum, Oct. 9 and 10, 1989.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 1999 TO FEBRUARY 2000

### DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76.20	76.36	74.94	74.64	75.08	---	---	---	---	---	---	---
2	76.21	76.00	73.99	74.23	75.37	---	---	---	---	---	---	---
3	75.97	75.97	74.13	73.65	75.42	---	---	---	---	---	---	---
4	76.51	76.33	74.73	74.08	75.46	---	---	---	---	---	---	---
5	76.52	76.53	75.23	74.62	75.64	---	---	---	---	---	---	---
6	76.86	76.53	75.42	74.85	75.75	---	---	---	---	---	---	---
7	77.03	76.53	75.73	75.01	75.71	---	---	---	---	---	---	---
8	77.01	76.58	75.92	75.40	75.79	---	---	---	---	---	---	---
9	76.02	76.59	75.98	75.50	75.63	---	---	---	---	---	---	---
10	75.31	76.53	75.90	75.53	74.64	---	---	---	---	---	---	---
11	75.18	76.53	76.01	75.69	74.59	---	---	---	---	---	---	---
12	76.02	76.60	76.04	75.89	75.16	---	---	---	---	---	---	---
13	76.35	76.54	76.01	75.82	75.35	---	---	---	---	---	---	---
14	76.55	76.42	75.97	76.07	75.30	---	---	---	---	---	---	---
15	76.74	76.40	76.08	76.02	75.50	---	---	---	---	---	---	---
16	76.77	76.40	76.12	75.05	75.50	---	---	---	---	---	---	---
17	76.59	76.52	76.21	75.49	75.61	---	---	---	---	---	---	---
18	76.58	76.29	76.19	75.69	---	---	---	---	---	---	---	---
19	76.79	75.87	76.15	75.80	---	---	---	---	---	---	---	---
20	76.73	75.51	76.12	75.72	---	---	---	---	---	---	---	---
21	76.67	75.27	76.16	75.95	---	---	---	---	---	---	---	---
22	76.54	75.15	76.18	76.08	---	---	---	---	---	---	---	---
23	76.55	75.40	76.20	75.99	---	---	---	---	---	---	---	---
24	76.61	75.67	76.14	75.85	---	---	---	---	---	---	---	---
25	75.79	75.81	76.10	73.84	---	---	---	---	---	---	---	---
26	75.10	75.85	74.50	73.09	---	---	---	---	---	---	---	---
27	74.90	75.93	74.59	73.40	---	---	---	---	---	---	---	---
28	75.10	76.08	74.52	74.48	---	---	---	---	---	---	---	---
29	75.78	76.16	74.11	74.82	---	---	---	---	---	---	---	---
30	76.28	76.16	74.06	74.08	---	---	---	---	---	---	---	---
31	76.47	---	74.01	74.59	---	---	---	---	---	---	---	---
WTR YR 2000	MEAN		75.69	HIGH		73.09	LOW		77.03			



## BEAUFORT COUNTY--Continued

352036076513903. Local number, NC-196; DENR Bonnerton Research Station well P18v3; County number, BO-372.

LOCATION.--Lat 35°20'36", long 76°51'39", Hydrologic Unit 03020104, 1 mi south of Bonnerton on Secondary Road 1936.

Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 30 ft, diameter 4 in., cased to 20 ft, screened interval from 20 to 30 ft.

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

DATUM.--Land-surface datum is 37.64 ft above sea level (levels by DENR). Measuring point: Top of instrument shelf, 1.90 ft above land-surface datum.

REMARKS.--Well is part of local-effects network. Water level is affected by nearby pumping associated with mining operations.

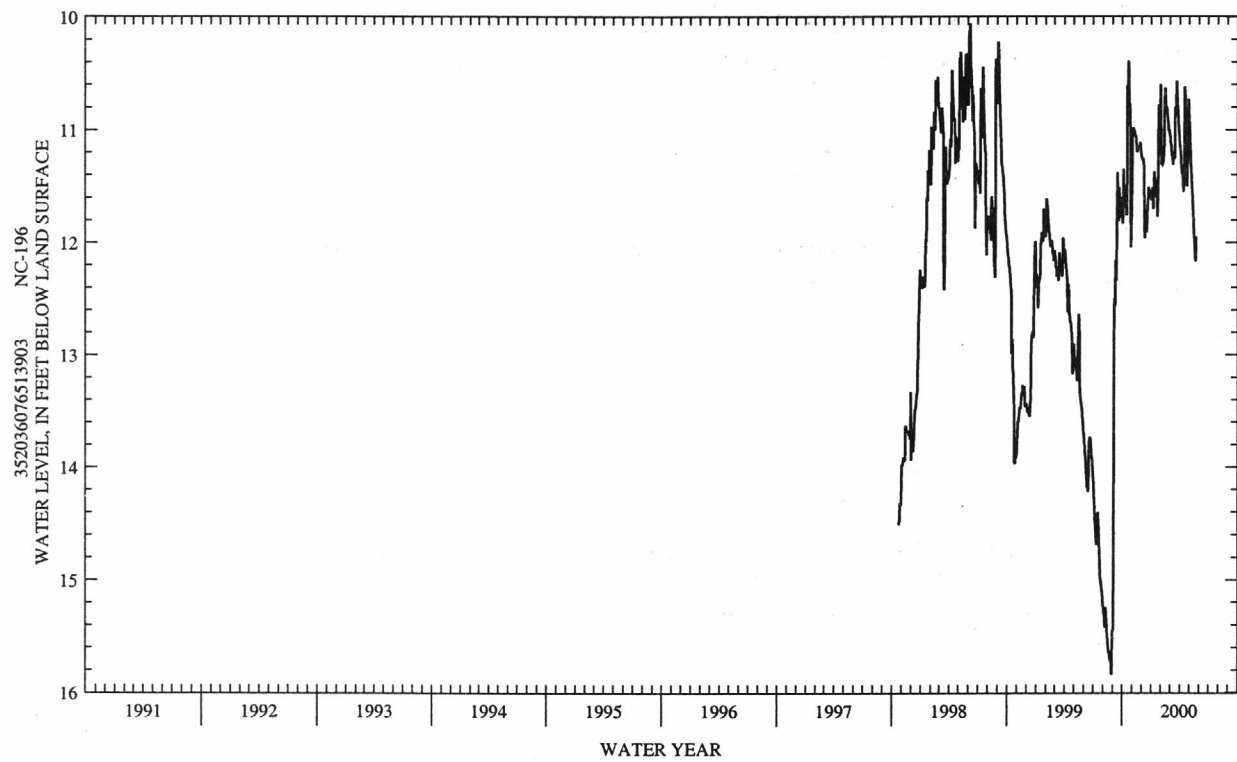
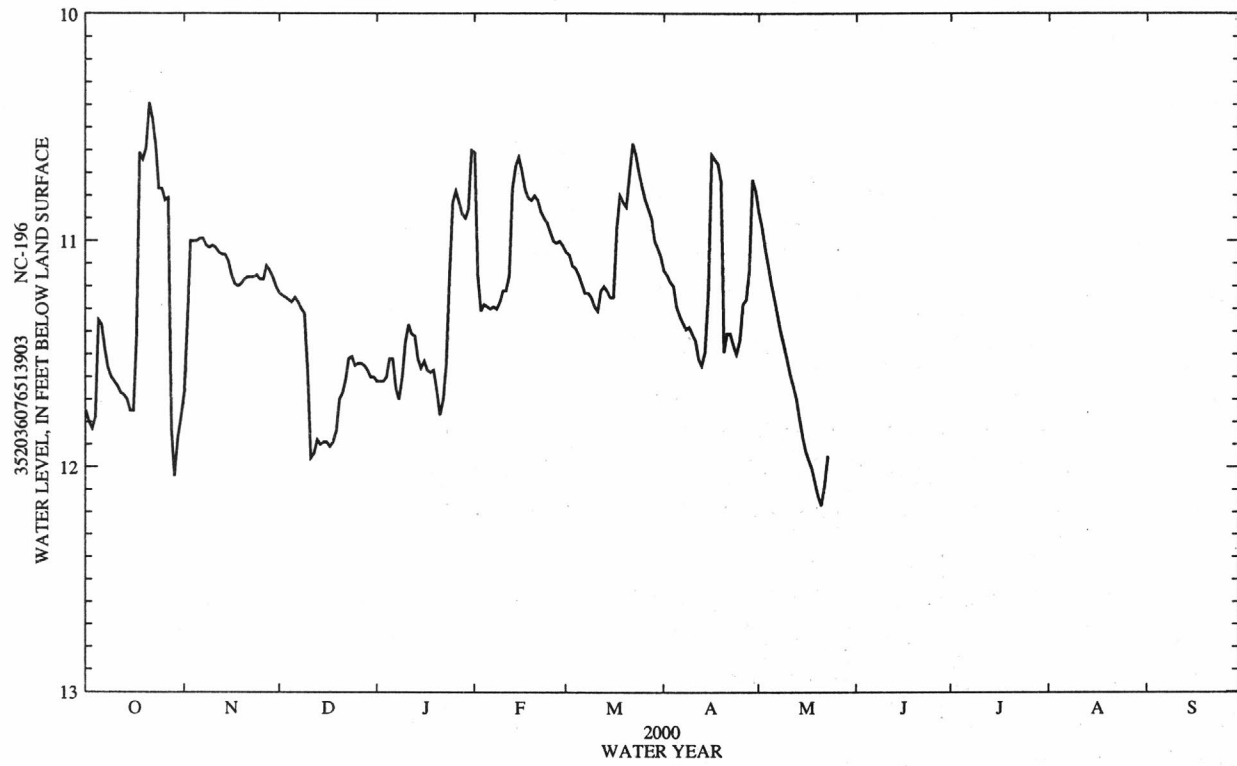
PERIOD OF RECORD.--October 1997 to May 2000 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.01 ft below land-surface datum, June 7, 1998; lowest water level recorded 15.87 ft below land-surface datum, Aug. 28, 29, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD OCTOBER 1999 TO MAY 2000

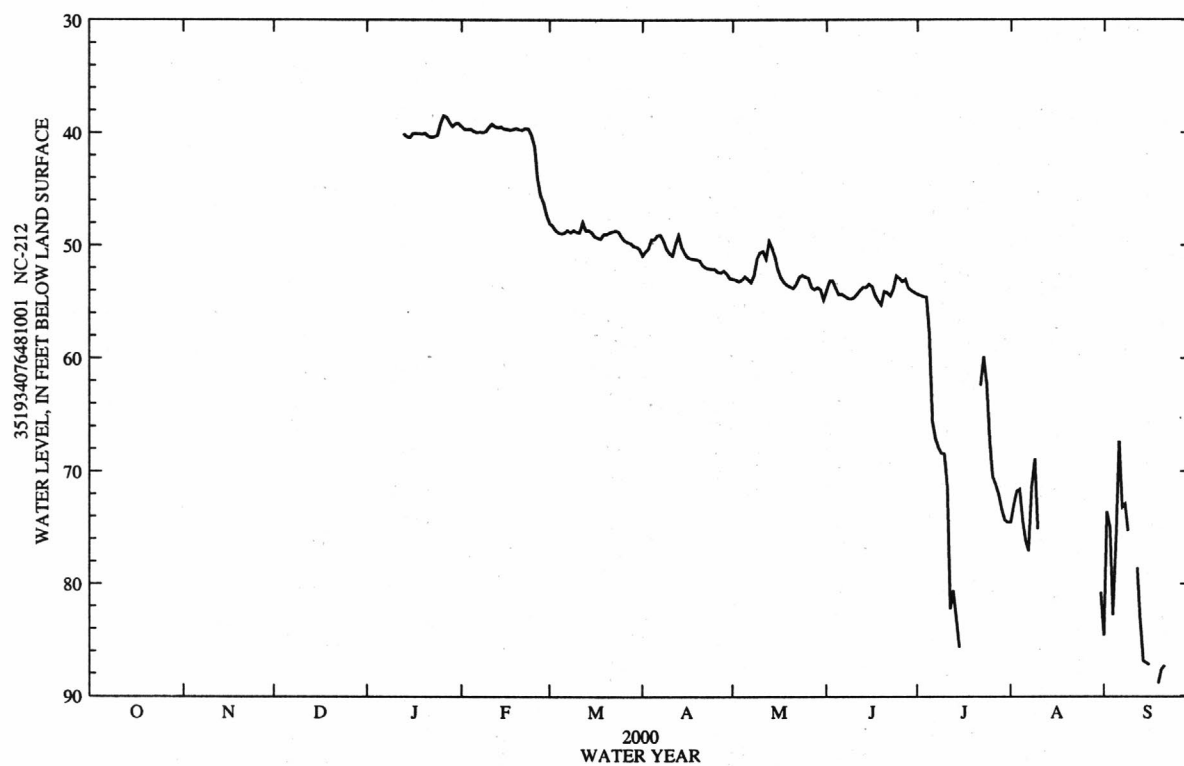
## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.75	11.67	11.23	11.62	10.61	11.05	11.13	10.87	---	---	---	---
2	11.80	11.37	11.24	11.62	11.15	11.06	11.15	10.94	---	---	---	---
3	11.83	11.00	11.25	11.62	11.31	11.11	11.18	11.03	---	---	---	---
4	11.78	11.00	11.26	11.60	11.28	11.12	11.20	11.11	---	---	---	---
5	11.35	11.00	11.27	11.52	11.29	11.15	11.29	11.19	---	---	---	---
6	11.37	10.99	11.25	11.52	11.30	11.19	11.33	11.26	---	---	---	---
7	11.48	10.99	11.27	11.65	11.29	11.23	11.36	11.33	---	---	---	---
8	11.56	11.02	11.30	11.70	11.30	11.23	11.39	11.40	---	---	---	---
9	11.60	11.03	11.32	11.60	11.27	11.25	11.38	11.46	---	---	---	---
10	11.62	11.02	11.58	11.45	11.22	11.29	11.41	11.52	---	---	---	---
11	11.64	11.03	11.96	11.37	11.22	11.31	11.44	11.59	---	---	---	---
12	11.67	11.05	11.94	11.41	11.15	11.22	11.52	11.64	---	---	---	---
13	11.68	11.06	11.88	11.42	10.77	11.20	11.55	11.70	---	---	---	---
14	11.70	11.06	11.90	11.52	10.67	11.22	11.49	11.79	---	---	---	---
15	11.75	11.09	11.89	11.56	10.63	11.25	11.23	11.87	---	---	---	---
16	11.75	11.15	11.89	11.53	10.69	11.25	10.62	11.93	---	---	---	---
17	11.44	11.19	11.91	11.57	10.77	10.94	10.64	11.97	---	---	---	---
18	10.61	11.20	11.89	11.58	10.81	10.80	10.66	12.01	---	---	---	---
19	10.64	11.19	11.84	11.57	10.82	10.83	10.74	12.07	---	---	---	---
20	10.59	11.17	11.70	11.66	10.80	10.85	11.49	12.13	---	---	---	---
21	10.39	11.16	11.67	11.77	10.82	10.71	11.41	12.17	---	---	---	---
22	10.46	11.16	11.61	11.70	10.87	10.57	11.41	12.08	---	---	---	---
23	10.58	11.16	11.52	11.54	10.90	10.62	11.46	11.95	---	---	---	---
24	10.77	11.15	11.51	11.16	10.92	10.70	11.50	---	---	---	---	---
25	10.77	11.17	11.55	10.83	10.96	10.76	11.44	---	---	---	---	---
26	10.82	11.17	11.54	10.78	11.00	10.82	11.28	---	---	---	---	---
27	10.81	11.11	11.54	10.83	11.01	10.86	11.26	---	---	---	---	---
28	11.83	11.13	11.55	10.88	11.00	10.90	11.13	---	---	---	---	---
29	12.04	11.16	11.57	10.90	11.02	11.00	10.73	---	---	---	---	---
30	11.87	11.20	11.60	10.86	---	11.03	10.78	---	---	---	---	---
31	11.78	---	11.60	10.60	---	11.07	---	---	---	---	---	---
WTR YR 2000	MEAN 11.28		HIGH 10.39		LOW 12.17							









## BERTIE COUNTY

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

LOCATION.--Lat 36°10'02", long 76°56'21", Hydrologic Unit 03010203, 0.75 mi south of Cremo, south of Secondary Road 1313 on logging road. 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 431 ft, diameter 6 in. to 340 ft, diameter 4 in. from 315 to 431 ft, screened interval from 400 to 410 ft; measured depth 412 ft, October 1986.

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

DATUM.--Land-surface datum is 64.49 ft above sea level (levels by DENR). Measuring point: Top of collar on 6-inch casing, 1.25 ft above land-surface datum (since July 1994).

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

PERIOD OF RECORD.--Miscellaneous water-level measurements August 1974 to October 1999. Continuous record November 1986 to November 1990 and June 2000 to current year. Records from August 1974 to August 1986 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.51 ft below land-surface datum, July 30, 1975; lowest water level measured, 44.03 ft below land-surface datum, Nov. 13, 1996.

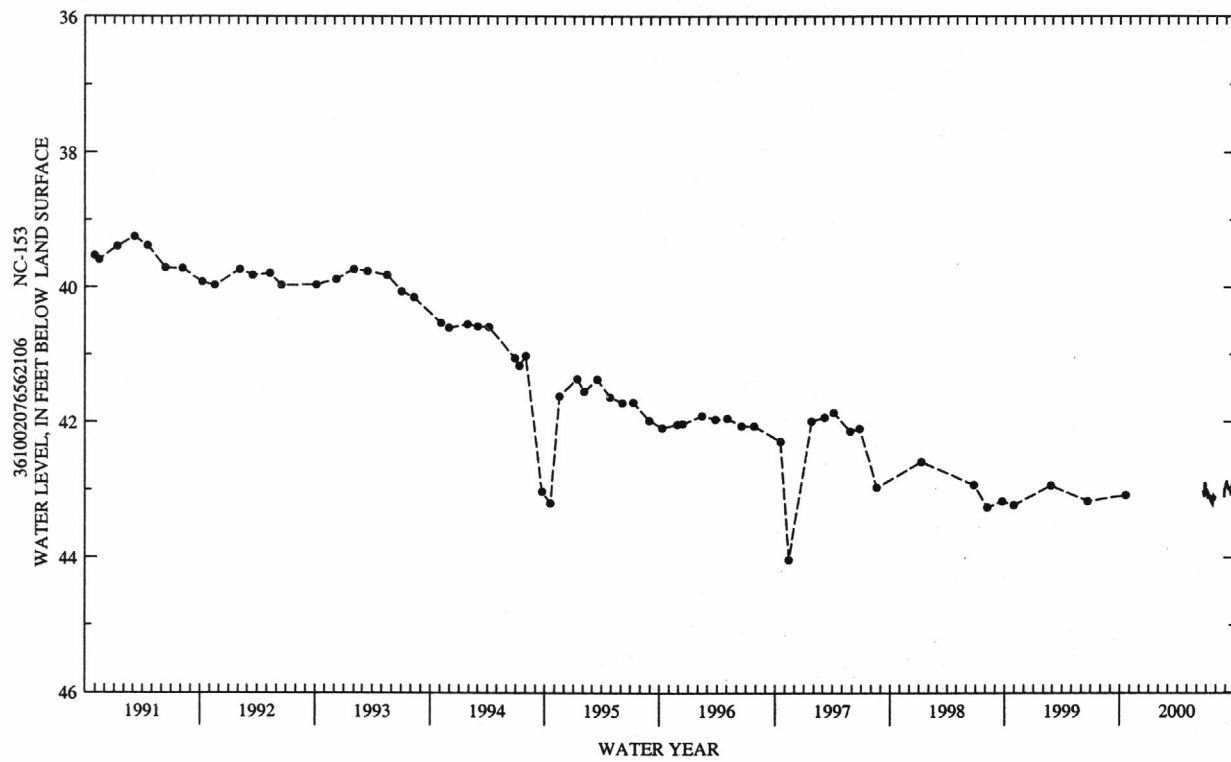
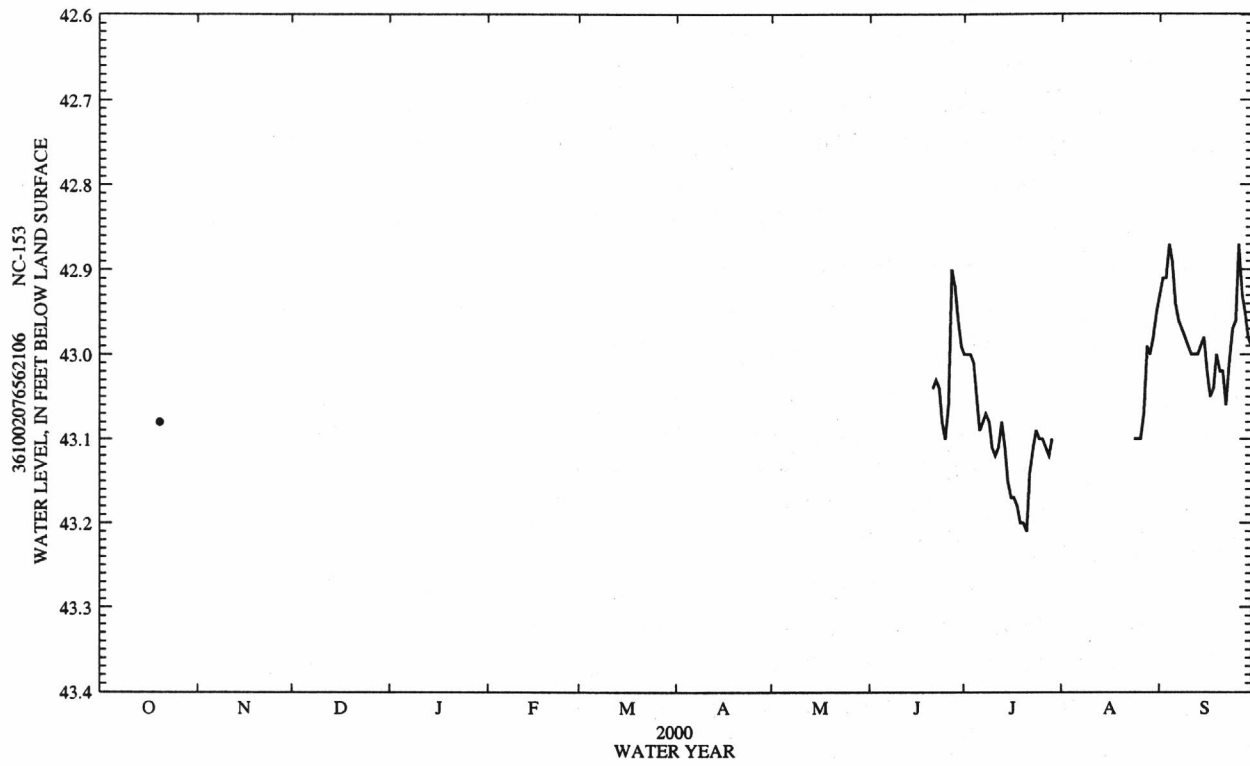
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL
OCT 20	43.08

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD JUNE 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	43.05	---	42.89
10	---	---	---	---	---	---	---	---	---	43.11	---	42.99
15	---	---	---	---	---	---	---	---	---	43.15	---	42.98
20	---	---	---	---	---	---	---	---	---	43.20	---	43.02
25	---	---	---	---	---	---	---	---	43.10	43.10	43.10	42.96
EOM---	---	---	---	---	---	---	---	42.99	---	42.95	42.99	
WTR YR 2000		MEAN 43.03		HIGH 42.87	SEP 4		LOW 43.21	JUL 21				



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## BERTIE COUNTY--Continued

361420077111407. Local number, NC-154; DENR Roxobel Research Station well F22b7; County number, BE-080.

LOCATION.--Lat 36°14'20", long 77°11'14", 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 sea level (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.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

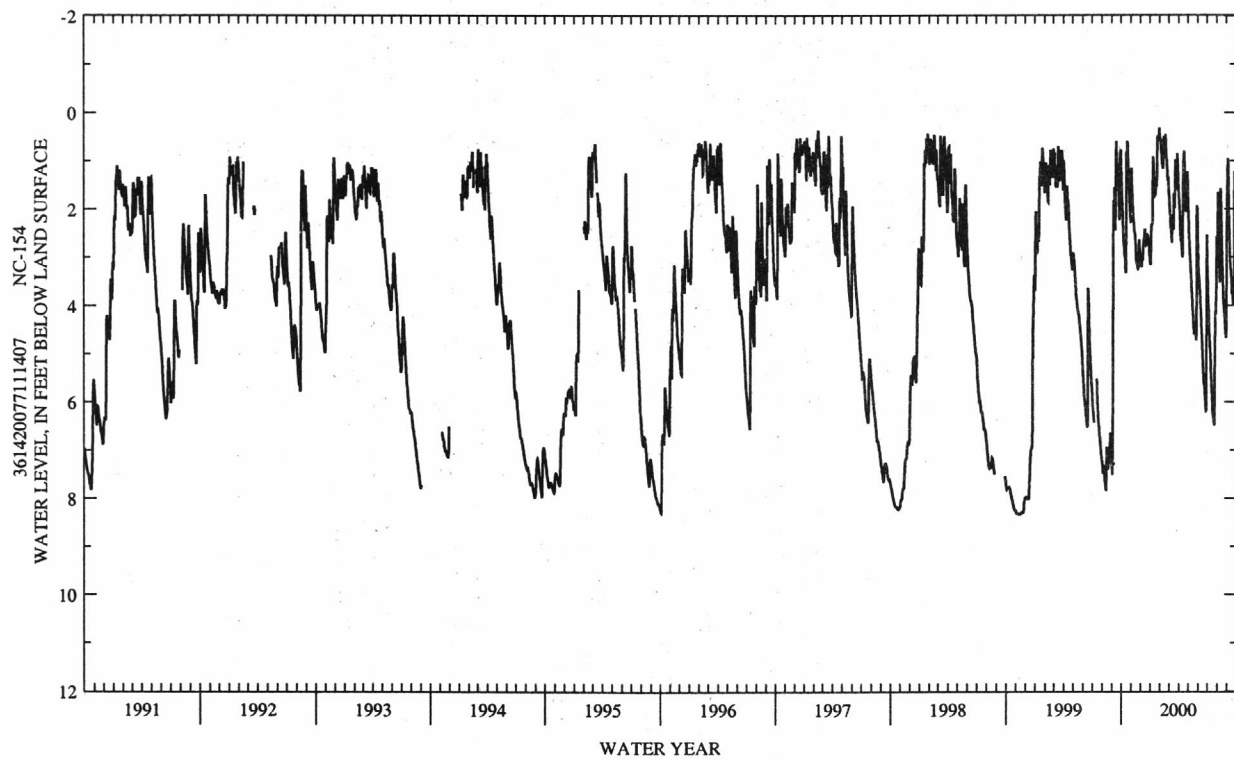
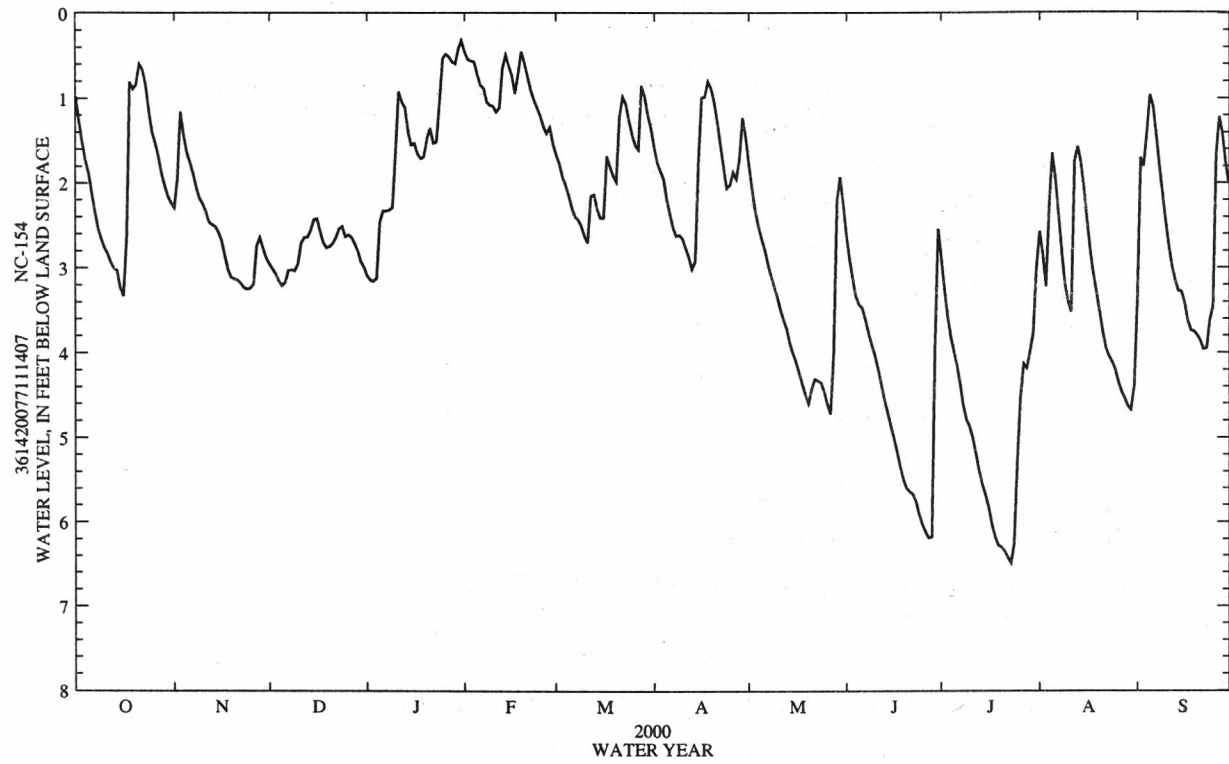
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	2.29	2.95	3.09	.45	1.66	1.58	1.77	2.61	2.87	2.57	3.37
2	1.27	1.95	3.01	3.14	.54	1.76	1.76	2.06	2.89	3.25	2.83	1.70
3	1.53	1.16	3.07	3.16	.56	1.92	1.85	2.32	3.12	3.57	3.22	1.80
4	1.73	1.44	3.15	3.12	.57	2.02	1.95	2.50	3.33	3.81	2.28	1.39
5	1.89	1.64	3.21	2.46	.72	2.14	2.18	2.65	3.43	3.99	1.65	.96
6	2.12	1.76	3.17	2.33	.84	2.29	2.35	2.78	3.47	4.15	1.96	1.09
7	2.35	1.89	3.03	2.33	.88	2.39	2.52	2.94	3.61	4.37	2.37	1.44
8	2.54	2.06	3.02	2.32	1.04	2.43	2.62	3.08	3.77	4.62	2.81	1.81
9	2.66	2.18	3.03	2.29	1.08	2.50	2.61	3.21	3.90	4.79	3.18	2.14
10	2.76	2.25	2.95	1.65	1.09	2.62	2.65	3.33	4.03	4.87	3.40	2.46
11	2.83	2.34	2.71	.92	1.16	2.70	2.77	3.49	4.18	5.00	3.52	2.75
12	2.93	2.46	2.64	1.04	1.11	2.15	2.87	3.61	4.36	5.19	1.73	2.98
13	3.00	2.49	2.64	1.11	.65	2.13	3.01	3.72	4.54	5.39	1.57	3.15
14	3.03	2.51	2.56	1.39	.49	2.30	2.92	3.89	4.70	5.56	1.75	3.27
15	3.23	2.58	2.43	1.55	.61	2.41	1.76	4.01	4.85	5.68	2.07	3.28
16	3.33	2.68	2.42	1.53	.72	2.41	.99	4.11	5.00	5.83	2.44	3.42
17	2.66	2.86	2.57	1.65	.94	1.68	.98	4.23	5.16	6.03	2.80	3.62
18	.81	3.02	2.70	1.71	.72	1.80	.80	4.37	5.34	6.18	3.08	3.74
19	.89	3.11	2.76	1.69	.45	1.91	.88	4.49	5.49	6.28	3.30	3.75
20	.84	3.13	2.75	1.47	.58	1.98	1.05	4.60	5.60	6.30	3.53	3.80
21	.60	3.14	2.71	1.35	.75	1.23	1.27	4.43	5.64	6.35	3.76	3.86
22	.66	3.18	2.64	1.53	.90	.98	1.55	4.31	5.67	6.42	3.95	3.96
23	.84	3.23	2.54	1.51	1.02	1.06	1.81	4.33	5.76	6.49	4.04	3.95
24	1.14	3.25	2.51	1.05	1.11	1.26	2.06	4.35	5.91	6.26	4.11	3.62
25	1.39	3.24	2.63	.53	1.20	1.42	2.02	4.46	6.03	5.26	4.20	3.45
26	1.52	3.19	2.61	.48	1.33	1.55	1.87	4.60	6.12	4.53	4.35	1.67
27	1.67	2.74	2.64	.51	1.41	1.60	1.95	4.72	6.19	4.13	4.46	1.22
28	1.88	2.64	2.72	.57	1.34	.85	1.71	4.01	6.18	4.18	4.54	1.41
29	2.02	2.77	2.80	.59	1.53	.98	1.23	2.21	3.97	4.00	4.63	1.76
30	2.15	2.88	2.92	.42	---	1.19	1.46	1.93	2.54	3.77	4.67	2.01
31	2.23	---	2.99	.32	---	1.36	---	2.26	---	3.02	4.38	---

WTR YR 2000

MEAN 2.70

HIGH .32

LOW 6.49





## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## BERTIE COUNTY--Continued

361420077111405. Local number, NC-217; DENR Roxobel Research Station well F22b5; County number, BE-108.

LOCATION.--Lat 36°14'20", long 77°11'14", Hydrologic Unit 03010203, 3.8 mi northeast of Roxobel on Secondary Road 1249. 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 602 ft, diameter 4 in. to 240 ft, diameter 2.5 in. from 240 to 602 ft, screened interval from 592 to 602 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 74 ft above sea level (from topographic map). Measuring point: Top of collar on 4-inch casing, 2.50 ft above land-surface datum.

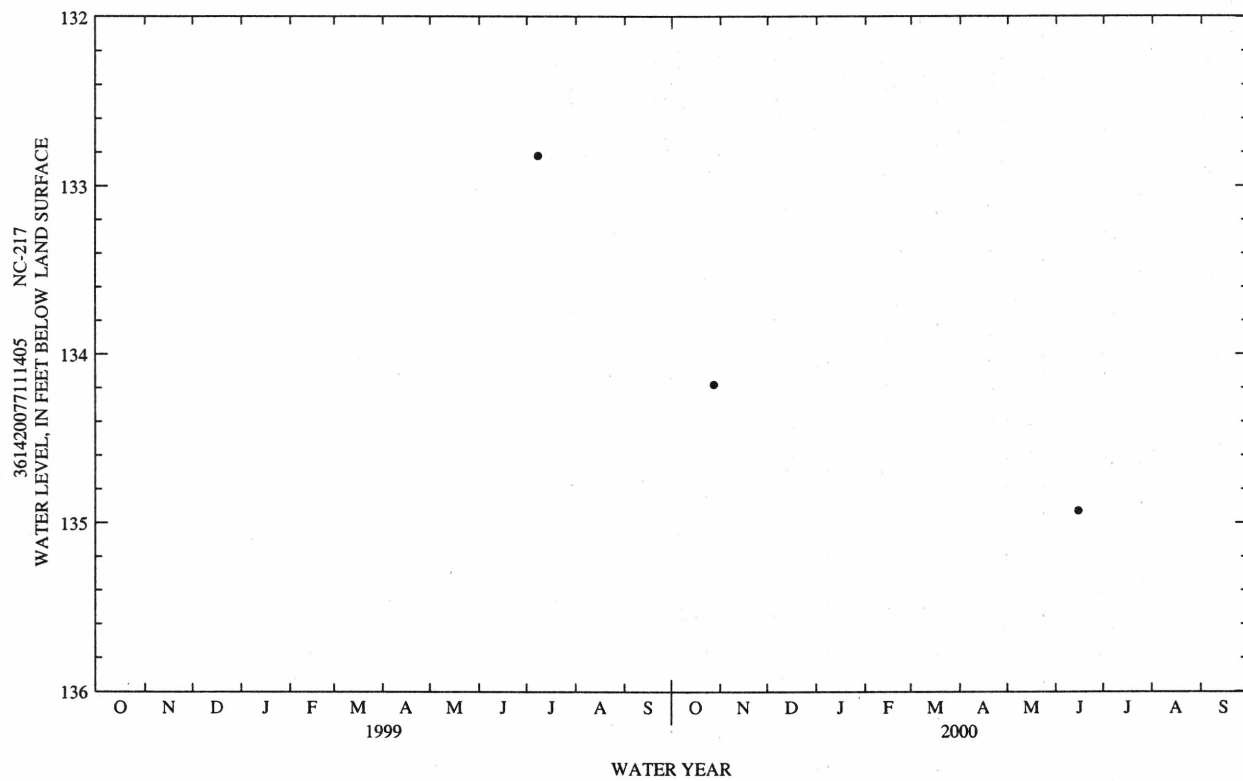
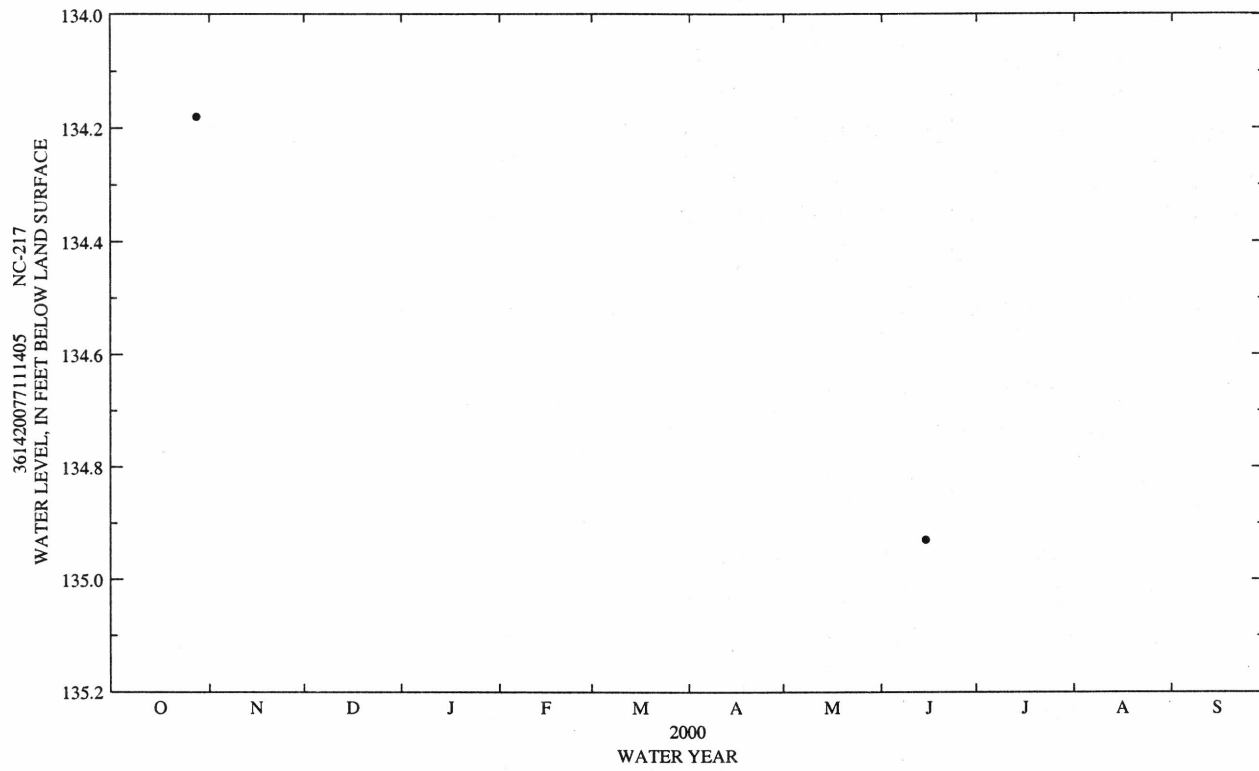
REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--Miscellaneous water-level measurements August 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 107.09 ft below land-surface datum, Aug. 27, 1986; lowest water level measured, 134.93 ft below land-surface datum, June 15, 2000.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	134.18	JUN 15	134.93



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## BLADEN COUNTY

344119078354201. County number, BL-057.

LOCATION.--Lat 34°41'20", long 78°35'42", Hydrologic Unit 03030005, 4.2 mi north of Elizabethtown on State 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 sea level (from topographic map). Measuring point: Vent hole in top of sanitary seal, 0.7 ft above land-surface datum.

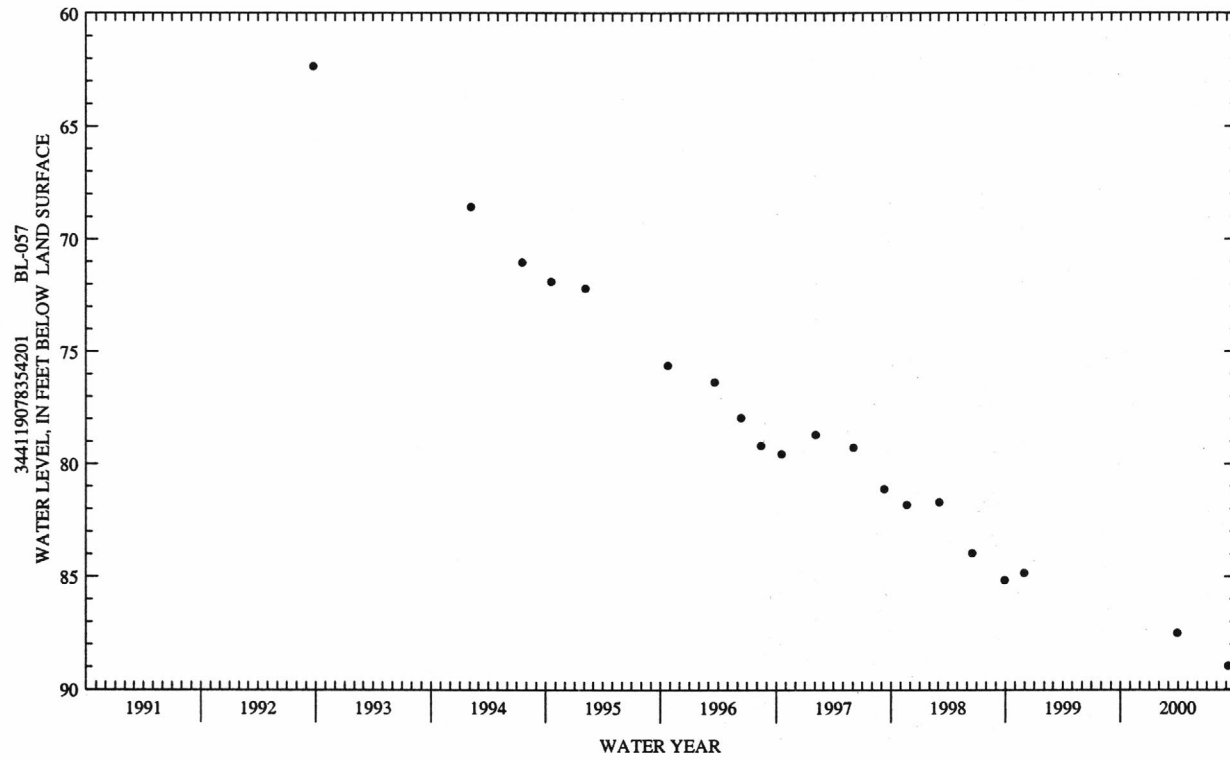
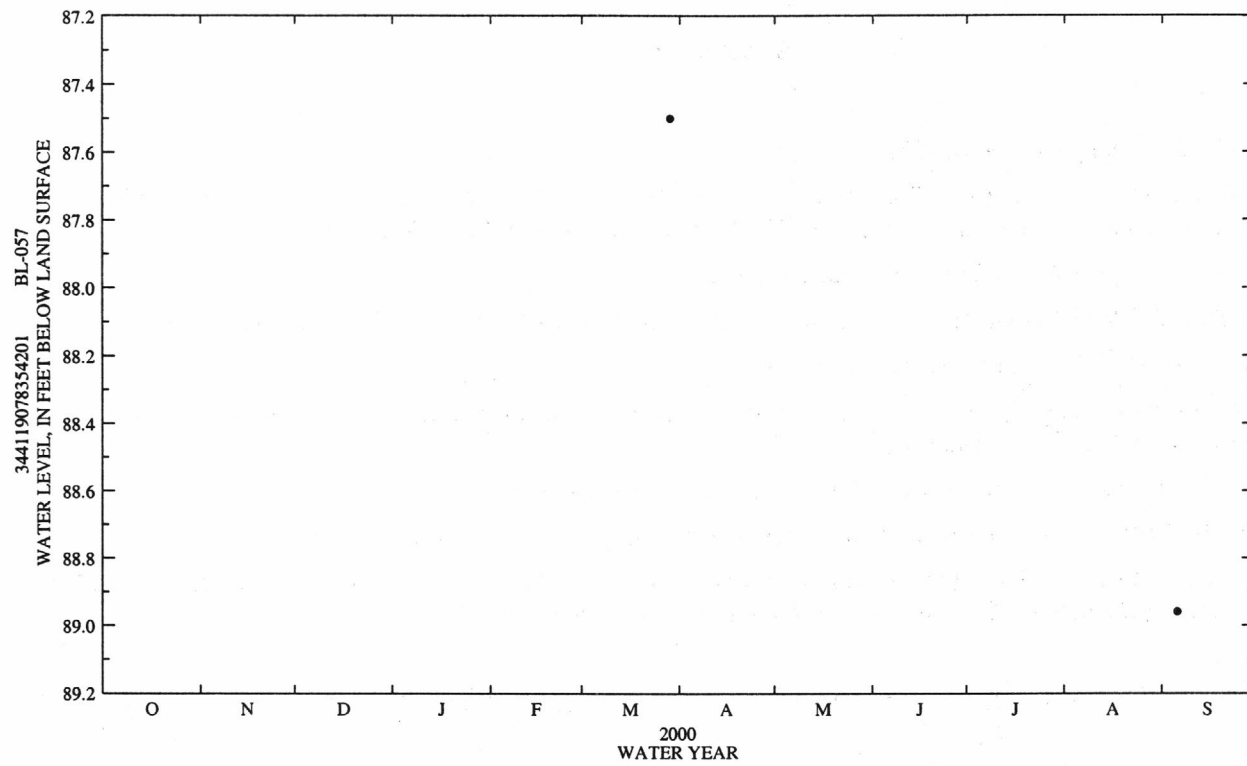
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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 LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 29	87.50	SEP 6	88.96



## BLADEN COUNTY--Continued

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

LOCATION.--Lat 34°50'39", long 78°50'13", 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 sea level. Measuring point: Top of 4-inch casing, 2.35 ft above land-surface datum.

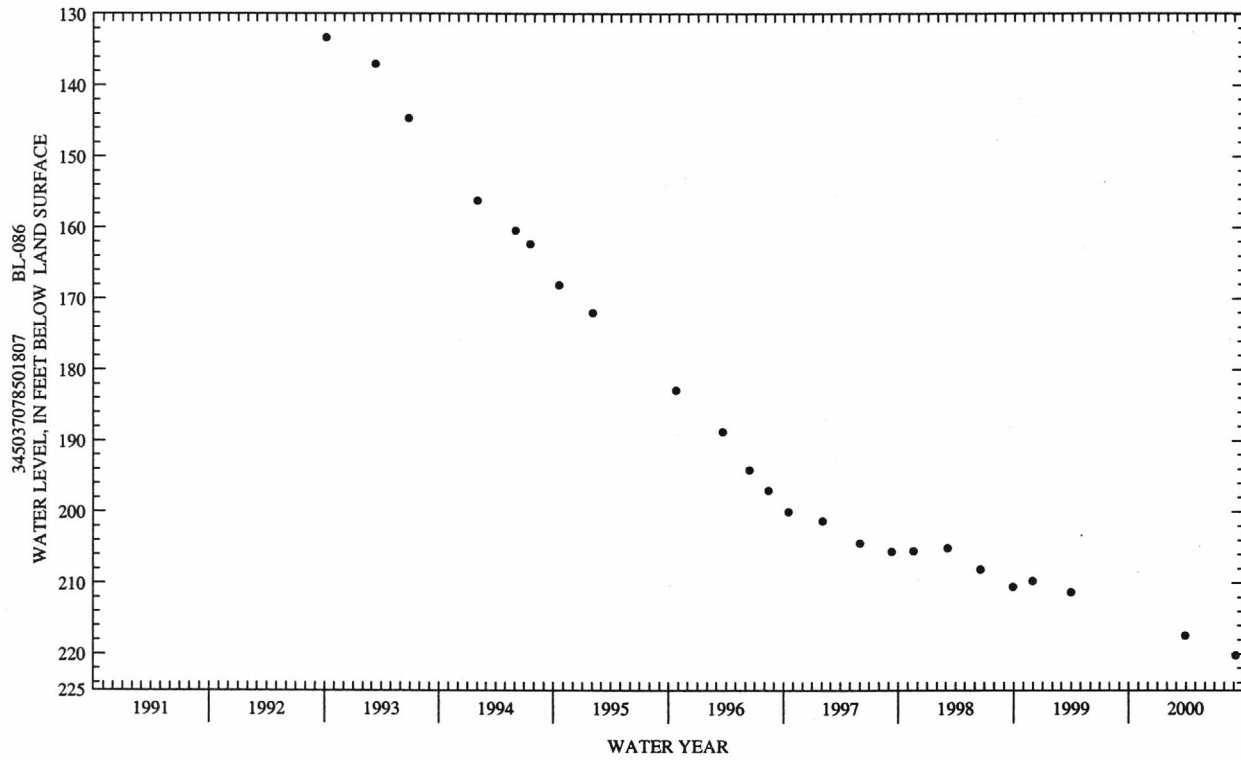
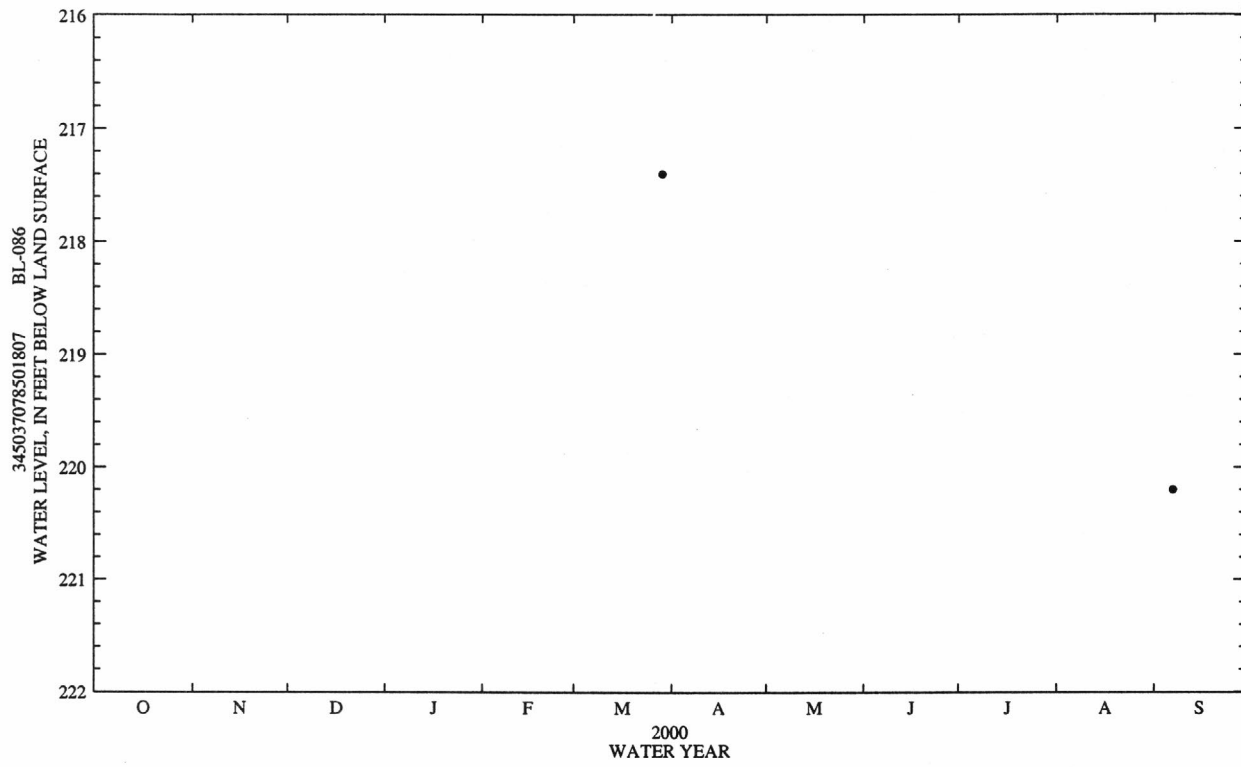
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 220.2 ft below land-surface datum, Sept. 7, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 29	217.4	SEP 7	220.2





## BLADEN COUNTY--Continued

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

LOCATION.--Lat 34°39'05", long 78°43'28", 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 intervals unknown.

INSTRUMENTATION.--Measured periodically with steel tape.

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

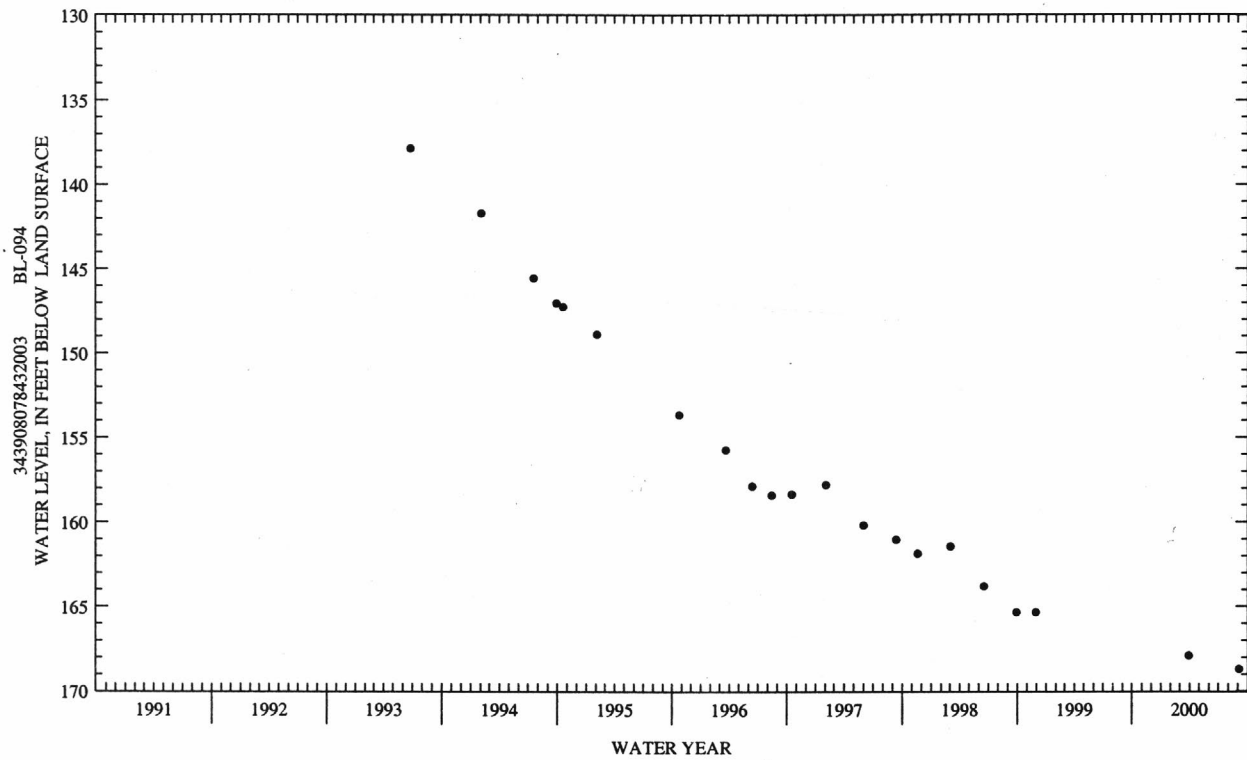
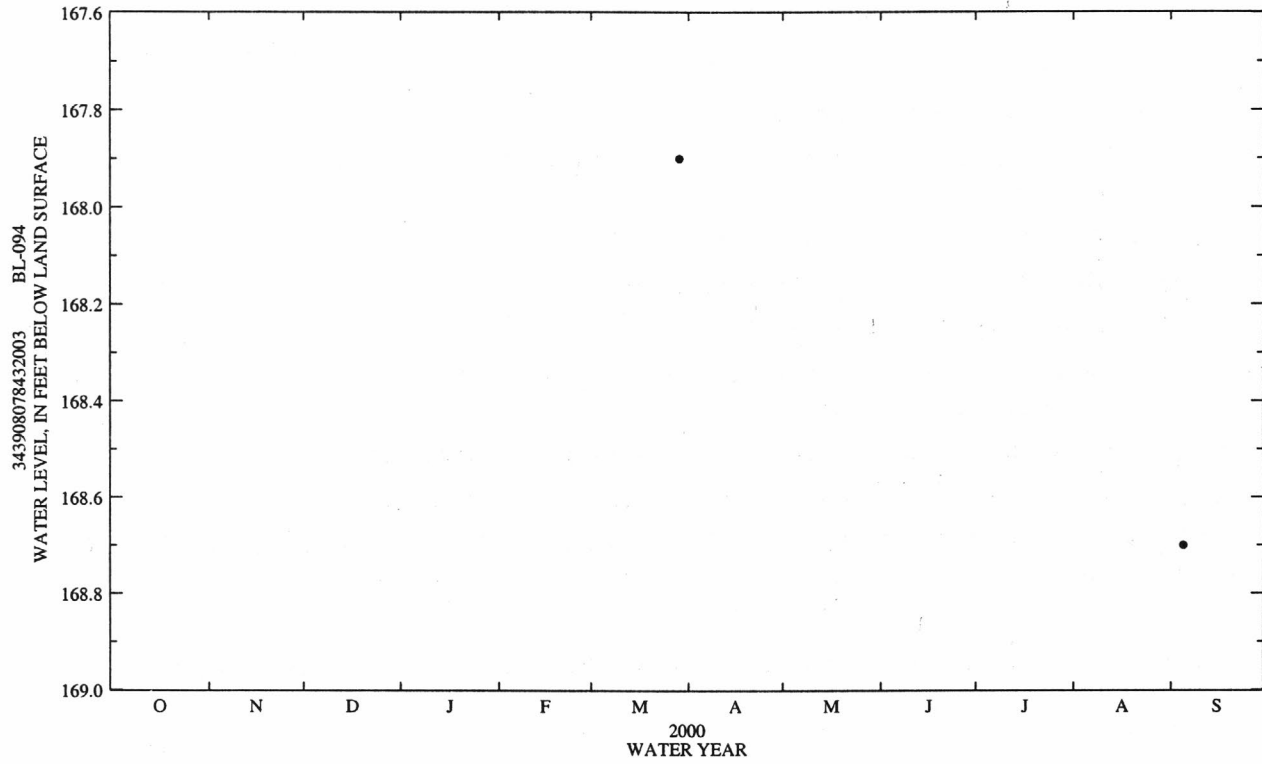
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 168.70 ft below land-surface datum, Sept. 5, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 29	167.90	SEP 5	168.70



## BLADEN COUNTY--Continued

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

LOCATION.--Lat 34°30'24", long 78°45'17", 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 sea level (from topographic map). Measuring point: Top of lower plug in 4-inch casing collar, 1.36 ft above land-surface datum.

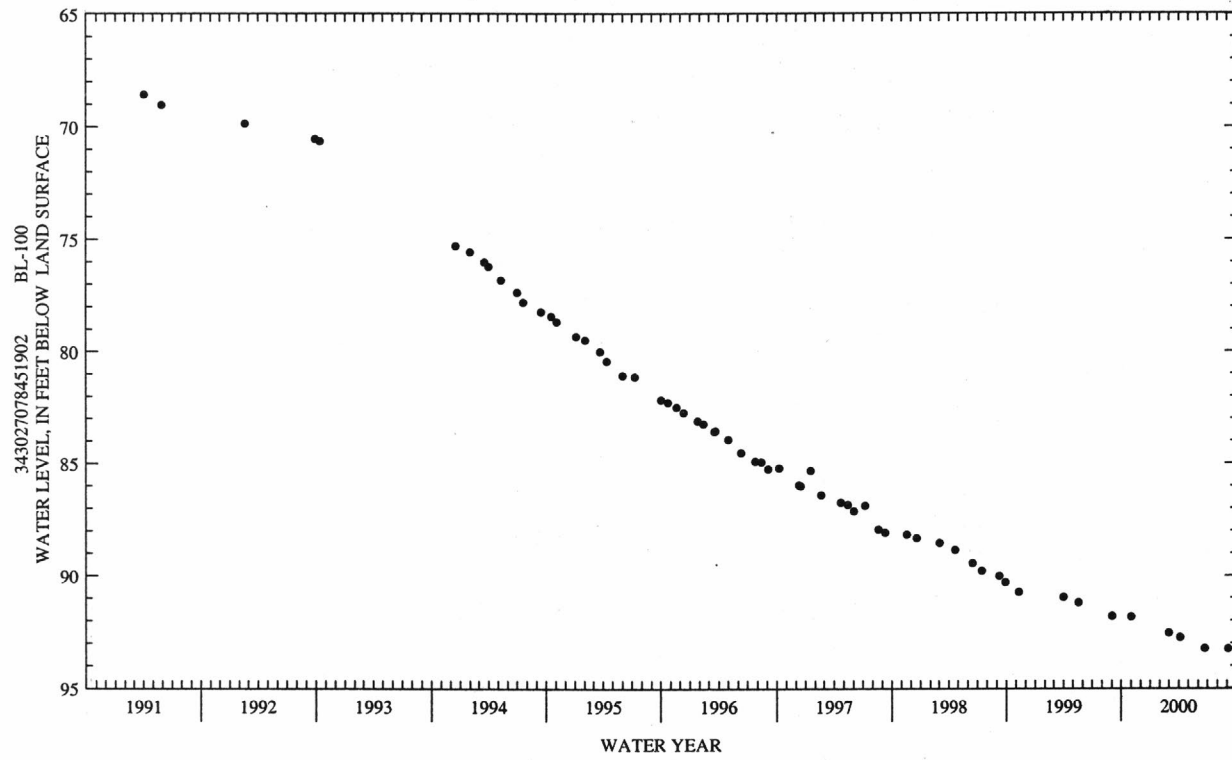
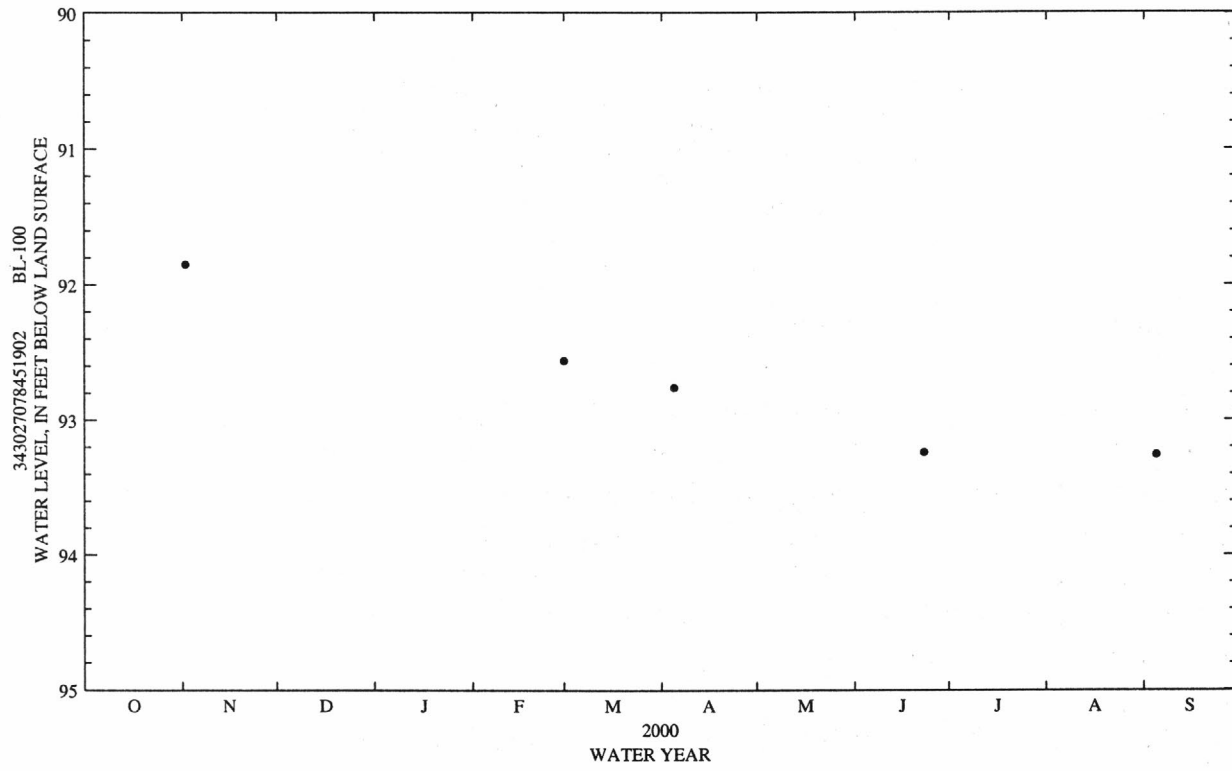
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements November 1975 to current year. Records from November 1975 to September 1986 are unpublished and available in 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, 93.26 ft below land-surface datum, Sept. 5, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	91.85	MAR 1	92.56	APR 5	92.76	JUN 23	93.24	SEP 5	93.26



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## BLADEN COUNTY--Continued

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

LOCATION.--Lat 34°37'26", long 78°36'02", 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 sea level (from topographic map). Measuring point: One-inch hole in base of pump mount, 1.2 ft above land-surface datum.

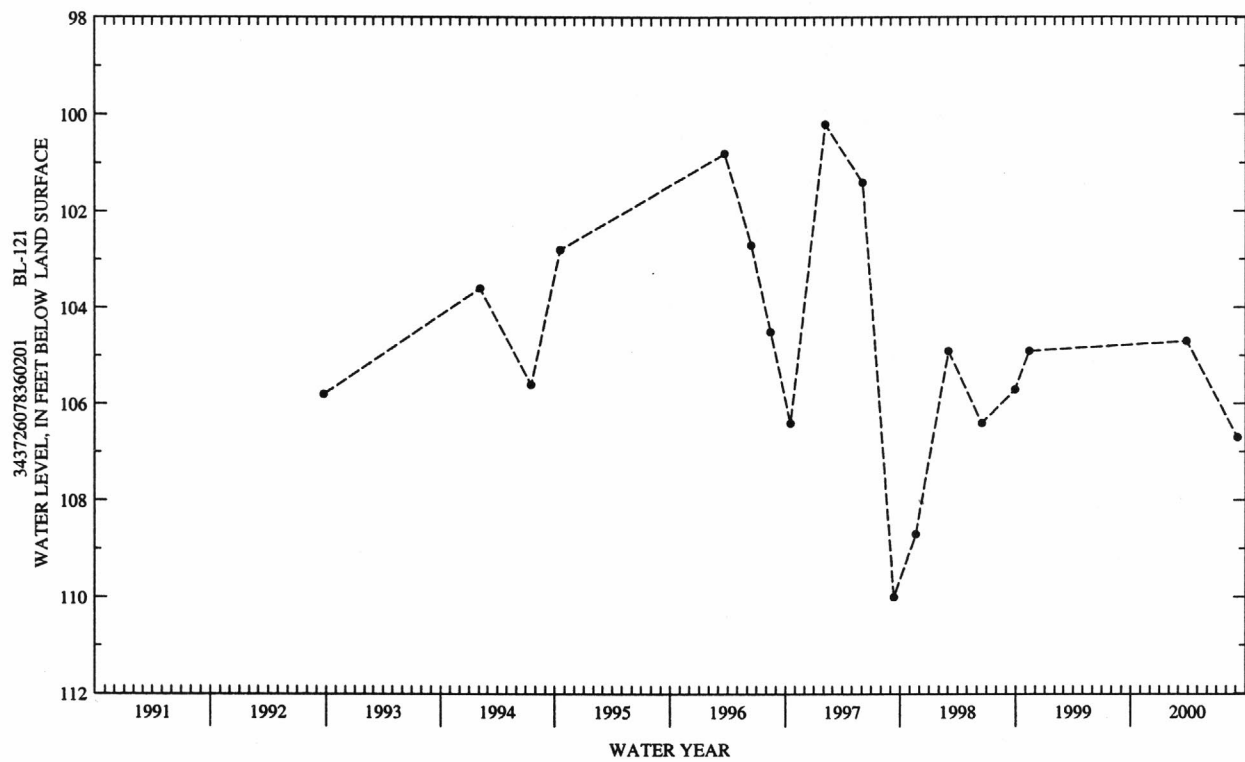
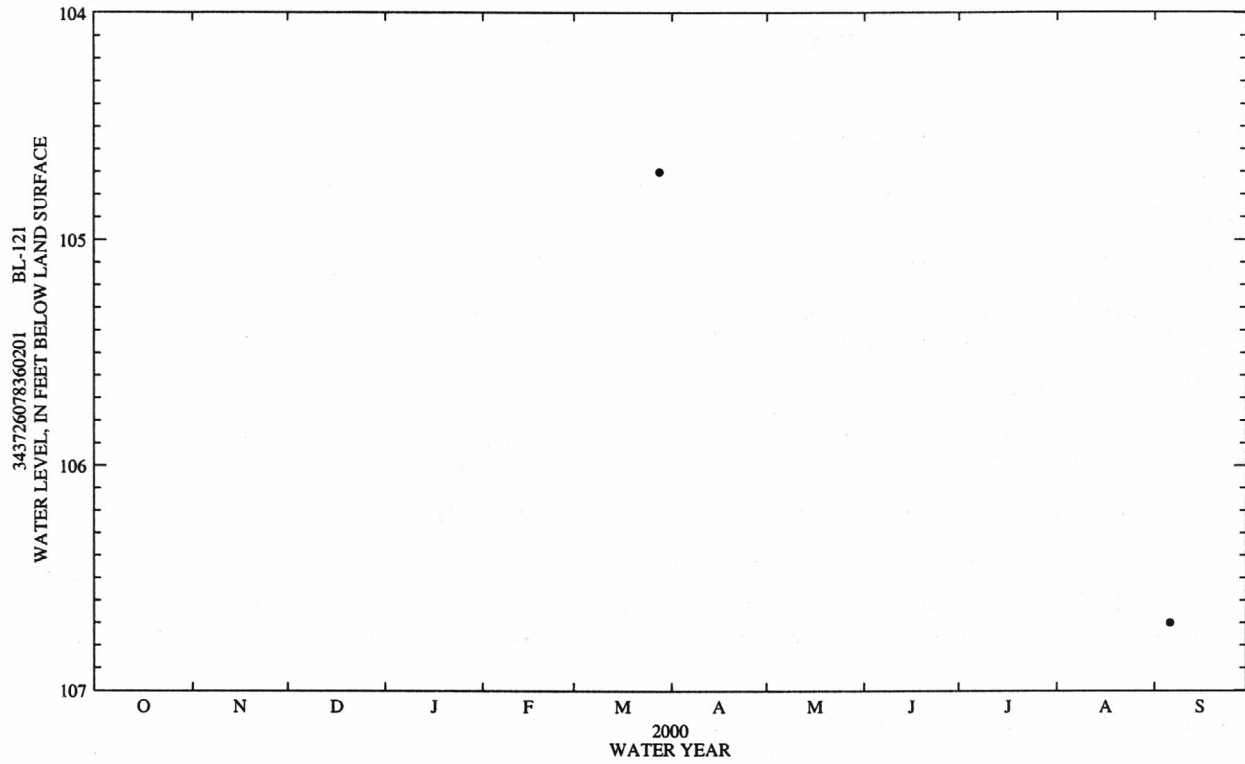
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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 LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 28	104.7	SEP 6	106.7



## BLADEN COUNTY--Continued

343900078383205. County number, BL-131.

LOCATION.--Lat 34°39'00", long 78°38'36", Hydrologic Unit 03030005, north of Elizabethtown on State Highways 41 and 87 at Alamac Knit Fabrics, Inc. Owner: Alamac Knit Fabrics, 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 115 ft above sea level (from topographic map). 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.--Miscellaneous water-level measurements December 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 171.1 ft below land-surface datum, Dec. 20, 1988; lowest water level measured, 197.2 ft below land-surface datum, June 14, 1996.

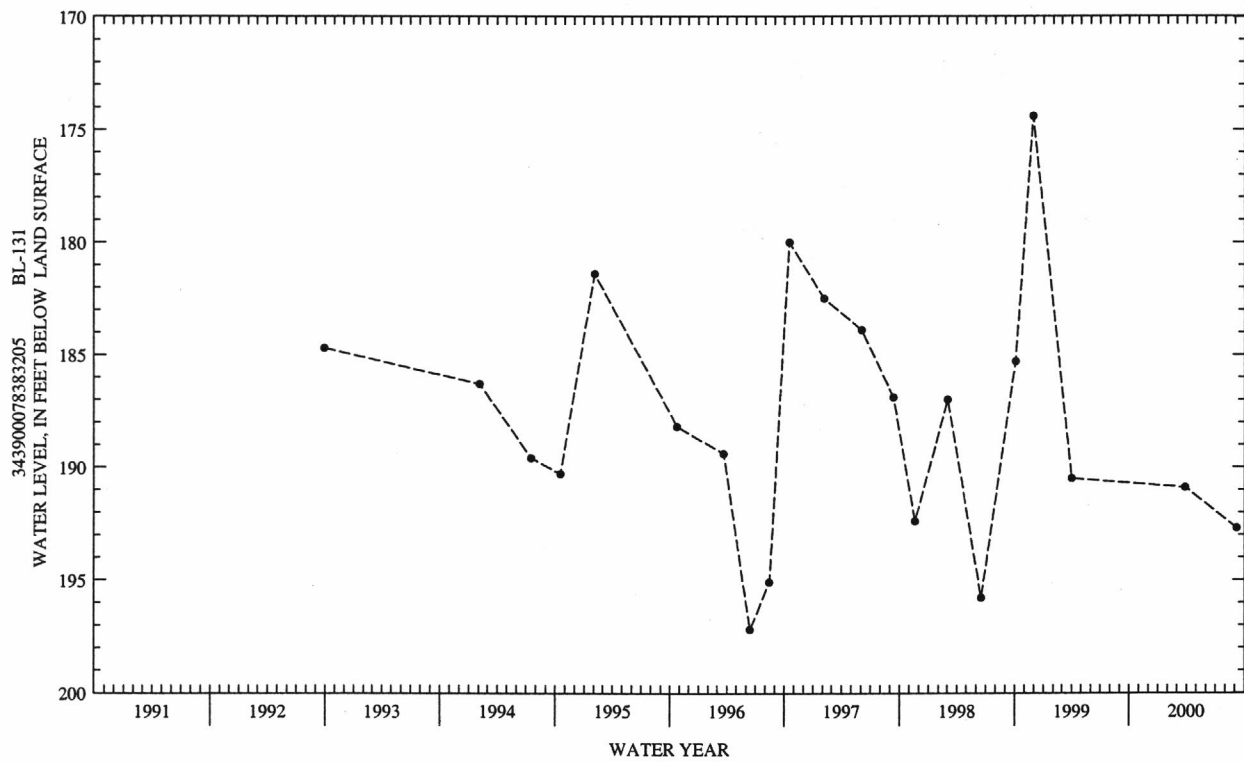
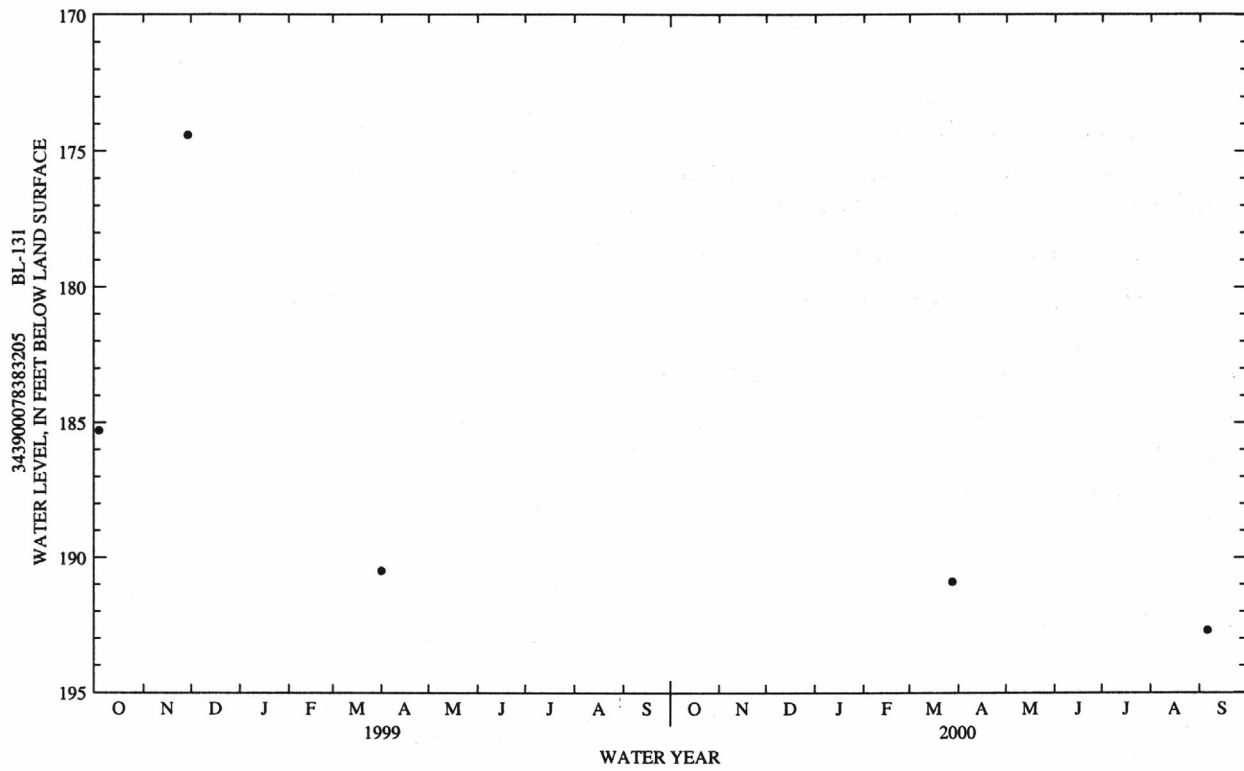
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	185.3	NOV 29	174.4	APR 1	190.5

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 28	190.9	SEP 6	192.7





## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## BLADEN COUNTY--Continued

344441078482402. County number, BL-142.

LOCATION.--Lat 34°44'42", long 78°48'24", 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 sea level (from topographic map). Measuring point: Top of 6-inch steel protective casing, 2.3 ft above land-surface datum.

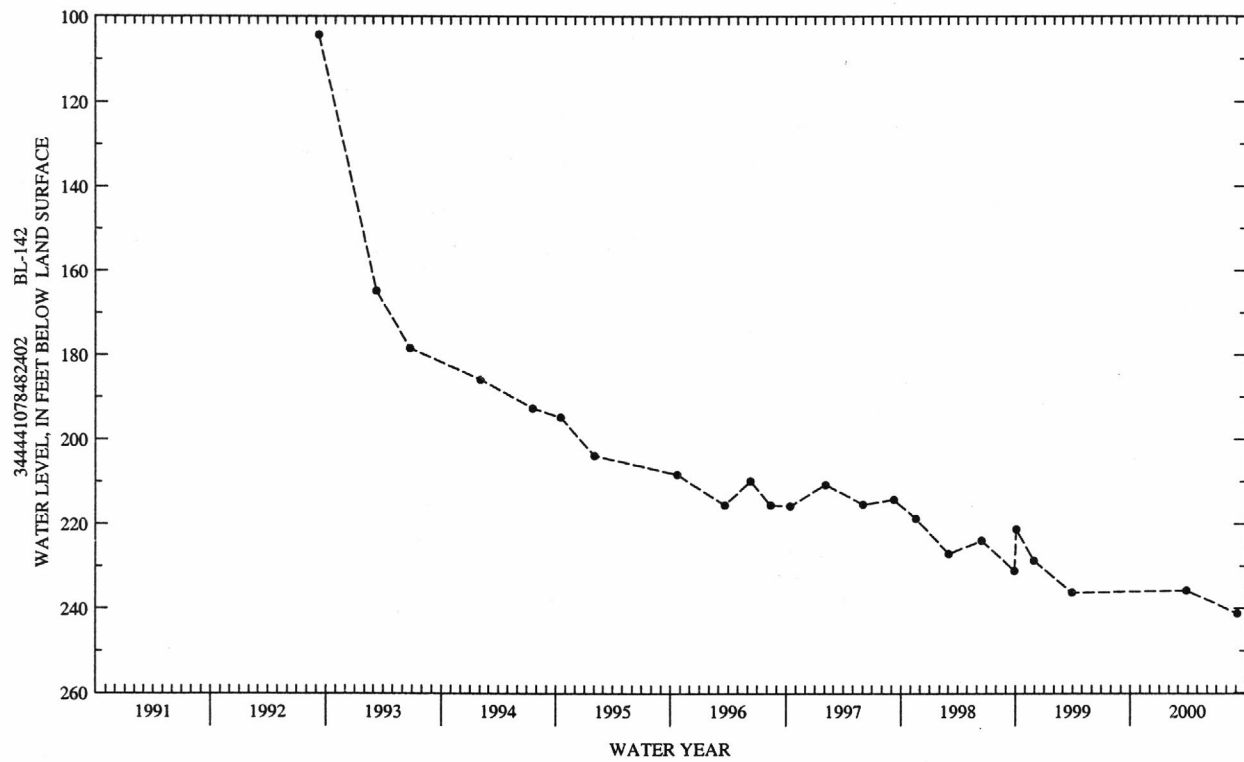
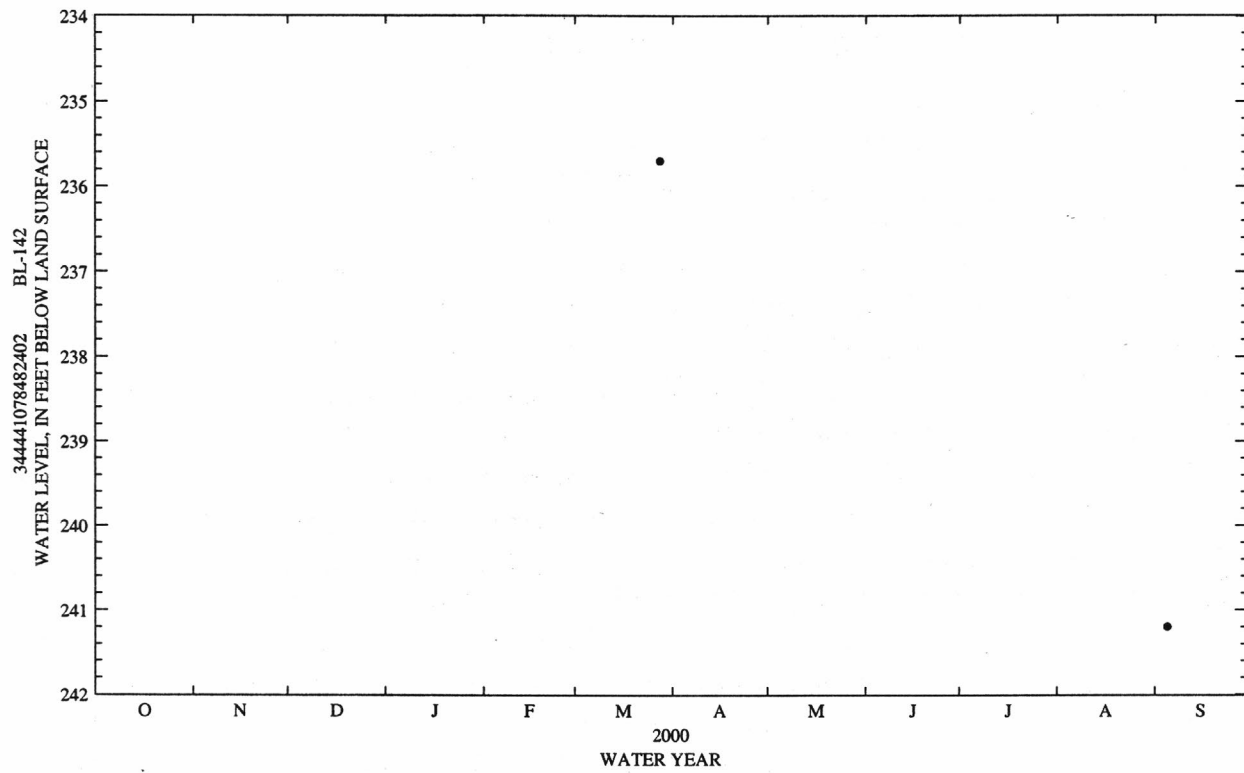
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 241.2 ft below land-surface datum, Sept. 5, 2000.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 28	235.7	SEP 5	241.2



## BLADEN COUNTY--Continued

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

LOCATION.--Lat 34°44'35", long 78°42'31", 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 sea level (from topographic map). Measuring point: Hole in top of sanitary seal, 0.8 ft above land-surface datum.

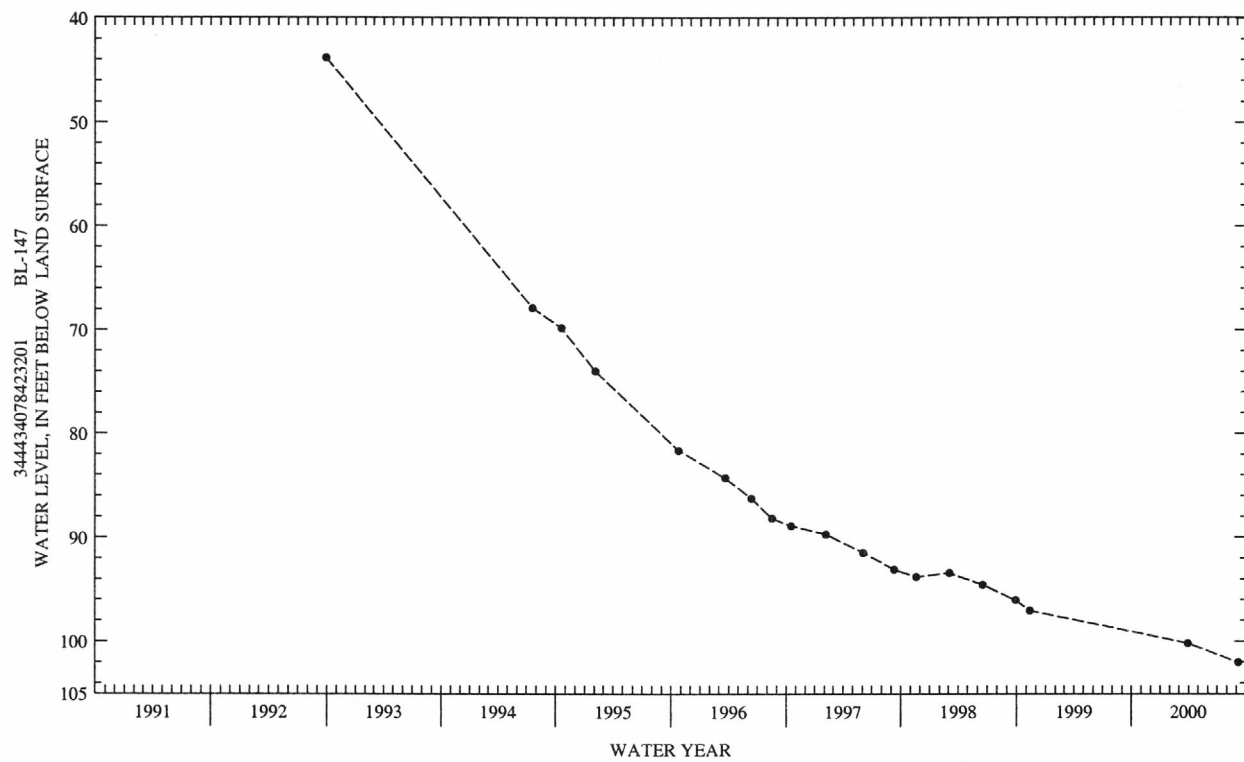
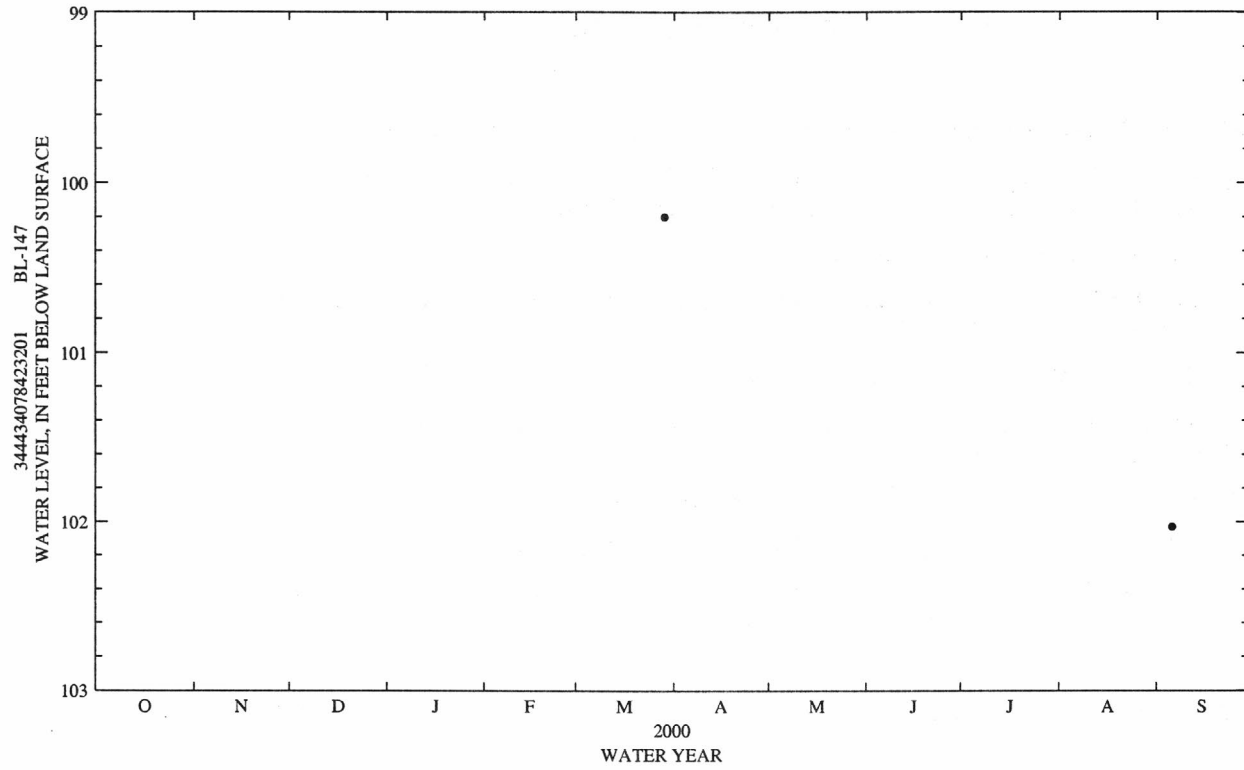
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 102.03 ft below land-surface datum, Sept. 6, 2000.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 29	100.20	SEP 6	102.03



## BLADEN COUNTY--Continued

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

LOCATION.--Lat 34°30'24", long 78°45'17", 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.--Peedee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 110 ft, diameter 6 in. to 82 ft, diameter 4 in. from 58 to 110 ft, screened interval from 100 to 110 ft.

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

DATUM.--Land-surface datum is 106 ft above sea level (from topographic map). Measuring point: Top of collar on 6-inch casing, 2.69 ft above land-surface datum; revised from 2.78, May 19, 1999.

REMARKS.--Well is part of areal-effects network. Records prior to January 1987 are from Bladenboro Research Station well Z41u4 which was adjacent to and of similar construction to well Z41u3.

PERIOD OF RECORD.--Miscellaneous water-level measurements November 1975 to current year. Continuous record began January 1987. Records for well Z41u4 from March 1976 to December 1986 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.73 ft below land-surface datum, Apr. 19, 1978; lowest water level recorded, 9.25 ft below land-surface datum, Aug. 18, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

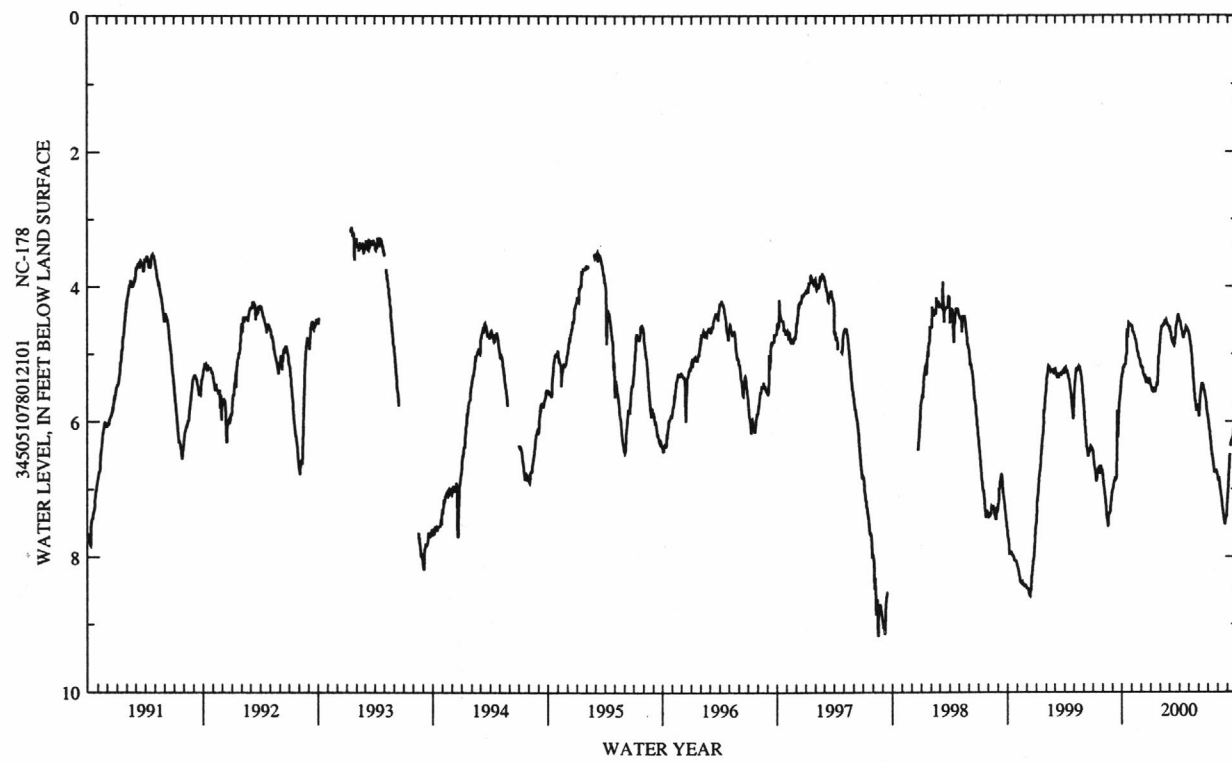
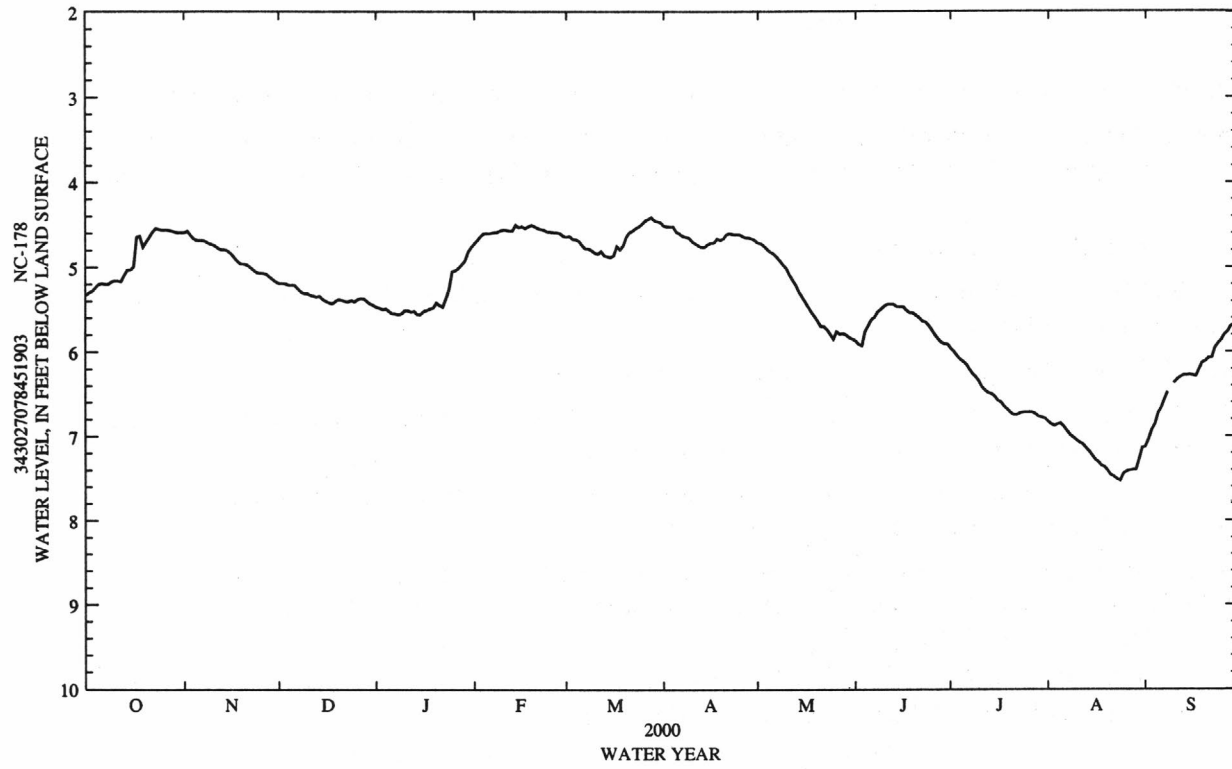
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.33	4.59	5.19	5.47	4.72	4.64	4.51	4.71	5.87	5.96	6.83	7.13
2	5.30	4.57	5.19	5.48	4.68	4.63	4.52	4.72	5.91	6.00	6.86	7.04
3	5.28	4.62	5.19	5.50	4.63	4.67	4.52	4.75	5.93	6.05	6.88	6.93
4	5.24	4.66	5.21	5.49	4.60	4.67	4.52	4.79	5.76	6.09	6.86	6.86
5	5.20	4.68	5.21	5.52	4.60	4.69	4.58	4.82	5.69	6.12	6.85	6.73
6	5.19	4.68	5.21	5.55	4.60	4.74	4.60	4.84	5.62	6.15	6.89	6.67
7	5.20	4.68	5.25	5.55	4.59	4.78	4.63	4.88	5.59	6.21	6.94	6.57
8	5.20	4.70	5.29	5.56	4.59	4.78	4.64	4.92	5.53	6.26	6.99	6.48
9	5.17	4.72	5.31	5.55	4.57	4.80	4.65	4.97	5.50	6.30	7.02	---
10	5.16	4.73	5.31	5.51	4.56	4.83	4.69	5.01	5.46	6.35	7.05	6.37
11	5.16	4.75	5.33	5.51	4.56	4.84	4.72	5.09	5.44	6.42	7.08	6.33
12	5.17	4.78	5.34	5.53	4.57	4.81	4.74	5.15	5.44	6.46	7.10	6.30
13	5.10	4.79	5.35	5.52	4.57	4.86	4.76	5.21	5.44	6.49	7.14	6.28
14	5.03	4.79	5.34	5.56	4.50	4.87	4.76	5.29	5.47	6.50	7.18	6.28
15	5.03	4.81	5.38	5.56	4.53	4.88	4.73	5.35	5.47	6.53	7.23	6.27
16	4.99	4.84	5.40	5.52	4.52	4.86	4.71	5.41	5.47	6.58	7.28	6.28
17	4.64	4.89	5.42	5.51	4.54	4.75	4.71	5.47	5.51	6.60	7.31	6.29
18	4.63	4.93	5.43	5.49	4.52	4.79	4.66	5.53	5.54	6.65	7.35	6.20
19	4.76	4.96	5.40	5.48	4.50	4.74	4.68	5.58	5.54	6.68	7.37	6.13
20	4.70	4.96	5.38	5.42	4.52	4.64	4.66	5.64	5.57	6.72	7.41	6.11
21	4.64	4.97	5.39	5.45	4.54	4.59	4.61	5.70	5.60	6.75	7.46	6.07
22	4.58	5.00	5.40	5.47	4.55	4.57	4.60	5.70	5.64	6.75	7.48	6.07
23	4.54	5.03	5.41	5.37	4.56	4.54	4.61	5.74	5.65	6.73	7.51	5.95
24	4.55	5.06	5.39	5.26	4.58	4.52	4.61	5.79	5.69	6.72	7.53	5.90
25	4.56	5.07	5.41	5.05	4.58	4.49	4.61	5.85	5.74	6.72	7.45	5.86
26	4.56	5.07	5.38	5.04	4.59	4.45	4.63	5.76	5.80	6.72	7.42	5.80
27	4.56	5.08	5.37	5.01	4.59	4.43	4.65	5.79	5.85	6.72	7.41	5.76
28	4.57	5.11	5.37	4.97	4.60	4.41	4.65	5.78	5.89	6.74	7.40	5.70
29	4.58	5.14	5.40	4.92	4.63	4.45	4.66	5.80	5.91	6.77	7.40	5.68
30	4.59	5.17	5.43	4.82	---	4.46	4.68	5.83	5.91	6.78	7.28	5.65
31	4.59	---	5.45	4.76	---	4.47	---	5.85	---	6.79	7.14	---

WTR YR 2000

MEAN 5.45

HIGH 4.41

LOW 7.53





## BRUNSWICK COUNTY

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

LOCATION.--Lat 34°04'16.94", long 78°08'40.80", North American Datum of 1983, Hydrologic Unit 03040207, in Bolivia at town hall on U.S. Highway 17. Owner: DENR (North Carolina Department of Environment and Natural Resources).

**AQUIFER.**--Castle Hayne aquifer of Late Cretaceous age.

**WELL CHARACTERISTICS.**--Drilled observation well, depth 60 ft, diameter 4 in.; cased to 50 ft, screened from 50 to 60 ft.

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

DATUM.--Land-surface datum is 41.26 ft above sea level. Measuring point: Top of casing, 0.38 ft above land-surface datum.

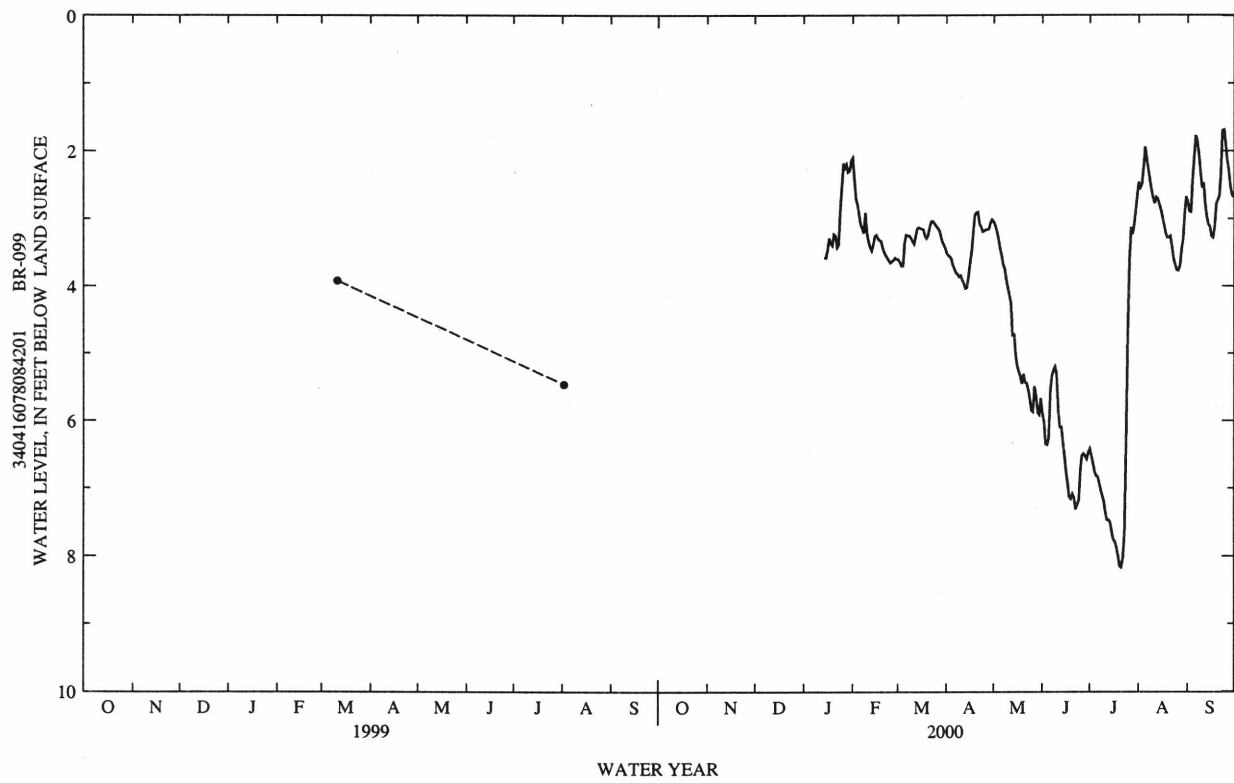
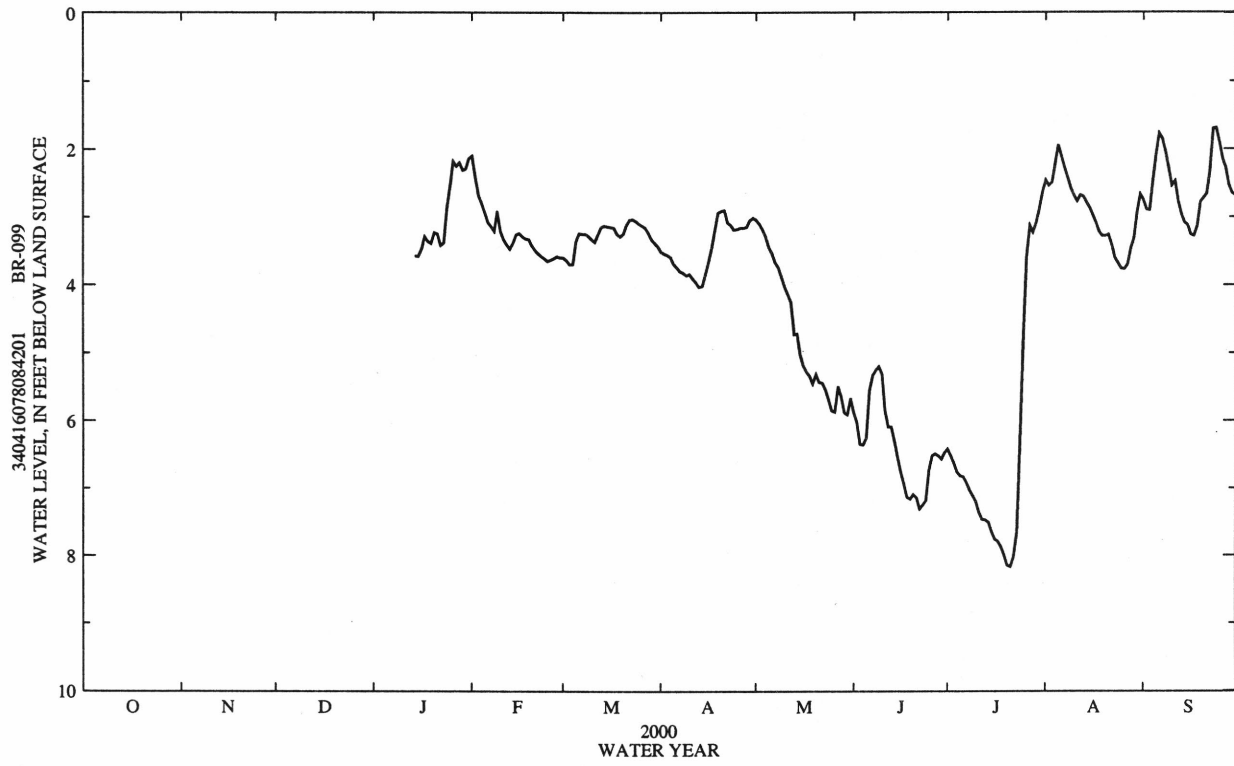
REMARKS.--Well is part of local-effects network.

PERIOD OF RECORD.--Miscellaneous water-level measurements April 1971 to September 2000. Continuous record began January 2000.

**EXTREMES FOR PERIOD OF RECORD.**--Highest water level measured, 1.25 ft below land-surface datum, June 15, 1978; lowest water level recorded, 8.75 ft below land-surface datum, July 20, 21, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD JANUARY 2000 TO SEPTEMBER 2000

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	2.10	3.60	3.51	3.04	5.88	6.42	2.46	2.75
2	---	---	---	---	2.41	3.64	3.54	3.10	6.02	6.52	2.54	2.89
3	---	---	---	---	2.69	3.70	3.56	3.18	6.35	6.63	2.49	2.90
4	---	---	---	---	2.80	3.70	3.59	3.29	6.36	6.76	2.22	2.44
5	---	---	---	---	2.94	3.36	3.69	3.44	6.26	6.82	1.94	2.07
6	---	---	---	---	3.08	3.24	3.74	3.54	5.55	6.83	2.11	1.77
7	---	---	---	---	3.14	3.25	3.80	3.67	5.33	6.92	2.27	1.85
8	---	---	---	---	3.21	3.25	3.82	3.74	5.25	7.03	2.43	2.04
9	---	---	---	---	2.91	3.28	3.86	3.89	5.20	7.11	2.58	2.29
10	---	---	---	---	3.21	3.33	3.84	4.03	5.31	7.20	2.69	2.54
11	---	---	---	---	3.33	3.37	3.91	4.14	5.85	7.36	2.77	2.47
12	---	---	---	---	3.41	3.26	3.96	4.25	6.09	7.47	2.68	2.77
13	---	---	---	---	3.47	3.15	4.03	4.73	6.09	7.47	2.70	2.96
14	---	---	---	3.57	3.38	3.13	4.02	4.72	6.31	7.51	2.79	3.08
15	---	---	---	3.58	3.26	3.14	3.85	5.03	6.54	7.65	2.87	3.12
16	---	---	---	3.47	3.24	3.15	3.66	5.19	6.77	7.76	2.98	3.26
17	---	---	---	3.29	3.29	3.16	3.46	5.27	6.94	7.79	3.09	3.28
18	---	---	---	3.36	3.32	3.25	3.19	5.34	7.13	7.88	3.22	3.13
19	---	---	---	3.39	3.33	3.29	2.94	5.45	7.16	8.00	3.28	2.78
20	---	---	---	3.23	3.42	3.25	2.91	5.31	7.09	8.15	3.28	2.72
21	---	---	---	3.25	3.49	3.12	2.90	5.43	7.14	8.17	3.26	2.66
22	---	---	---	3.42	3.54	3.04	3.08	5.44	7.31	8.02	3.41	2.32
23	---	---	---	3.38	3.58	3.03	3.12	5.54	7.25	7.66	3.60	1.70
24	---	---	---	2.87	3.61	3.06	3.19	5.68	7.18	6.34	3.68	1.69
25	---	---	---	2.54	3.65	3.10	3.18	5.85	6.74	4.74	3.76	1.90
26	---	---	---	2.18	3.63	3.13	3.16	5.87	6.52	3.58	3.77	2.14
27	---	---	---	2.25	3.61	3.16	3.16	5.49	6.49	3.13	3.70	2.28
28	---	---	---	2.20	3.58	3.23	3.15	5.64	6.52	3.23	3.46	2.53
29	---	---	---	2.31	3.60	3.33	3.05	5.88	6.57	3.09	3.31	2.65
30	---	---	---	2.29	---	3.38	3.01	5.91	6.47	2.88	2.94	2.68
31	---	---	---	2.14	---	3.43	---	5.67	---	2.64	2.67	---
WTR YR 2000		MEAN 4.05		HIGH 1.69		LOW 8.17						



335849078054301. County number, BR-100.

**AQUIFER.**--Castle Hayne aquifer of Late Cretaceous age.

**INSTRUMENTATION.**--Water-level recorder collecting data at 15-minute intervals.

REMARKS.-- Water levels are affected by nearby pumping of Brunswick County Water Supply Well 15. Well is part of the Brunswick county ground-water project.

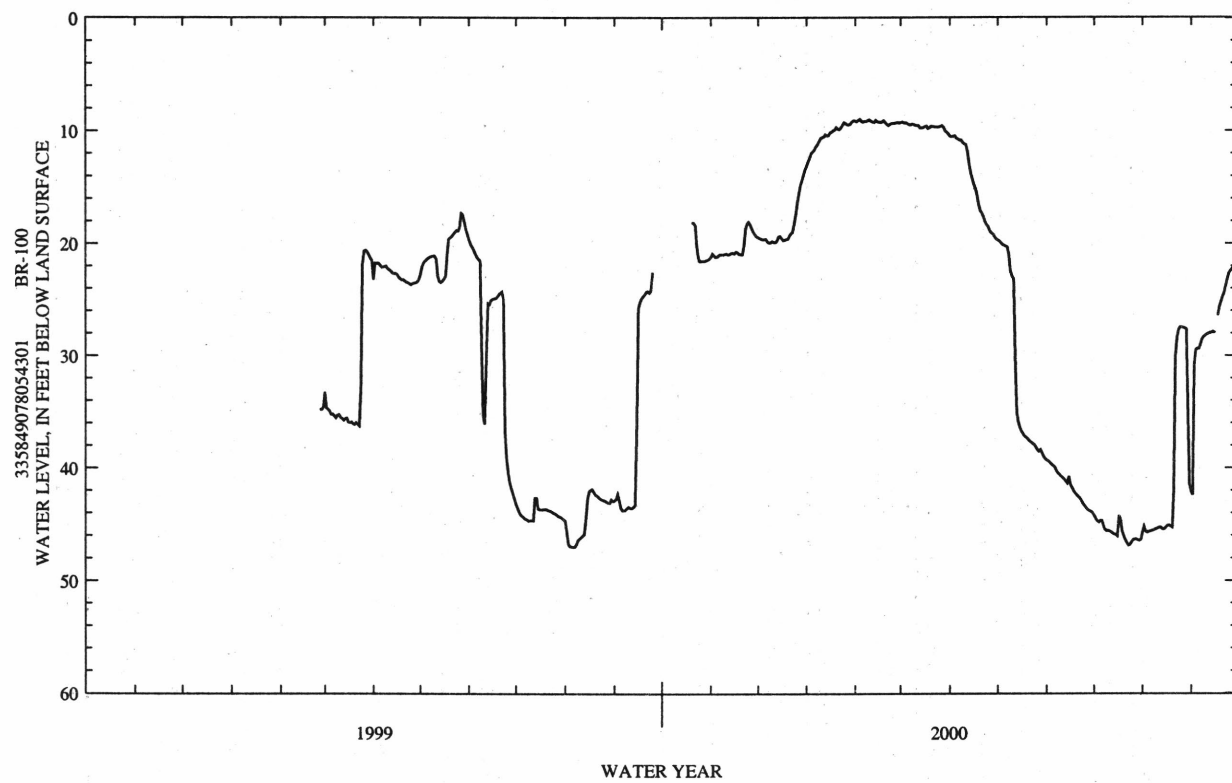
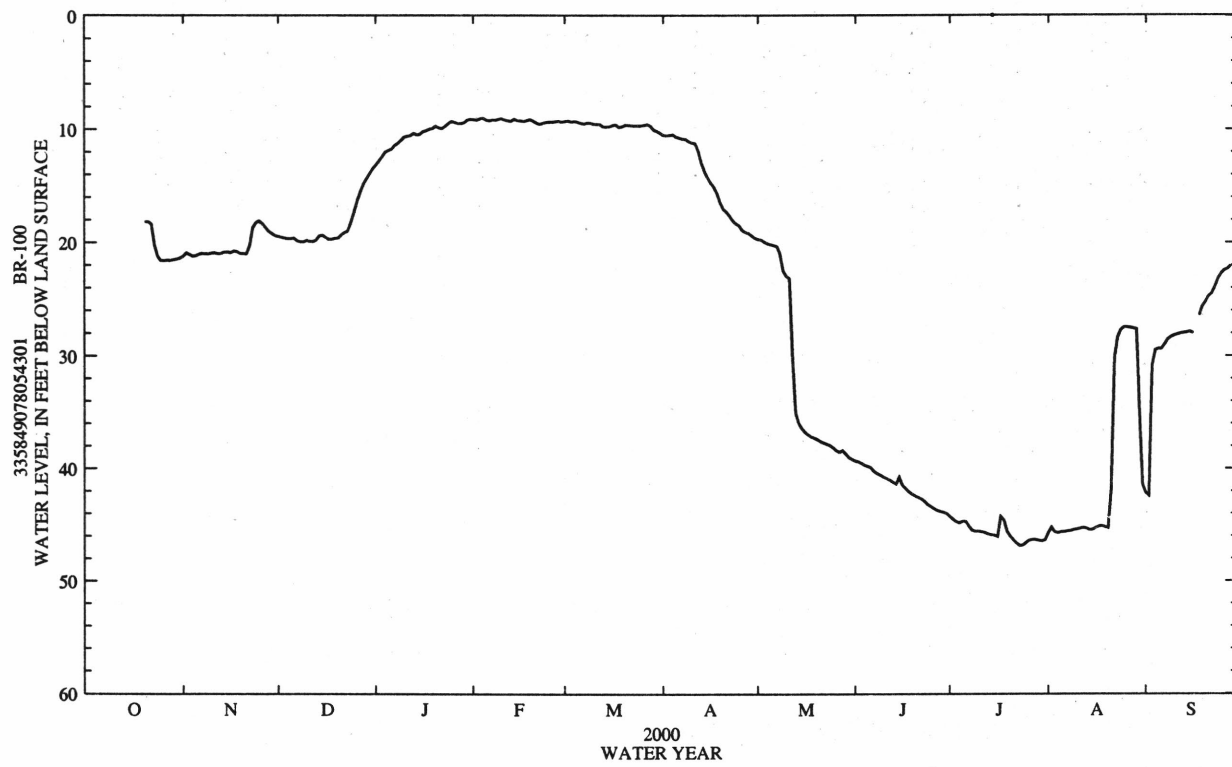
PERIOD OF RECORD.--February 1999 to current year.

**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 8.95ft below land-surface datum, Feb. 4, 2000; lowest water level recorded, 47.04 ft below land-surface datum, Aug. 6, 7, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM. WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

### DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	21.21	19.46	13.15	9.12	9.27	10.51	19.71	39.31	44.27	45.70	42.14
2	---	20.91	19.53	12.77	9.18	9.23	10.53	19.76	39.40	44.52	45.23	42.41
3	---	21.05	19.59	12.41	9.06	9.32	10.51	19.94	39.53	44.72	45.65	30.83
4	---	21.20	19.65	12.00	8.99	9.27	10.46	20.09	39.71	44.85	45.74	29.49
5	---	21.17	19.65	11.87	9.16	9.35	10.66	20.18	39.81	44.69	45.65	29.3
6	---	21.03	19.59	11.72	9.23	9.44	10.73	20.24	39.93	44.69	45.63	29.39
7	---	20.96	19.83	11.42	9.15	9.49	10.84	20.33	40.27	45.14	45.59	28.98
8	---	20.98	19.94	11.23	9.18	9.42	10.84	20.96	40.45	45.49	45.55	28.55
9	---	20.99	19.94	10.95	9.09	9.43	11.05	22.50	40.58	45.60	45.47	28.33
10	---	20.93	19.80	10.68	9.04	9.51	11.17	22.96	40.74	45.59	45.41	28.20
11	---	20.90	19.89	10.59	9.13	9.53	11.23	23.17	40.89	45.64	45.35	28.12
12	---	20.99	19.90	10.55	9.23	9.53	11.88	30.11	41.03	45.71	45.28	28.03
13	---	20.96	19.76	10.33	9.25	9.75	12.90	35.06	41.19	45.82	45.33	27.97
14	---	20.84	19.40	10.47	9.07	9.75	13.68	35.96	41.37	45.91	45.46	27.94
15	---	20.83	19.33	10.43	9.21	9.73	14.22	36.43	40.77	45.92	45.45	27.85
16	---	20.89	19.55	10.18	9.21	9.64	14.72	36.75	41.50	46.07	45.27	27.99
17	---	20.75	19.72	10.12	9.27	9.59	15.09	36.97	41.76	44.26	45.13	---
18	---	20.79	19.70	9.98	9.20	9.81	15.68	37.19	42.06	44.59	45.10	26.44
19	---	20.97	19.61	9.92	9.11	9.73	16.48	37.29	42.26	45.60	45.20	25.67
20	18.17	20.97	19.60	9.71	9.24	9.60	17.06	37.42	42.43	46.05	45.30	25.20
21	18.16	20.98	19.31	9.86	9.42	9.62	17.28	37.59	42.56	46.37	41.89	24.76
22	18.38	20.25	19.10	9.90	9.54	9.65	17.63	37.71	42.71	46.67	30.12	24.49
23	20.28	18.67	19.00	9.72	9.43	9.68	18.05	37.83	42.93	46.88	28.36	23.88
24	21.23	18.22	18.28	9.49	9.36	9.68	18.33	37.94	43.22	46.84	27.70	23.18
25	21.60	18.08	17.40	9.27	9.32	9.67	18.49	38.13	43.39	46.59	27.48	22.71
26	21.60	18.30	16.37	9.36	9.34	9.61	18.91	38.39	43.57	46.38	27.48	22.45
27	21.55	18.66	15.57	9.46	9.29	9.55	19.08	38.53	43.74	46.34	27.51	22.32
28	21.59	19.00	14.85	9.48	9.27	9.69	19.16	38.39	43.84	46.33	27.56	22.06
29	21.52	19.20	14.39	9.39	9.33	10.04	19.39	38.69	43.88	46.40	27.65	---
30	21.46	19.37	13.93	9.18	---	10.15	19.59	39.00	44.02	46.45	34.78	---
31	21.37	---	13.48	9.11	---	10.32	---	39.19	---	46.37	41.46	---
WTR YR 2000		MEAN	24.41		HIGH	8.99		LOW	46.88			



## BRUNSWICK COUNTY--Continued

340743078202002. County number, BR-106; DENR Bear Pen Research Station well EE36k5.

LOCATION.--Lat 34°07'42.98", long 78°20'19.82", North American Datum of 1983, Hydrologic Unit 03040206, 9 mi north of Supply on Federal Road, near North Carolina Forest Service airstrip. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 654 ft, diameter 2.5 in.; cased to 644 ft, screened interval from 644 to October 1999 to September 2000. Periodic water level measurements to 654 ft.

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

DATUM.--Land-surface datum is 61.50 ft above sea level. Measuring point: Top of casing, 3.56 ft above land-surface datum.

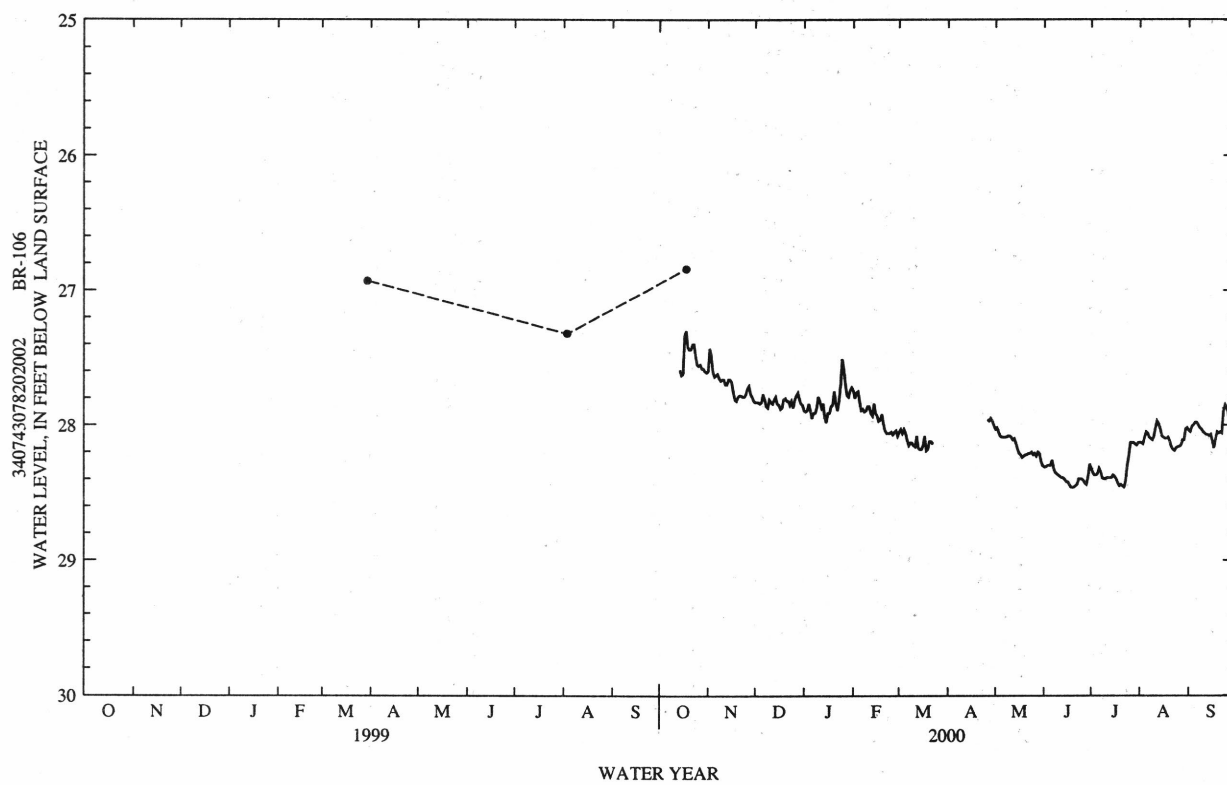
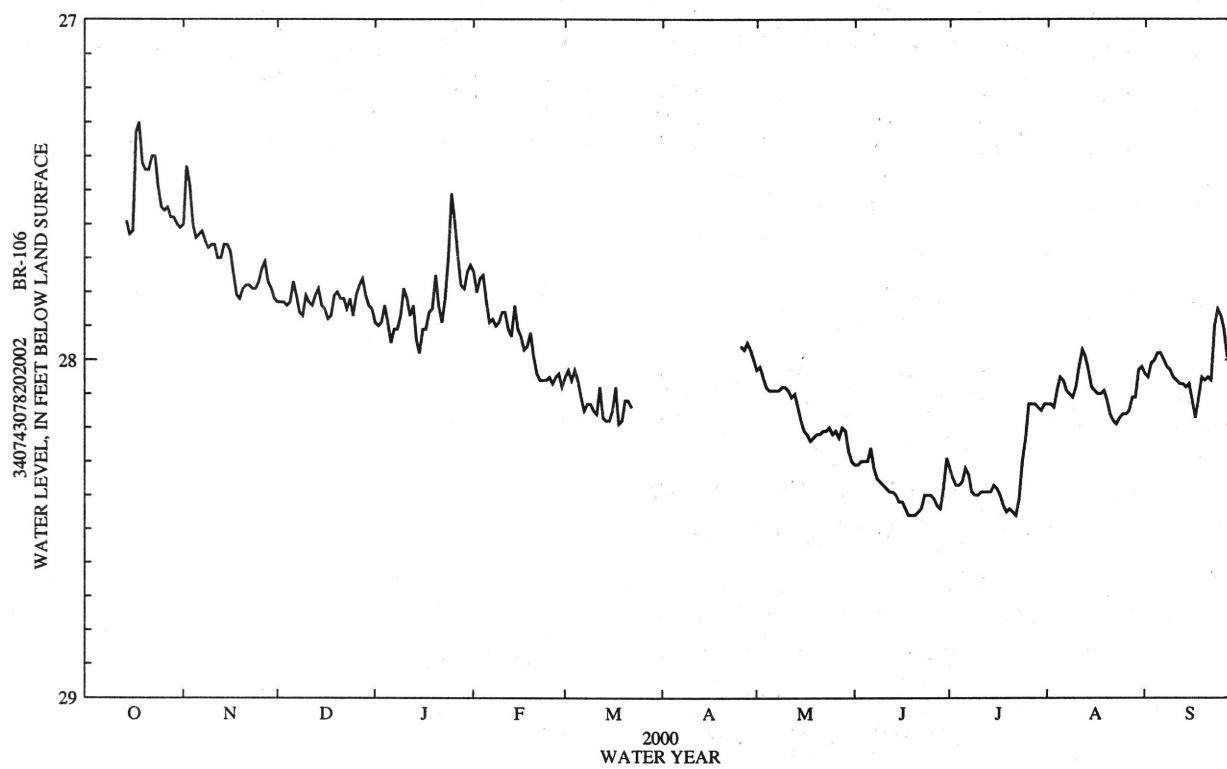
REMARKS.--Well is part of Brunswick County Ground-water study.

PERIOD OF RECORD.--Miscellaneous water-level measurements January 1974 to current year. Continuous record began October 1999.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.03 ft below land-surface datum, July 9, 1975; lowest water level recorded, 27.99 ft below land-surface datum, July 22, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	27.60	27.83	27.89	27.74	28.05	---	28.03	28.31	28.32	28.13	28.04
2	---	27.43	27.83	27.90	27.80	28.03	---	28.02	28.31	28.35	28.13	28.05
3	---	27.48	27.83	27.89	27.76	28.06	---	28.05	28.30	28.37	28.14	28.01
4	---	27.60	27.84	27.84	27.75	28.03	---	28.08	28.30	28.37	28.09	28.00
5	---	27.64	27.83	27.89	27.83	28.06	---	28.09	28.30	28.36	28.05	27.98
6	---	27.63	27.77	27.95	27.89	28.11	---	28.09	28.26	28.32	28.06	27.98
7	---	27.62	27.81	27.91	27.88	28.15	---	28.09	28.32	28.34	28.09	28.00
8	---	27.65	27.86	27.91	27.90	28.13	---	28.09	28.35	28.39	28.10	28.02
9	---	27.67	27.87	27.87	27.89	28.13	---	28.08	28.36	28.40	28.11	28.03
10	---	27.66	27.81	27.79	27.86	28.15	---	28.08	28.37	28.40	28.08	28.05
11	---	27.66	27.83	27.82	27.86	28.16	---	28.09	28.38	28.39	28.02	28.06
12	---	27.70	27.84	27.87	27.91	28.08	---	28.11	28.39	28.39	27.97	28.07
13	---	27.70	27.81	27.84	27.93	28.17	---	28.10	28.39	28.39	27.99	28.07
14	27.59	27.66	27.79	27.94	27.84	28.18	---	28.14	28.40	28.39	28.03	28.08
15	27.63	27.66	27.84	27.98	27.91	28.18	---	28.18	28.42	28.37	28.08	28.07
16	27.62	27.68	27.85	27.91	27.93	28.15	---	28.21	28.42	28.38	28.09	28.12
17	27.33	27.75	27.88	27.91	27.97	28.08	---	28.22	28.44	28.40	28.10	28.17
18	27.30	27.81	27.87	27.86	27.96	28.19	---	28.24	28.46	28.43	28.10	28.11
19	27.42	27.82	27.81	27.85	27.92	28.18	---	28.23	28.46	28.45	28.09	28.05
20	27.44	27.79	27.80	27.75	27.99	28.12	---	28.22	28.46	28.44	28.12	28.06
21	27.44	27.78	27.82	27.84	28.04	28.12	---	28.22	28.45	28.45	28.16	28.05
22	27.40	27.78	27.82	27.89	28.06	28.14	---	28.21	28.44	28.46	28.18	28.06
23	27.40	27.79	27.85	27.82	28.06	---	---	28.21	28.40	28.41	28.19	27.90
24	27.49	27.79	27.82	27.70	28.06	---	---	28.20	28.40	28.30	28.17	27.85
25	27.55	27.77	27.87	27.51	28.05	---	---	28.22	28.40	28.23	28.16	27.87
26	27.56	27.73	27.81	27.59	28.07	---	27.96	28.21	28.41	28.13	28.16	27.91
27	27.55	27.71	27.78	27.70	28.05	---	27.97	28.23	28.43	28.13	28.15	27.99
28	27.58	27.77	27.76	27.78	28.04	---	27.95	28.20	28.44	28.13	28.11	28.01
29	27.58	27.79	27.81	27.79	28.08	---	27.97	28.21	28.38	28.14	28.11	28.04
30	27.60	27.82	27.84	27.74	---	---	28.00	28.27	28.29	28.15	28.03	28.05
31	27.61	---	27.85	27.72	---	---	---	28.30	---	28.13	28.02	---
WTR YR 2000	MEAN 28.01		HIGH 27.30		LOW 28.46							



## BRUNSWICK COUNTY--Continued

340743078202006. County number, BR-107; DENR Bear Pen Research Station well EE36k6.

LOCATION.--Lat 34°07'42.98", long 78°20'19.82", North American Datum of 1983, Hydrologic Unit 03040206, 9 mi north of Supply on Federal Road, near North Carolina Forest Service airstrip. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Peedee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 110 ft, diameter 4 in.; cased to 48 ft, open interval from 48 to 110 ft.

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

DATUM.--Land-surface datum is 61.00 ft above sea level. Measuring point: Top of instrument shelf, 0.69 ft above land-surface datum.

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

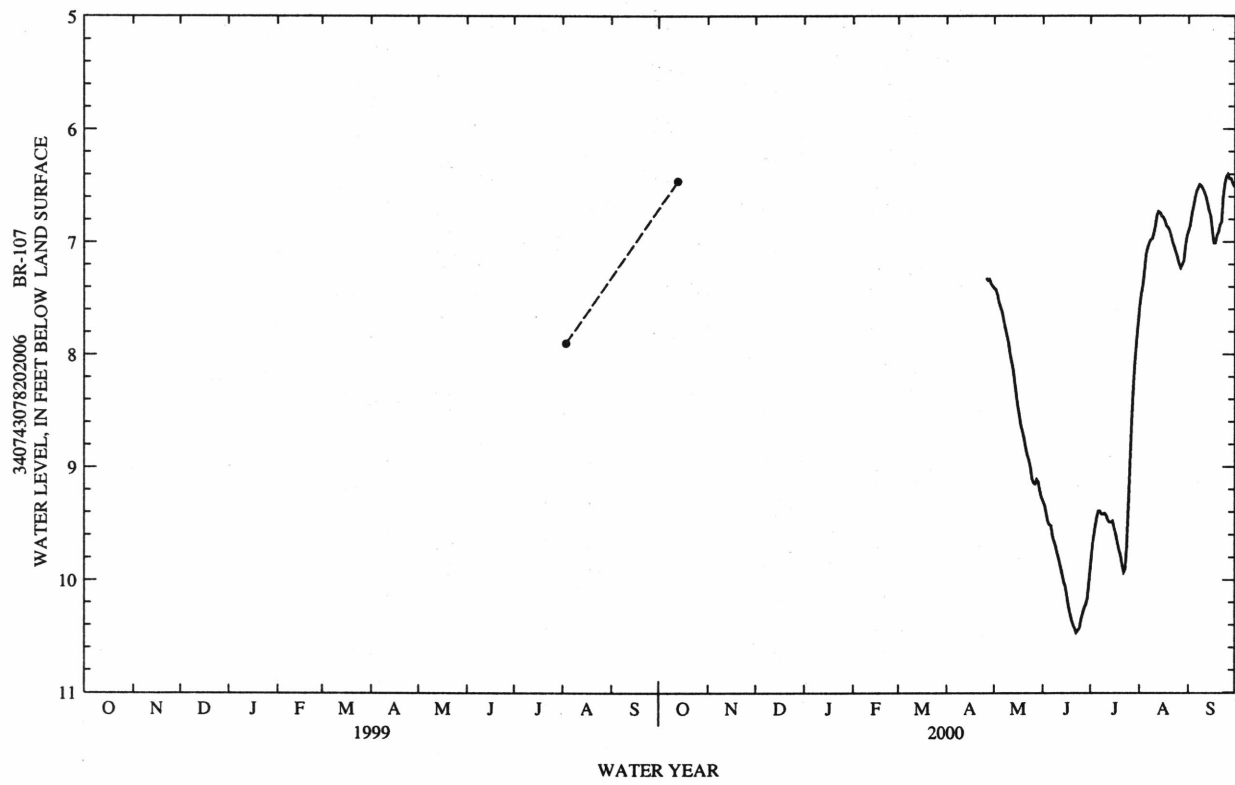
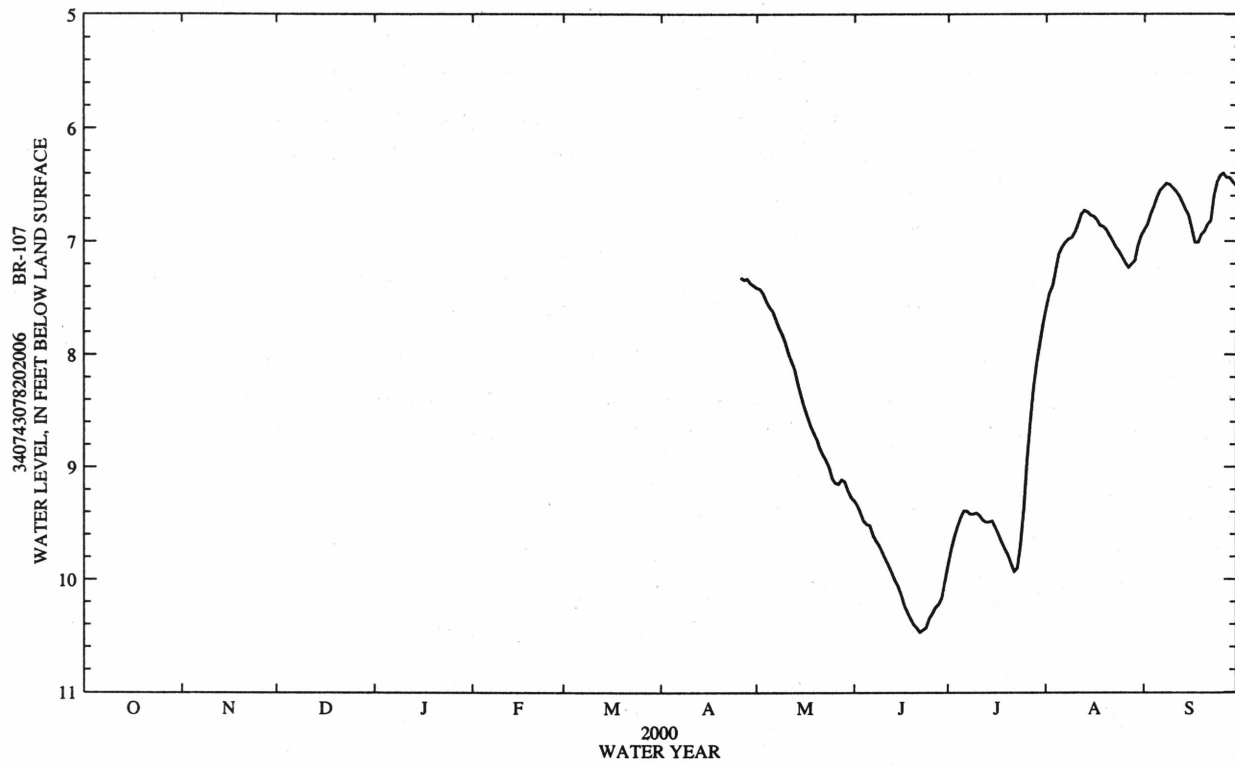
PERIOD OF RECORD.--Miscellaneous water-level measurements June 1978 to current year. Continuous record began April 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.37 ft below land-surface datum, Sept. 26, 2000; lowest water level recorded, 10.50 ft below land-surface datum, June 22, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD APRIL 2000 TO SEPTEMBER 2000

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	7.41	9.30	9.87	7.58	6.90
2	---	---	---	---	---	---	---	7.42	9.34	9.73	7.46	6.85
3	---	---	---	---	---	---	---	7.46	9.41	9.62	7.39	6.76
4	---	---	---	---	---	---	---	7.53	9.48	9.53	7.25	6.69
5	---	---	---	---	---	---	---	7.58	9.51	9.45	7.11	6.61
6	---	---	---	---	---	---	---	7.62	9.52	9.39	7.05	6.55
7	---	---	---	---	---	---	---	7.69	9.61	9.39	7.01	6.52
8	---	---	---	---	---	---	---	7.76	9.66	9.42	6.98	6.49
9	---	---	---	---	---	---	---	7.82	9.70	9.42	6.97	6.50
10	---	---	---	---	---	---	---	7.89	9.76	9.41	6.92	6.53
11	---	---	---	---	---	---	---	7.99	9.82	9.43	6.85	6.56
12	---	---	---	---	---	---	---	8.06	9.88	9.47	6.76	6.60
13	---	---	---	---	---	---	---	8.13	9.94	9.49	6.73	6.66
14	---	---	---	---	---	---	---	8.25	10.01	9.49	6.74	6.72
15	---	---	---	---	---	---	---	8.36	10.06	9.48	6.77	6.77
16	---	---	---	---	---	---	---	8.46	10.14	9.54	6.78	6.89
17	---	---	---	---	---	---	---	8.54	10.23	9.60	6.81	7.01
18	---	---	---	---	---	---	---	8.63	10.29	9.67	6.86	7.01
19	---	---	---	---	---	---	---	8.69	10.35	9.73	6.87	6.94
20	---	---	---	---	---	---	---	8.75	10.40	9.78	6.90	6.91
21	---	---	---	---	---	---	---	8.83	10.43	9.86	6.95	6.85
22	---	---	---	---	---	---	---	8.89	10.47	9.93	7.00	6.82
23	---	---	---	---	---	---	---	8.94	10.45	9.90	7.05	6.60
24	---	---	---	---	---	---	---	9.00	10.43	9.69	7.09	6.48
25	---	---	---	---	---	---	---	9.10	10.35	9.36	7.14	6.42
26	---	---	---	---	---	---	7.32	9.14	10.30	8.94	7.19	6.40
27	---	---	---	---	---	---	7.34	9.15	10.25	8.59	7.23	6.44
28	---	---	---	---	---	---	7.33	9.11	10.22	8.30	7.20	6.44
29	---	---	---	---	---	---	7.37	9.13	10.16	8.08	7.17	6.48
30	---	---	---	---	---	---	7.39	9.21	10.01	7.90	7.04	6.51
31	---	---	---	---	---	---	---	9.27	---	7.73	6.95	---
WTR YR 2000	MEAN 8.25		HIGH 6.40		LOW 10.47							





335631078003604. County number, BR-116; DENR Calabash Research Station well HH39j3.

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

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

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

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

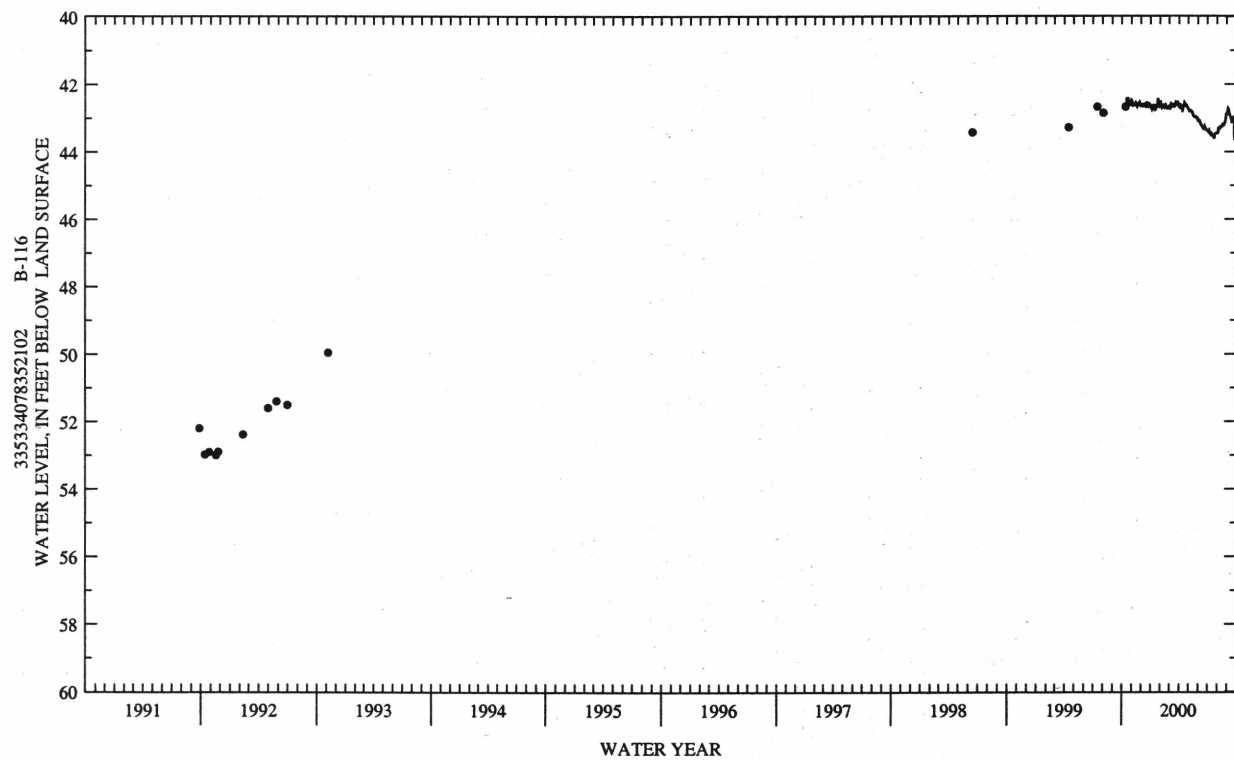
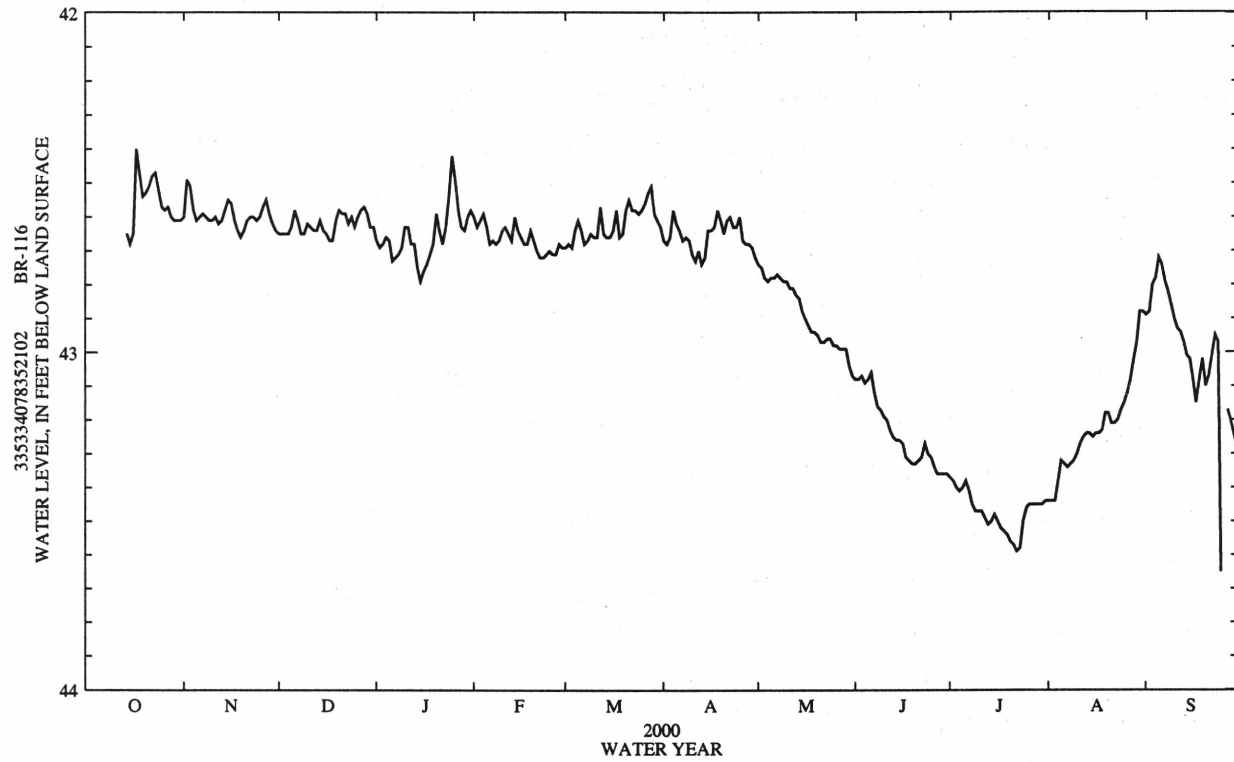
PERIOD OF RECORD.--Miscellaneous water-level measurements May 1973 to current year. Continuous record began October 1999.

**EXTREMES FOR PERIOD OF RECORD.**--Highest water level measured, 13.79 ft below land-surface datum, May 7, 1973; lowest water level recorded, 43.59 ft below land-surface datum. July 22, 23, 2000.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

### DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	---	42.60	42.65	42.67	42.60	42.69	42.67	42.74	43.08	43.37	43.44	42.89	
2	---	42.49	42.65	42.69	42.63	42.68	42.68	42.75	43.08	43.38	43.44	42.88	
3	---	42.51	42.65	42.68	42.61	42.69	42.66	42.78	43.07	43.40	43.44	42.80	
4	---	42.58	42.65	42.66	42.59	42.64	42.58	42.79	43.09	43.41	43.38	42.78	
5	---	42.61	42.63	42.67	42.63	42.61	42.62	42.78	43.08	43.40	43.32	42.72	
6	---	42.60	42.58	42.73	42.68	42.64	42.64	42.78	43.06	43.38	43.33	42.74	
7	---	42.59	42.61	42.72	42.67	42.68	42.67	42.77	43.12	43.41	43.34	42.79	
8	---	42.60	42.65	42.71	42.68	42.67	42.66	42.78	43.16	43.45	43.33	42.82	
9	---	42.61	42.65	42.69	42.67	42.65	42.67	42.79	43.17	43.47	43.32	42.86	
10	---	42.61	42.62	42.63	42.64	42.66	42.71	42.79	43.19	43.47	43.30	42.90	
11	---	42.60	42.63	42.63	42.63	42.66	42.73	42.81	43.20	43.47	43.27	42.93	
12	---	42.62	42.64	42.68	42.65	42.57	42.70	42.81	43.23	43.49	43.25	42.94	
13	---	42.61	42.64	42.68	42.67	42.65	42.74	42.83	43.25	43.51	43.24	42.97	
14	42.65	42.58	42.61	42.75	42.60	42.66	42.72	42.84	43.26	43.50	43.24	43.01	
15	42.68	42.55	42.64	42.79	42.64	42.66	42.64	42.88	43.26	43.48	43.25	43.02	
16	42.65	42.56	42.65	42.76	42.66	42.64	42.64	42.90	43.27	43.50	43.24	43.08	
17	42.40	42.61	42.67	42.74	42.68	42.58	42.63	42.92	43.31	43.52	43.24	43.15	
18	42.47	42.64	42.67	42.71	42.68	42.66	42.58	42.94	43.32	43.53	43.23	43.08	
19	42.54	42.66	42.61	42.68	42.64	42.65	42.61	42.94	43.33	43.54	43.18	43.02	
20	42.53	42.64	42.58	42.59	42.67	42.58	42.65	42.95	43.33	43.56	43.18	43.10	
21	42.51	42.61	42.59	42.64	42.70	42.55	42.61	42.97	43.32	43.57	43.21	43.07	
22	42.48	42.60	42.59	42.68	42.72	42.58	42.60	42.97	43.31	43.59	43.21	43.01	
23	42.47	42.60	42.62	42.63	42.72	42.58	42.63	42.96	43.27	43.58	43.20	42.95	
24	42.52	42.61	42.60	42.54	42.71	42.59	42.63	42.96	43.30	43.50	43.17	42.97	
25	42.57	42.60	42.63	42.42	42.70	42.58	42.60	42.98	43.31	43.46	43.15	43.65	
26	42.58	42.57	42.60	42.49	42.71	42.56	42.67	42.98	43.34	43.45	43.12	---	
27	42.57	42.55	42.58	42.58	42.71	42.53	42.68	42.99	43.36	43.45	43.08	43.17	
28	42.60	42.59	42.57	42.63	42.68	42.51	42.68	42.99	43.36	43.45	43.02	43.20	
29	42.61	42.62	42.59	42.64	42.69	42.59	42.69	42.99	43.36	43.45	42.97	43.24	
30	42.61	42.64	42.63	42.60	---	42.61	42.72	43.04	43.36	43.45	42.88	43.28	
31	42.61	---	42.63	42.58	---	42.63	---	43.07	---	43.44	42.88	---	
WTR YR 2000		MEAN	42.86	HIGH	42.40	LOW	43.65						



## BRUNSWICK COUNTY--Continued

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

LOCATION.--Lat 34°04'17.37", long 78°08'41.46", North American Datum of 1983, Hydrologic Unit 03040207, in Bolivia at town hall on U.S. Highway 17. Owner: DENR (North Carolina Department of Environment and Natural Resources).

**AQUIFER.**--Peedee aquifer of Late Cretaceous age.

**WELL CHARACTERISTICS.**--Drilled observation well, depth 140 ft, diameter 4 in., cased to 92 ft, open hole to 140 ft.

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

DATUM.--Land-surface datum is 40.97 ft above sea level. Measuring point: Top of casing 0.89 ft above land-surface datum.

REMARKS.-- Well is part of Brunswick County Groundwater project.

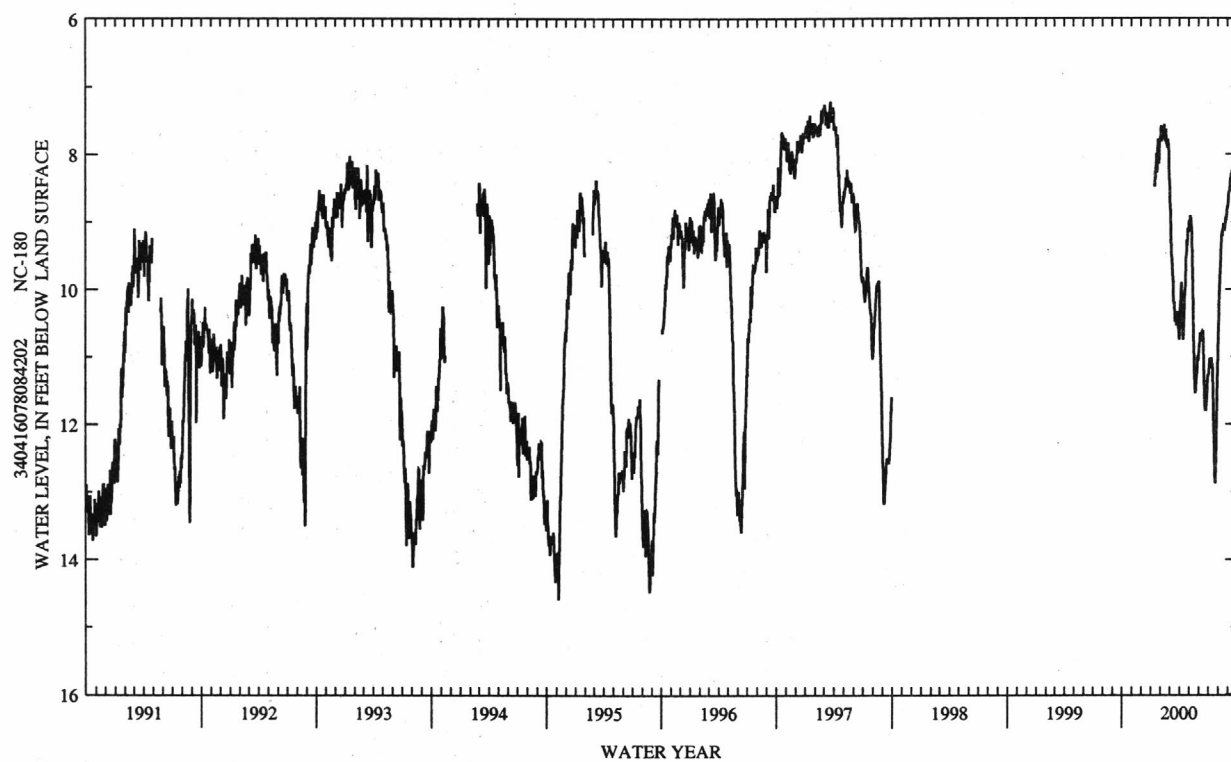
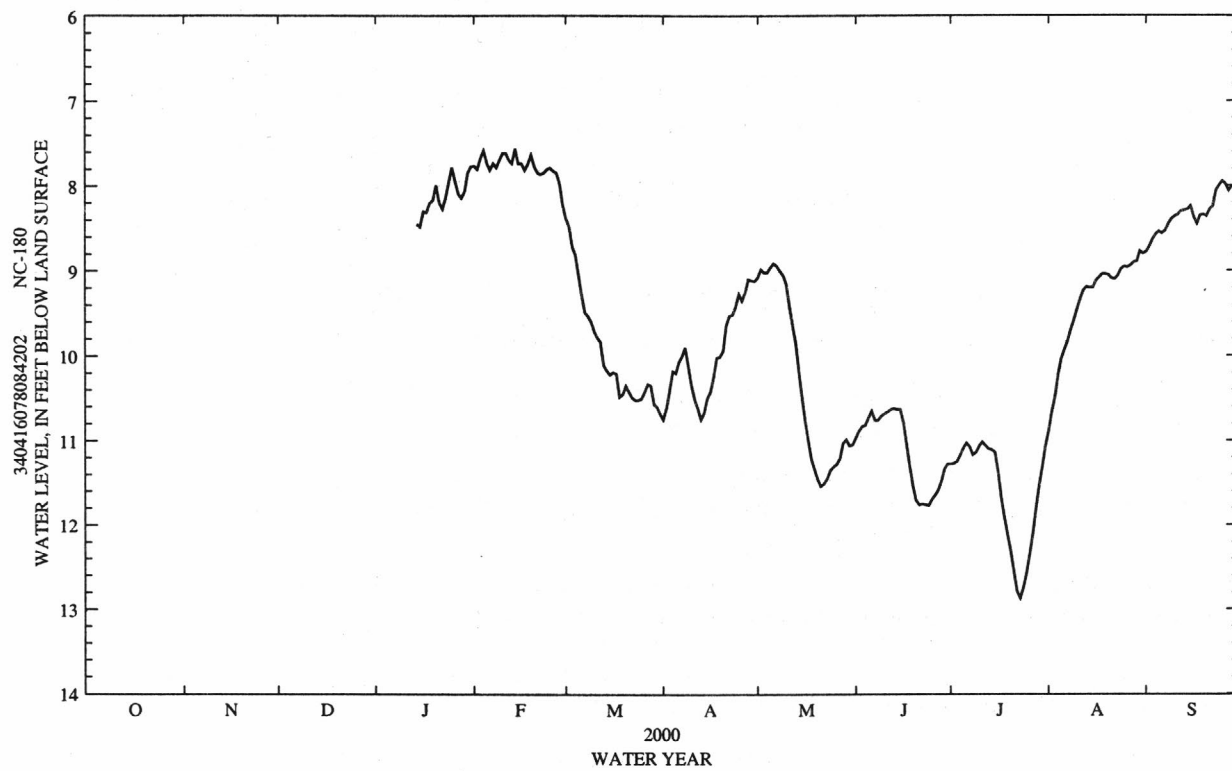
PERIOD OF RECORD.--Miscellaneous water-level measurements April 1971 to August 1999. Continuous record May 1987 to September 1997 and January 2000 to current year. Records from April 1971 to March 1987 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.05 ft below land-surface datum, May 22, 1972; lowest water level recorded, 15.07 ft below land-surface datum. Sept. 4, 1995.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD JANUARY 2000 TO SEPTEMBER 2000

### DAILY MEAN VALUES

[illegible]



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## 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", North American Datum of 1983, 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.--Castle Hayne aquifer of Oligocene and Eocene 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 site.

DATUM.--Land-surface datum is 28.06 ft above sea level (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.

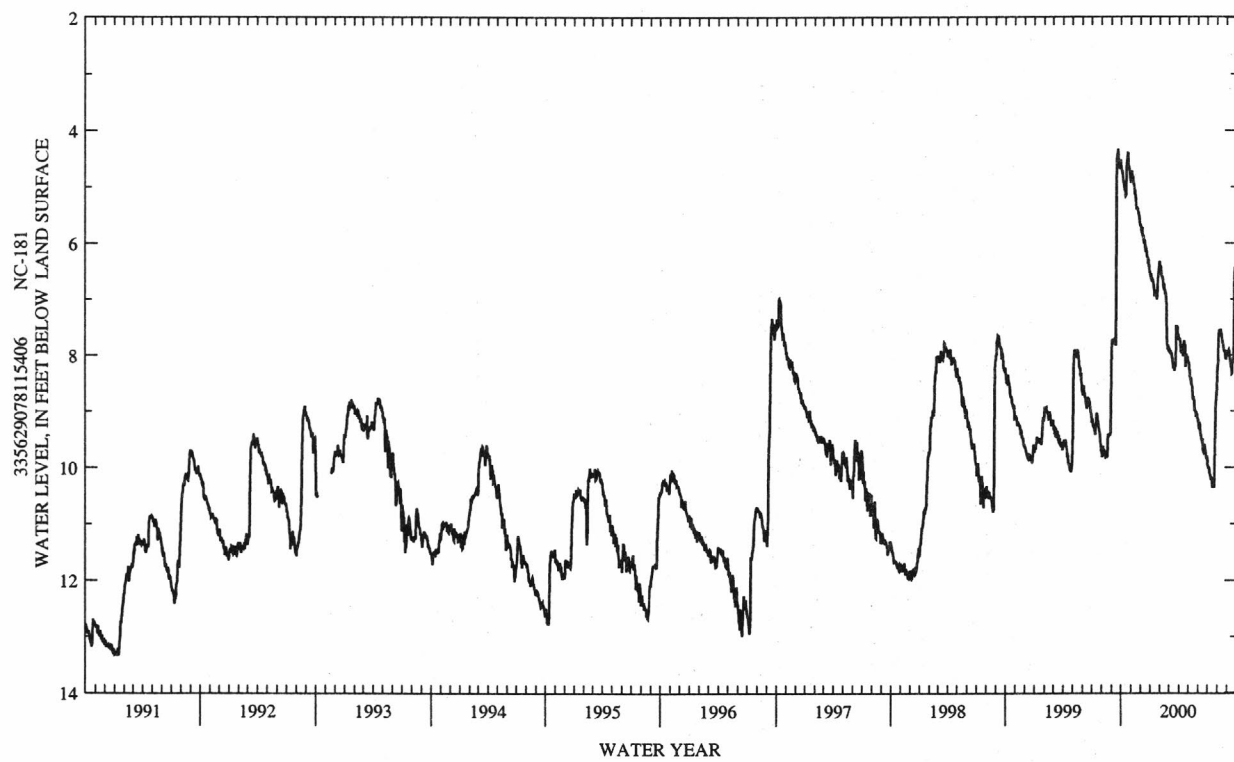
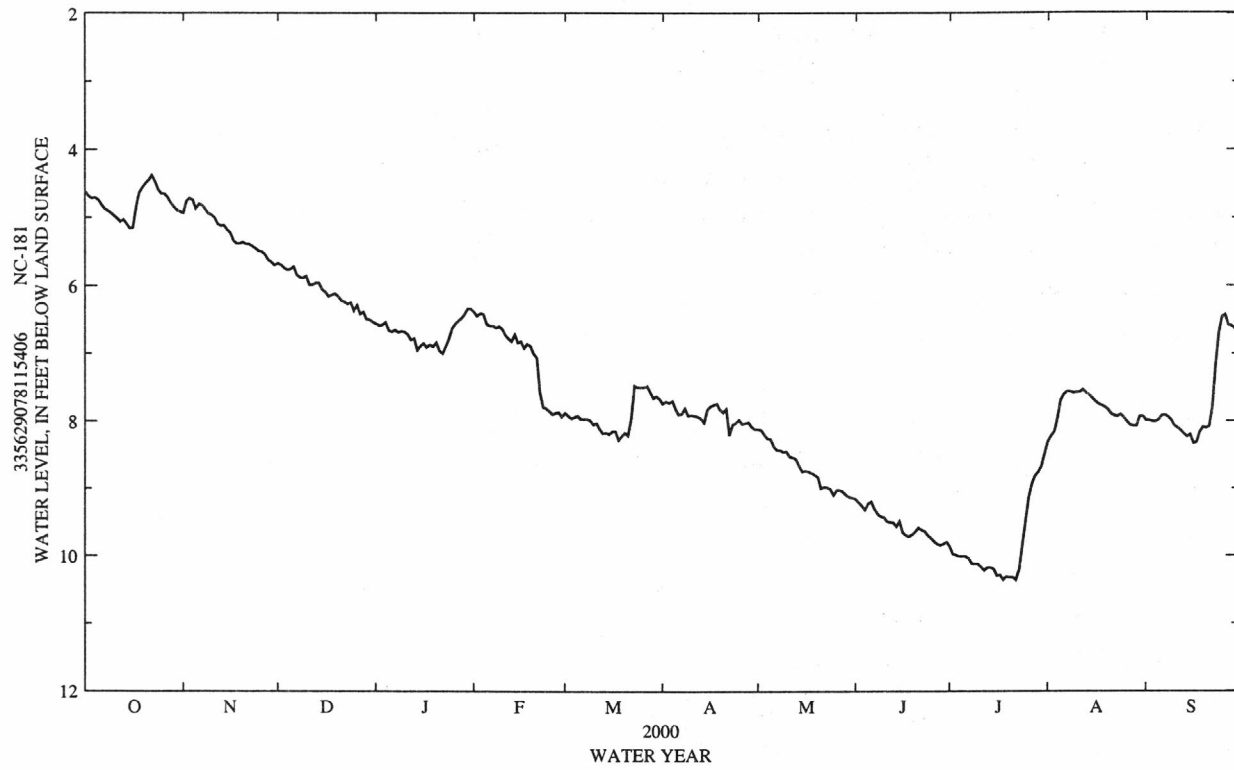
PERIOD OF RECORD.--March 1987 to current year. Records from July 1974 to March 1978 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.24 ft below land-surface datum, Oct. 22, 1999; lowest water level recorded, 13.53 ft below land-surface datum, Aug. 1, 1990.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.63	4.93	5.67	6.56	6.39	7.88	7.74	8.12	9.16	9.87	8.30	7.99
2	4.69	4.76	5.69	6.59	6.45	7.92	7.71	8.13	9.21	9.98	8.22	7.99
3	4.72	4.72	5.74	6.58	6.41	7.96	7.73	8.20	9.26	9.99	8.15	8.01
4	4.71	4.74	5.77	6.54	6.42	7.94	7.70	8.26	9.32	10.01	7.95	8.01
5	4.74	4.87	5.76	6.66	6.57	7.92	7.82	8.27	9.23	10.01	7.69	7.98
6	4.81	4.80	5.72	6.68	6.59	7.97	7.90	8.38	9.20	10.01	7.60	7.92
7	4.87	4.82	5.84	6.65	6.59	7.97	7.89	8.43	9.31	10.04	7.56	7.91
8	4.90	4.88	5.88	6.69	6.62	7.97	7.81	8.43	9.38	10.12	7.56	7.94
9	4.93	4.94	5.89	6.67	6.60	7.99	7.92	8.46	9.42	10.13	7.58	7.99
10	4.97	4.96	5.86	6.68	6.64	8.05	7.91	8.45	9.43	10.13	7.57	8.07
11	5.01	5.00	5.99	6.72	6.73	8.03	7.92	8.53	9.49	10.17	7.57	8.10
12	5.06	5.09	5.99	6.80	6.78	8.11	7.93	8.54	9.51	10.22	7.53	8.14
13	5.03	5.12	5.96	6.78	6.82	8.18	7.96	8.57	9.51	10.18	7.58	8.19
14	5.09	5.11	5.96	6.95	6.72	8.17	8.02	8.67	9.57	10.18	7.61	8.23
15	5.16	5.18	6.06	6.89	6.84	8.19	7.83	8.75	9.49	10.20	7.66	8.20
16	5.15	5.22	6.09	6.85	6.82	8.15	7.78	8.74	9.66	10.30	7.71	8.33
17	4.85	5.34	6.16	6.91	6.92	8.15	7.76	8.75	9.70	10.29	7.75	8.32
18	4.64	5.38	6.14	6.87	6.86	8.28	7.74	8.77	9.72	10.36	7.77	8.16
19	4.56	5.38	6.12	6.90	6.89	8.22	7.83	8.80	9.69	10.31	7.79	8.09
20	4.50	5.36	6.16	6.84	7.00	8.17	7.87	8.83	9.65	10.32	7.83	8.10
21	4.45	5.39	6.22	6.96	7.06	8.21	7.82	9.00	9.59	10.32	7.89	8.08
22	4.38	5.39	6.24	7.00	7.57	7.94	8.21	8.98	9.62	10.36	7.92	7.80
23	4.47	5.42	6.27	6.90	7.79	7.47	8.05	8.99	9.64	10.21	7.93	7.16
24	4.59	5.45	6.25	6.79	7.81	7.50	8.03	9.01	9.70	9.85	7.90	6.70
25	4.65	5.49	6.37	6.63	7.85	7.50	7.98	9.10	9.74	9.48	7.95	6.46
26	4.65	5.50	6.29	6.57	7.90	7.50	8.04	9.03	9.79	9.13	8.01	6.43
27	4.70	5.54	6.42	6.52	7.88	7.48	8.03	9.03	9.83	8.93	8.06	6.58
28	4.78	5.62	6.39	6.48	7.87	7.57	8.02	9.05	9.85	8.81	8.07	6.59
29	4.84	5.65	6.50	6.42	7.93	7.66	8.08	9.10	9.83	8.76	8.07	6.63
30	4.89	5.70	6.50	6.34	---	7.63	8.12	9.13	9.80	8.67	7.93	6.65
31	4.91	---	6.54	6.34	---	7.67	---	9.14	---	8.48	7.93	---
WTR YR 2000	MEAN 7.44		HIGH 4.38		LOW 10.36							





## BRUNSWICK COUNTY--Continued

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

LOCATION.--Lat 33°56'31.42", long 78°00'35.08", North American Datum of 1983, Hydrologic Unit 03030005, north of Southport 0.45 mi northeast of Secondary Road 1526 on Secondary Road 1527. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 200 ft, diameter 6 in., cased to 93.5 ft, open hole from 93.5 to 200 ft; measured depth 199 ft, September 1997.

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

DATUM.--Land-surface datum is 28.08 ft above sea level. Measuring point: Top of casing, 1.17 ft above land-surface datum.

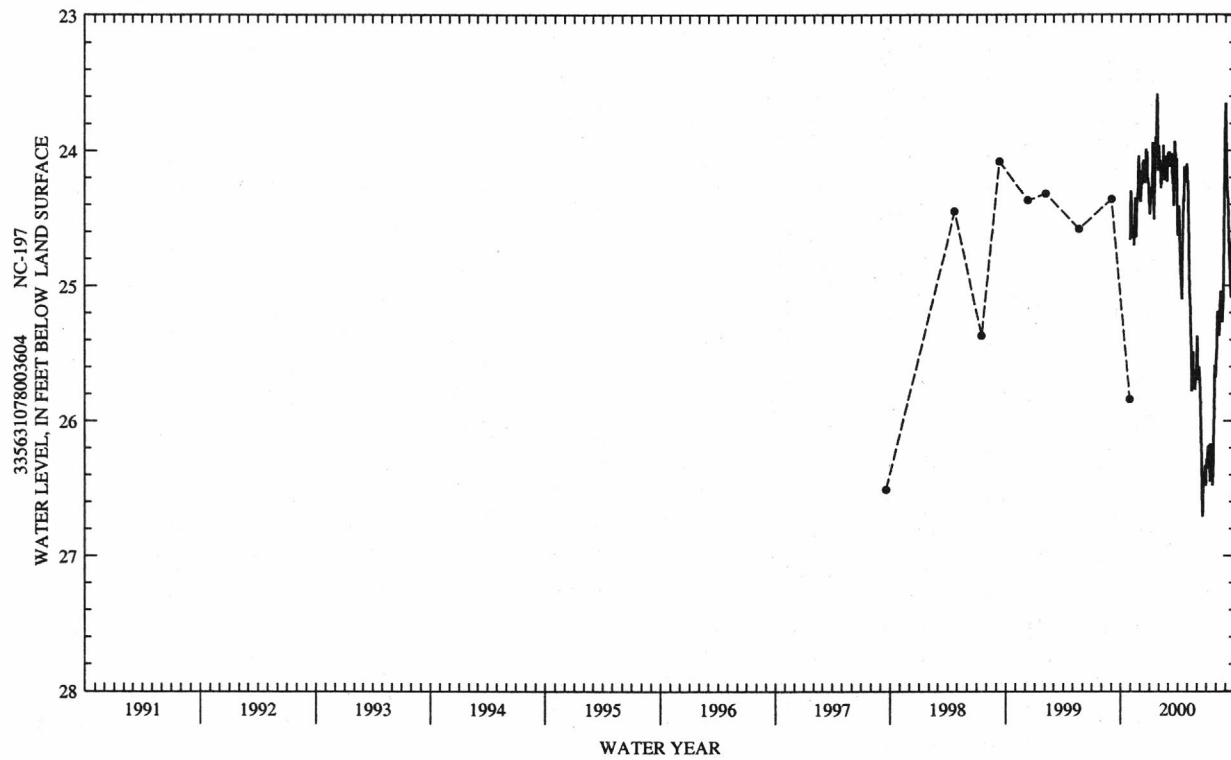
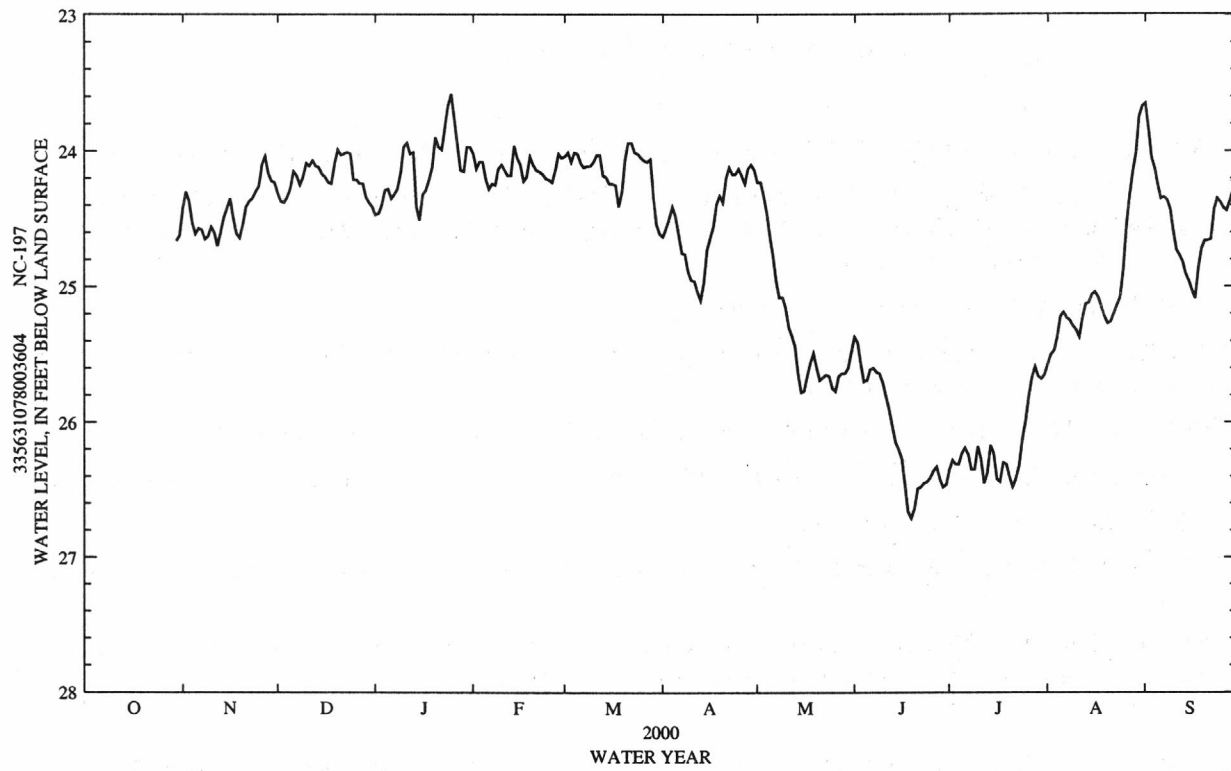
REMARKS.-- Well is part of areal-effects network.

PERIOD OF RECORD.--Miscellaneous water-level measurements January 1970 to current year. Continuous record began October 1999.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.28 ft below land-surface datum, Mar. 8, 1988; lowest water level measured, 31.03 ft below land-surface datum, Jan. 20, 1970.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	24.42	24.31	24.47	24.02	24.04	24.63	24.23	25.37	26.35	25.57	23.65
2	---	24.30	24.37	24.46	24.13	24.01	24.57	24.23	25.41	26.28	25.50	23.84
3	---	24.37	24.38	24.40	24.08	24.08	24.50	24.33	25.57	26.31	25.47	24.05
4	---	24.53	24.34	24.29	24.08	24.01	24.41	24.46	25.70	26.31	25.37	24.13
5	---	24.61	24.28	24.28	24.21	24.02	24.48	24.63	25.69	26.23	25.22	24.25
6	---	24.57	24.15	24.35	24.28	24.09	24.61	24.78	25.61	26.19	25.19	24.35
7	---	24.58	24.18	24.32	24.24	24.12	24.75	24.96	25.60	26.24	25.23	24.34
8	---	24.65	24.25	24.28	24.25	24.11	24.76	25.08	25.63	26.35	25.25	24.36
9	---	24.63	24.19	24.16	24.13	24.11	24.89	25.08	25.64	26.35	25.29	24.43
10	---	24.56	24.09	23.97	24.10	24.08	24.95	25.15	25.71	26.18	25.32	24.59
11	---	24.60	24.11	23.94	24.14	24.03	24.96	25.30	25.81	26.27	25.37	24.73
12	---	24.70	24.07	24.02	24.18	24.03	25.04	25.36	25.91	26.45	25.23	24.77
13	---	24.60	24.11	24.01	24.18	24.18	25.10	25.44	26.03	26.38	25.13	24.82
14	---	24.49	24.12	24.41	23.96	24.19	24.97	25.64	26.15	26.17	25.12	24.91
15	---	24.42	24.17	24.51	24.05	24.24	24.73	25.78	26.20	26.23	25.06	24.96
16	---	24.35	24.19	24.32	24.10	24.24	24.64	25.77	26.27	26.42	25.04	25.03
17	---	24.50	24.23	24.29	24.22	24.25	24.56	25.66	26.46	26.44	25.08	25.09
18	---	24.61	24.24	24.21	24.19	24.41	24.39	25.56	26.66	26.30	25.15	24.86
19	---	24.64	24.09	24.12	24.04	24.30	24.33	25.49	26.71	26.31	25.22	24.72
20	---	24.54	23.99	23.90	24.10	24.06	24.38	25.60	26.64	26.40	25.27	24.66
21	---	24.41	24.03	23.97	24.14	23.94	24.20	25.69	26.49	26.48	25.26	24.66
22	---	24.37	24.02	23.99	24.15	23.94	24.12	25.67	26.48	26.42	25.20	24.65
23	---	24.35	24.01	23.83	24.17	24.01	24.17	25.65	26.45	26.32	25.14	24.43
24	---	24.30	24.02	23.67	24.20	24.02	24.17	25.66	26.44	26.13	25.08	24.35
25	---	24.26	24.21	23.58	24.21	24.05	24.13	25.75	26.41	25.99	24.88	24.38
26	---	24.10	24.21	23.76	24.23	24.07	24.18	25.77	26.36	25.81	24.55	24.42
27	---	24.04	24.24	23.96	24.14	24.08	24.24	25.66	26.33	25.67	24.33	24.44
28	---	24.16	24.24	24.14	24.02	24.06	24.13	25.64	26.42	25.59	24.15	24.37
29	---	24.22	24.34	24.15	24.05	24.35	24.10	25.64	26.48	25.66	24.02	24.29
30	24.66	24.23	24.38	23.97	---	24.54	24.14	25.60	26.46	25.68	23.75	24.15
31	24.62	---	24.41	23.97	---	24.61	---	25.48	---	25.65	23.67	---
WTR YR 2000	MEAN 24.79		HIGH 23.58		LOW 26.71							



## BRUNSWICK COUNTY--Continued

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

LOCATION.--Lat 33°56'31.42", long 78°00'35.08", North American Datum of 1983, Hydrologic Unit 03030005, north of Southport 0.45 miles northeast of Secondary Road 1526 on Secondary Road 1527. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 74 ft, diameter 4 in., cased to 64 ft, screened from 64 to 74 ft; measured depth 72.0 ft, September 1997.

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

DATUM.--Land-surface datum is 28.26 ft above sea level. Measuring point: Top of casing, 2.20 ft above land-surface datum, revised from 0.00, Oct. 29, 1999.

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

PERIOD OF RECORD.--Miscellaneous water-level measurements January 1970 to current year. Continuous record began November 1999.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 20.68 ft below land-surface datum, Nov. 11 1999; lowest water level measured, 30.30 ft below land-surface datum, Aug. 26, 1970.

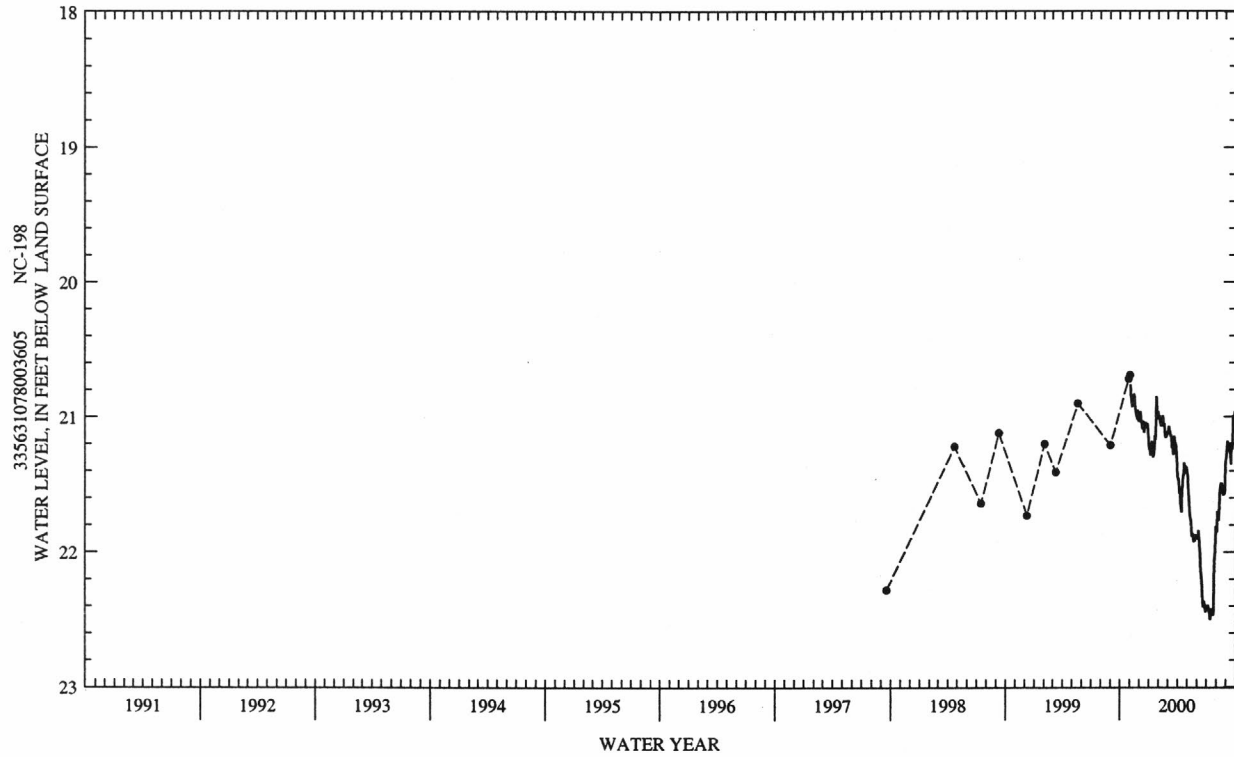
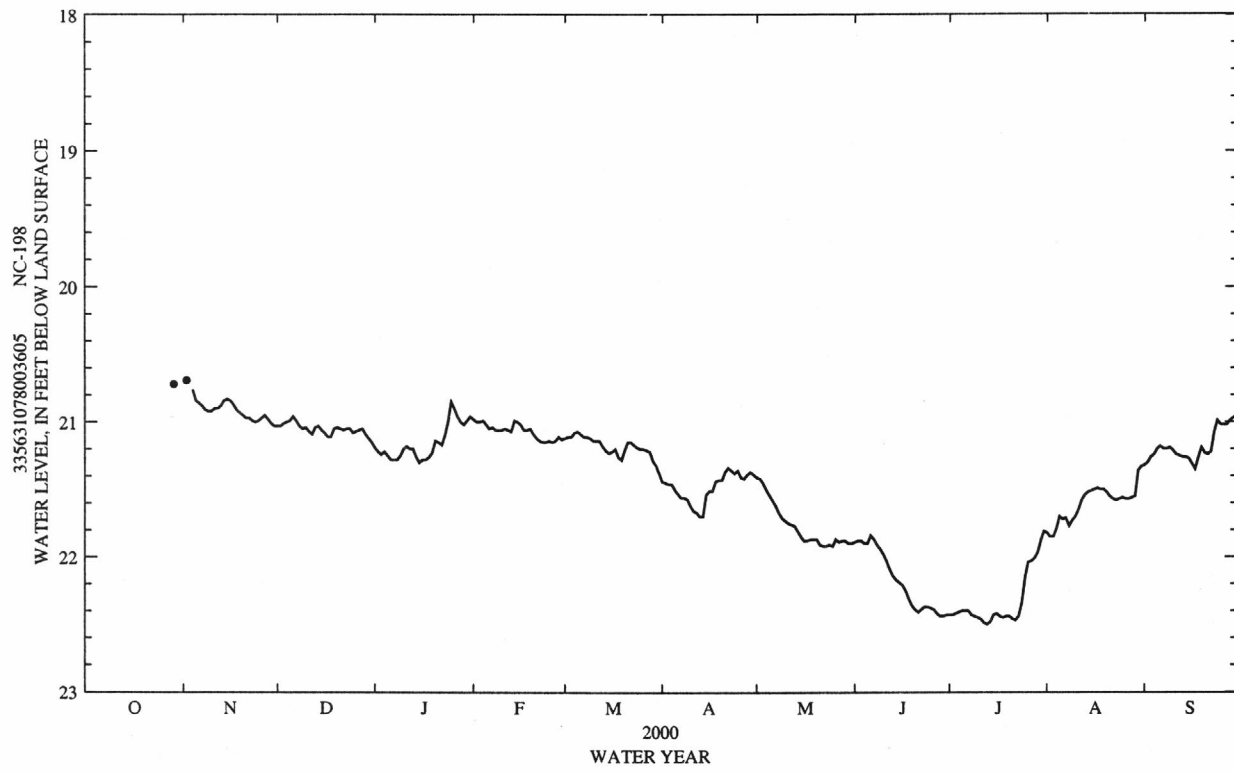
WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	20.72	NOV 2	20.69

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD NOVEMBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	20.84	20.99	21.25	21.02	21.07	21.50	21.54	21.90	22.40	21.70	21.20
10	---	20.92	21.04	21.20	21.06	21.14	21.62	21.73	21.98	22.45	21.70	21.21
15	---	20.83	21.06	21.30	21.00	21.23	21.54	21.85	22.19	22.43	21.51	21.27
20	---	20.95	21.04	21.14	21.09	21.21	21.43	21.87	22.39	22.44	21.52	21.23
25	---	20.99	21.08	20.85	21.14	21.20	21.36	21.92	22.38	22.15	21.56	21.02
EOM---	21.03	21.15	20.96	21.13	21.38	21.39	21.90	22.43	21.81	21.33	20.96	
WTR YR 2000		MEAN 21.45		HIGH 20.76	NOV 4		LOW 22.50	JUL 13				



## BRUNSWICK COUNTY--Continued

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

LOCATION.--Lat 33°56'31.42", long 78°00'35.08", North American Datum of 1983, Hydrologic Unit 03030005, north of Southport, 0.45 mi northeast of Secondary Road 1526 on Secondary Road 1527. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 23 ft, diameter 4 in., cased to 11 ft, screened from 11 to 21 ft; measured depth 20.8 ft, September 1997.

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

DATUM.--Land-surface datum is 28.00 ft above sea level. Measuring point: Top of instrument shelf, 1.27 ft above land-surface datum; revised from 0.00 ft above land-surface datum, Oct. 16, 1997.

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

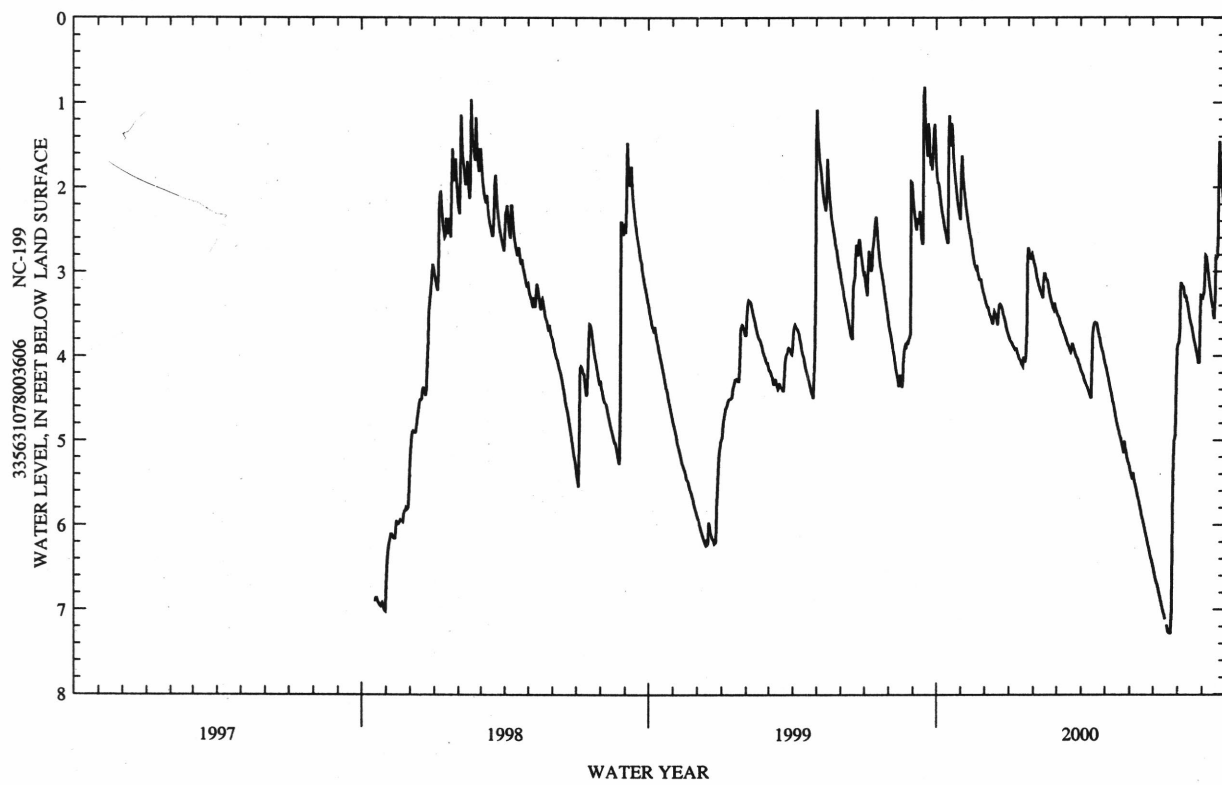
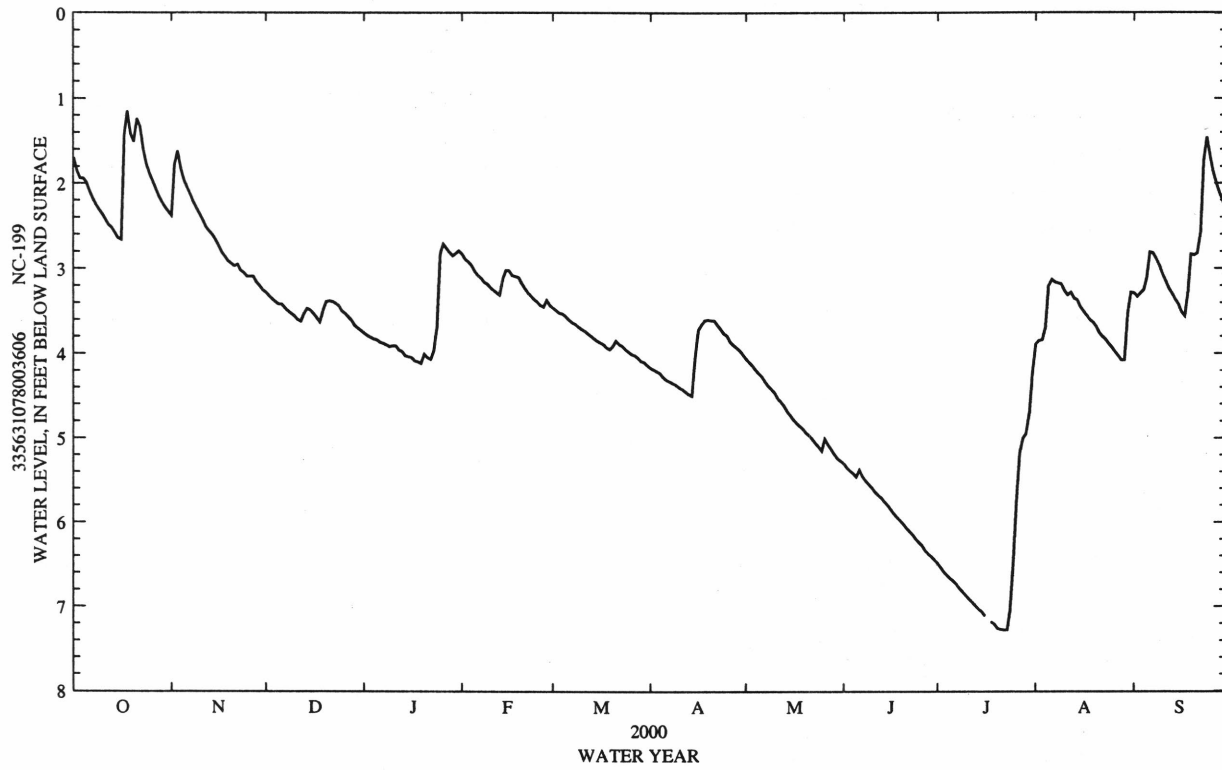
PERIOD OF RECORD.--January 1970 to current year. Miscellaneous water-level measurements January 1970 to March 1989. Continuous record began October 1997.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.13 ft below land-surface datum, Sept. 16, 1999; lowest water level recorded, 7.29 ft below land-surface datum, July 22, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.70	2.38	3.28	3.76	2.83	3.46	4.17	4.06	5.30	6.49	3.89	3.29
2	1.85	1.78	3.32	3.79	2.89	3.49	4.19	4.10	5.35	6.54	3.85	3.33
3	1.94	1.62	3.36	3.81	2.92	3.52	4.21	4.14	5.39	6.59	3.84	3.29
4	1.94	1.83	3.39	3.83	2.96	3.53	4.23	4.19	5.42	6.63	3.69	3.25
5	1.99	1.96	3.42	3.84	3.03	3.56	4.28	4.23	5.46	6.67	3.21	3.11
6	2.09	2.05	3.42	3.87	3.08	3.60	4.31	4.27	5.38	6.70	3.13	2.81
7	2.18	2.13	3.46	3.88	3.11	3.63	4.33	4.33	5.46	6.74	3.16	2.82
8	2.25	2.22	3.50	3.90	3.16	3.65	4.35	4.38	5.51	6.79	3.17	2.89
9	2.31	2.29	3.53	3.92	3.18	3.68	4.37	4.42	5.55	6.83	3.18	2.97
10	2.36	2.36	3.56	3.91	3.22	3.71	4.40	4.46	5.59	6.87	3.26	3.07
11	2.42	2.43	3.60	3.91	3.25	3.73	4.42	4.53	5.64	6.91	3.31	3.15
12	2.49	2.51	3.62	3.96	3.28	3.76	4.45	4.57	5.68	6.95	3.28	3.23
13	2.52	2.56	3.53	3.98	3.31	3.79	4.48	4.62	5.71	6.99	3.35	3.30
14	2.58	2.60	3.47	4.03	3.12	3.82	4.50	4.68	5.76	7.03	3.37	3.36
15	2.64	2.66	3.49	4.04	3.02	3.85	4.05	4.73	5.80	7.06	3.45	3.42
16	2.66	2.73	3.53	4.05	3.02	3.87	3.72	4.78	5.85	7.11	3.50	3.51
17	1.44	2.81	3.58	4.09	3.08	3.89	3.66	4.82	5.90	---	3.55	3.56
18	1.15	2.86	3.63	4.10	3.09	3.93	3.61	4.86	5.94	7.18	3.60	3.27
19	1.42	2.91	3.49	4.12	3.10	3.95	3.60	4.89	5.98	7.21	3.63	2.83
20	1.51	2.94	3.39	4.01	3.17	3.91	3.61	4.94	6.02	7.26	3.68	2.84
21	1.24	2.97	3.38	4.05	3.23	3.85	3.61	4.97	6.07	7.27	3.75	2.82
22	1.33	2.95	3.39	4.07	3.28	3.89	3.66	5.01	6.11	7.28	3.80	2.58
23	1.60	3.02	3.41	3.97	3.32	3.91	3.71	5.06	6.15	7.28	3.83	1.73
24	1.77	3.05	3.44	3.69	3.36	3.95	3.76	5.10	6.20	7.04	3.88	1.46
25	1.88	3.09	3.50	2.83	3.39	3.98	3.79	5.15	6.24	6.47	3.93	1.68
26	1.97	3.09	3.53	2.71	3.43	4.01	3.86	5.01	6.28	5.73	3.98	1.86
27	2.06	3.09	3.57	2.76	3.45	4.02	3.90	5.08	6.34	5.17	4.03	2.01
28	2.15	3.16	3.61	2.81	3.37	4.05	3.93	5.13	6.38	5.00	4.08	2.11
29	2.22	3.20	3.67	2.85	3.43	4.09	3.96	5.19	6.41	4.95	4.08	2.21
30	2.28	3.25	3.70	2.82	---	4.10	4.01	5.24	6.45	4.69	3.52	2.29
31	2.33	---	3.73	2.79	---	4.14	---	5.27	---	4.22	3.28	---
WTR YR 2000	MEAN 3.86		HIGH 1.15		LOW 7.28							



## CARTERET COUNTY

344323076451301. Local number, NC-139; DENR Camp Glenn Research Station well X17j5; County name, CT-153.

LOCATION.--Lat 34°43'23", long 76°45'13", Hydrologic Unit 03020106, on west edge of Morehead City, and south of U.S. Highway 70 at DENR Marine Fisheries Facility on north shore of Bogue Sound. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, drilled to 238 ft, diameter 4 in., cased to 180 ft, open hole to 191 ft, hole collapsed from 191 to 238 ft.

INSTRUMENTATION.--Water-level recorder collecting data at 30-minute intervals.

DATUM.--Land-surface datum is 8.72 ft above sea level (levels by DENR). Measuring point: Top of collar on casing, 1.73 ft above land-surface datum.

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

PERIOD OF RECORD.--January 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.23 ft below land-surface datum, Dec. 7, 1976; lowest water level recorded, 14.90 ft below land-surface datum, Aug. 2, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	8.97	9.16	9.59	8.71	8.61	8.50	10.18	11.61	11.95	10.93
2	---	---	8.86	9.12	9.69	8.62	8.64	8.57	10.45	11.71	11.98	11.06
3	---	---	8.82	9.03	9.62	8.53	8.68	8.82	10.47	11.83	11.82	11.13
4	---	---	8.94	8.93	9.41	8.57	8.58	8.90	10.45	12.09	11.71	11.13
5	---	---	8.78	9.15	9.40	8.61	8.75	8.73	10.30	12.21	11.70	11.00
6	---	---	8.60	9.11	9.39	8.78	8.68	8.98	10.28	12.04	11.74	10.62
7	---	---	8.73	9.04	9.45	8.82	8.72	9.15	10.41	11.93	11.88	10.53
8	---	---	8.89	9.04	9.51	8.67	8.88	9.34	10.51	12.07	11.80	10.61
9	---	---	9.08	8.83	9.39	8.74	9.09	9.41	10.61	12.09	11.79	10.67
10	---	---	9.11	8.71	9.12	9.01	9.28	9.38	10.81	12.14	11.66	10.76
11	---	---	9.10	8.76	9.13	8.86	9.27	9.48	10.94	12.31	11.62	10.72
12	---	---	9.05	8.84	9.19	8.67	9.26	9.47	11.12	12.30	11.56	10.64
13	---	---	9.04	8.62	9.13	8.91	9.12	9.66	11.30	12.21	11.49	10.51
14	---	---	8.74	9.05	8.91	8.82	8.90	9.78	11.35	12.15	11.30	10.42
15	---	---	8.86	9.00	9.04	8.90	8.67	9.91	11.38	12.05	11.36	10.35
16	---	---	8.77	8.94	9.16	8.78	8.73	9.96	11.48	12.11	11.49	10.21
17	---	---	8.96	8.87	9.22	8.62	8.65	10.16	11.78	12.15	11.45	10.23
18	---	---	8.90	8.79	9.06	8.79	8.49	10.32	11.96	12.14	11.36	10.09
19	---	9.34	8.61	8.99	8.82	8.64	8.48	10.42	11.98	12.29	11.38	10.20
20	---	9.22	8.65	8.77	8.95	8.34	8.43	10.51	11.70	12.39	11.32	10.32
21	---	9.10	8.70	9.03	9.10	8.27	8.43	10.52	11.61	12.22	11.24	10.28
22	---	9.04	8.71	9.12	9.11	8.49	8.53	10.39	11.72	12.15	11.27	10.25
23	---	8.96	8.80	9.05	9.00	8.45	8.58	10.25	11.69	12.09	11.33	9.94
24	---	8.99	8.84	8.90	9.00	8.45	8.57	10.28	11.79	11.86	11.36	9.97
25	---	8.96	8.84	8.65	9.05	8.61	8.50	10.41	11.78	11.70	11.27	9.94
26	---	8.74	8.83	8.95	9.11	8.52	8.53	10.48	11.86	11.61	11.04	9.92
27	---	8.79	8.94	9.33	8.89	8.38	8.40	10.61	12.05	11.55	11.09	9.76
28	---	8.86	8.88	9.66	8.81	8.38	8.22	10.65	12.01	11.57	11.05	9.64
29	---	8.87	9.04	9.83	8.78	8.63	8.31	10.57	11.84	11.69	11.01	9.63
30	---	8.88	9.13	9.61	---	8.59	8.43	10.11	11.59	11.71	10.68	9.55
31	---	---	9.20	9.51	---	8.46	---	10.03	---	11.75	10.83	---

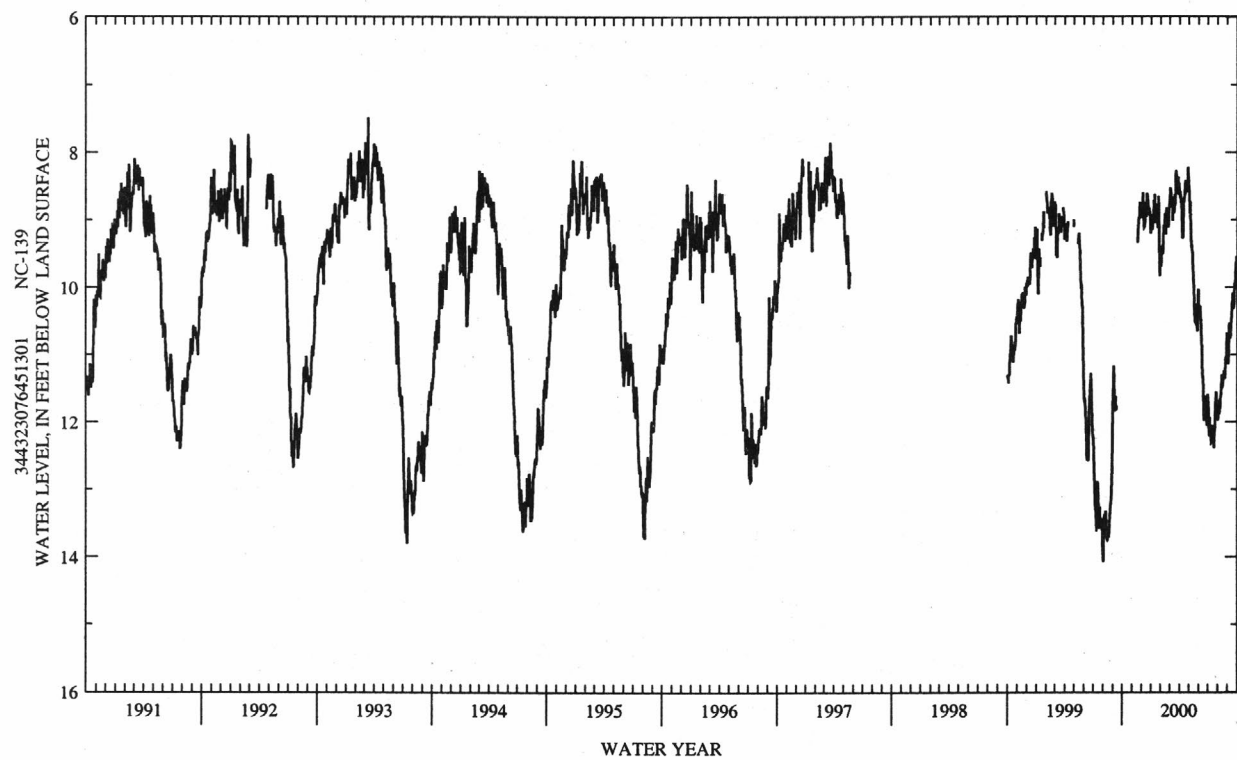
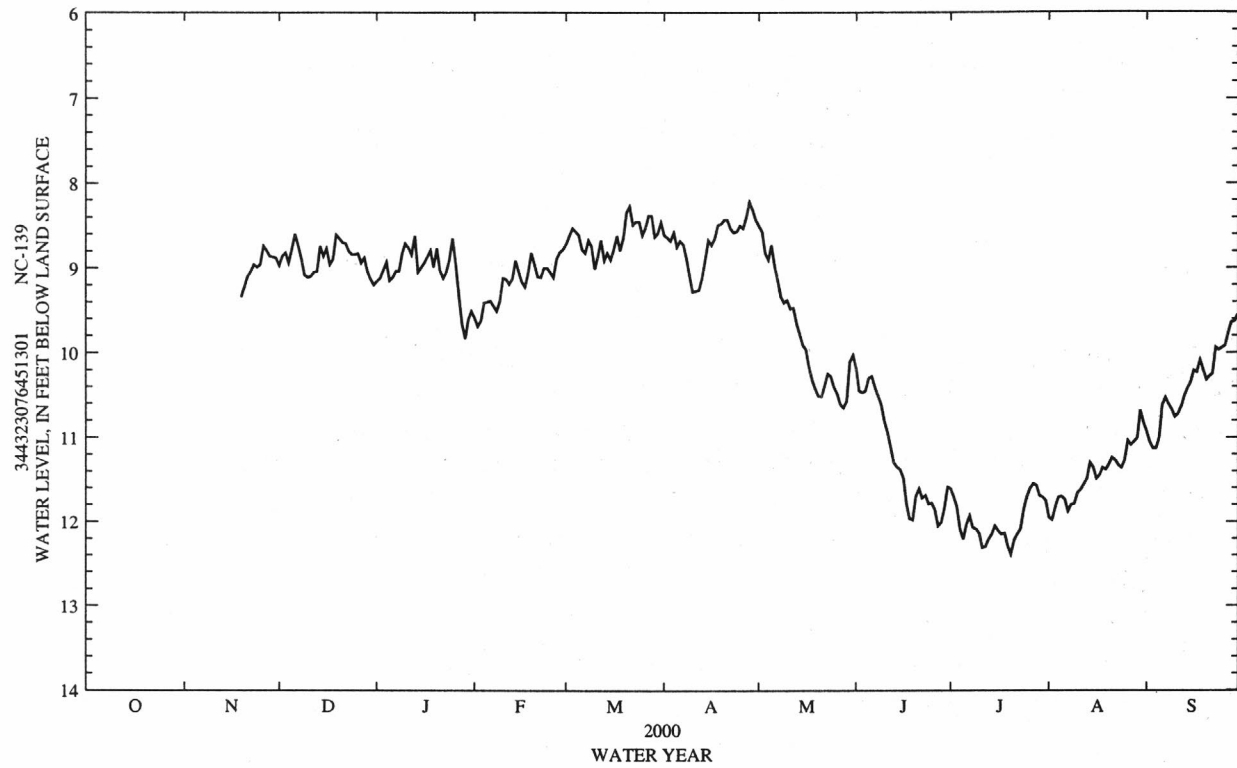
WTR YR 2000

MEAN 9.89

HIGH 8.22

LOW 12.39





## CHEROKEE COUNTY

351117083545001. Local number, NC-191; County number, CE-028.

LOCATION.--Lat 35°11'17", long 83°54'50", Hydrologic Unit 06020002, 0.6 mi north of Marble, 100 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 108.5 ft, diameter 4 in., cased to 53 ft, screened interval from 53 to 83 ft, sand filter pack from 40 to 83 ft, backfilled with saprolite from 83 to 108.5 ft.

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

DATUM.--Land-surface datum is 1,720 ft above sea level (from topographic map). Measuring point: Top of instrument shelf, 0.45 ft above land-surface datum; revised from 1.15 ft above land surface August 1995.

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

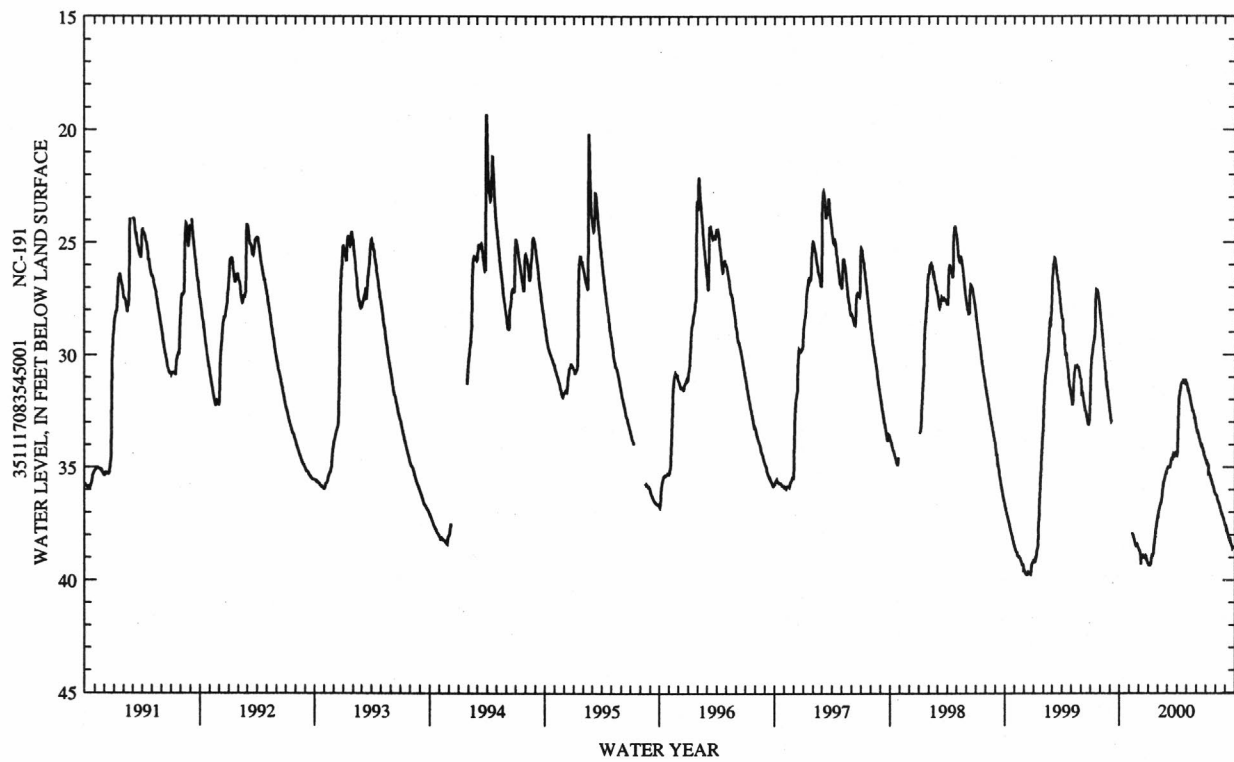
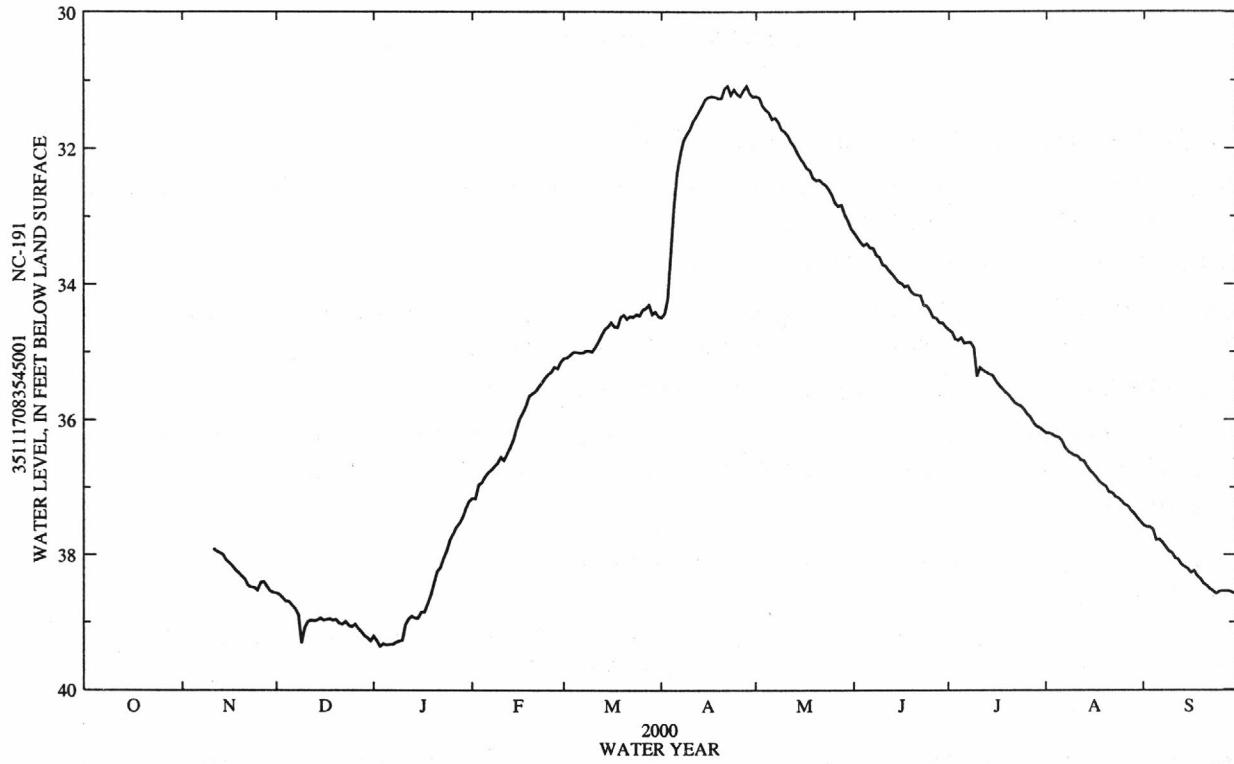
PERIOD OF RECORD.--October 1989 to current year. Miscellaneous water-level measurements September 1985 to November 1995.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 19.26 ft below land-surface datum, Mar. 29, 1994; lowest water level recorded, 39.79 ft below land-surface datum, Dec. 11, 12, 1998.

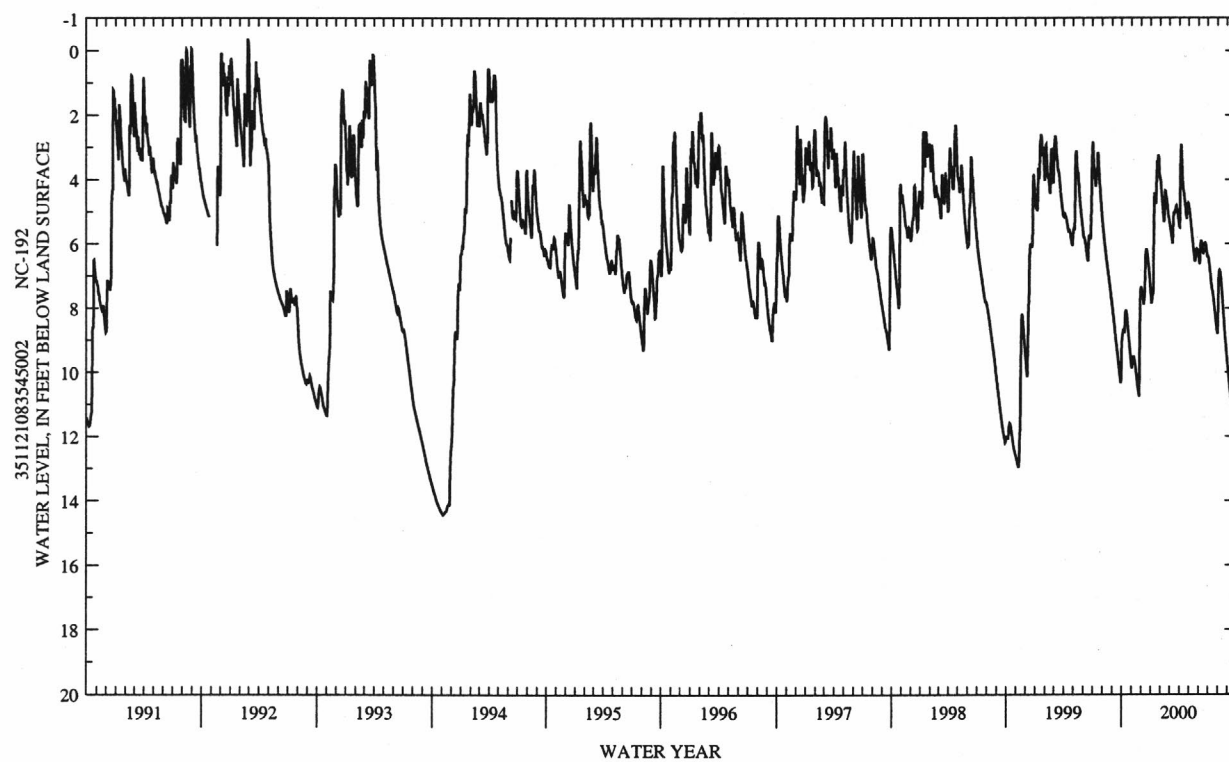
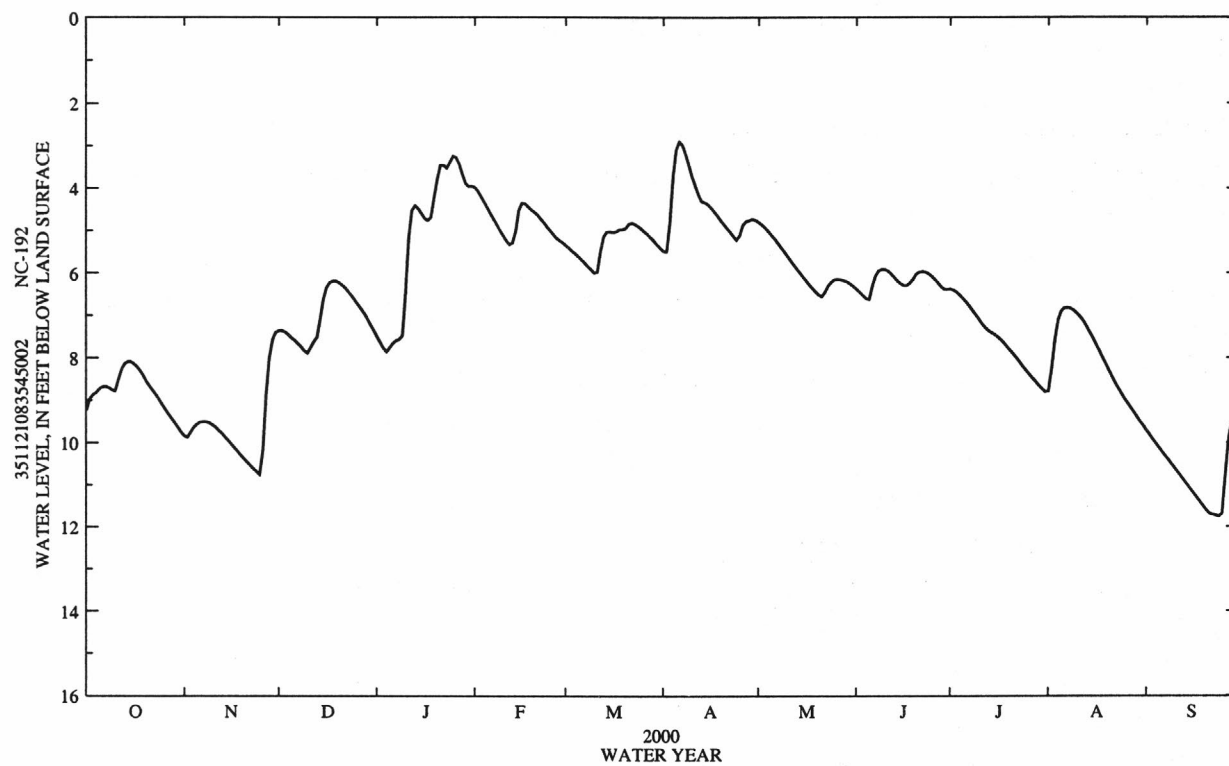
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	38.57	39.21	37.16	35.09	34.49	31.23	33.24	34.67	36.20	37.56
2	---	---	38.59	39.28	37.17	35.08	34.43	31.25	33.31	34.71	36.20	37.59
3	---	---	38.64	39.36	36.96	35.04	34.22	31.37	33.38	34.81	36.22	37.59
4	---	---	38.69	39.32	36.93	35.00	33.53	31.43	33.43	34.83	36.25	37.63
5	---	---	38.69	39.34	36.84	35.00	32.84	31.47	33.40	34.79	36.26	37.78
6	---	---	38.75	39.33	36.78	35.01	32.36	31.57	33.46	34.87	36.31	37.77
7	---	---	38.80	39.33	36.74	35.01	32.08	31.55	33.47	34.86	36.41	37.82
8	---	---	38.89	39.30	36.69	34.98	31.88	31.61	33.57	34.86	36.47	37.88
9	---	---	39.31	39.28	36.64	34.98	31.79	31.72	33.60	34.94	36.50	37.95
10	---	---	39.08	39.27	36.55	34.99	31.72	31.75	33.71	35.36	36.53	37.97
11	---	37.91	38.99	39.03	36.60	34.92	31.60	31.81	33.73	35.23	36.54	38.05
12	---	37.95	38.97	38.95	36.50	34.84	31.53	31.90	33.80	35.27	36.60	38.07
13	---	37.97	38.98	38.91	36.41	34.74	31.45	31.97	33.85	35.30	36.61	38.15
14	---	38.00	38.97	38.94	36.29	34.66	31.36	32.06	33.91	35.33	36.69	38.18
15	---	38.08	38.94	38.94	36.12	34.62	31.27	32.15	33.97	35.35	36.76	38.21
16	---	38.12	38.97	38.85	35.98	34.56	31.24	32.21	33.99	35.43	36.80	38.27
17	---	38.17	38.96	38.85	35.89	34.62	31.23	32.29	34.04	35.49	36.86	38.24
18	---	38.23	38.95	38.72	35.79	34.63	31.24	32.32	34.02	35.54	36.92	38.32
19	---	38.27	38.97	38.59	35.65	34.48	31.26	32.43	34.11	35.59	36.96	38.36
20	---	38.32	38.96	38.41	35.61	34.45	31.26	32.47	34.15	35.63	36.99	38.43
21	---	38.36	39.02	38.25	35.58	34.51	31.12	32.46	34.16	35.69	37.07	38.46
22	---	38.46	39.03	38.19	35.51	34.47	31.08	32.51	34.17	35.75	37.08	38.51
23	---	38.48	38.99	38.05	35.45	34.48	31.21	32.54	34.31	35.78	37.14	38.54
24	---	38.49	39.05	37.94	35.38	34.44	31.13	32.60	34.32	35.80	37.16	38.58
25	---	38.53	39.07	37.78	35.33	34.46	31.20	32.69	34.39	35.85	37.21	38.55
26	---	38.41	39.03	37.69	35.29	34.37	31.23	32.80	34.49	35.92	37.26	38.54
27	---	38.40	39.09	37.59	35.22	34.35	31.14	32.85	34.50	35.97	37.28	38.54
28	---	38.47	39.14	37.53	35.24	34.30	31.08	32.83	34.57	36.05	37.35	38.54
29	---	38.54	39.20	37.44	35.14	34.44	31.19	32.97	34.57	36.10	37.39	38.56
30	---	38.56	39.23	37.31	---	34.40	31.24	33.06	34.63	36.12	37.45	38.58
31	---	---	39.28	37.21	---	34.47	---	33.18	---	36.16	37.51	---
WTR YR 2000	MEAN 35.84		HIGH 31.08		LOW 39.36							







## COLUMBUS COUNTY

341237078534213. County number, CO-102; DENR Clarendon Research Station well DD42n4.

LOCATION.--Lat 34°12'39.3", long 78°53'46.0", North American Datum of 1983, Hydrologic Unit 03040203, 3.1 mi west of Clarendon on Secondary Road 1314. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Pee Dee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 248 ft, diameter 4 in. to 228 ft, diameter 2.5 in. from 196 to 248 ft, screened interval from 238 to 248 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 106.8 ft above sea level (levels by DENR). Measuring point: Top of collar on casing, 1.28 ft above land-surface datum.

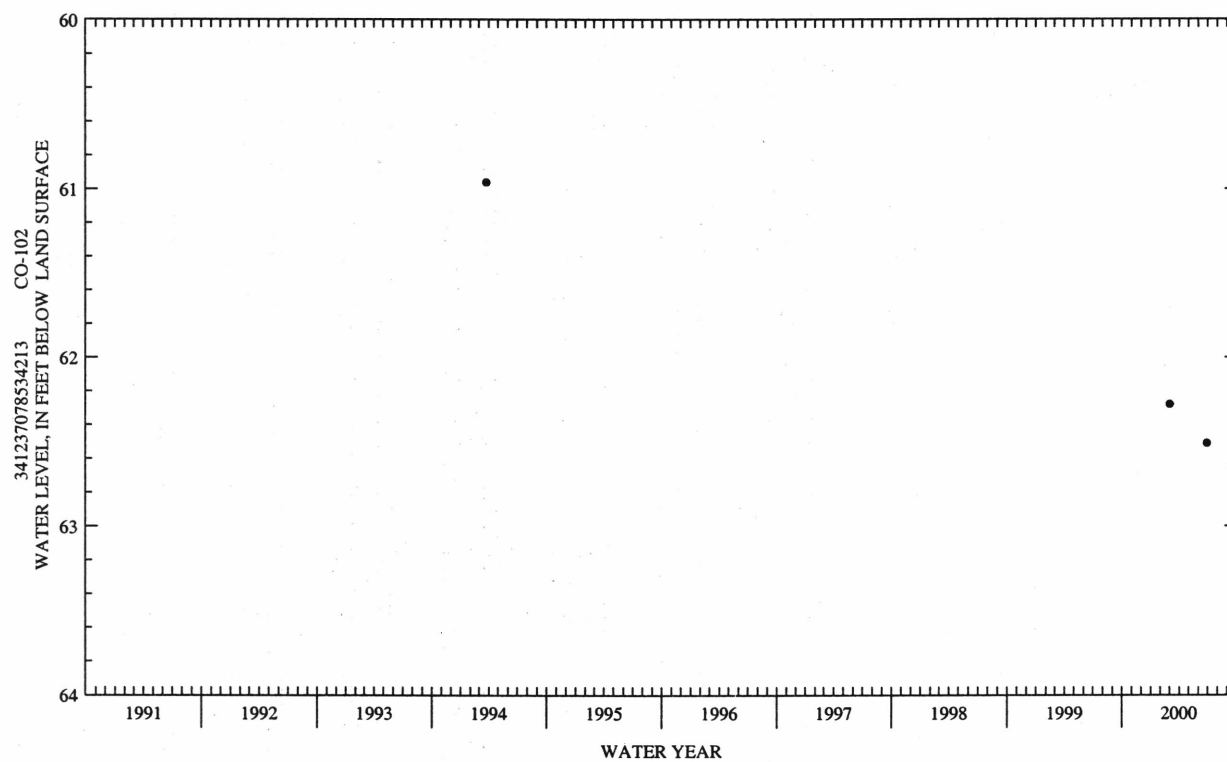
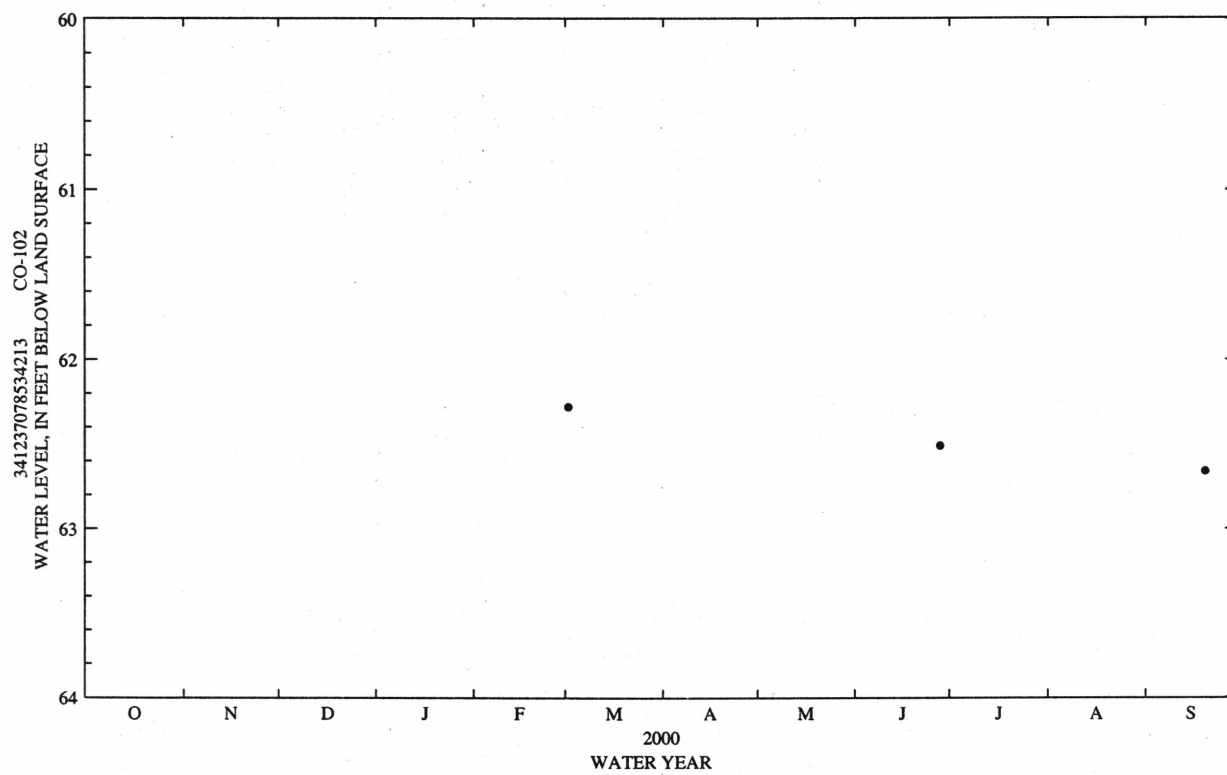
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements July 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 52.49 ft below land-surface datum, July 29, 1981; lowest water level measured, 62.66 ft below land-surface datum, Sept. 20, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 2	62.28	JUN 28	62.51	SEP 20	62.66





## COLUMBUS COUNTY--Continued

342508078360802. Local number, NC-179; DENR Carver Moore Research Station well AA39v2; County number, CO-089.

LOCATION.--Lat 34°25'07", long 78°36'10", 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 sea level (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. Miscellaneous water-level measurements January 1987 to current year. Continuous record from January 1987 to November 1990 and 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, 48.81 ft below land-surface datum, Aug. 23-25, 2000.

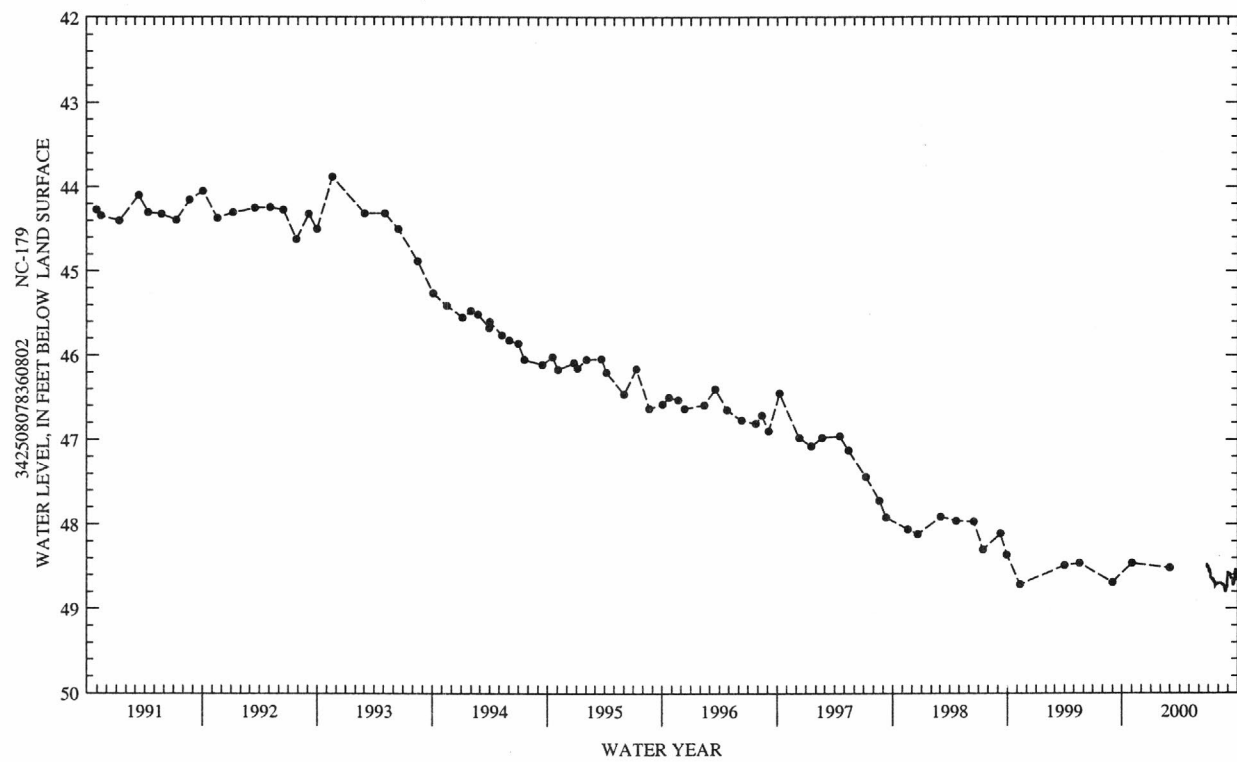
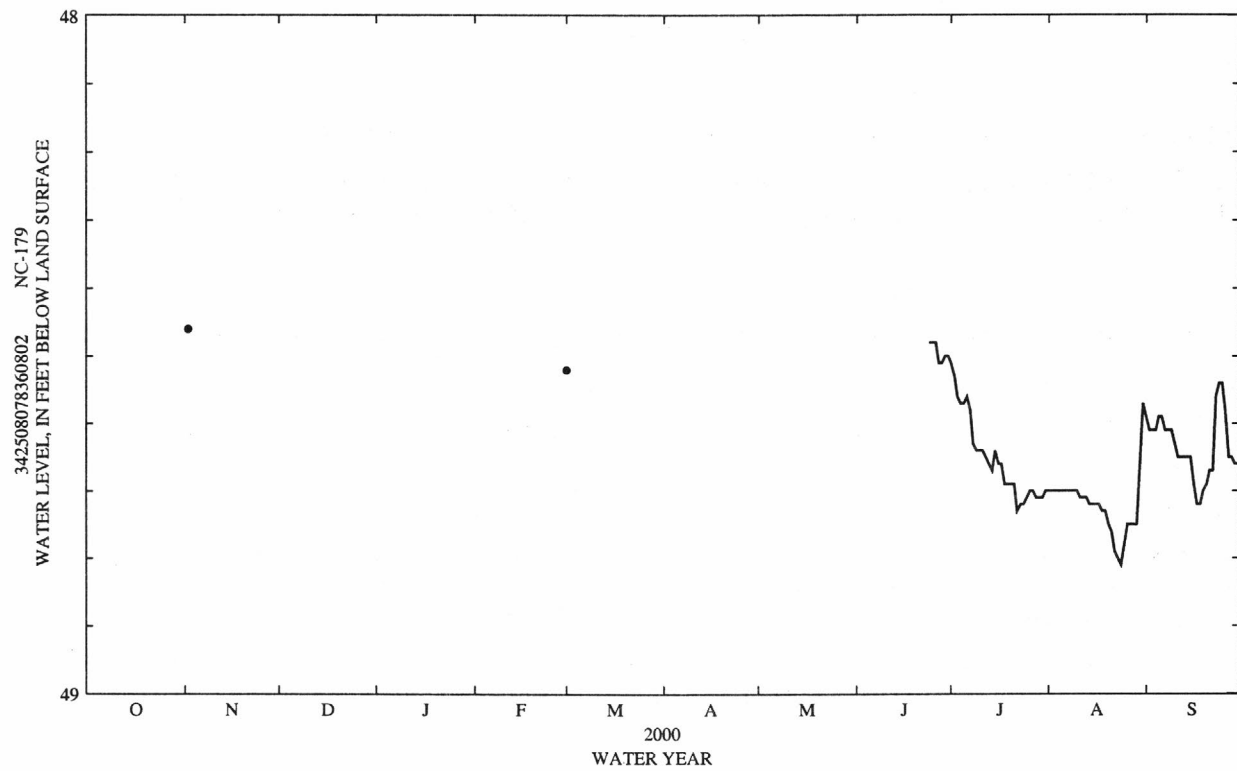
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	48.46	MAR 1	48.52

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD JUNE 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	48.57	48.70	48.59
10	---	---	---	---	---	---	---	---	---	48.64	48.70	48.63
15	---	---	---	---	---	---	---	---	---	48.64	48.72	48.65
20	---	---	---	---	---	---	---	---	---	48.69	48.75	48.69
25	---	---	---	---	---	---	---	---	48.48	48.71	48.78	48.54
EOM---	---	---	---	---	---	---	---	48.50	48.70	48.57	48.66	
WTR YR 2000	MEAN 48.66			HIGH 48.48 JUN 24			LOW 48.81 AUG 24					



## DAVIE COUNTY

355359080331701. Local number, NC-142; County number, DV-025.

LOCATION.--Lat 35°53'59", long 80°33'17", Hydrologic Unit 03040102, 0.5 mi northeast of Mocksville on U.S. Highway 158 at B.C. Brocks Community Center. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined weathered granite of Paleozoic age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 30.8 ft, diameter 6 in., cased to 30.8 ft, open end, backfilled with gravel from 20 to 30.8 ft.

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

DATUM.--Land-surface datum is 835 ft above sea level (from topographic map). Measuring point: Top of casing, 1.00 ft above land-surface datum.

REMARKS.--In October 1982, well replaced nearby NC-110. Well is part of terrane-effects network.

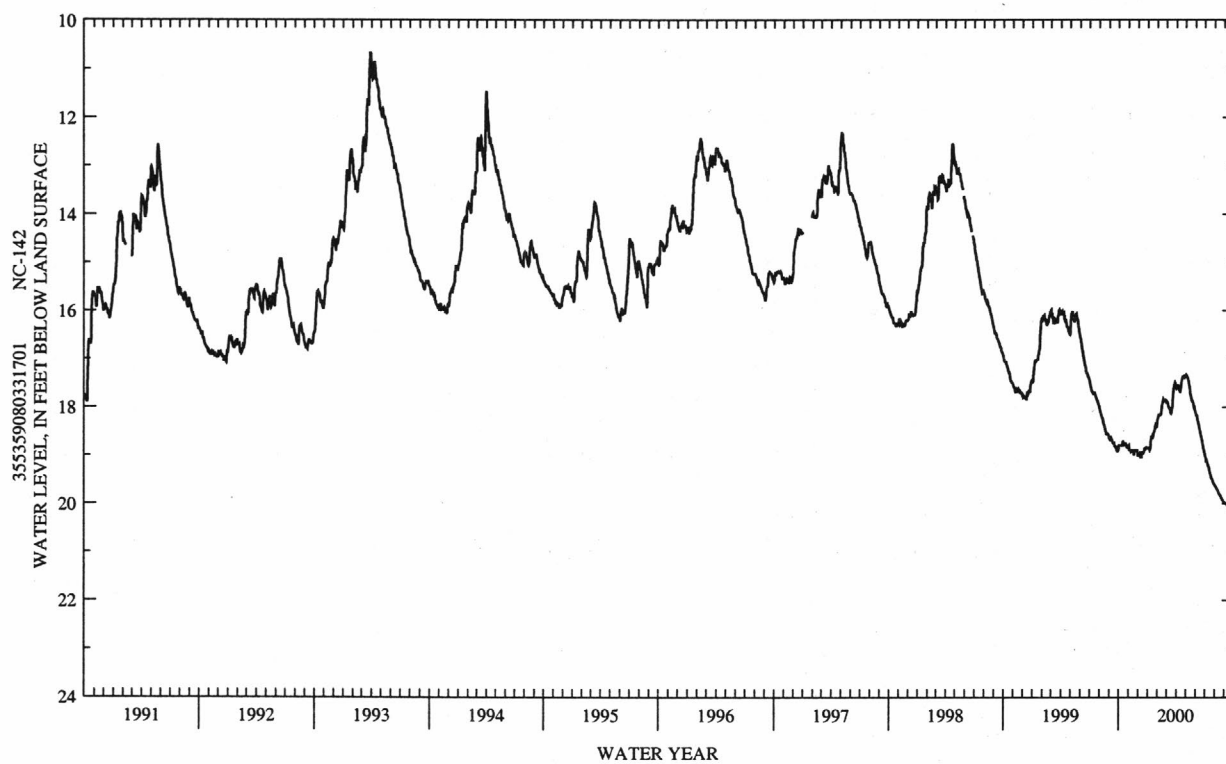
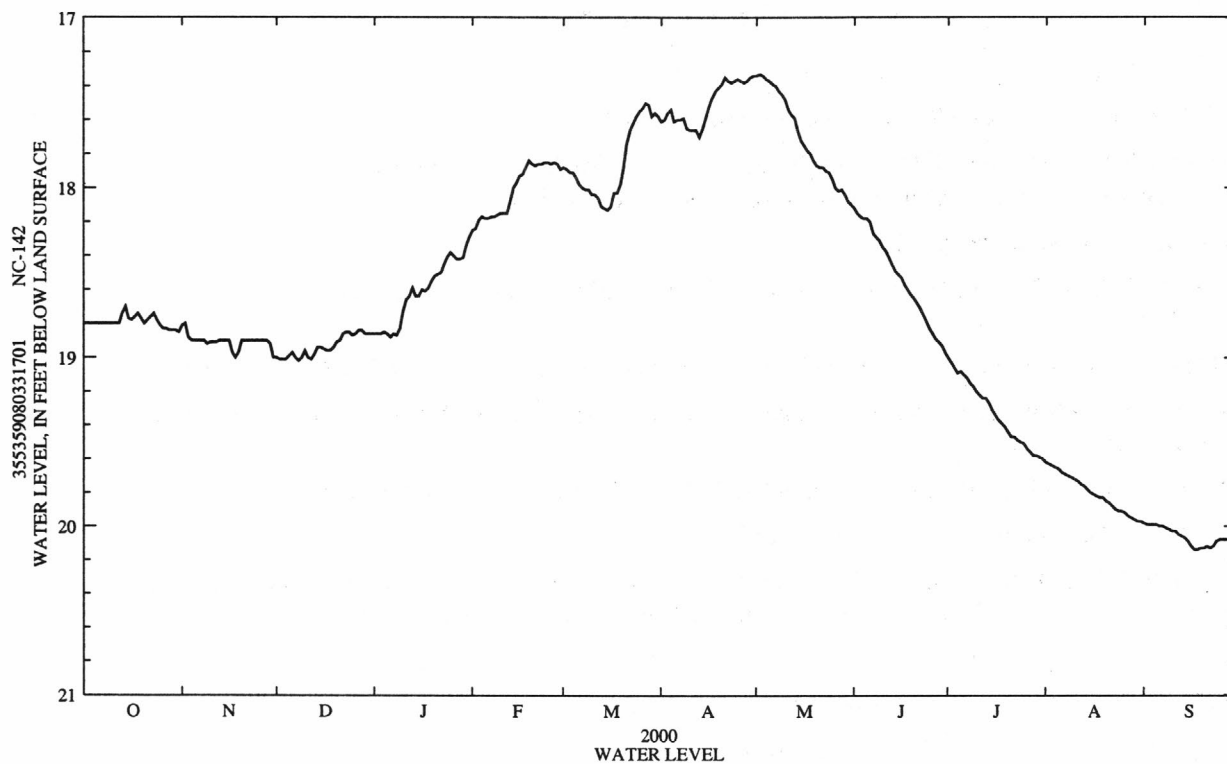
PERIOD OF RECORD.--October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.64 ft below land-surface datum, Mar. 28, 1993; lowest water level recorded, 20.98 ft below land-surface datum, Oct. 24, 25, and 26, 1981.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.80	18.81	19.00	18.86	18.25	17.88	17.61	17.34	18.12	19.00	19.62	19.98
2	18.80	18.80	19.01	18.86	18.24	17.89	17.60	17.33	18.15	19.03	19.63	19.99
3	18.80	18.88	19.01	18.86	18.19	17.91	17.56	17.34	18.17	19.06	19.64	19.99
4	18.80	18.90	19.01	18.85	18.17	17.91	17.54	17.36	18.18	19.09	19.65	19.99
5	18.80	18.90	18.99	18.86	18.18	17.94	17.61	17.37	18.18	19.08	19.66	19.99
6	18.80	18.90	18.97	18.88	18.18	17.98	17.60	17.39	18.20	19.10	19.68	20.00
7	18.80	18.90	19.00	18.86	18.17	18.00	17.60	17.40	18.27	19.12	19.69	20.00
8	18.80	18.90	19.02	18.87	18.17	18.01	17.59	17.43	18.29	19.15	19.70	20.01
9	18.80	18.92	19.00	18.83	18.16	18.01	17.65	17.45	18.31	19.17	19.71	20.02
10	18.80	18.91	18.96	18.73	18.15	18.04	17.66	17.48	18.35	19.20	19.72	20.03
11	18.80	18.91	19.00	18.66	18.15	18.04	17.66	17.54	18.37	19.22	19.73	20.03
12	18.80	18.91	19.01	18.64	18.15	18.06	17.66	17.57	18.41	19.24	19.75	20.05
13	18.74	18.90	18.98	18.59	18.08	18.11	17.70	17.59	18.45	19.24	19.76	20.06
14	18.70	18.90	18.94	18.64	18.00	18.12	17.65	17.66	18.49	19.27	19.78	20.07
15	18.77	18.90	18.94	18.64	17.97	18.13	17.59	17.72	18.51	19.31	19.80	20.09
16	18.78	18.90	18.95	18.60	17.93	18.11	17.52	17.75	18.53	19.34	19.81	20.12
17	18.76	18.97	18.96	18.61	17.92	18.03	17.47	17.78	18.57	19.37	19.82	20.14
18	18.74	19.00	18.96	18.59	17.88	18.03	17.43	17.80	18.60	19.39	19.83	20.14
19	18.77	18.97	18.94	18.55	17.84	17.98	17.41	17.84	18.63	19.41	19.83	20.13
20	18.80	18.90	18.91	18.52	17.86	17.88	17.39	17.87	18.65	19.44	19.85	20.13
21	18.78	18.90	18.90	18.51	17.87	17.74	17.35	17.88	18.68	19.47	19.86	20.12
22	18.76	18.90	18.86	18.50	17.86	17.66	17.37	17.88	18.71	19.47	19.88	20.13
23	18.74	18.90	18.85	18.45	17.86	17.62	17.38	17.90	18.75	19.49	19.90	20.12
24	18.78	18.90	18.85	18.41	17.85	17.58	17.37	17.91	18.79	19.50	19.91	20.09
25	18.81	18.90	18.87	18.38	17.85	17.55	17.36	17.95	18.83	19.51	19.91	20.08
26	18.83	18.90	18.86	18.40	17.86	17.53	17.37	18.00	18.86	19.54	19.92	20.08
27	18.83	18.90	18.84	18.42	17.85	17.50	17.38	18.02	18.89	19.56	19.94	20.08
28	18.84	18.90	18.84	18.42	17.86	17.51	17.37	18.01	18.91	19.58	19.95	20.08
29	18.84	18.92	18.86	18.41	17.89	17.58	17.35	18.04	18.93	19.58	19.96	20.09
30	18.84	19.00	18.86	18.34	---	17.56	17.34	18.08	18.97	19.59	19.97	20.09
31	18.85	---	18.86	18.29	---	17.58	---	18.10	---	19.60	19.97	---
WTR YR 2000	MEAN 18.67		HIGH 17.33		LOW 20.14							



## DUPLIN COUNTY

345051078012101. Local number, NC-174; DENR Rose Hill Research Station well V32v1; County number, DU-126.

LOCATION.--Lat 34°50'51", long 78°01'21", 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.--Pee Dee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 98 ft, diameter 4 in., screened interval from 83 to 98 ft.

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

DATUM.--Land-surface datum is 85.89 ft above sea level (levels by DENR). Measuring point: Top of instrument shelf, 1.75 ft above land-surface datum.

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

PERIOD OF RECORD.--Miscellaneous water-level measurements March 1982 to current year. Continuous record began January 1987.

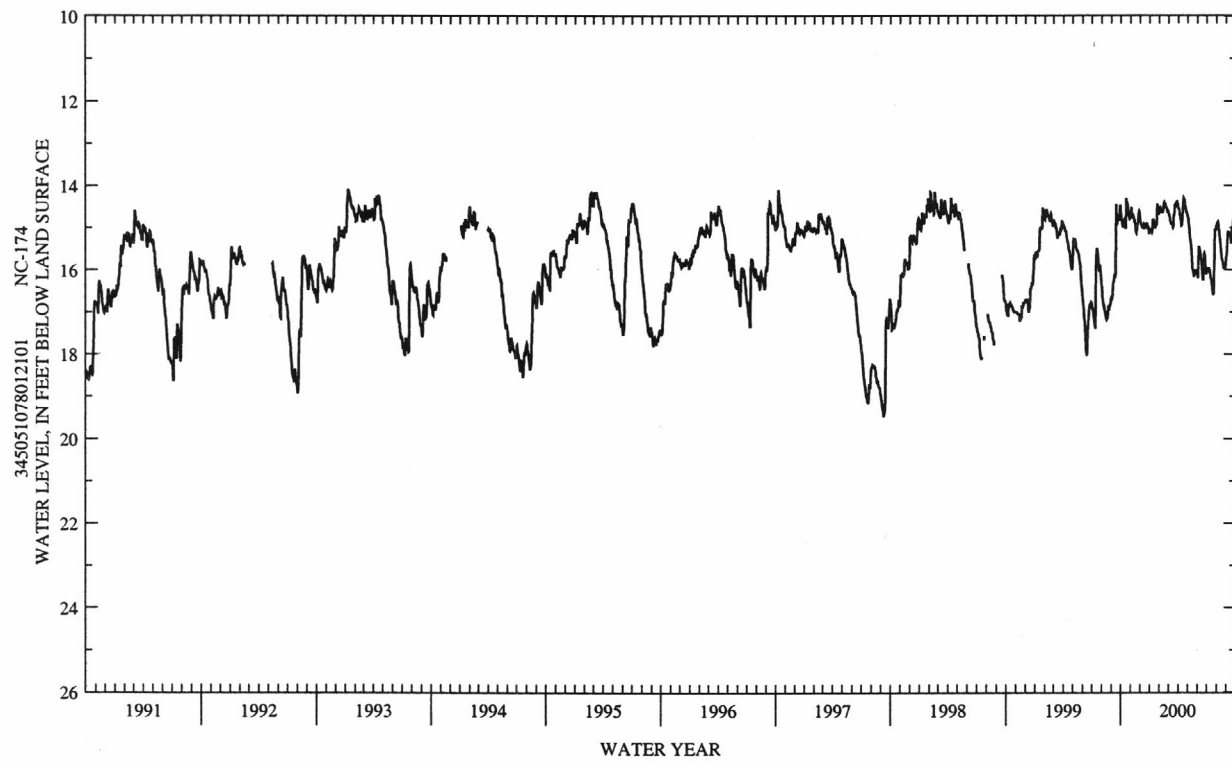
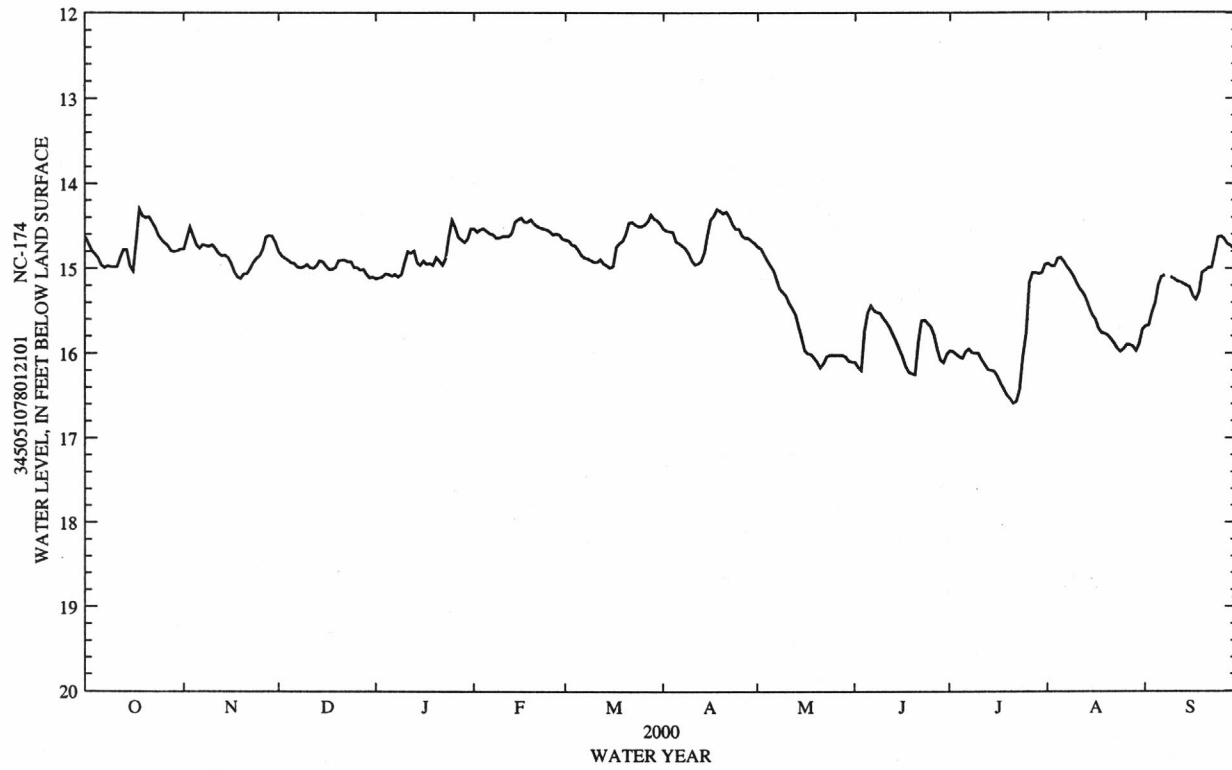
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.00 ft below land-surface datum, Oct. 8, 1996; lowest water level recorded, 19.93 ft below land-surface datum, Aug. 4, 5, 1990.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.63	14.77	14.80	15.12	14.53	14.66	14.53	14.74	16.10	15.97	14.94	15.68
2	14.71	14.64	14.85	15.11	14.57	14.67	14.55	14.76	16.16	15.98	14.97	15.67
3	14.79	14.51	14.88	15.10	14.54	14.72	14.56	14.83	16.20	16.01	14.97	15.52
4	14.83	14.62	14.90	15.06	14.53	14.73	14.57	14.90	15.74	16.04	14.88	15.41
5	14.88	14.72	14.93	15.07	14.56	14.78	14.68	14.96	15.52	16.06	14.87	15.20
6	14.96	14.76	14.94	15.09	14.59	14.84	14.70	15.02	15.44	15.98	14.92	15.10
7	14.99	14.72	14.98	15.07	14.60	14.87	14.73	15.13	15.50	15.95	14.98	15.08
8	14.97	14.73	14.99	15.10	14.64	14.88	14.76	15.24	15.52	15.99	15.03	---
9	14.98	14.74	14.98	15.07	14.64	14.90	14.82	15.28	15.53	16.00	15.09	15.10
10	14.98	14.72	14.95	14.93	14.62	14.92	14.90	15.32	15.59	16.00	15.17	15.12
11	14.98	14.76	14.99	14.80	14.62	14.92	14.95	15.41	15.64	16.07	15.24	15.15
12	14.87	14.82	15.00	14.82	14.62	14.89	14.94	15.47	15.70	16.13	15.29	15.16
13	14.78	14.85	14.97	14.79	14.58	14.94	14.91	15.54	15.78	16.19	15.36	15.18
14	14.78	14.84	14.91	14.93	14.45	14.96	14.81	15.68	15.86	16.20	15.46	15.20
15	14.97	14.87	14.92	14.96	14.42	14.99	14.60	15.82	15.95	16.21	15.55	15.22
16	15.03	14.94	14.97	14.91	14.40	14.97	14.42	15.96	16.04	16.27	15.60	15.32
17	14.67	15.04	15.01	14.95	14.45	14.74	14.38	16.00	16.15	16.35	15.71	15.37
18	14.30	15.10	15.01	14.94	14.45	14.70	14.30	16.01	16.22	16.42	15.76	15.28
19	14.38	15.12	14.99	14.96	14.42	14.67	14.32	16.05	16.24	16.49	15.77	15.05
20	14.40	15.06	14.91	14.87	14.47	14.59	14.35	16.10	16.25	16.53	15.79	15.02
21	14.39	15.06	14.90	14.91	14.50	14.46	14.33	16.17	15.86	16.59	15.83	14.99
22	14.45	15.00	14.90	14.96	14.52	14.45	14.39	16.12	15.62	16.57	15.88	14.99
23	14.52	14.93	14.92	14.88	14.53	14.48	14.48	16.04	15.61	16.43	15.94	14.82
24	14.61	14.88	14.92	14.63	14.54	14.50	14.53	16.02	15.65	16.04	15.98	14.63
25	14.66	14.85	14.99	14.43	14.56	14.50	14.53	16.02	15.69	15.77	15.95	14.62
26	14.70	14.77	14.99	14.51	14.60	14.48	14.61	16.02	15.79	15.17	15.90	14.65
27	14.73	14.63	15.02	14.63	14.63	14.44	14.64	16.02	15.95	15.05	15.90	14.71
28	14.79	14.61	15.01	14.66	14.60	14.36	14.64	16.02	16.08	15.05	15.92	14.73
29	14.80	14.62	15.07	14.69	14.65	14.41	14.67	16.04	16.11	15.06	15.97	14.77
30	14.79	14.69	15.11	14.65	---	14.43	14.70	16.09	16.01	15.05	15.89	14.79
31	14.77	---	15.10	14.53	---	14.47	---	16.10	---	14.95	15.72	---

WTR YR 2000      MEAN 15.11      HIGH 14.30      LOW 16.59



## DUPLIN COUNTY--Continued

345051078012106. Local number, NC-218; DENR Rose Hill Research Station well V32v6; County number, DU-135.

LOCATION.--Lat 34°50'51", long 78°01'21", 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.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 218 ft, diameter 4 in. to 103 ft, diameter 2.5 in. from 103 to 208 ft, screened interval from 208 to 218 ft.

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

DATUM.--Land-surface datum is 86 ft above sea level (from topographic map). Measuring point: Top of collar attached to casing, 2.25 ft above land-surface datum; revised from 2.62 ft above land-surface datum, May 5, 1999

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

PERIOD OF RECORD.--Miscellaneous water-level measurements May 1982 to current year. Continuous record began August 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.14 ft below land-surface datum, May 19, 1982; lowest water level measured, 43.62 ft below land-surface datum, Sept. 17, 1998.

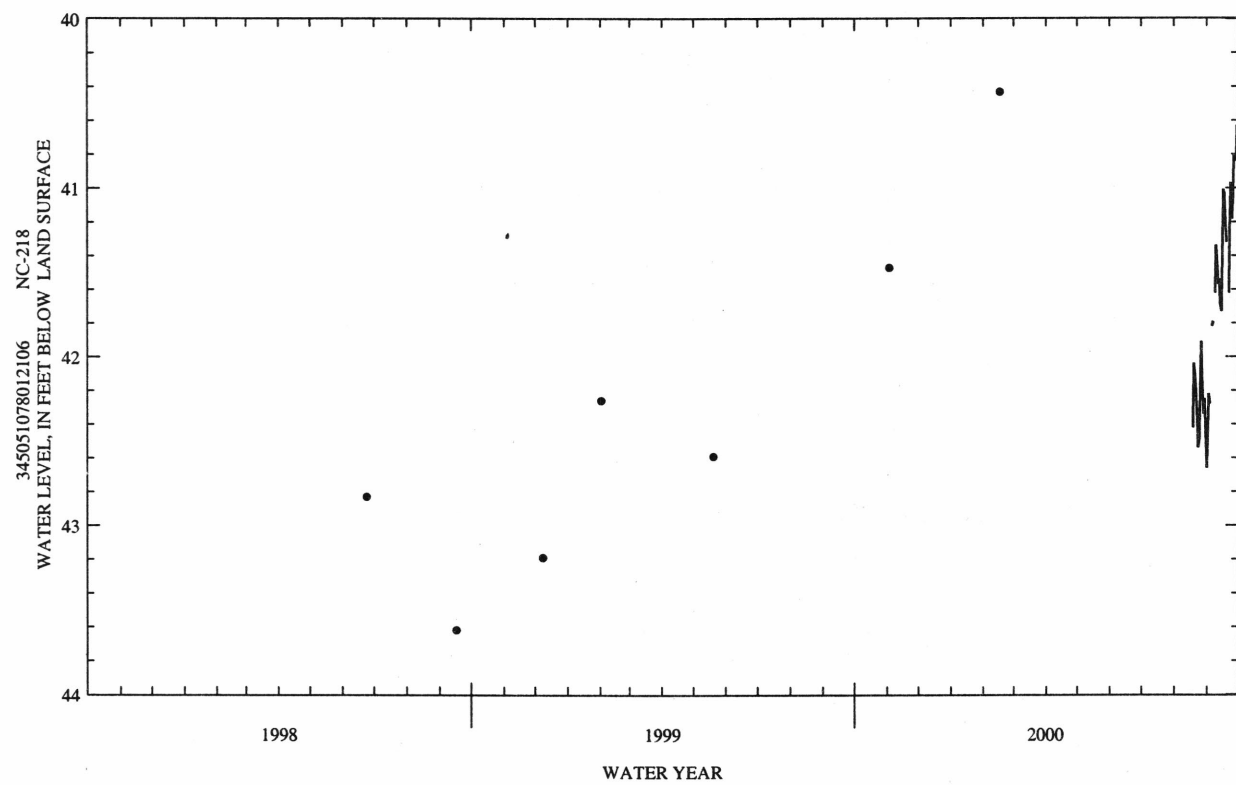
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 3	41.47	FEB 17	40.43

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD AUGUST 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	41.34
15	---	---	---	---	---	---	---	---	---	---	---	41.73
20	---	---	---	---	---	---	---	---	---	---	42.04	41.32
25	---	---	---	---	---	---	---	---	---	---	42.49	41.18
EOM---	---	---	---	---	---	---	---	---	---	42.48	40.63	
WTR YR 2000	MEAN 41.72			HIGH 40.63 SEP 30				LOW 42.66 SEP 1				





353103077333401. County number, GR-082; L2 Lizzie N26q2.

**AQUIFER.--**Surficial.

**INSTRUMENTATION.**--Water-level recorder collecting data at 15-minute intervals.

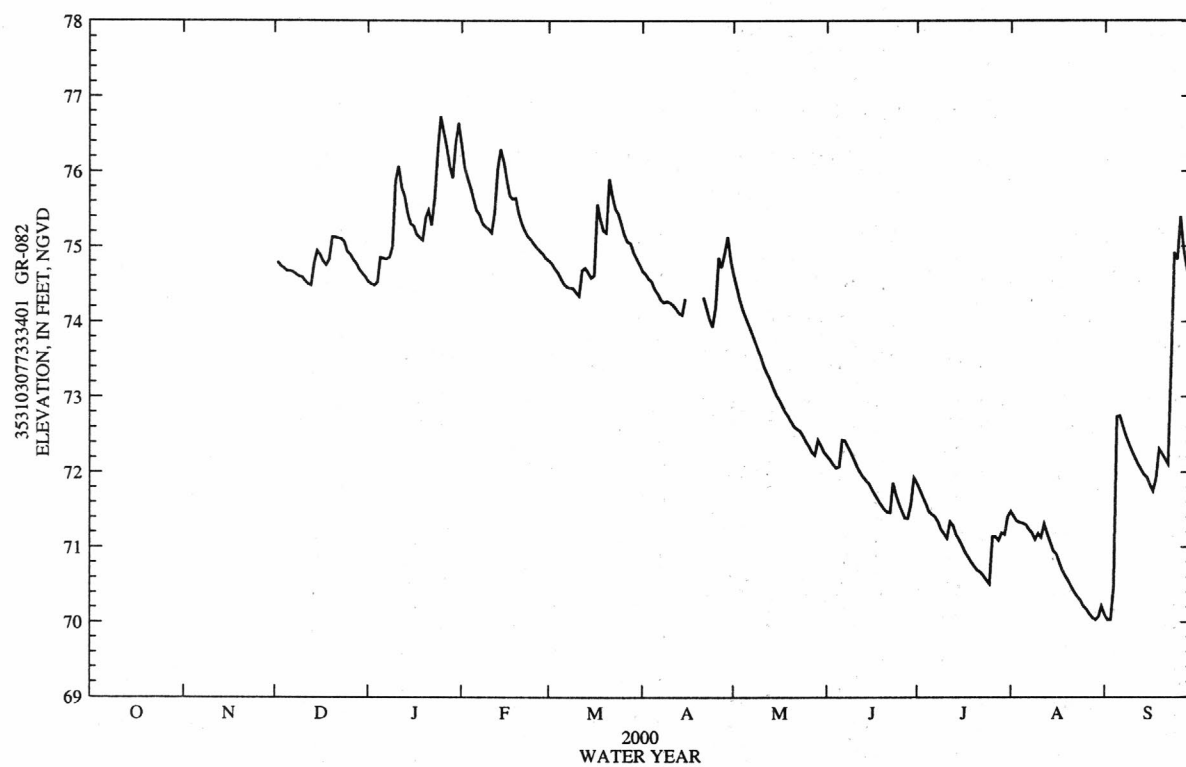
REMARKS.--Well is part of multimedia integrated modeling system (MIMS) project.

PERIOD OF RECORD.--December 1999 to September 2000.

**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded 76.98 ft, above NGVD, Jan. 25, 2000; lowest water level recorded, 69.99 ft, above NGVD, Aug. 30, 2000.

### DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	74.53	76.35	74.81	74.67	74.62	72.22	71.86	71.48	70.10
2	---	---	74.79	74.50	76.06	74.77	74.63	74.46	72.17	71.77	71.41	70.03
3	---	---	74.74	74.48	75.91	74.70	74.57	74.29	72.11	71.67	71.35	70.03
4	---	---	74.71	74.52	75.78	74.65	74.53	74.15	72.06	71.58	71.33	70.47
5	---	---	74.67	74.85	75.62	74.57	74.43	74.05	72.07	71.48	71.32	72.74
6	---	---	74.67	74.84	75.48	74.50	74.37	73.95	72.43	71.44	71.30	72.75
7	---	---	74.66	74.83	75.42	74.46	74.29	73.85	72.42	71.41	71.24	72.61
8	---	---	74.63	74.85	75.30	74.45	74.25	73.74	72.34	71.34	71.19	72.49
9	---	---	74.60	74.99	75.26	74.44	74.27	73.63	72.26	71.24	71.10	72.38
10	---	---	74.59	75.87	75.23	74.39	74.25	73.54	72.17	71.18	71.18	72.28
11	---	---	74.54	76.07	75.18	74.34	74.22	73.41	72.08	71.12	71.13	72.19
12	---	---	74.50	75.78	75.46	74.68	74.17	73.32	72.00	71.34	71.31	72.11
13	---	---	74.48	75.67	76.04	74.71	74.11	73.24	71.94	71.29	71.18	72.04
14	---	---	74.77	75.44	76.29	74.65	74.09	73.14	71.89	71.17	71.06	71.97
15	---	---	74.94	75.30	76.13	74.58	74.30	73.04	71.85	71.10	70.95	71.93
16	---	---	74.89	75.27	75.89	74.61	---	72.97	71.77	71.02	70.91	71.83
17	---	---	74.80	75.16	75.67	75.56	---	72.89	71.70	70.93	70.80	71.75
18	---	---	74.75	75.12	75.63	75.36	---	72.81	71.63	70.87	70.69	71.92
19	---	---	74.83	75.08	75.64	75.21	---	72.75	71.57	70.80	70.62	72.31
20	---	---	75.12	75.38	75.44	75.18	---	72.68	71.51	70.74	70.55	72.25
21	---	---	75.12	75.48	75.30	75.90	74.32	72.61	71.47	70.69	70.47	72.18
22	---	---	75.11	75.28	75.21	75.68	74.18	72.58	71.46	70.67	70.40	72.11
23	---	---	75.10	75.65	75.13	75.50	74.04	72.55	71.86	70.62	70.34	73.55
24	---	---	75.06	76.27	75.09	75.43	73.93	72.49	71.70	70.56	70.29	74.92
25	---	---	74.93	76.73	75.03	75.29	74.19	72.41	71.58	70.51	70.21	74.83
26	---	---	74.89	76.52	74.98	75.15	74.85	72.35	71.48	71.14	70.17	75.40
27	---	---	74.82	76.31	74.94	75.06	74.72	72.27	71.39	71.14	70.11	74.97
28	---	---	74.77	76.06	74.90	75.04	74.91	72.23	71.38	71.09	70.06	74.74
29	---	---	74.69	75.91	74.84	74.92	75.13	72.43	71.57	71.19	70.03	74.54
30	---	---	74.64	76.38	---	74.84	74.82	72.36	71.93	71.17	70.07	74.40
31	---	---	74.59	76.64	---	74.76	---	72.27	---	71.41	70.21	---
WTR YR 2000	MEAN	73.43	MAX	76.73	MIN	70.03						



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## GREENE COUNTY--Continued

353135077332701. County number, GR-110; L17.

LOCATION.--Lat 35°31'35", long 77°33'27", Hydrologic Unit 03020203, near Lizzie, 200 ft west of State 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.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 72.50 ft above National Geodetic Vertical Datum of 1929 (levels by North Carolina Geodetic Survey). Measuring point: Top of metal casing, 2.75 ft above land surface datum.

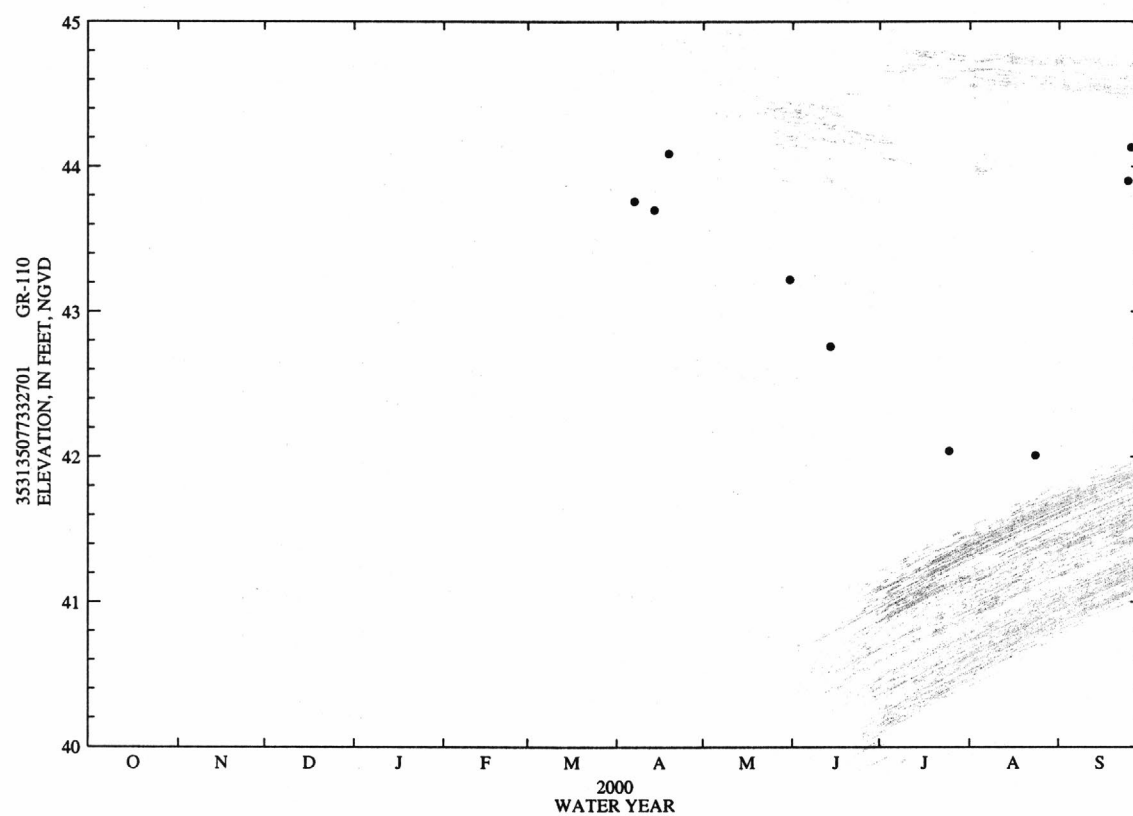
REMARKS.--Well is part of multimedia integrated modeling system (MIMS) project.

PERIOD OF RECORD.--April 2000 to September 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 44.13 ft above NGVD, Sept. 26, 2000; lowest water level measured 42.01 ft above NGVD, Aug. 24, 2000.

## WATER LEVEL, IN FEET, NGVD, FOR PERIOD APRIL 2000 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 7	43.76	APR 19	44.09	JUN 14	42.76	AUG 24	42.01	SEP 25	43.90	SEP 26	44.13
APR 14	43.70	MAY 31	43.22	JUL 25	42.04						



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## GREENE COUNTY--Continued

353135077332702. County number, GR-111; L18 Lizzie

LOCATION.--Lat 35°31'35", long 77°33'27", Hydrologic Unit 03020203, near Lizzie, 200 ft west of State 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.

DATUM.--Land-surface datum is 72.83 ft above National Geodetic Vertical Datum 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.

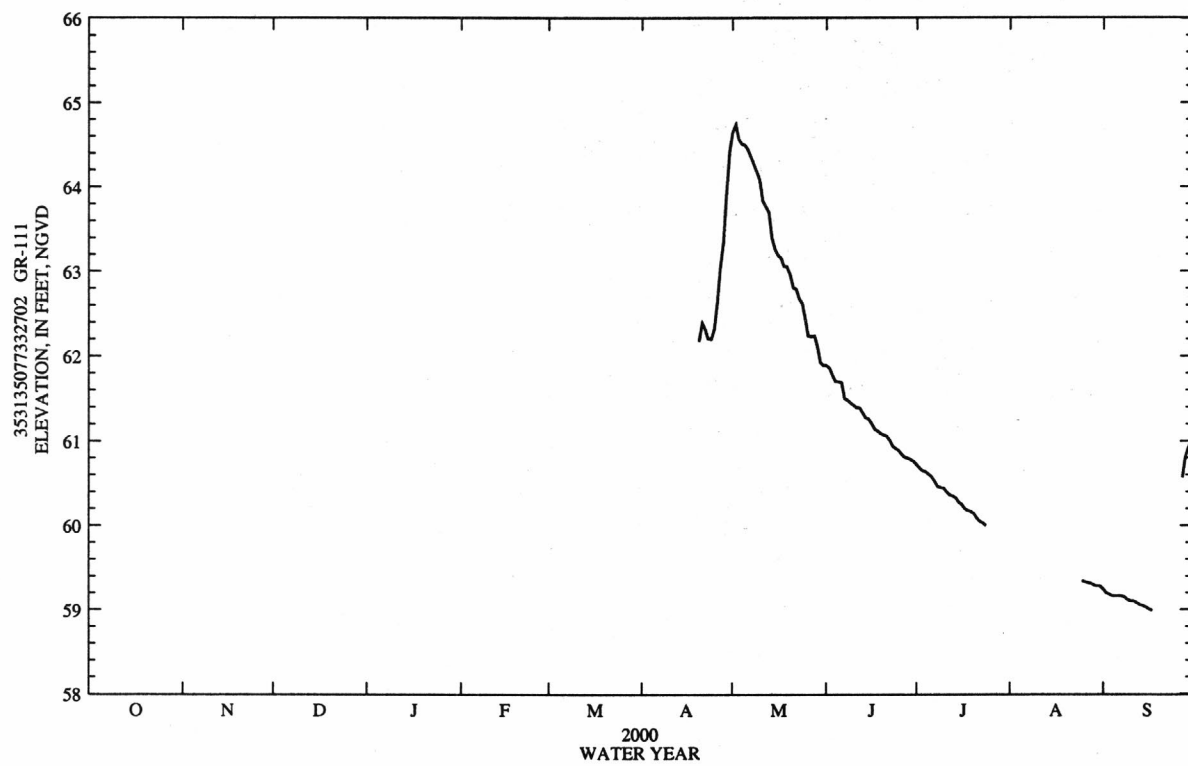
PERIOD OF RECORD.--April 2000 to September 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 64.77 ft above NGVD, May 2, 2000; lowest water level recorded, 58.99 ft above NGVD, Sept. 16, 2000.

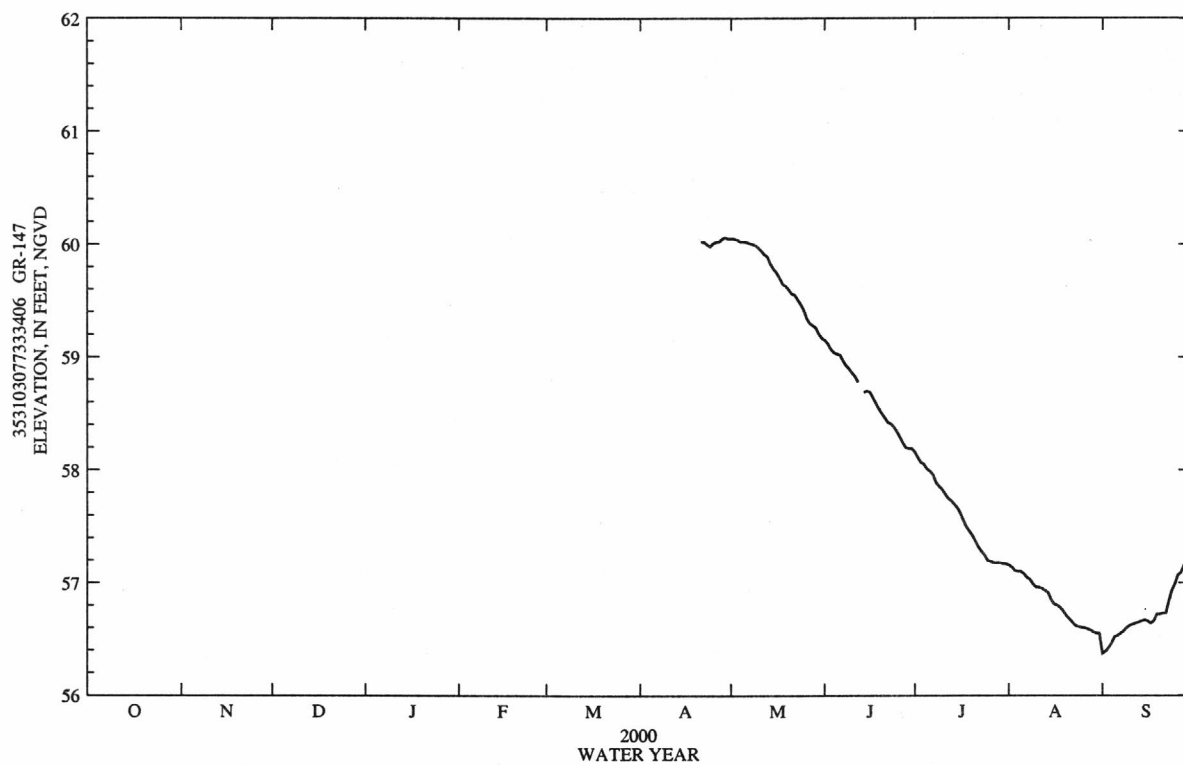
## ELEVATION (FEET NGVD), FOR PERIOD APRIL 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	64.65	61.89	60.72	---	59.24
2	---	---	---	---	---	---	---	64.74	61.86	60.68	---	59.20
3	---	---	---	---	---	---	---	64.57	61.78	60.65	---	59.18
4	---	---	---	---	---	---	---	64.51	61.70	60.64	---	59.16
5	---	---	---	---	---	---	---	64.50	61.70	60.61	---	59.16
6	---	---	---	---	---	---	---	64.45	61.69	60.58	---	59.16
7	---	---	---	---	---	---	---	64.36	61.50	60.52	---	59.16
8	---	---	---	---	---	---	---	64.27	61.48	60.46	---	59.15
9	---	---	---	---	---	---	---	64.18	61.45	60.45	---	59.12
10	---	---	---	---	---	---	---	64.09	61.42	60.44	---	59.10
11	---	---	---	---	---	---	---	63.83	61.39	60.40	---	59.10
12	---	---	---	---	---	---	---	63.77	61.39	60.36	---	59.08
13	---	---	---	---	---	---	---	63.70	61.33	60.35	---	59.06
14	---	---	---	---	---	---	---	63.41	61.27	60.33	---	59.05
15	---	---	---	---	---	---	---	63.26	61.26	60.28	---	59.03
16	---	---	---	---	---	---	---	63.19	61.21	60.25	---	59.01
17	---	---	---	---	---	---	---	63.16	61.14	60.20	---	58.99
18	---	---	---	---	---	---	---	63.06	61.12	60.18	---	---
19	---	---	---	---	---	---	---	63.06	61.09	60.17	---	---
20	---	---	---	---	---	---	62.18	62.96	61.07	60.14	---	---
21	---	---	---	---	---	---	62.39	62.81	61.06	60.09	---	---
22	---	---	---	---	---	---	62.32	62.79	61.01	60.05	---	---
23	---	---	---	---	---	---	62.21	62.68	60.94	60.03	---	---
24	---	---	---	---	---	---	62.20	62.62	60.91	60.00	---	---
25	---	---	---	---	---	---	62.33	62.44	60.89	---	59.34	---
26	---	---	---	---	---	---	62.63	62.24	60.84	---	59.33	---
27	---	---	---	---	---	---	63.04	62.23	60.81	---	59.32	60.57
28	---	---	---	---	---	---	63.35	62.24	60.80	---	59.31	60.81
29	---	---	---	---	---	---	63.92	62.11	60.78	---	59.29	60.92
30	---	---	---	---	---	---	64.43	61.93	60.76	---	59.28	61.00
31	---	---	---	---	---	---	---	61.89	---	---	59.28	---
WTR YR 2000	MEAN 61.32			MAX 64.74			MIN 58.99					



DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	60.05	59.15	58.16	57.16	56.37
2	---	---	---	---	---	---	---	60.05	59.12	58.11	57.14	56.39
3	---	---	---	---	---	---	---	60.04	59.07	58.07	57.11	56.42
4	---	---	---	---	---	---	---	60.02	59.04	58.05	57.10	56.46
5	---	---	---	---	---	---	---	60.02	59.03	58.01	57.10	56.52
6	---	---	---	---	---	---	---	60.02	59.02	57.99	57.08	56.53
7	---	---	---	---	---	---	---	60.01	58.97	57.96	57.05	56.55
8	---	---	---	---	---	---	---	60.00	58.93	57.89	57.03	56.57
9	---	---	---	---	---	---	---	59.99	58.90	57.86	56.99	56.60
10	---	---	---	---	---	---	---	59.97	58.86	57.83	56.96	56.62
11	---	---	---	---	---	---	---	59.94	58.83	57.79	56.96	56.63
12	---	---	---	---	---	---	---	59.91	58.78	57.75	56.95	56.64
13	---	---	---	---	---	---	---	59.89	---	57.73	56.93	56.65
14	---	---	---	---	---	---	---	59.83	58.69	57.70	56.91	56.66
15	---	---	---	---	---	---	---	59.78	58.70	57.67	56.85	56.67
16	---	---	---	---	---	---	---	59.75	58.69	57.62	56.81	56.66
17	---	---	---	---	---	---	---	59.70	58.64	57.56	56.80	56.64
18	---	---	---	---	---	---	---	59.65	58.59	57.50	56.78	56.66
19	---	---	---	---	---	---	---	59.63	58.54	57.46	56.75	56.72
20	---	---	---	---	---	---	---	59.60	58.50	57.42	56.71	56.72
21	---	---	---	---	---	---	60.02	59.56	58.46	57.37	56.68	56.73
22	---	---	---	---	---	---	60.02	59.55	58.42	57.32	56.65	56.73
23	---	---	---	---	---	---	60.00	59.51	58.41	57.28	56.62	56.84
24	---	---	---	---	---	---	59.98	59.47	58.38	57.25	56.61	56.93
25	---	---	---	---	---	---	60.01	59.42	58.34	57.20	56.60	56.99
26	---	---	---	---	---	---	60.02	59.35	58.29	57.19	56.60	57.07
27	---	---	---	---	---	---	60.02	59.30	58.24	57.18	56.59	57.09
28	---	---	---	---	---	---	60.05	59.28	58.20	57.18	56.58	57.15
29	---	---	---	---	---	---	60.06	59.26	58.19	57.18	56.56	57.19
30	---	---	---	---	---	---	60.05	59.21	58.19	57.17	56.55	57.24
31	---	---	---	---	---	---	---	59.17	---	57.17	56.55	---
WTR YR 2000	MEAN 58.03			MAX 60.06		MIN 56.37						





## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## HAYWOOD COUNTY

352315082484401. Local number, NC-40; County name, HW-047.

LOCATION.--Lat 35°23'15", long 82°48'44", Hydrologic Unit 06010106, 2 mi south of Cruso on U.S. Highway 276 at Camp Hope. Owner: Blue Ridge Paper Products, Inc.

AQUIFER.--Unconfined saprolite derived from muscovite-biotite gneiss of Precambrian age.

WELL CHARACTERISTICS.--Dug observation well, depth 18.5 ft, diameter 12 in., cased to 18.5 ft, open end, backfilled with gravel from 4 to 18.5 ft.

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

DATUM.--Land-surface datum is 3,148.26 ft above sea level. Measuring point: Top of casing, 1.00 ft above land-surface datum.

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

PERIOD OF RECORD.--December 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.24 ft below land-surface datum, Mar. 12, 1977; lowest water level recorded, 6.90 ft below land-surface datum, Oct. 7, 8, 9, 1986.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

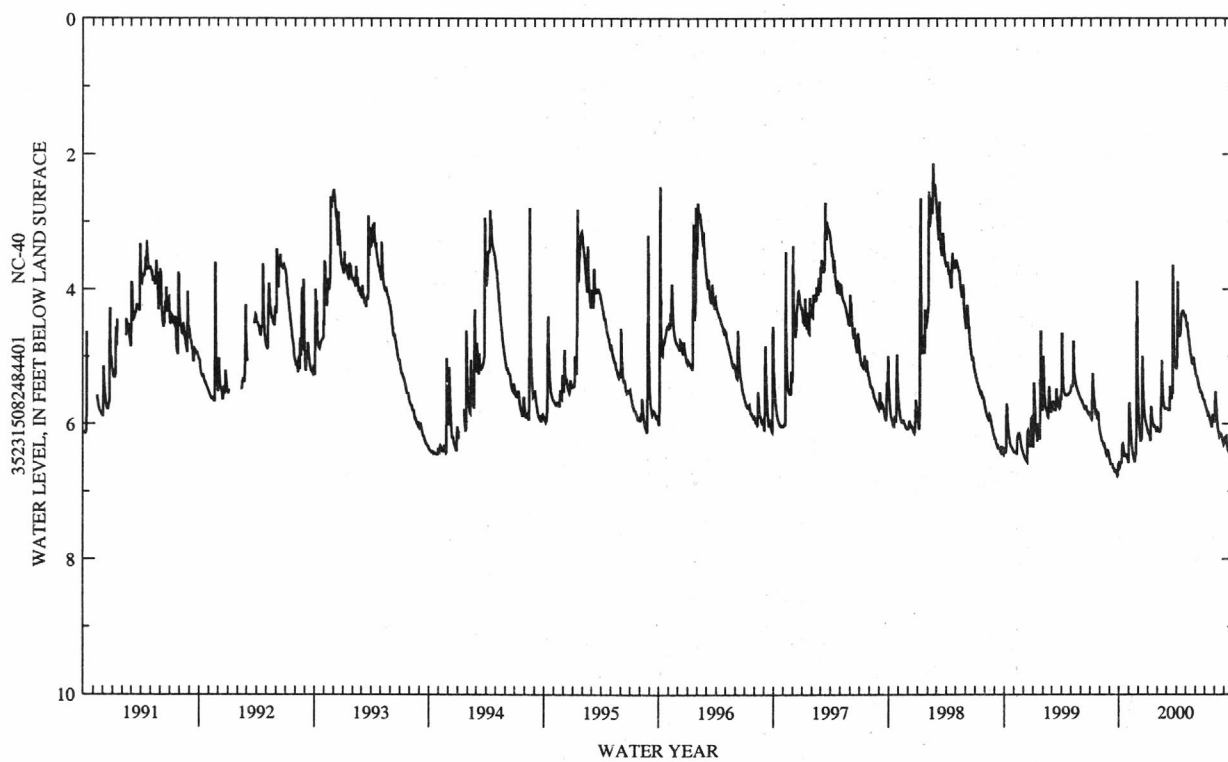
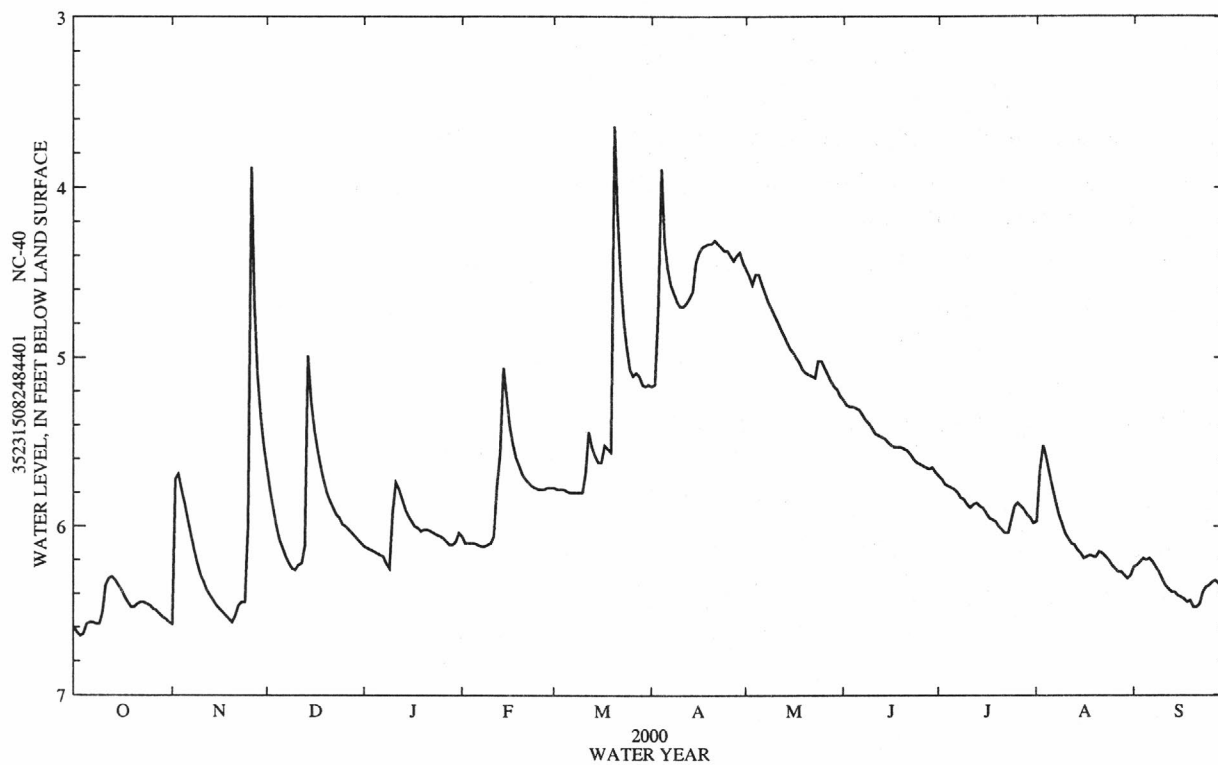
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.60	6.58	5.66	6.12	6.06	5.77	5.17	4.48	5.25	5.70	5.97	6.24
2	6.63	5.72	5.79	6.13	6.10	5.78	5.16	4.52	5.28	5.72	5.67	6.23
3	6.65	5.69	5.90	6.14	6.10	5.78	4.73	4.57	5.29	5.75	5.52	6.21
4	6.64	5.79	6.00	6.15	6.10	5.78	3.89	4.51	5.29	5.76	5.59	6.19
5	6.58	5.87	6.08	6.16	6.10	5.79	4.31	4.51	5.30	5.77	5.68	6.20
6	6.57	5.97	6.13	6.17	6.11	5.80	4.47	4.57	5.31	5.78	5.77	6.19
7	6.57	6.06	6.18	6.18	6.12	5.80	4.57	4.62	5.34	5.80	5.85	6.21
8	6.58	6.15	6.22	6.22	6.12	5.80	4.62	4.67	5.37	5.83	5.93	6.24
9	6.58	6.22	6.25	6.25	6.11	5.80	4.67	4.71	5.39	5.84	5.98	6.27
10	6.51	6.29	6.26	5.92	6.10	5.80	4.70	4.75	5.42	5.87	6.04	6.31
11	6.35	6.33	6.23	5.74	6.06	5.68	4.70	4.79	5.45	5.89	6.07	6.35
12	6.31	6.38	6.22	5.78	5.76	5.44	4.68	4.83	5.46	5.87	6.10	6.37
13	6.30	6.41	6.12	5.84	5.57	5.53	4.65	4.87	5.47	5.86	6.11	6.39
14	6.32	6.44	4.99	5.90	5.06	5.58	4.61	4.91	5.48	5.88	6.14	6.39
15	6.35	6.47	5.26	5.94	5.22	5.62	4.44	4.95	5.50	5.89	6.16	6.41
16	6.38	6.49	5.42	5.97	5.40	5.62	4.38	4.97	5.52	5.92	6.19	6.42
17	6.42	6.51	5.54	6.00	5.51	5.52	4.35	5.00	5.53	5.95	6.18	6.43
18	6.45	6.53	5.64	6.01	5.59	5.54	4.34	5.03	5.53	5.96	6.17	6.45
19	6.48	6.55	5.73	6.03	5.64	5.56	4.33	5.07	5.53	5.97	6.18	6.44
20	6.48	6.57	5.80	6.02	5.69	3.64	4.33	5.09	5.54	6.00	6.18	6.48
21	6.46	6.53	5.85	6.02	5.72	4.16	4.31	5.10	5.55	6.02	6.15	6.48
22	6.45	6.47	5.89	6.03	5.74	4.54	4.33	5.11	5.57	6.04	6.16	6.46
23	6.45	6.45	5.93	6.04	5.76	4.79	4.35	5.12	5.60	6.04	6.18	6.39
24	6.46	6.45	5.95	6.05	5.77	4.95	4.37	5.02	5.62	5.96	6.20	6.36
25	6.47	6.00	5.99	6.06	5.78	5.07	4.37	5.02	5.63	5.88	6.23	6.35
26	6.49	3.88	6.00	6.07	5.78	5.11	4.40	5.06	5.64	5.86	6.25	6.33
27	6.50	4.68	6.02	6.09	5.78	5.09	4.43	5.10	5.65	5.88	6.27	6.32
28	6.52	5.10	6.04	6.11	5.77	5.11	4.40	5.14	5.66	5.90	6.27	6.34
29	6.54	5.35	6.06	6.11	5.77	5.16	4.38	5.17	5.65	5.93	6.29	6.37
30	6.55	5.52	6.08	6.09	---	5.17	4.44	5.19	5.68	5.95	6.31	6.40
31	6.57	---	6.10	6.04	---	5.16	---	5.23	---	5.98	6.29	---

WTR YR 2000

MEAN 5.74

HIGH 3.64

LOW 6.65



## HERTFORD COUNTY

363026077001906. Local number, NC-155; DENR Como Research Station well B20u6; County number, HF-085.

LOCATION.--Lat 36°30'26", long 77°00'19", 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 sea level (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. Miscellaneous water-level measurements September 1981 to current year. Continuous record began June 2000. Records from September 1981 to October 1986 are unpublished and available in 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 measured, 162.05 ft below land-surface datum, June 3, 1998.

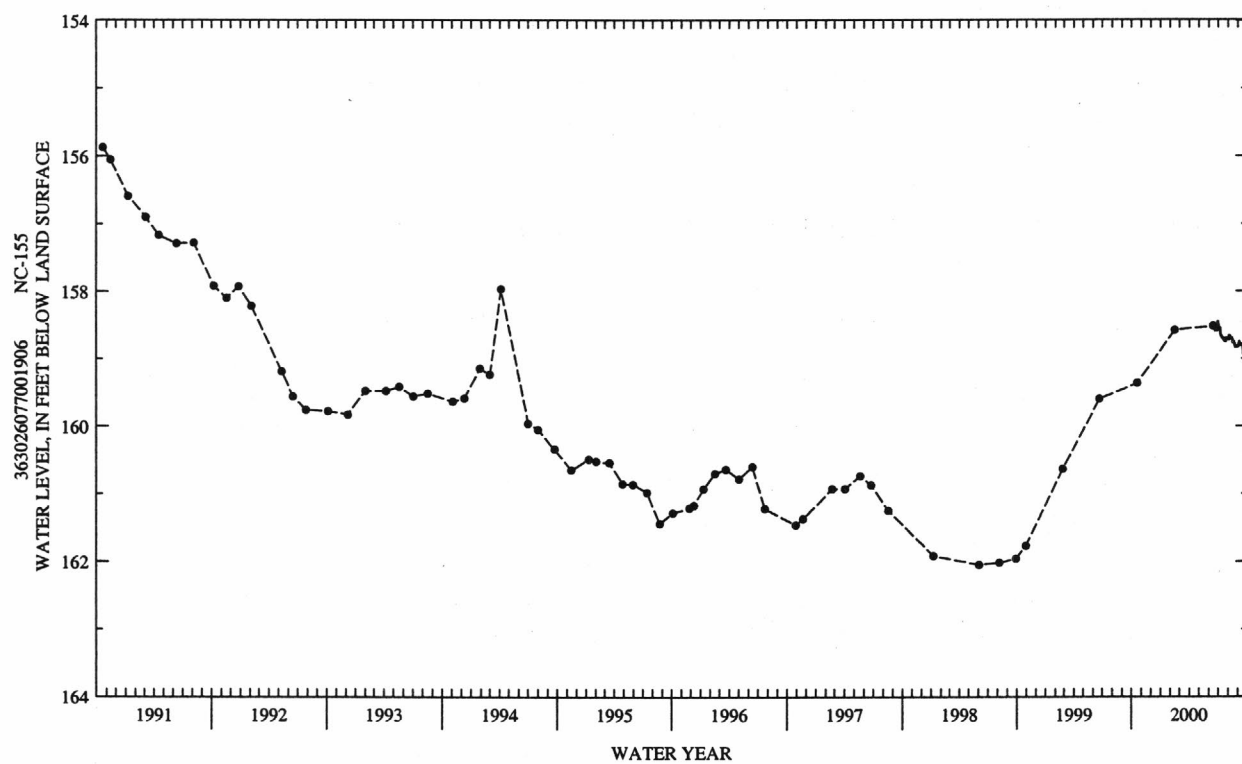
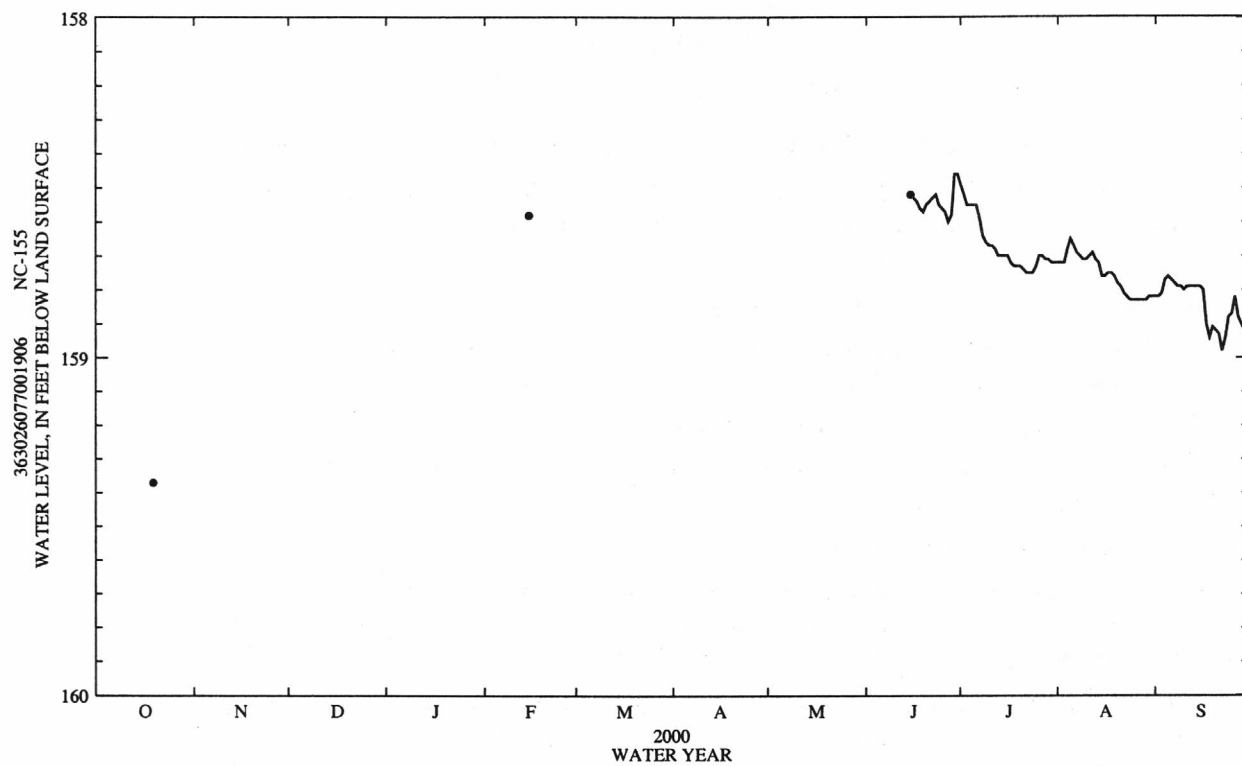
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	159.37	FEB 15	158.58	JUN 15	158.52

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD JUNE 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	158.55	158.65	158.76
10	---	---	---	---	---	---	---	---	---	158.67	158.71	158.80
15	---	---	---	---	---	---	---	---	---	158.70	158.76	158.79
20	---	---	---	---	---	---	---	---	158.55	158.73	158.78	158.92
25	---	---	---	---	---	---	---	---	158.56	158.73	158.83	158.87
EOM---	---	---	---	---	---	---	---	158.46	158.72	158.82	158.95	
WTR YR 2000		MEAN 158.73		HIGH 158.46 JUN 29		LOW 158.98 SEP 22						



## HOKE COUNTY

350314079213301. County number, HO-032; DENR McCain Research Station well T48i2.

LOCATION.--Lat 35°03'17", long 79°21'35", 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 92 to 110 ft, screened interval from 82 to 92 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 350 ft above sea level (from topographic map). Measuring point: Top of 4-inch casing, 2.0 ft above land-surface datum (since May 2000).

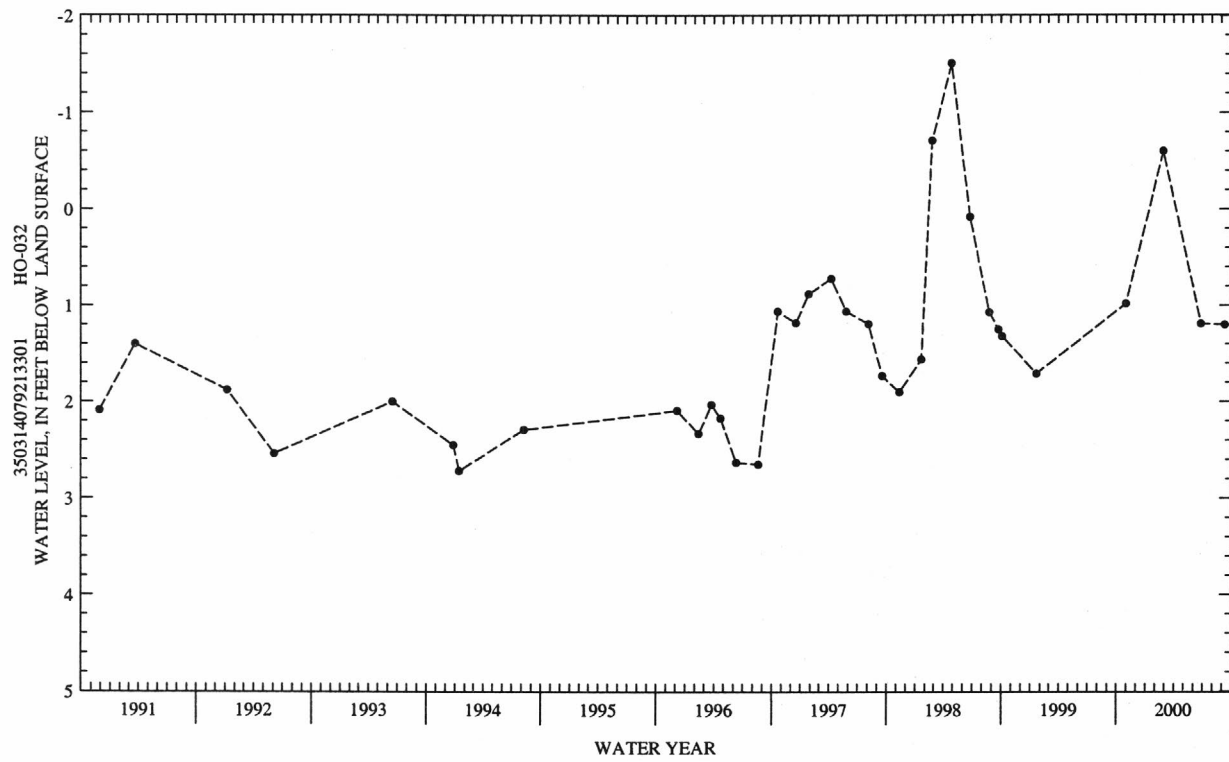
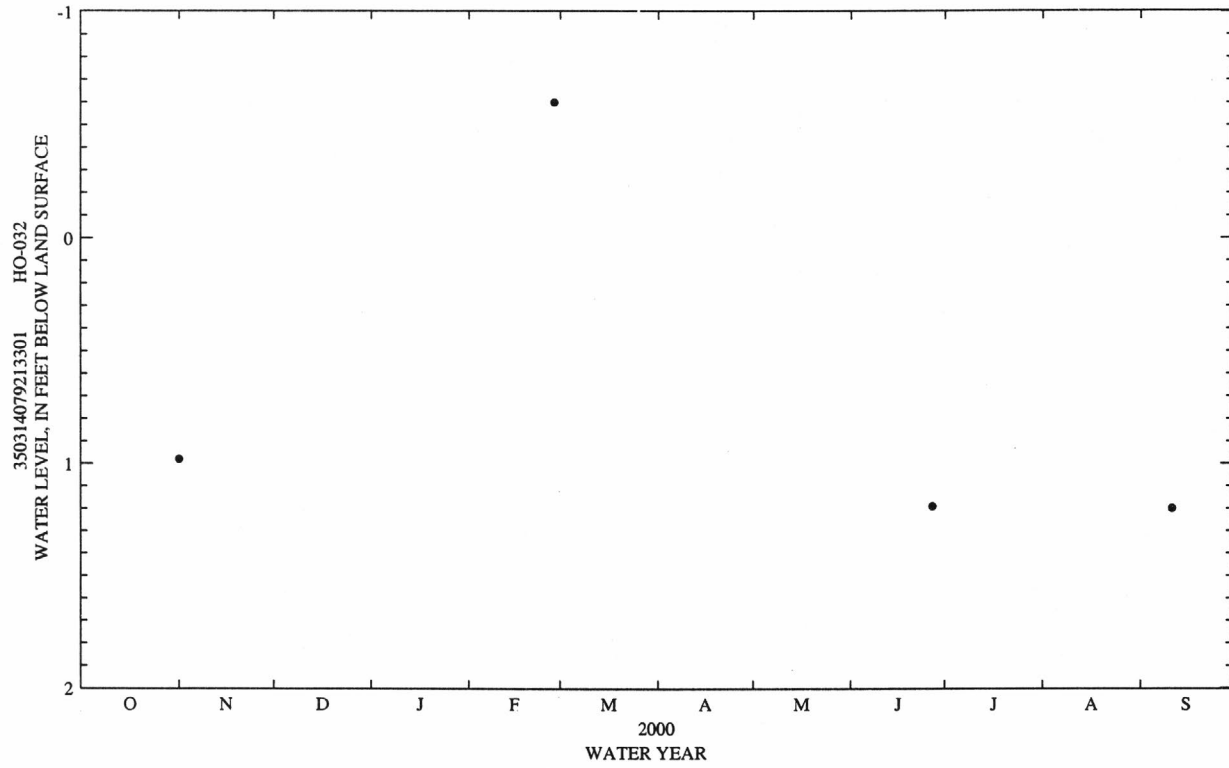
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study. Negative values of water levels measured in feet below land surface indicate ground-water levels that are above land surface.

PERIOD OF RECORD.--Miscellaneous water-level measurements February 1972 to current year. Records from February 1972 to December 1987 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.51 ft above land-surface datum, April 28, 1998; lowest water level measured, 4.52 ft below land-surface datum, July 15, 1981.

WATER LEVEL, IN FEET BELOW OR ABOVE (-) LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	.98	FEB 28	-.60	JUN 27	1.19	SEP 11	1.20



## HOKE COUNTY--Continued

345807079134201. County number, HO-037; Raeford well 8.

LOCATION.--Lat 34°58'07", long 79°13'42", 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 sea level (from topographic map). Measuring point: Top of well vent pipe in pump pedestal, 1.0 ft above land-surface datum.

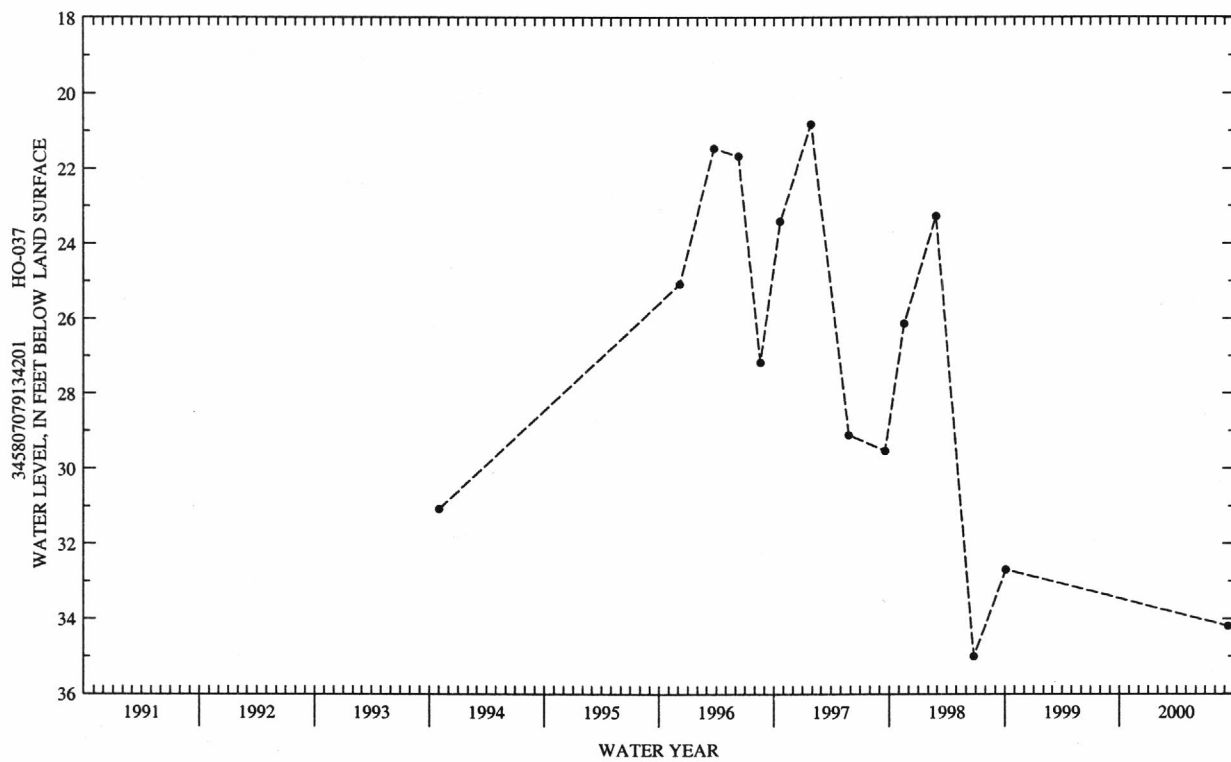
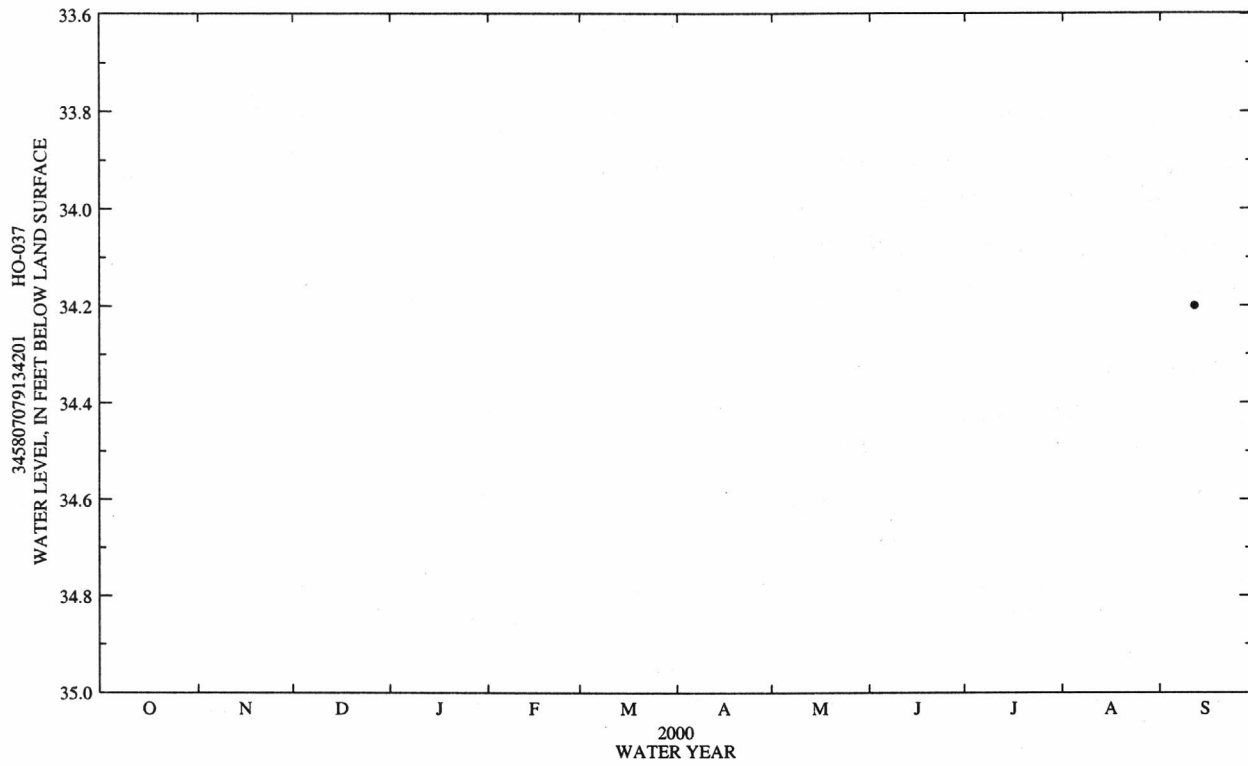
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 35.01 ft below land-surface datum, June 25, 1998.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL
SEP 12	34.2





## HOKE COUNTY--Continued

345933079144406. County number, HO-047; DENR Raeford Research Station well U46e6.

LOCATION.--Lat 34°59'34", long 79°14'42", Hydrologic Unit 03030004, northwest of Raeford, 0.2 mi north of Secondary Road 1203 on Secondary Road 1311 at North Carolina Department of Transportation Maintenance Yard.

Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 111 ft, diameter 4 in. to 62 ft, diameter 2.5 in. from 62 to 111 ft, screened intervals from 62 to 67 ft and 96 to 101 ft.

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

DATUM.--Land-surface datum is 274.37 ft above sea level (levels by DENR). Measuring point: Top of flange attached to floor of instrument shelter, 1.7 ft above land-surface datum (since December 1995).

REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study. Water levels affected by pumping of nearby municipal wells.

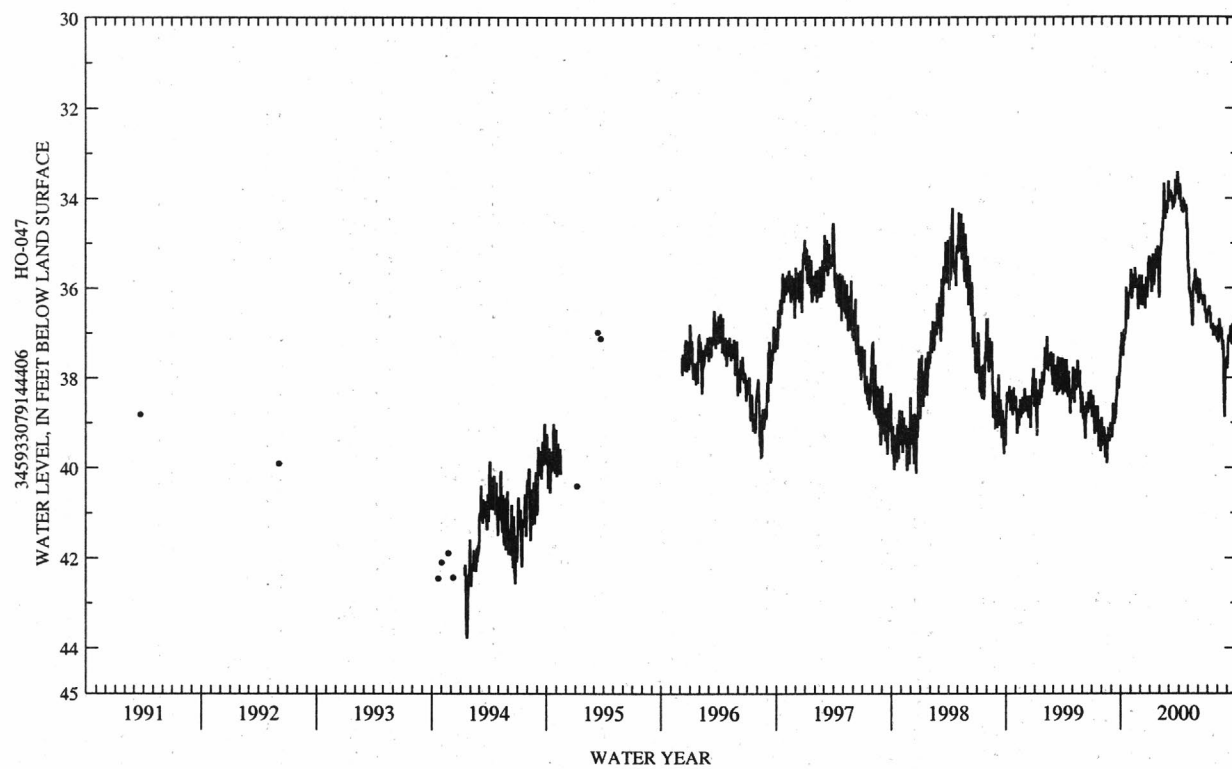
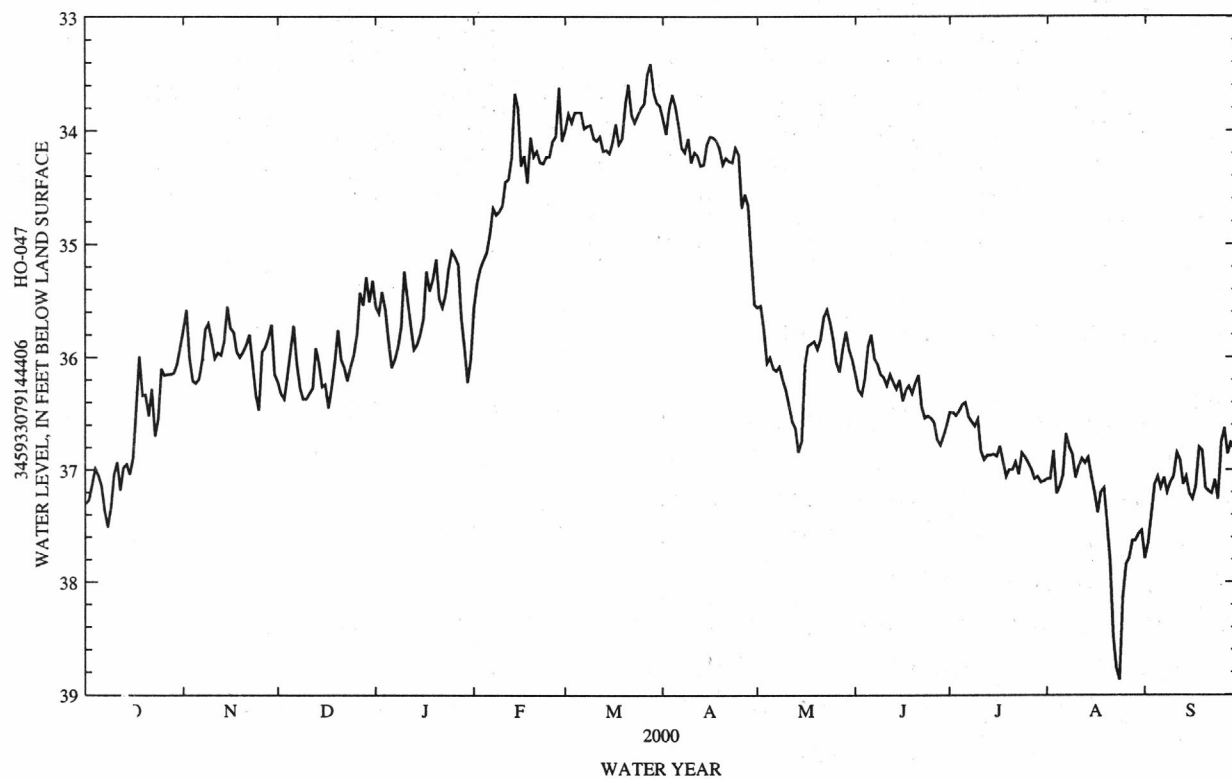
PERIOD OF RECORD.--Miscellaneous water-level measurements July 1981 to current year. Continuous record from January 1994 to November 1994 and from December 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 33.31 ft below land-surface datum, Mar. 27, 2000; lowest water level recorded, 43.85 ft below land-surface datum, Jan. 20, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.30	35.75	36.22	35.55	35.55	33.99	33.89	35.56	36.15	36.49	37.08	37.79
2	37.27	35.58	36.32	35.61	35.34	33.85	34.03	35.54	36.29	36.49	37.08	37.65
3	37.13	36.00	36.37	35.42	35.21	33.93	33.81	35.75	36.33	36.52	36.83	37.40
4	36.99	36.21	36.17	35.58	35.14	33.84	33.68	36.05	36.19	36.48	37.21	37.13
5	37.05	36.23	35.95	35.85	35.07	33.84	33.79	36.00	35.90	36.42	37.15	37.06
6	37.14	36.19	35.72	36.09	34.91	33.84	33.95	36.10	35.80	36.40	37.05	37.16
7	37.37	36.02	36.05	36.02	34.68	33.98	34.15	36.12	36.01	36.53	36.68	37.07
8	37.51	35.75	36.27	35.91	34.74	33.96	34.19	36.08	36.06	36.57	36.80	37.20
9	37.33	35.70	36.37	35.73	34.71	33.95	34.07	36.20	36.15	36.61	36.86	37.11
10	37.04	35.85	36.37	35.24	34.66	34.07	34.28	36.29	36.18	36.55	37.07	37.06
11	36.93	36.01	36.32	35.49	34.45	34.09	34.19	36.43	36.25	36.83	36.97	36.85
12	37.18	35.96	36.27	35.71	34.43	34.05	34.22	36.57	36.15	36.91	36.90	36.91
13	36.98	35.98	35.92	35.93	34.24	34.18	34.31	36.63	36.22	36.87	36.94	37.13
14	36.95	35.86	36.05	35.89	33.67	34.17	34.30	36.84	36.28	36.87	36.89	37.06
15	37.04	35.55	36.26	35.80	33.80	34.20	34.12	36.74	36.20	36.86	37.06	37.21
16	36.89	35.74	36.24	35.66	34.31	34.10	34.05	36.07	36.39	36.88	37.20	37.26
17	36.44	35.78	36.45	35.24	34.22	33.94	34.06	35.90	36.29	36.79	37.38	37.15
18	35.99	35.95	36.27	35.41	34.46	34.12	34.09	35.88	36.25	36.93	37.20	36.80
19	36.34	36.00	36.04	35.31	34.06	34.07	34.16	35.86	36.32	37.06	37.16	36.83
20	36.33	35.95	35.76	35.13	34.23	33.78	34.30	35.93	36.23	37.00	37.47	37.16
21	36.52	35.89	36.02	35.48	34.18	33.59	34.24	35.84	36.16	37.00	37.80	37.19
22	36.28	35.80	36.09	35.56	34.28	33.86	34.27	35.64	36.44	36.93	38.48	37.21
23	36.70	36.05	36.21	35.45	34.29	33.93	34.28	35.58	36.54	37.04	38.76	37.09
24	36.55	36.33	36.08	35.22	34.23	33.86	34.15	35.69	36.52	36.85	38.87	37.26
25	36.10	36.47	35.98	35.06	34.23	33.80	34.21	35.85	36.54	36.89	38.14	36.75
26	36.16	35.95	35.80	35.11	34.09	33.76	34.68	36.05	36.58	36.94	37.84	36.63
27	36.15	35.91	35.43	35.18	34.05	33.50	34.56	36.13	36.73	37.00	37.79	36.86
28	36.15	35.83	35.54	35.65	33.62	33.41	34.66	35.93	36.78	37.08	37.63	36.76
29	36.14	35.71	35.29	35.92	34.09	33.66	35.10	35.77	36.70	37.06	37.63	36.79
30	36.06	36.15	35.51	36.22	---	33.75	35.53	35.93	36.60	37.11	37.57	36.69
31	35.91	---	35.32	36.02	---	33.78	---	36.02	---	37.10	37.54	---
WTR YR 2000	MEAN 35.88		HIGH 33.41		LOW 38.87							



## HOKE COUNTY--Continued

350210079064501. County number, HO-114; Hoke County Utilities well WA4.

LOCATION.--Lat 35°02'10", long 79°06'45", Hydrologic Unit 03030004, northeast of Raeford, 0.3 mi north of U.S. Highway 401 on Carolina Drive. Owner: Hoke County Utilities.

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

WELL CHARACTERISTICS.--Drilled supply well, depth 120 ft, diameter 8 in., screened intervals from 60 to 80 ft and 105 to 115 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 262 ft above sea level (from topographic map). Measuring point: Top of well access pipe in pump pedestal, 2.1 ft above land-surface datum.

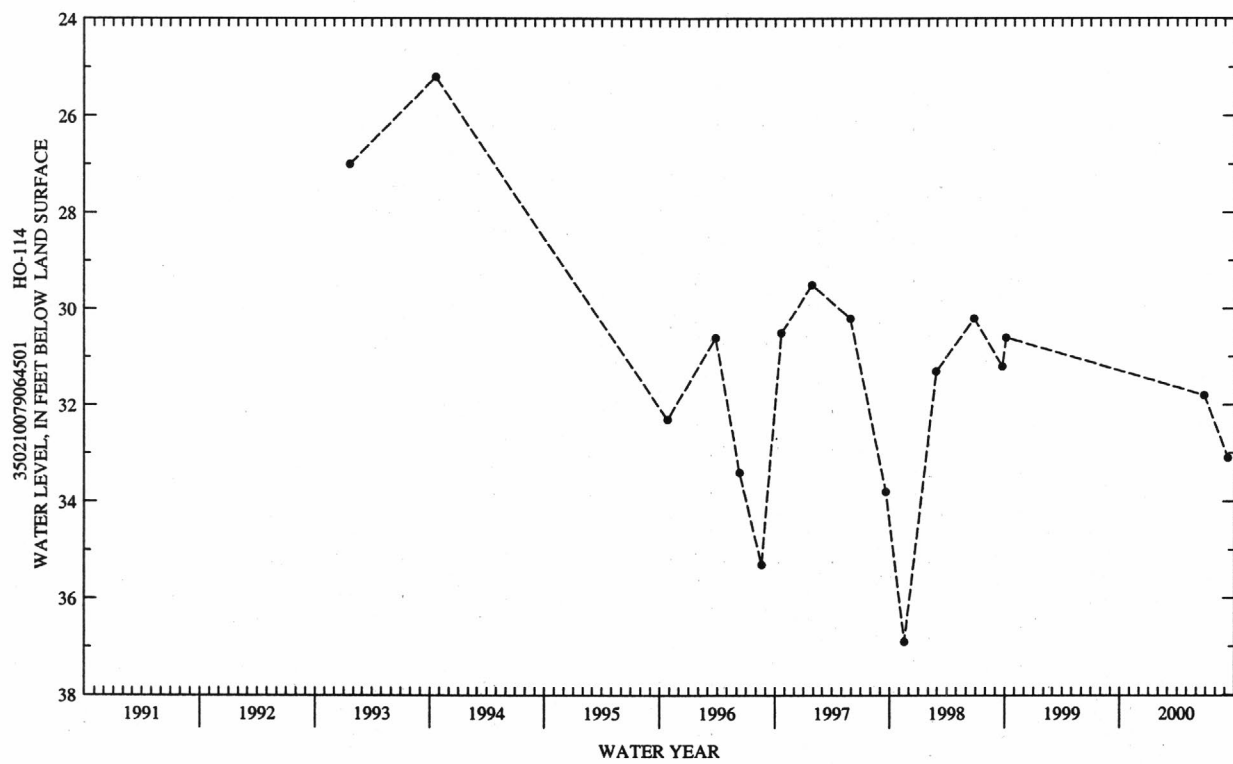
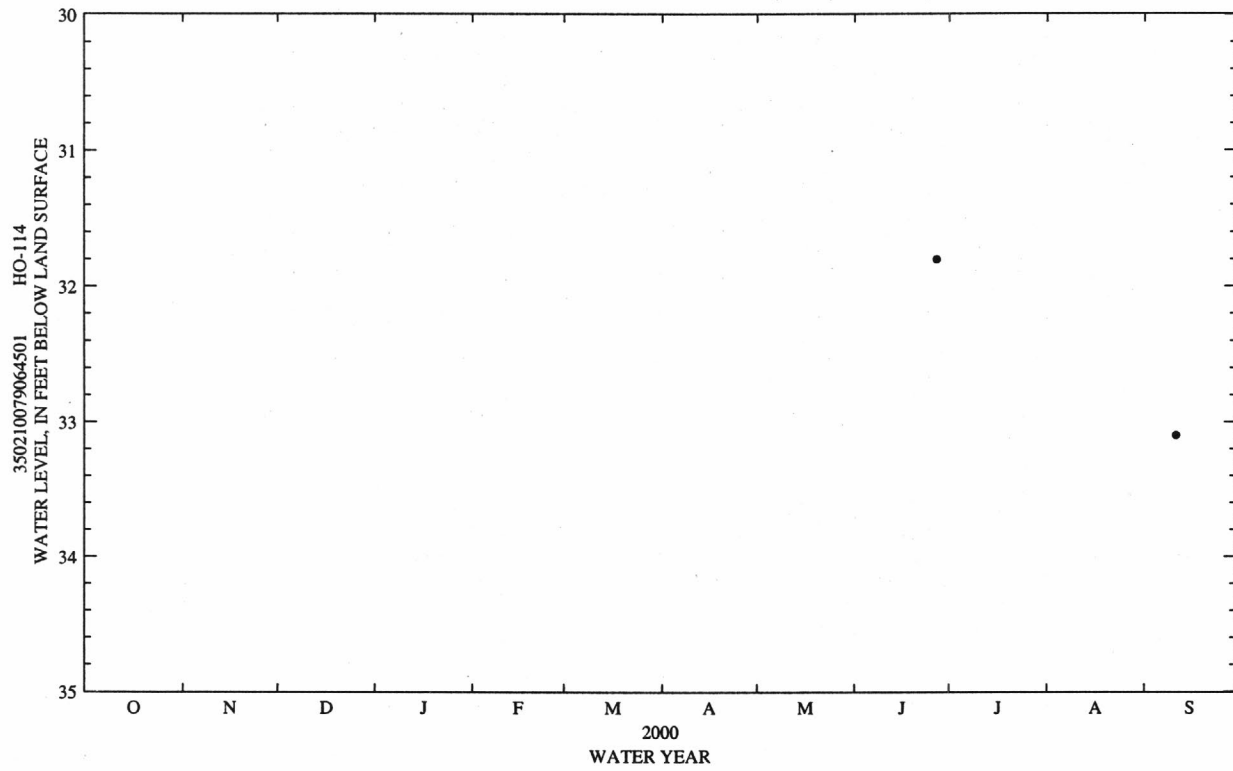
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements January 1993 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.2 ft below land-surface datum, Oct. 21, 1993; lowest water level measured, 36.9 ft below land-surface datum, Nov. 17, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 27	31.8	SEP 11	33.1



## JONES COUNTY

345809077301408. Local number, NC-173; DENR Comfort Research Station well U26j8; County number, JO-035.

LOCATION.--Lat 34°58'09", long 77°30'14", 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 sea level (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.

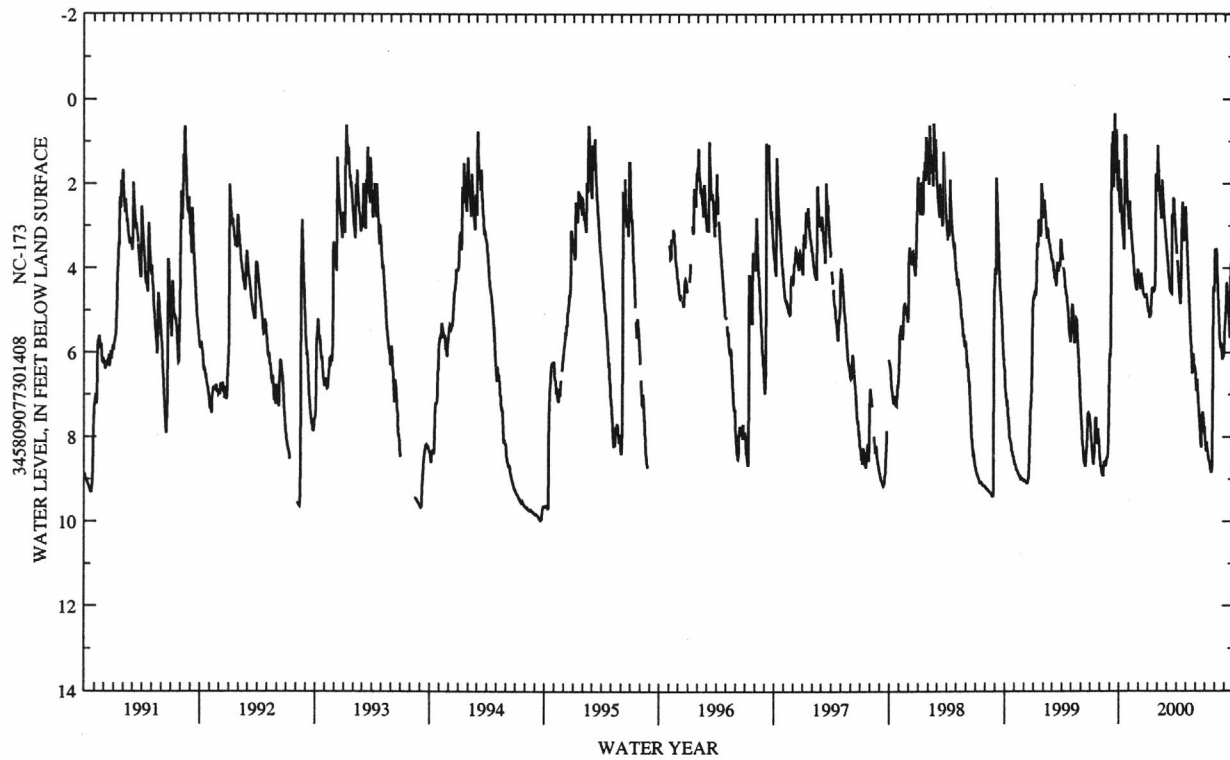
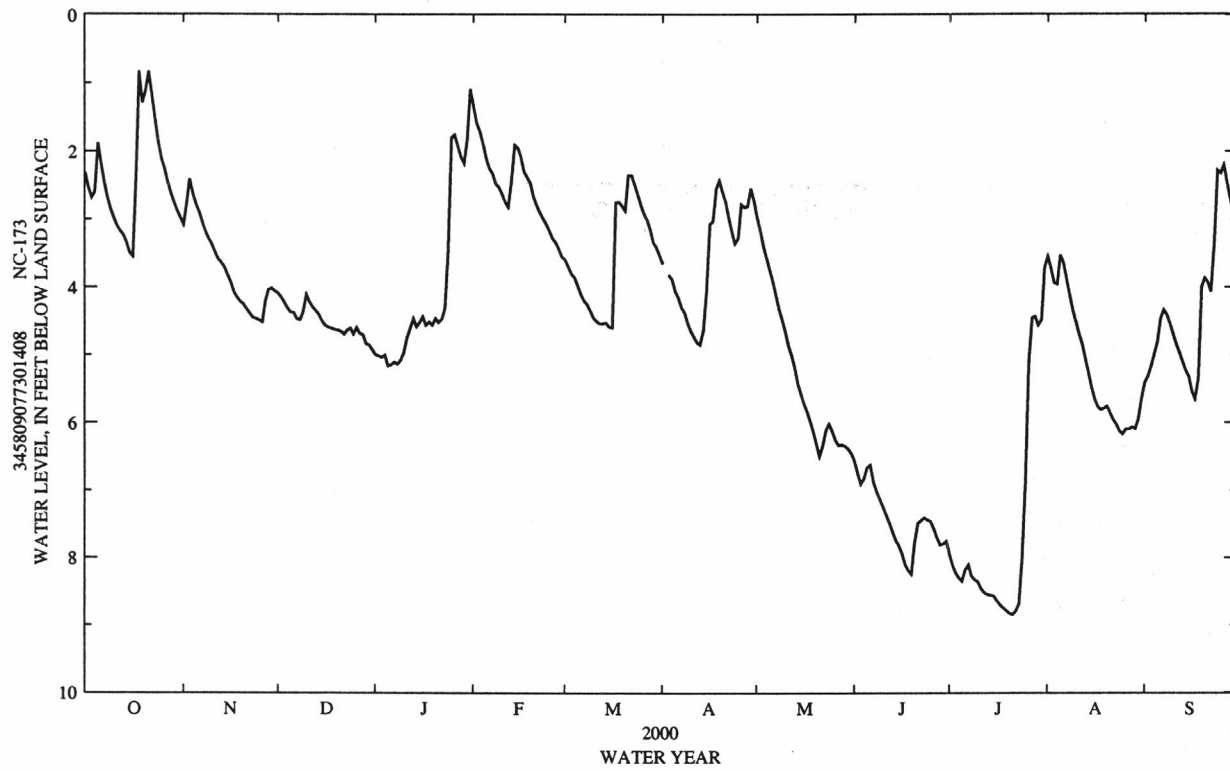
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.06 ft above land-surface datum, Sept. 16, 1999; lowest water level recorded, 9.97 ft below land-surface datum, Sept. 19, 20, 21, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.32	3.08	4.09	5.00	1.34	3.60	3.65	2.96	6.57	7.96	3.55	5.41
2	2.53	2.77	4.15	5.02	1.59	3.70	---	3.17	6.74	8.12	3.72	5.31
3	2.68	2.41	4.23	5.04	1.71	3.81	3.82	3.39	6.91	8.23	3.94	5.17
4	2.60	2.63	4.31	5.01	1.89	3.86	3.89	3.57	6.83	8.30	3.96	4.98
5	1.88	2.78	4.37	5.17	2.11	3.98	4.06	3.74	6.67	8.35	3.53	4.81
6	2.18	2.90	4.38	5.15	2.25	4.11	4.15	3.92	6.63	8.19	3.65	4.47
7	2.47	3.05	4.47	5.11	2.33	4.20	4.30	4.12	6.88	8.11	3.89	4.34
8	2.68	3.18	4.49	5.14	2.48	4.26	4.38	4.32	7.02	8.28	4.13	4.41
9	2.85	3.28	4.37	5.08	2.53	4.35	4.54	4.49	7.13	8.33	4.35	4.55
10	2.98	3.37	4.11	4.97	2.63	4.46	4.65	4.66	7.25	8.36	4.53	4.70
11	3.09	3.48	4.22	4.75	2.74	4.51	4.74	4.87	7.36	8.46	4.70	4.85
12	3.17	3.58	4.30	4.61	2.82	4.54	4.82	5.01	7.48	8.52	4.85	4.97
13	3.23	3.64	4.35	4.47	2.44	4.54	4.85	5.19	7.61	8.55	5.06	5.11
14	3.34	3.70	4.41	4.59	1.91	4.53	4.63	5.42	7.74	8.56	5.26	5.23
15	3.49	3.82	4.51	4.53	1.95	4.59	4.06	5.58	7.82	8.57	5.48	5.32
16	3.55	3.92	4.57	4.44	2.08	4.60	3.07	5.72	7.94	8.64	5.65	5.54
17	2.33	4.07	4.60	4.57	2.30	2.75	3.03	5.83	8.10	8.70	5.77	5.65
18	.83	4.15	4.61	4.52	2.38	2.74	2.55	5.98	8.19	8.75	5.81	5.35
19	1.29	4.21	4.63	4.57	2.47	2.80	2.43	6.13	8.25	8.79	5.79	4.00
20	1.12	4.25	4.64	4.47	2.67	2.87	2.60	6.32	7.78	8.83	5.76	3.87
21	.83	4.32	4.66	4.53	2.80	2.35	2.74	6.50	7.49	8.85	5.86	3.93
22	1.17	4.39	4.70	4.48	2.90	2.35	2.97	6.34	7.45	8.80	5.96	4.07
23	1.54	4.45	4.64	4.32	2.99	2.49	3.18	6.12	7.41	8.69	6.03	3.34
24	1.87	4.47	4.61	3.49	3.07	2.64	3.36	6.02	7.44	8.02	6.13	2.28
25	2.11	4.49	4.70	1.80	3.17	2.79	3.28	6.13	7.46	6.87	6.17	2.32
26	2.26	4.52	4.60	1.76	3.28	2.92	2.78	6.26	7.57	5.11	6.10	2.20
27	2.45	4.21	4.69	1.93	3.34	3.01	2.82	6.34	7.70	4.46	6.10	2.46
28	2.62	4.04	4.71	2.08	3.44	3.15	2.81	6.33	7.81	4.44	6.07	2.69
29	2.75	4.02	4.84	2.18	3.55	3.34	2.55	6.35	7.80	4.57	6.09	2.91
30	2.87	4.06	4.86	1.82	---	3.41	2.73	6.39	7.76	4.49	5.95	3.10
31	2.97	---	4.93	1.09	---	3.53	---	6.46	---	3.71	5.64	---

WTR YR 2000      MEAN 4.51      HIGH .83      LOW 8.85



## LENOIR COUNTY

351600077381001. Local number, NC-128; County number, LN-128.

LOCATION.--Lat 35°15'59", long 77°37'52", Hydrologic Unit 03020202, on west edge of Kinston at intersection of U.S. Highways 70 and 258 Bypass, and U.S. Highways 70 and 258 Business. Owner: City of Kinston.

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

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 10 in., cased to 160 ft, screened intervals unknown.

INSTRUMENTATION.--Water-level recorder collecting data at 30-minute intervals.

DATUM.--Land-surface datum is 33.5 ft above sea level. Measuring point: Top of instrument shelf, 2.10 ft above land-surface datum.

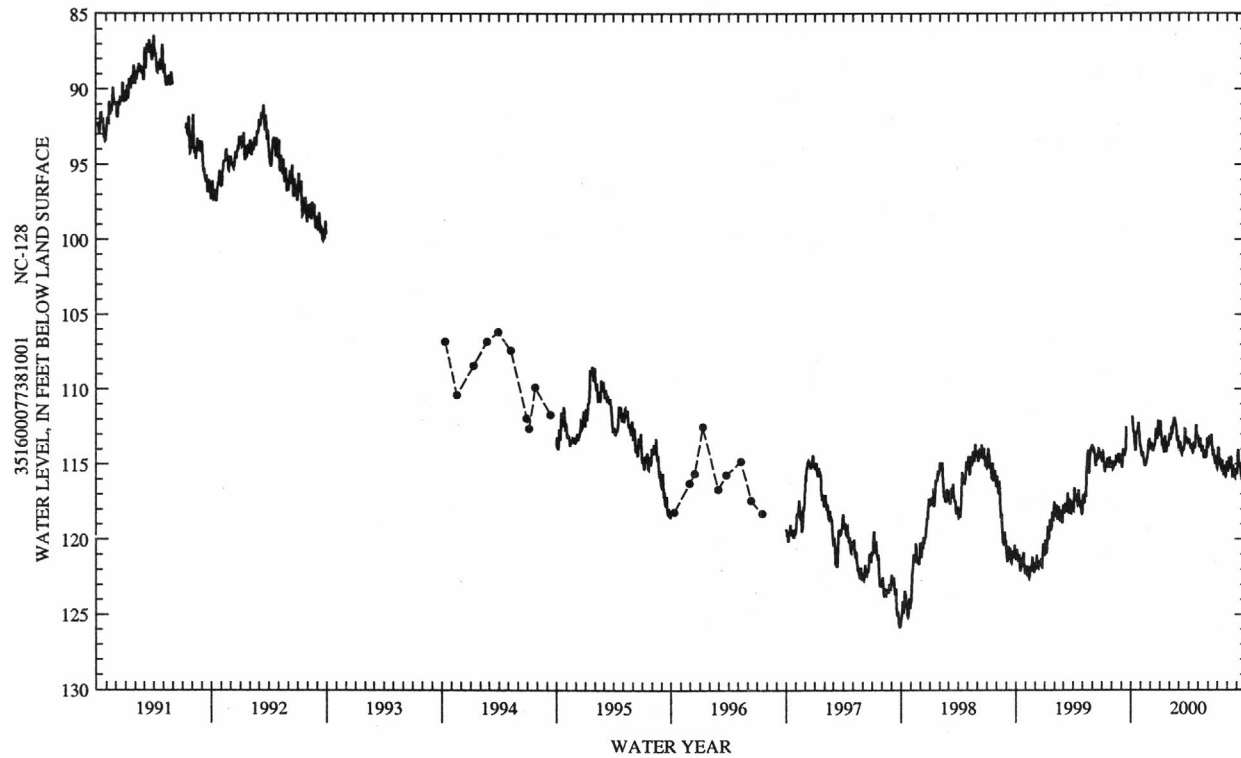
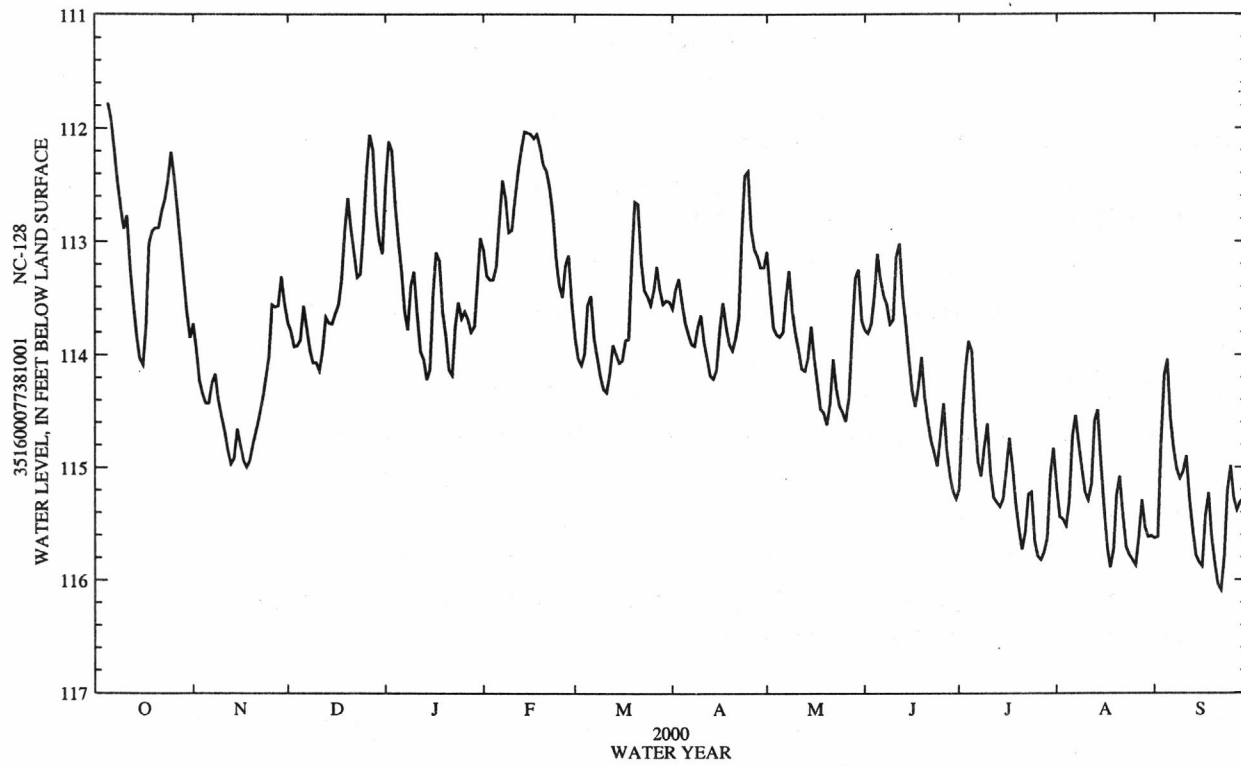
REMARKS.--Well is part of local-effects network.

PERIOD OF RECORD.--January 1974 to current year. Miscellaneous water-level measurements June 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.83 ft below land-surface datum, Dec. 30, 1968; lowest water level recorded 125.96 ft below land-surface datum, Sept. 27, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	113.73	113.72	112.51	113.08	113.85	113.59	113.09	113.78	115.20	115.18	115.63
2	---	113.96	113.79	112.12	113.30	114.03	113.42	113.46	113.81	114.53	115.44	115.62
3	---	114.23	113.93	112.20	113.34	114.09	113.33	113.76	113.73	114.13	115.46	114.79
4	---	114.35	113.92	112.67	113.34	113.99	113.54	113.82	113.49	113.88	115.52	114.18
5	111.78	114.43	113.87	112.98	113.22	113.56	113.71	113.84	113.11	113.97	115.30	114.04
6	111.92	114.43	113.57	113.26	112.82	113.48	113.81	113.80	113.34	114.55	114.72	114.55
7	112.19	114.25	113.76	113.62	112.46	113.85	113.90	113.49	113.48	114.95	114.54	114.83
8	112.47	114.17	113.96	113.78	112.62	114.02	113.92	113.26	113.56	115.08	114.80	115.01
9	112.70	114.40	114.07	113.39	112.92	114.18	113.75	113.62	113.73	114.82	115.01	115.10
10	112.89	114.55	114.07	113.27	112.90	114.30	113.65	113.81	113.69	114.61	115.22	115.04
11	112.77	114.68	114.14	113.67	112.63	114.33	113.89	113.96	113.14	115.05	115.29	114.90
12	113.24	114.84	113.95	113.97	112.38	114.17	114.03	114.12	113.02	115.27	115.15	115.28
13	113.55	114.97	113.67	114.04	112.19	113.91	114.18	114.14	113.47	115.31	114.59	115.56
14	113.83	114.92	113.72	114.22	112.03	113.99	114.21	114.03	113.74	115.35	114.49	115.78
15	114.03	114.66	113.73	114.13	112.04	114.07	114.13	113.75	114.04	115.28	114.97	115.84
16	114.09	114.80	113.64	113.46	112.05	114.05	113.77	114.03	114.32	115.02	115.36	115.88
17	113.74	114.94	113.56	113.10	112.09	113.87	113.54	114.25	114.46	114.74	115.70	115.44
18	113.02	115.00	113.34	113.17	112.05	113.86	113.75	114.48	114.29	115.01	115.89	115.23
19	112.91	114.94	112.91	113.63	112.17	113.16	113.90	114.51	114.02	115.32	115.73	115.62
20	112.88	114.79	112.62	113.84	112.32	112.65	113.96	114.62	114.37	115.54	115.25	115.86
21	112.88	114.67	112.90	114.13	112.38	112.67	113.85	114.43	114.59	115.73	115.08	116.04
22	112.74	114.54	113.11	114.18	112.52	113.18	113.68	114.04	114.76	115.58	115.44	116.09
23	112.63	114.40	113.32	113.75	112.77	113.43	112.95	114.30	114.87	115.24	115.71	115.79
24	112.46	114.21	113.29	113.54	113.14	113.48	112.42	114.45	114.99	115.22	115.78	115.21
25	112.21	114.03	112.90	113.68	113.38	113.56	112.38	114.51	114.73	115.66	115.82	114.99
26	112.43	113.56	112.38	113.62	113.49	113.43	112.89	114.59	114.43	115.79	115.87	115.27
27	112.71	113.58	112.06	113.69	113.21	113.22	113.07	114.37	114.84	115.82	115.62	115.38
28	113.03	113.57	112.19	113.80	113.12	113.42	113.13	113.78	115.07	115.75	115.29	115.31
29	113.33	113.31	112.74	113.75	113.55	113.55	113.23	113.32	115.21	115.63	115.54	115.28
30	113.64	113.55	112.99	113.37	---	113.52	113.23	113.25	115.28	115.07	115.62	115.17
31	113.85	---	113.11	112.97	---	113.53	---	113.70	---	114.83	115.61	---
WTR YR 2000	MEAN 114.01		HIGH 111.78		LOW 116.09							





## LENOIR COUNTY--Continued

351937077284201. Local number, NC-185; DENR Graingers Research Station well Q25d12; County number, LN-110

LOCATION.--Lat 35°19'37", long 77°28'42", 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.--Pee Dee 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 sea level (from topographic map). Measuring point: Top of instrument shelf, 3.10 ft above land-surface datum.

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

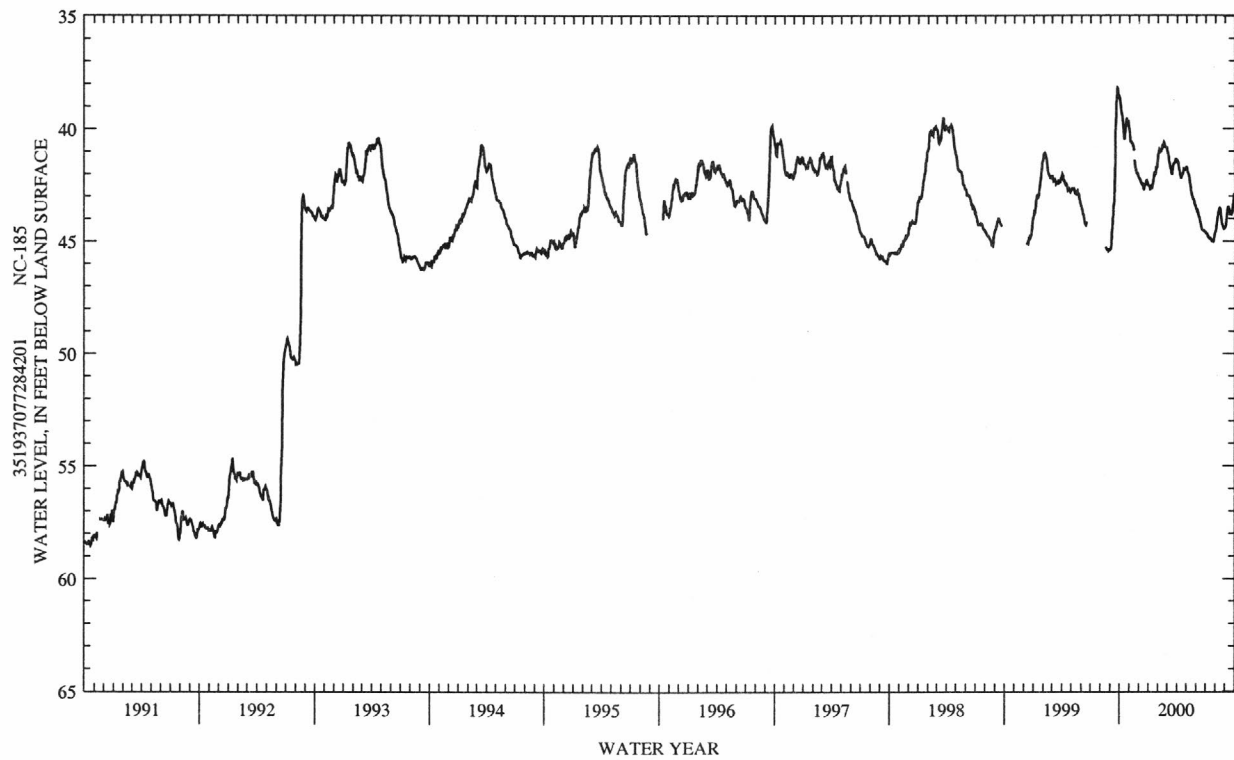
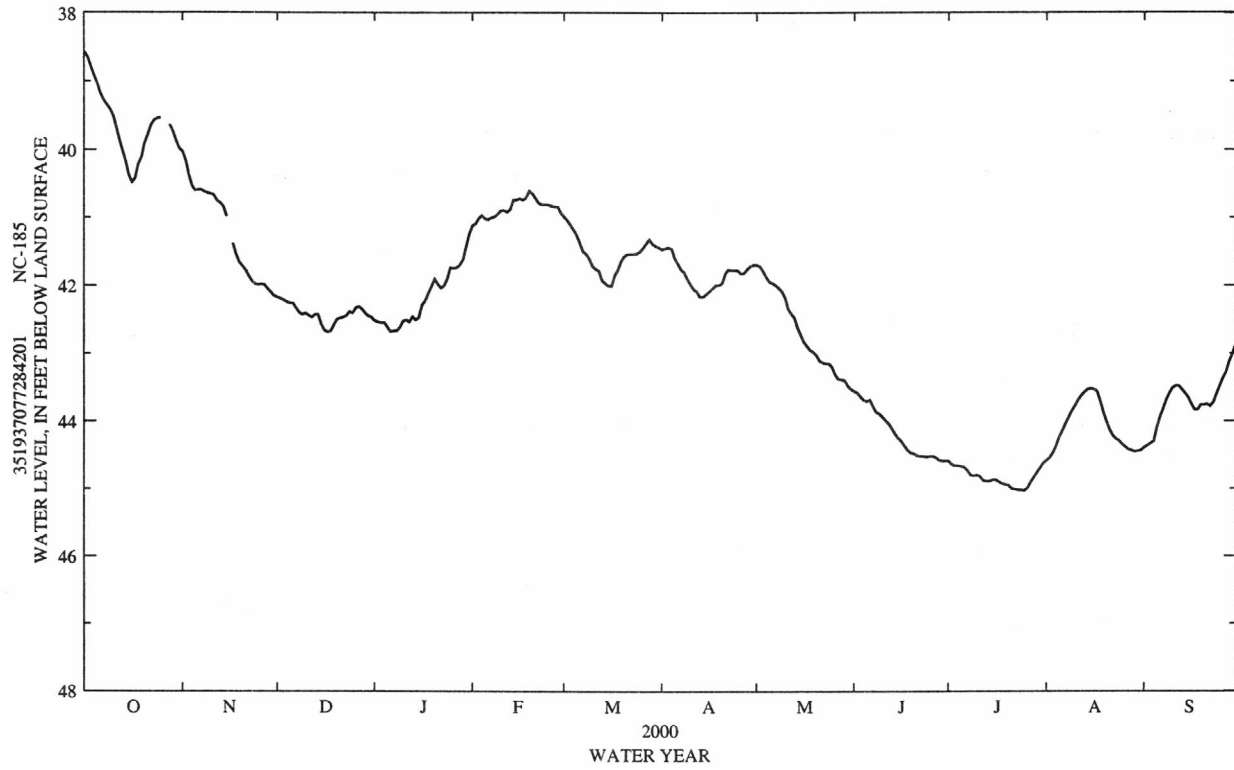
PERIOD OF RECORD.--December 1985 to current year.

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.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.57	40.03	42.17	42.52	41.12	40.99	41.47	41.70	43.56	44.59	44.58	44.39
2	38.65	40.16	42.19	42.54	41.09	41.04	41.45	41.72	43.58	44.64	44.54	44.36
3	38.79	40.36	42.21	42.55	41.01	41.11	41.44	41.79	43.64	44.66	44.47	44.33
4	38.91	40.53	42.24	42.55	40.97	41.18	41.46	41.88	43.69	44.66	44.37	44.30
5	39.04	40.60	42.26	42.61	41.02	41.26	41.60	41.95	43.71	44.67	44.24	44.10
6	39.17	40.59	42.26	42.68	41.03	41.38	41.68	41.97	43.69	44.68	44.14	43.95
7	39.27	40.59	42.33	42.67	41.00	41.50	41.77	42.00	43.79	44.73	44.04	43.82
8	39.34	40.62	42.40	42.67	40.99	41.54	41.81	42.04	43.87	44.80	43.94	43.69
9	39.40	40.64	42.43	42.62	40.95	41.61	41.91	42.09	43.89	44.81	43.85	43.59
10	39.50	40.65	42.41	42.53	40.90	41.72	41.99	42.18	43.94	44.80	43.77	43.51
11	39.65	40.67	42.44	42.51	40.89	41.76	42.06	42.35	43.99	44.82	43.69	43.48
12	39.86	40.75	42.47	42.54	40.92	41.79	42.09	42.42	44.04	44.88	43.62	43.48
13	40.01	40.78	42.43	42.46	40.88	41.93	42.17	42.48	44.11	44.89	43.57	43.53
14	40.17	40.84	42.43	42.51	40.74	41.97	42.17	42.62	44.19	44.89	43.53	43.59
15	40.37	40.98	42.57	42.48	40.74	42.01	42.13	42.73	44.25	44.87	43.52	43.65
16	40.48	---	42.66	42.29	40.72	42.01	42.09	42.83	44.30	44.87	43.53	43.75
17	40.42	41.38	42.69	42.23	40.74	41.85	42.05	42.89	44.37	44.90	43.56	43.83
18	40.22	41.54	42.67	42.12	40.71	41.77	42.00	42.95	44.43	44.93	43.70	43.83
19	40.11	41.65	42.58	42.02	40.61	41.64	42.00	42.98	44.47	44.94	43.87	43.76
20	39.91	41.71	42.50	41.91	40.65	41.57	41.97	43.03	44.48	44.95	44.00	43.76
21	39.78	41.77	42.48	41.98	40.72	41.54	41.83	43.11	44.51	45.00	44.12	43.75
22	39.64	41.86	42.47	42.04	40.79	41.54	41.77	43.14	44.52	45.01	44.21	43.78
23	39.57	41.93	42.45	42.01	40.81	41.54	41.78	43.15	44.52	45.02	44.26	43.72
24	39.54	41.98	42.39	41.91	40.81	41.53	41.78	43.15	44.53	45.02	44.29	43.60
25	39.53	41.99	42.41	41.74	40.81	41.50	41.78	43.20	44.52	45.03	44.34	43.48
26	---	41.98	42.33	41.75	40.83	41.44	41.83	43.31	44.52	44.99	44.38	43.37
27	---	41.99	42.31	41.74	40.84	41.38	41.82	43.38	44.54	44.90	44.42	43.28
28	39.63	42.05	42.35	41.70	40.84	41.32	41.76	43.39	44.58	44.83	44.43	43.13
29	39.73	42.10	42.41	41.62	40.93	41.39	41.72	43.40	44.59	44.76	44.45	43.01
30	39.87	42.15	42.45	41.42	---	41.42	41.70	43.48	44.59	44.69	44.44	42.88
31	39.98	---	42.47	41.24	---	41.44	---	43.53	---	44.62	44.43	---
WTR YR 2000	MEAN 42.45		HIGH 38.57		LOW 45.03							



## MECKLENBURG COUNTY

351730080524203. Local number, NC-146; County number, ME-301

LOCATION.--Lat 35°19'16", long 80°52'39", Hydrologic Unit 03050101, 6 mi south of Huntersville in Hornets Nest Park.  
Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from metamorphosed quartz diorite.

WELL CHARACTERISTICS.--Drilled observation well, depth 17.1 ft, diameter 4 in., cased to 12.1 ft, screened interval from 12.1 to 17.1 ft, sand filter packed from 12.1 to 17.1 ft.

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

DATUM.--Land-surface datum is 730 ft above sea level (from topographic map). Measuring point: Top of casing, 1.90 ft above land-surface datum.

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

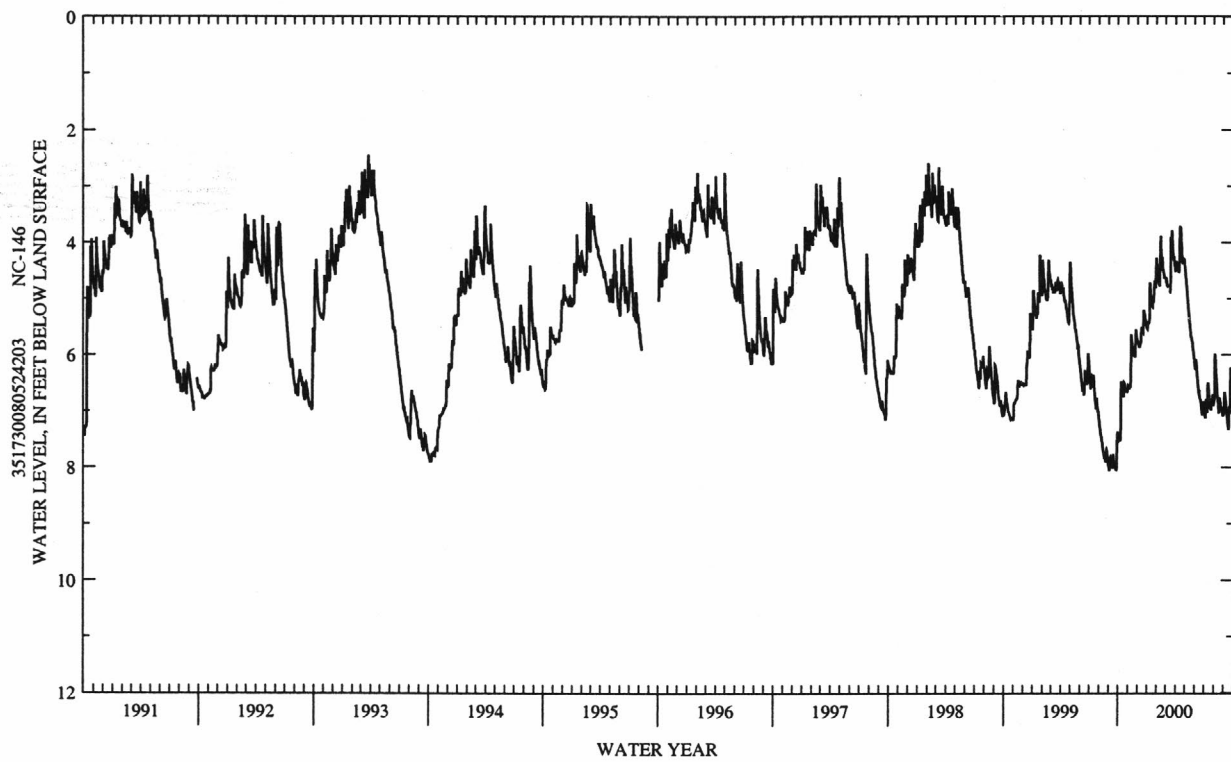
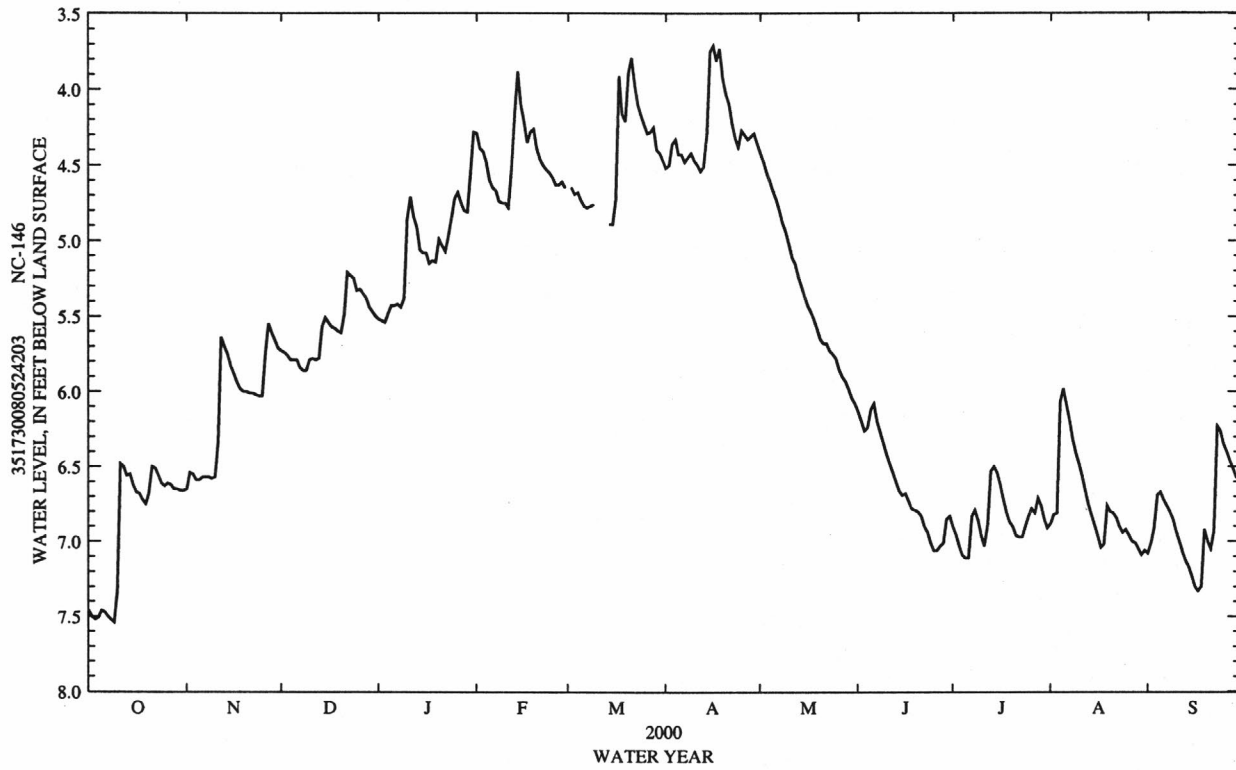
PERIOD OF RECORD.--November 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.28 ft below land-surface datum, Mar. 24, 1993;  
lowest water level recorded, 8.09 ft below land-surface datum, Sep. 4, 5, 26, 27, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.46	6.65	5.73	5.52	4.29	---	4.52	4.42	6.13	6.90	6.88	7.08
2	7.50	6.54	5.74	5.53	4.39	4.65	4.50	4.48	6.19	6.96	6.82	7.01
3	7.52	6.55	5.76	5.54	4.41	4.69	4.36	4.55	6.26	7.03	6.81	6.91
4	7.51	6.59	5.79	5.48	4.48	4.68	4.33	4.61	6.24	7.09	6.07	6.69
5	7.46	6.59	5.79	5.43	4.60	4.73	4.43	4.67	6.12	7.11	5.98	6.67
6	7.47	6.57	5.79	5.43	4.65	4.77	4.43	4.73	6.08	7.11	6.09	6.72
7	7.50	6.57	5.84	5.42	4.67	4.78	4.48	4.80	6.20	6.83	6.19	6.76
8	7.52	6.57	5.86	5.44	4.74	4.77	4.45	4.88	6.27	6.79	6.32	6.80
9	7.54	6.58	5.86	5.38	4.75	4.76	4.42	4.94	6.34	6.86	6.41	6.85
10	7.33	6.57	5.79	4.86	4.75	---	4.47	5.02	6.42	6.96	6.48	6.93
11	6.48	6.34	5.78	4.71	4.78	---	4.50	5.11	6.48	7.03	6.56	7.00
12	6.50	5.64	5.79	4.84	4.51	---	4.54	5.15	6.54	6.89	6.66	7.07
13	6.56	5.70	5.78	4.91	4.17	---	4.51	5.24	6.60	6.53	6.75	7.13
14	6.55	5.75	5.57	5.06	3.88	4.89	4.29	5.30	6.66	6.50	6.82	7.17
15	6.62	5.83	5.51	5.08	4.10	4.89	3.75	5.37	6.69	6.54	6.89	7.23
16	6.67	5.88	5.54	5.08	4.21	4.73	3.71	5.43	6.68	6.62	6.96	7.30
17	6.68	5.94	5.57	5.15	4.35	3.91	3.81	5.47	6.73	6.72	7.04	7.33
18	6.72	5.98	5.58	5.13	4.28	4.16	3.73	5.52	6.78	6.81	7.02	7.30
19	6.75	6.00	5.60	5.14	4.26	4.21	3.92	5.58	6.79	6.87	6.76	6.92
20	6.68	6.00	5.61	4.99	4.39	3.89	4.03	5.65	6.80	6.90	6.80	7.00
21	6.50	6.01	5.49	5.03	4.46	3.79	4.09	5.68	6.83	6.96	6.81	7.05
22	6.51	6.01	5.21	5.07	4.50	3.97	4.22	5.68	6.90	6.97	6.84	6.93
23	6.56	6.02	5.23	4.97	4.53	4.10	4.32	5.73	6.94	6.97	6.90	6.23
24	6.61	6.03	5.25	4.85	4.55	4.17	4.38	5.75	7.01	6.90	6.94	6.26
25	6.63	6.03	5.33	4.72	4.58	4.23	4.27	5.78	7.06	6.83	6.92	6.35
26	6.61	5.74	5.32	4.68	4.63	4.29	4.30	5.85	7.06	6.78	6.96	6.40
27	6.62	5.55	5.35	4.75	4.63	4.28	4.33	5.90	7.03	6.81	7.00	6.46
28	6.65	5.61	5.38	4.80	4.61	4.25	4.31	5.93	7.01	6.71	7.01	6.51
29	6.65	5.66	5.44	4.81	4.65	4.40	4.29	5.98	6.85	6.76	7.05	6.57
30	6.66	5.71	5.47	4.55	---	4.42	4.36	6.04	6.83	6.85	7.09	6.58
31	6.66	---	5.50	4.28	---	4.47	---	6.08	---	6.91	7.06	---
WTR YR 2000	MEAN 5.79		HIGH 3.71		LOW 7.54							



## ONslow COUNTY

344425077272501. Local number, NC-52; County number, ON-035.

LOCATION.--Lat 34°44'18", long 77°27'29", 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 sea level (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.

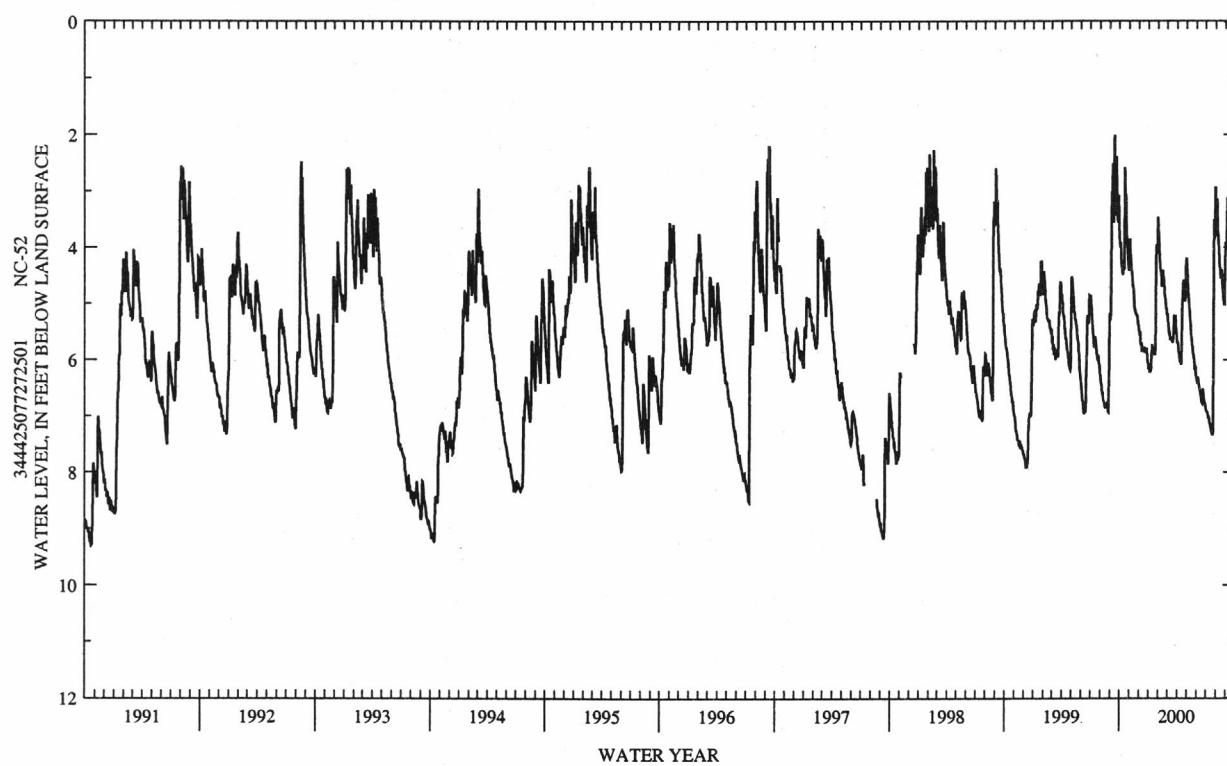
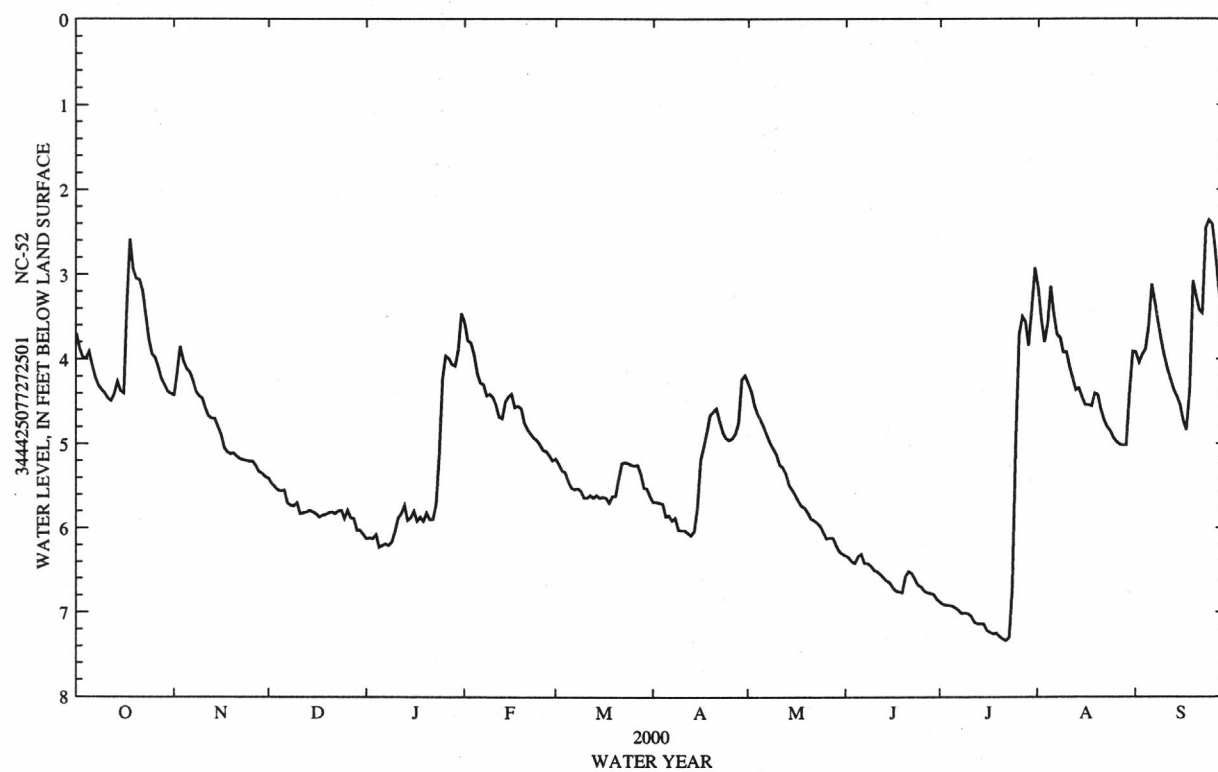
PERIOD OF RECORD.--January 1963 to current year.

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.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.70	4.42	5.41	6.13	3.57	5.18	5.69	4.28	6.33	6.88	3.16	3.92
2	3.87	4.16	5.47	6.12	3.78	5.24	5.69	4.38	6.35	6.91	3.52	4.04
3	3.98	3.85	5.51	6.13	3.81	5.32	5.70	4.54	6.40	6.92	3.80	3.95
4	3.99	4.02	5.55	6.08	3.94	5.34	5.71	4.65	6.42	6.92	3.59	3.88
5	3.91	4.11	5.56	6.23	4.17	5.44	5.86	4.72	6.34	6.93	3.14	3.61
6	4.07	4.15	5.55	6.21	4.28	5.52	5.85	4.81	6.31	6.95	3.48	3.12
7	4.22	4.25	5.70	6.19	4.30	5.54	5.91	4.90	6.42	6.98	3.71	3.34
8	4.31	4.38	5.73	6.21	4.43	5.53	5.88	4.99	6.42	7.02	3.75	3.57
9	4.36	4.43	5.74	6.17	4.41	5.56	6.02	5.06	6.45	7.01	3.92	3.78
10	4.40	4.46	5.70	6.05	4.45	5.64	6.03	5.13	6.50	7.02	3.92	3.96
11	4.46	4.58	5.83	5.88	4.54	5.64	6.03	5.25	6.52	7.05	4.09	4.12
12	4.49	4.67	5.82	5.83	4.68	5.61	6.06	5.28	6.55	7.12	4.23	4.24
13	4.41	4.70	5.81	5.73	4.70	5.64	6.09	5.36	6.59	7.14	4.36	4.36
14	4.26	4.70	5.79	5.91	4.50	5.61	6.04	5.49	6.63	7.14	4.34	4.44
15	4.37	4.80	5.81	5.88	4.44	5.64	5.76	5.55	6.65	7.14	4.45	4.54
16	4.40	4.89	5.83	5.80	4.41	5.63	5.19	5.61	6.71	7.22	4.54	4.73
17	3.33	5.05	5.87	5.92	4.57	5.64	5.04	5.68	6.75	7.24	4.54	4.84
18	2.58	5.10	5.85	5.87	4.55	5.70	4.85	5.74	6.76	7.26	4.55	4.36
19	2.94	5.12	5.84	5.92	4.58	5.62	4.66	5.76	6.77	7.25	4.40	3.08
20	3.05	5.11	5.82	5.82	4.75	5.62	4.62	5.82	6.58	7.29	4.42	3.26
21	3.06	5.15	5.81	5.90	4.83	5.42	4.58	5.89	6.52	7.32	4.59	3.42
22	3.20	5.18	5.83	5.90	4.88	5.23	4.73	5.91	6.54	7.34	4.72	3.46
23	3.49	5.19	5.80	5.72	4.93	5.22	4.86	5.94	6.61	7.30	4.80	2.45
24	3.77	5.20	5.79	5.13	4.96	5.23	4.93	5.98	6.68	6.71	4.85	2.36
25	3.94	5.21	5.89	4.22	5.01	5.25	4.96	6.06	6.70	4.93	4.93	2.41
26	3.98	5.21	5.79	3.96	5.08	5.26	4.94	6.13	6.75	3.71	4.98	2.72
27	4.09	5.26	5.88	3.99	5.09	5.25	4.88	6.12	6.77	3.50	5.01	3.14
28	4.23	5.33	5.89	4.06	5.14	5.35	4.75	6.12	6.78	3.56	5.02	3.39
29	4.30	5.35	6.03	4.08	5.20	5.52	4.24	6.21	6.79	3.84	5.02	3.64
30	4.38	5.39	6.03	3.88	---	5.53	4.19	6.28	6.85	3.39	4.40	3.78
31	4.40	---	6.08	3.46	---	5.62	---	6.31	---	2.92	3.91	---
WTR YR 2000	MEAN 5.14		HIGH 2.36		LOW 7.34							



## ONSLOW COUNTY--Continued

344837077291607. Local number, NC-189; DENR Jacksonville Well Field 258 Research Station well W25f7; County number, ON-224.

LOCATION.--Lat 34°48'37", long 77°29'16", Hydrologic Unit 03030001, 1.4 mi northeast of U.S. Highway 258 and State Highway 24 on Wells Road. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 834 ft, diameter 4 in., cased to 824 ft, screened interval from 824 to 834 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 26.62 ft above sea level (levels by DENR). Measuring point: Top of instrument shelf, 3.78 ft above land-surface datum.

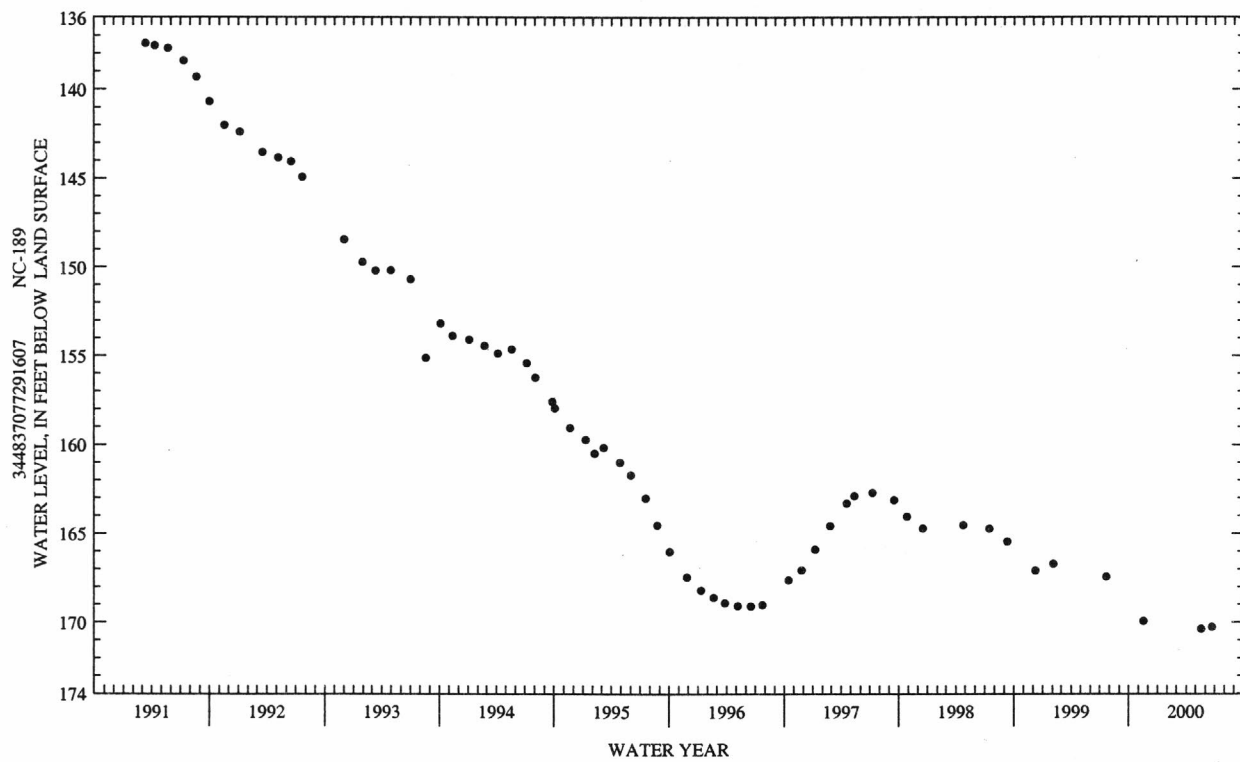
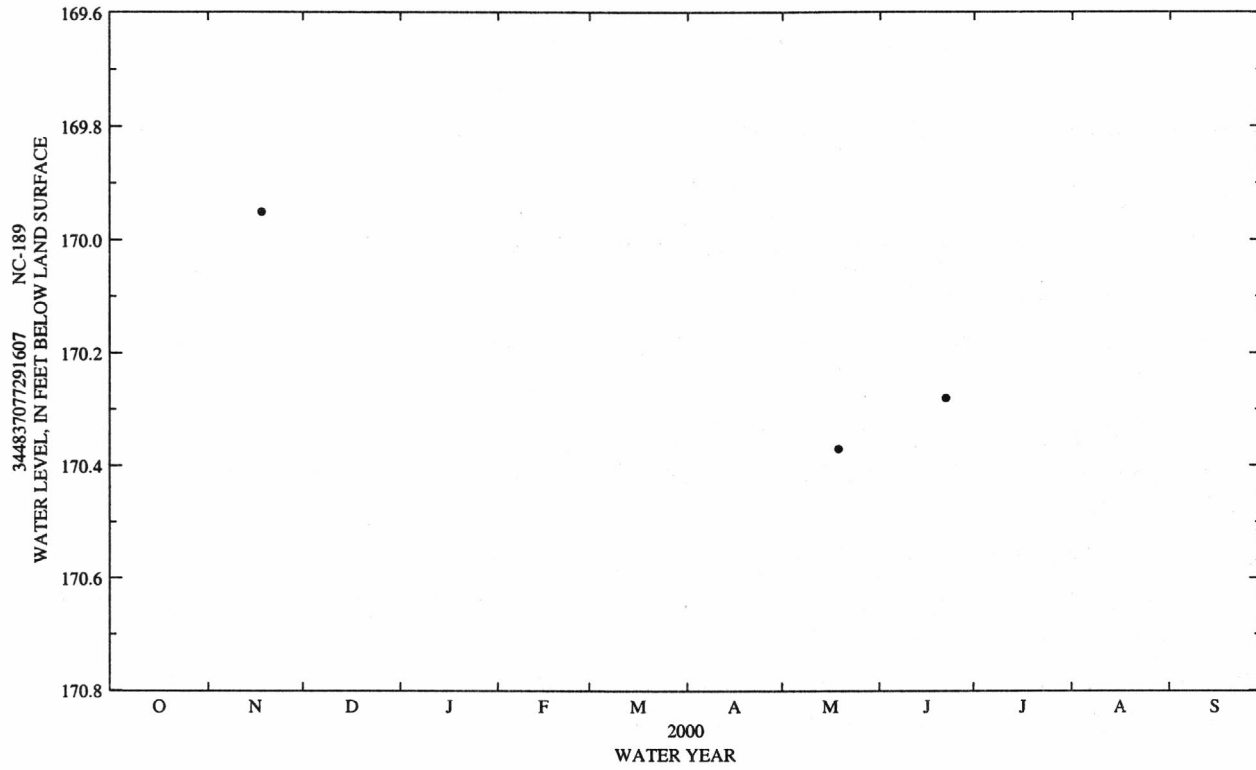
REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--Miscellaneous water-level measurements October 1986 to current year. Continuous record from October 1986 to April 1988 is unreliable and unpublished.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 96.64 ft below land-surface datum, Oct. 15, 1986; lowest water level measured, 170.37 ft below land-surface datum, May 19, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	169.95	MAY 19	170.37	JUN 22	170.28





## ONslow COUNTY--Continued

343512077265601. County number, ON-218; Rifle Range Well RR-97A.

LOCATION.--Lat 34°35'12", long 77°26'56", 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 sea level, 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.

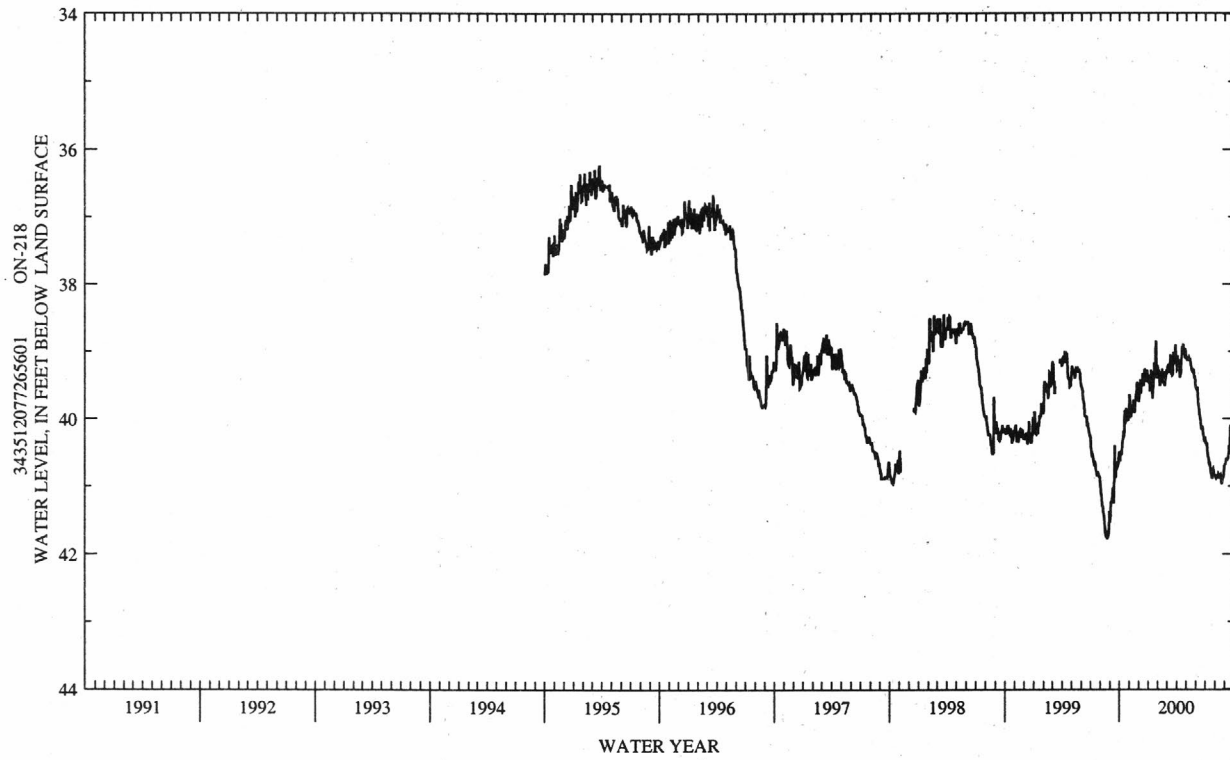
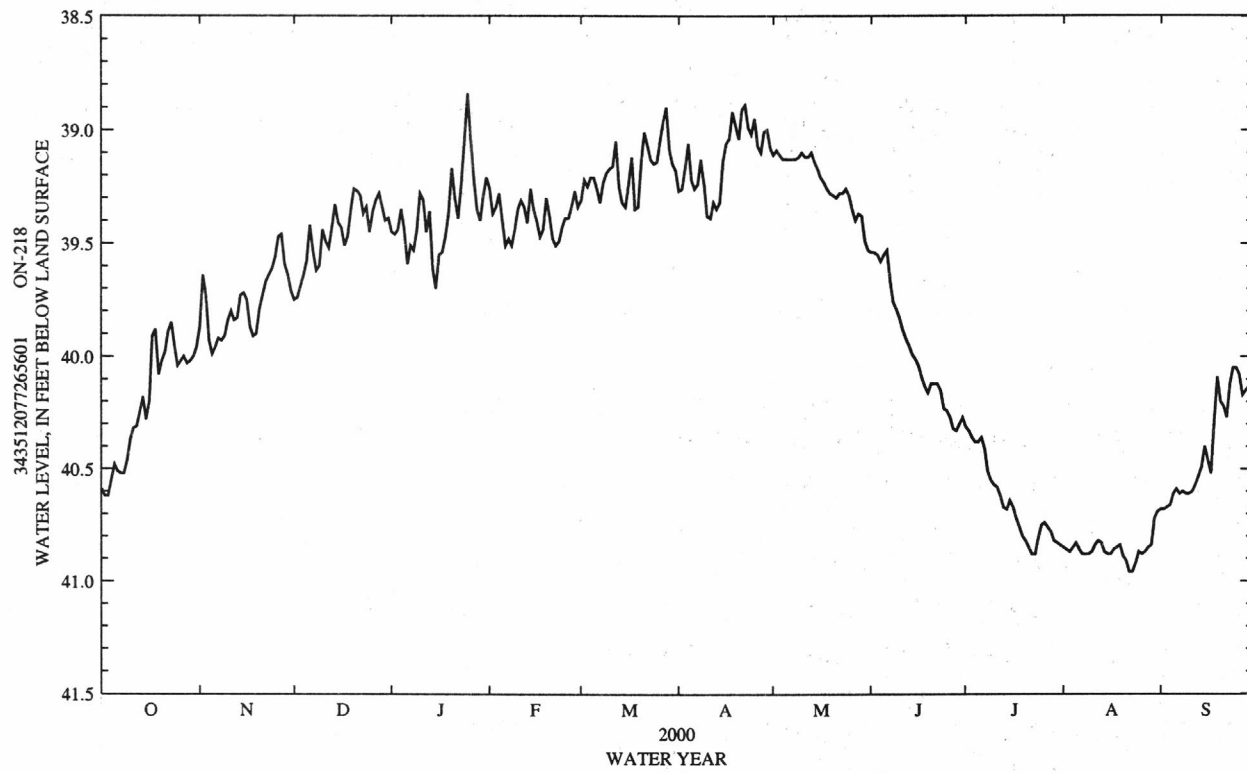
PERIOD OF RECORD.--October 1994 to current year. Prior to October 1, 1997 published as ON-292, Rifle Range Well RR-97.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.19 ft below land-surface datum, Mar. 23, 1995; lowest water level recorded, 41.77 ft below land-surface datum, Aug. 23, 24, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.59	39.87	39.75	39.45	39.26	39.31	39.27	39.11	39.54	40.31	40.85	40.68
2	40.62	39.64	39.74	39.46	39.37	39.22	39.26	39.09	39.54	40.33	40.86	40.68
3	40.62	39.73	39.69	39.44	39.34	39.25	39.17	39.11	39.55	40.36	40.87	40.67
4	40.55	39.93	39.64	39.35	39.28	39.21	39.06	39.13	39.58	40.38	40.85	40.66
5	40.48	39.99	39.58	39.44	39.40	39.21	39.22	39.13	39.55	40.38	40.83	40.61
6	40.51	39.96	39.42	39.59	39.51	39.26	39.26	39.13	39.53	40.36	40.86	40.59
7	40.52	39.92	39.53	39.51	39.48	39.32	39.24	39.13	39.67	40.41	40.88	40.61
8	40.52	39.93	39.62	39.53	39.51	39.23	39.13	39.13	39.76	40.51	40.88	40.60
9	40.46	39.91	39.60	39.44	39.44	39.19	39.24	39.12	39.79	40.55	40.88	40.61
10	40.37	39.84	39.44	39.28	39.35	39.17	39.38	39.10	39.83	40.57	40.87	40.61
11	40.32	39.80	39.49	39.31	39.31	39.16	39.39	39.12	39.88	40.58	40.84	40.60
12	40.31	39.84	39.52	39.45	39.34	39.05	39.32	39.12	39.92	40.62	40.82	40.57
13	40.25	39.83	39.43	39.36	39.41	39.25	39.35	39.10	39.95	40.67	40.83	40.53
14	40.18	39.73	39.33	39.61	39.26	39.32	39.32	39.14	39.99	40.68	40.87	40.49
15	40.28	39.72	39.41	39.70	39.35	39.34	39.14	39.17	40.01	40.64	40.88	40.40
16	40.20	39.75	39.43	39.55	39.40	39.24	39.06	39.21	40.04	40.67	40.88	40.46
17	39.91	39.87	39.51	39.54	39.47	39.12	39.04	39.23	40.09	40.72	40.86	40.52
18	39.88	39.91	39.47	39.47	39.44	39.35	38.92	39.26	40.13	40.76	40.85	40.28
19	40.08	39.90	39.35	39.37	39.30	39.34	38.98	39.28	40.16	40.80	40.84	40.09
20	40.02	39.79	39.26	39.17	39.38	39.14	39.04	39.29	40.12	40.82	40.89	40.20
21	39.98	39.73	39.27	39.30	39.48	39.01	38.91	39.30	40.12	40.85	40.91	40.22
22	39.89	39.67	39.29	39.39	39.51	39.07	38.89	39.28	40.12	40.88	40.96	40.27
23	39.85	39.64	39.37	39.24	39.49	39.13	38.99	39.28	40.15	40.88	40.96	40.12
24	39.95	39.61	39.34	39.05	39.43	39.15	39.02	39.26	40.23	40.81	40.92	40.05
25	40.04	39.56	39.45	38.84	39.39	39.14	38.95	39.29	40.24	40.75	40.87	40.05
26	40.02	39.47	39.36	39.04	39.39	39.04	39.07	39.35	40.27	40.74	40.88	40.08
27	40.00	39.46	39.31	39.22	39.34	38.96	39.10	39.40	40.32	40.76	40.87	40.17
28	40.03	39.59	39.28	39.35	39.27	38.90	39.01	39.37	40.33	40.78	40.85	40.15
29	40.02	39.64	39.34	39.40	39.34	39.09	39.00	39.38	40.30	40.82	40.84	40.13
30	40.00	39.71	39.40	39.29	---	39.15	39.08	39.49	40.27	40.83	40.72	40.08
31	39.96	---	39.39	39.21	---	39.18	---	39.53	---	40.84	40.69	---
WTR YR 2000	MEAN 39.80		HIGH 38.84		LOW 40.96							



## ONslow COUNTY--Continued

343641077290103. County number, ON-227; DENR Dixon Tower Research Station well Y25q3.

LOCATION.--Lat 34°36'41", long 77°29'01", 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.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, depth 240 ft, diameter 4 in., cased to 150 ft, screened interval from 150 to 240 ft.

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

DATUM.--Land-surface datum is 68 ft above sea level, (from topographic map). Measuring point: Top of shelter floor, 2.13 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

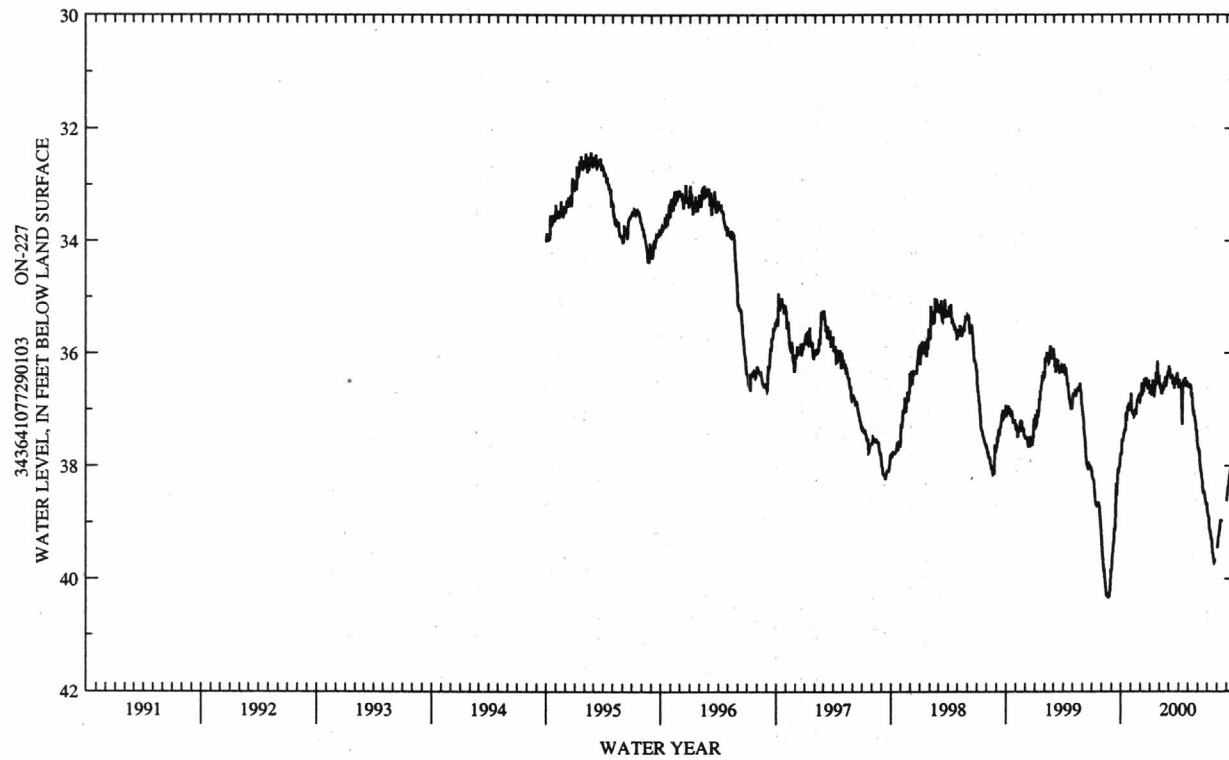
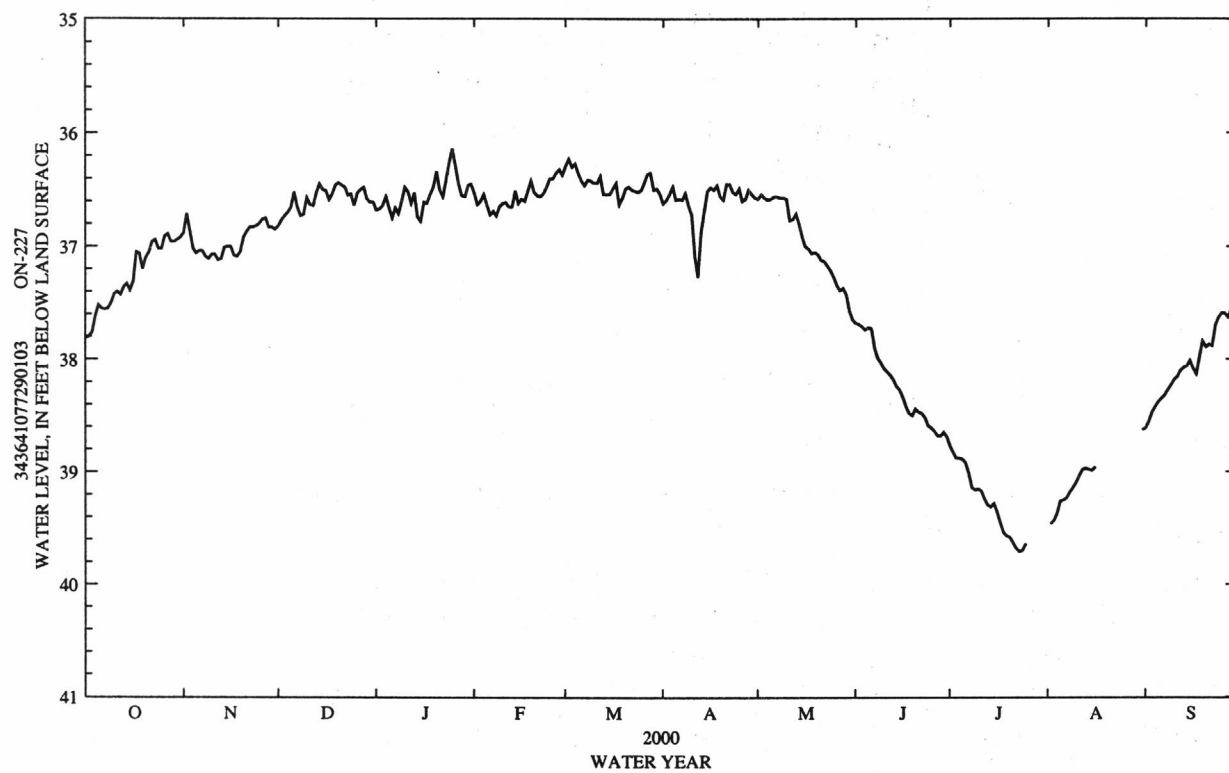
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 32.35 ft below land-surface datum, Feb. 22, 1995; lowest water level recorded, 40.37 ft below land-surface datum, Aug. 23, 24, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.81	36.88	36.82	36.68	36.53	36.29	36.62	36.58	37.68	38.77	---	38.61
2	37.80	36.71	36.77	36.67	36.63	36.23	36.59	36.54	37.69	38.83	39.46	38.55
3	37.76	36.86	36.73	36.64	36.60	36.30	36.54	36.57	37.71	38.88	39.43	38.47
4	37.62	37.02	36.70	36.56	36.54	36.27	36.47	36.59	37.74	38.88	39.36	38.42
5	37.52	37.06	36.66	36.66	36.64	36.35	36.59	36.58	37.72	38.89	39.26	38.38
6	37.55	37.04	36.52	36.75	36.72	36.42	36.58	36.56	37.73	38.92	39.25	38.35
7	37.56	37.04	36.65	36.66	36.69	36.46	36.59	36.56	37.90	39.02	39.23	38.32
8	37.55	37.09	36.73	36.71	36.73	36.41	36.53	36.57	37.99	39.14	39.18	38.27
9	37.50	37.11	36.72	36.60	36.65	36.42	36.64	36.57	38.03	39.16	39.14	38.23
10	37.42	37.07	36.57	36.48	36.62	36.44	36.72	36.58	38.08	39.15	39.09	38.18
11	37.40	37.07	36.63	36.52	36.61	36.44	37.09	36.77	38.11	39.17	39.03	38.15
12	37.43	37.12	36.64	36.62	36.65	36.38	37.27	36.76	38.14	39.24	38.98	38.10
13	37.36	37.11	36.53	36.53	36.65	36.54	36.87	36.71	38.18	39.29	38.97	38.07
14	37.33	37.01	36.45	36.74	36.51	36.54	36.68	36.80	38.24	39.31	38.98	38.06
15	37.39	37.00	36.50	36.78	36.62	36.54	36.51	36.92	38.27	39.28	38.99	38.01
16	37.31	37.00	36.51	36.61	36.58	36.49	36.48	37.00	38.34	39.36	38.96	38.08
17	37.05	37.08	36.59	36.62	36.60	36.44	36.50	37.02	38.42	39.45	---	38.13
18	37.06	37.09	36.54	36.54	36.51	36.63	36.46	37.06	38.48	39.54	---	37.97
19	37.20	37.05	36.46	36.48	36.42	36.57	36.56	37.05	38.50	39.57	---	37.84
20	37.10	36.92	36.44	36.34	36.52	36.49	36.59	37.07	38.44	39.58	---	37.89
21	37.05	36.87	36.46	36.50	36.55	36.47	36.45	37.12	38.47	39.63	---	37.87
22	36.96	36.83	36.48	36.56	36.56	36.50	36.45	37.13	38.48	39.68	---	37.88
23	36.94	36.83	36.55	36.42	36.53	36.51	36.52	37.17	38.52	39.71	---	37.70
24	37.02	36.82	36.54	36.27	36.47	36.52	36.54	37.21	38.59	39.70	---	37.63
25	37.02	36.80	36.64	36.14	36.40	36.50	36.49	37.27	38.61	39.64	---	37.59
26	36.91	36.76	36.53	36.29	36.40	36.43	36.60	37.34	38.64	---	---	37.59
27	36.89	36.75	36.50	36.45	36.35	36.36	36.58	37.39	38.68	---	---	37.63
28	36.96	36.83	36.48	36.55	36.32	36.35	36.50	37.37	38.68	---	---	37.56
29	36.96	36.83	36.58	36.56	36.37	36.50	36.54	37.43	38.65	---	---	37.55
30	36.94	36.85	36.61	36.46	---	36.49	36.57	37.57	38.69	---	---	37.50
31	36.92	---	36.61	36.45	---	36.54	---	37.65	---	---	38.63	---
WTR YR 2000	MEAN 37.28		HIGH 36.14		LOW 39.71							



## ONslow COUNTY--Continued

343641077290106. County number, ON-230; DENR Dixon Tower Research Station well Y25q6.

LOCATION.--Lat 34°36'41", long 77°29'01", 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 site.

DATUM.--Land-surface datum is 68 ft above sea level, (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, 11.07 ft below land-surface datum, Aug. 20, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

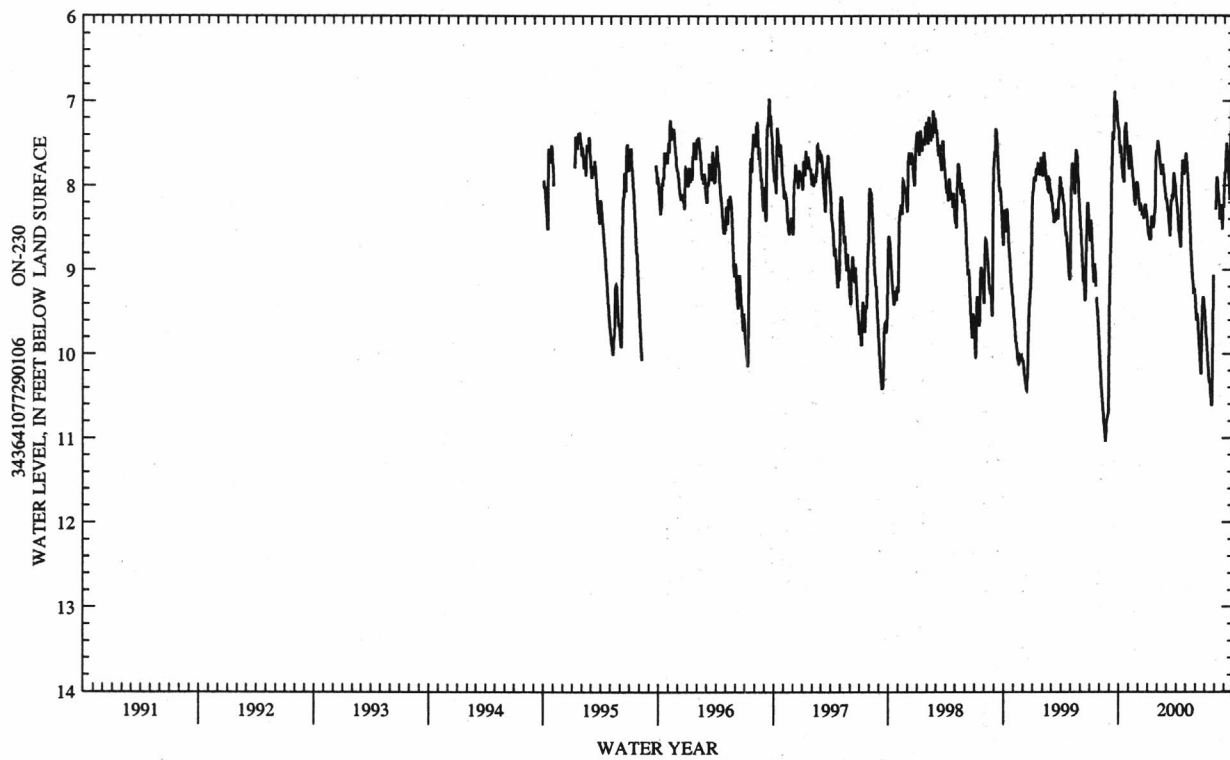
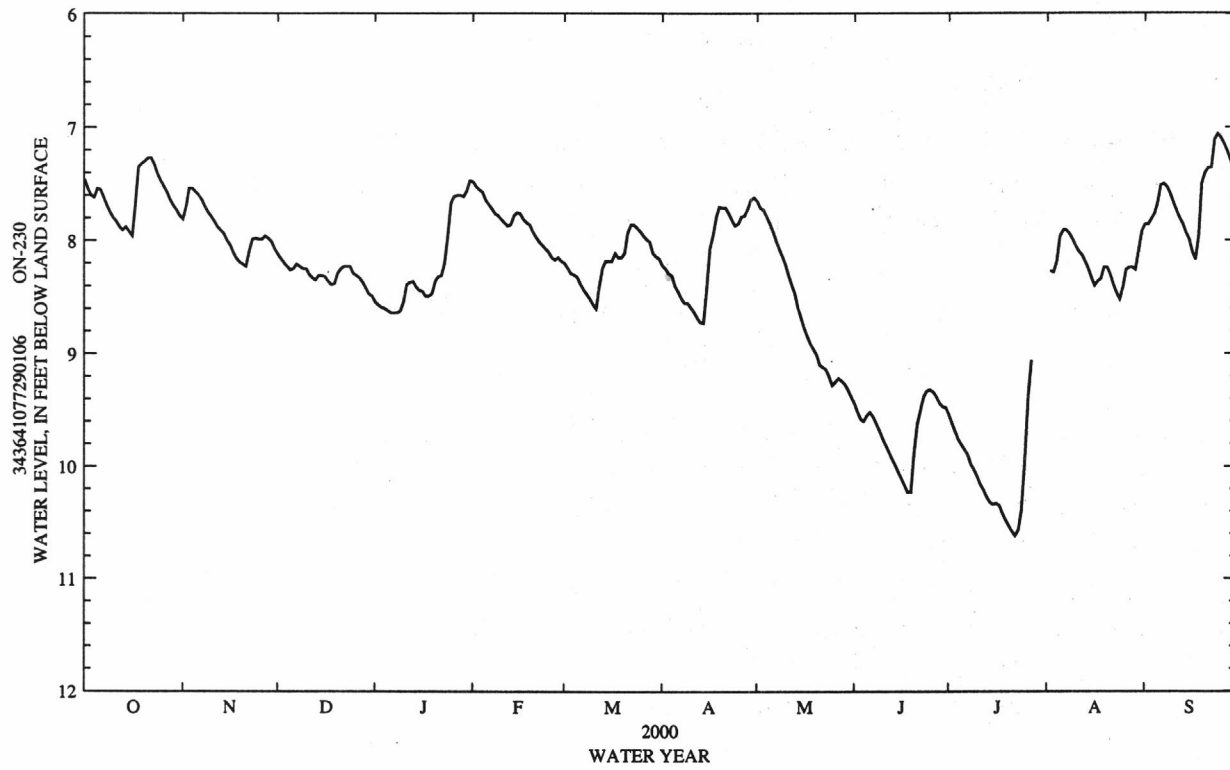
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.46	7.81	8.12	8.54	7.48	8.20	8.22	7.65	9.44	9.54	---	7.86
2	7.54	7.70	8.16	8.57	7.52	8.24	8.25	7.71	9.51	9.62	8.27	7.86
3	7.60	7.54	8.20	8.59	7.55	8.29	8.29	7.73	9.58	9.69	8.28	7.81
4	7.62	7.54	8.23	8.60	7.57	8.30	8.31	7.79	9.60	9.76	8.18	7.76
5	7.54	7.57	8.26	8.62	7.64	8.32	8.40	7.85	9.55	9.81	7.97	7.67
6	7.55	7.60	8.25	8.64	7.68	8.38	8.45	7.92	9.52	9.85	7.91	7.51
7	7.62	7.64	8.21	8.64	7.72	8.43	8.51	8.00	9.56	9.90	7.91	7.50
8	7.69	7.70	8.23	8.64	7.76	8.47	8.55	8.07	9.62	9.98	7.94	7.53
9	7.75	7.75	8.25	8.62	7.78	8.51	8.55	8.14	9.68	10.03	7.99	7.59
10	7.80	7.79	8.25	8.54	7.81	8.56	8.59	8.21	9.75	10.09	8.05	7.67
11	7.83	7.83	8.30	8.39	7.84	8.60	8.63	8.31	9.81	10.16	8.10	7.74
12	7.88	7.88	8.33	8.37	7.87	8.40	8.68	8.39	9.87	10.21	8.13	7.80
13	7.91	7.91	8.35	8.36	7.86	8.24	8.72	8.47	9.93	10.27	8.19	7.86
14	7.88	7.94	8.31	8.41	7.78	8.18	8.73	8.59	9.99	10.32	8.25	7.93
15	7.92	8.00	8.31	8.44	7.75	8.18	8.43	8.68	10.05	10.34	8.33	7.99
16	7.96	8.04	8.32	8.45	7.76	8.18	8.07	8.77	10.11	10.33	8.40	8.10
17	7.67	8.11	8.36	8.49	7.81	8.11	7.96	8.84	10.17	10.35	8.36	8.17
18	7.35	8.16	8.39	8.49	7.84	8.15	7.79	8.91	10.23	10.42	8.34	7.96
19	7.32	8.19	8.38	8.47	7.86	8.15	7.70	8.96	10.23	10.48	8.24	7.50
20	7.30	8.21	8.29	8.36	7.92	8.11	7.71	9.01	9.88	10.53	8.24	7.40
21	7.27	8.23	8.25	8.32	7.97	7.93	7.71	9.10	9.62	10.58	8.30	7.36
22	7.27	8.09	8.23	8.31	8.01	7.86	7.76	9.12	9.50	10.62	8.39	7.36
23	7.33	7.99	8.23	8.20	8.04	7.86	7.82	9.14	9.38	10.57	8.46	7.11
24	7.41	7.98	8.23	7.97	8.07	7.89	7.87	9.20	9.33	10.39	8.52	7.06
25	7.47	7.99	8.29	7.67	8.10	7.92	7.85	9.28	9.32	9.93	8.41	7.09
26	7.52	7.99	8.31	7.61	8.15	7.96	7.79	9.25	9.34	9.39	8.26	7.14
27	7.57	7.96	8.33	7.60	8.17	7.99	7.78	9.22	9.38	9.06	8.24	7.21
28	7.64	7.98	8.37	7.60	8.15	8.01	7.72	9.24	9.44	---	8.24	7.28
29	7.69	8.01	8.42	7.61	8.18	8.11	7.64	9.27	9.47	---	8.26	7.36
30	7.73	8.07	8.47	7.56	---	8.14	7.62	9.32	9.48	---	8.09	7.42
31	7.78	---	8.49	7.47	---	8.16	---	9.38	---	---	7.92	---

WTR YR 2000

MEAN 8.35

HIGH 7.06

LOW 10.62



## ONSLOW COUNTY--Continued

344139077211201. County number, ON-255; DENR Hadnot Point Research Station well X24s1.

LOCATION.--Lat 34°41'39", long 77°21'12", Hydrologic Unit 03030001, at Camp Lejeune, 1.6 mi south of intersection of Brewster Boulevard and Stone Street Extension, on Stone Street Extension, near tack shop, in pasture. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Castle Hayne aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 90 ft, diameter 4 in., cased to 80 ft, screened interval from 80 to 90 ft.

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

DATUM.--Land-surface datum is 18.63 ft above sea level, (levels by DENR). Measuring point: Top of floor of shelter 1.32 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

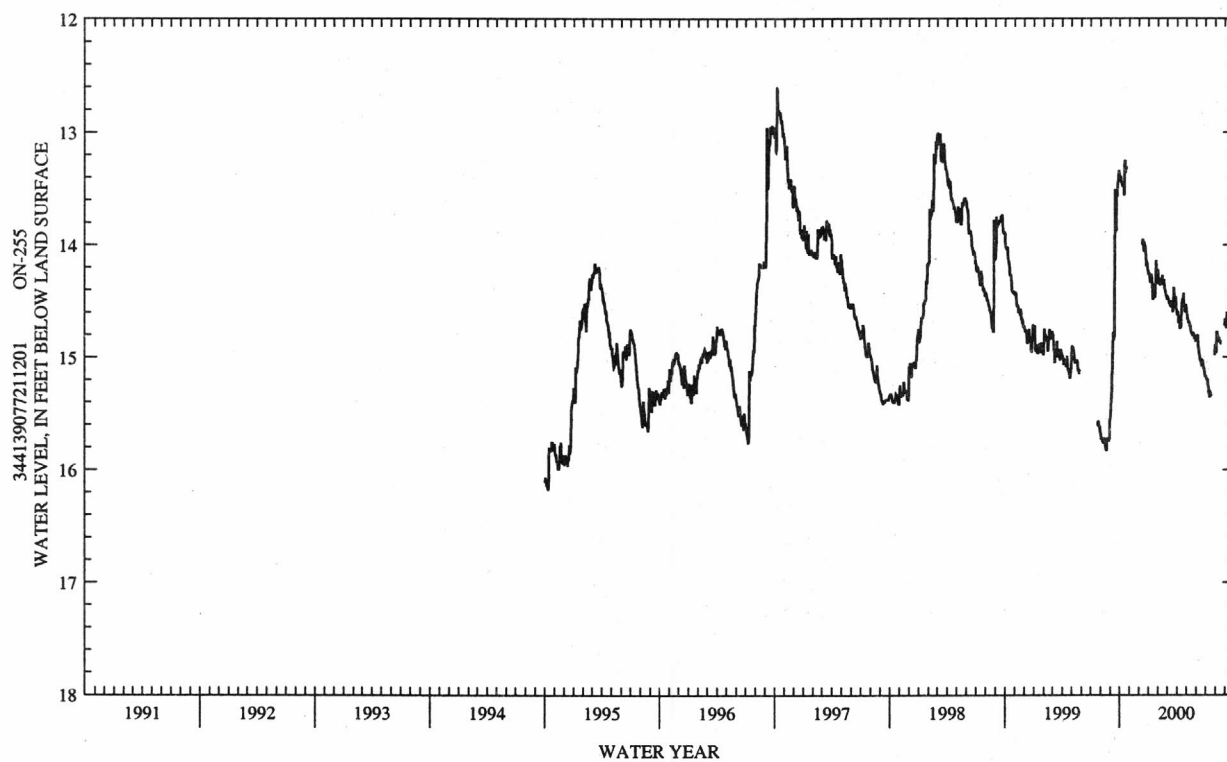
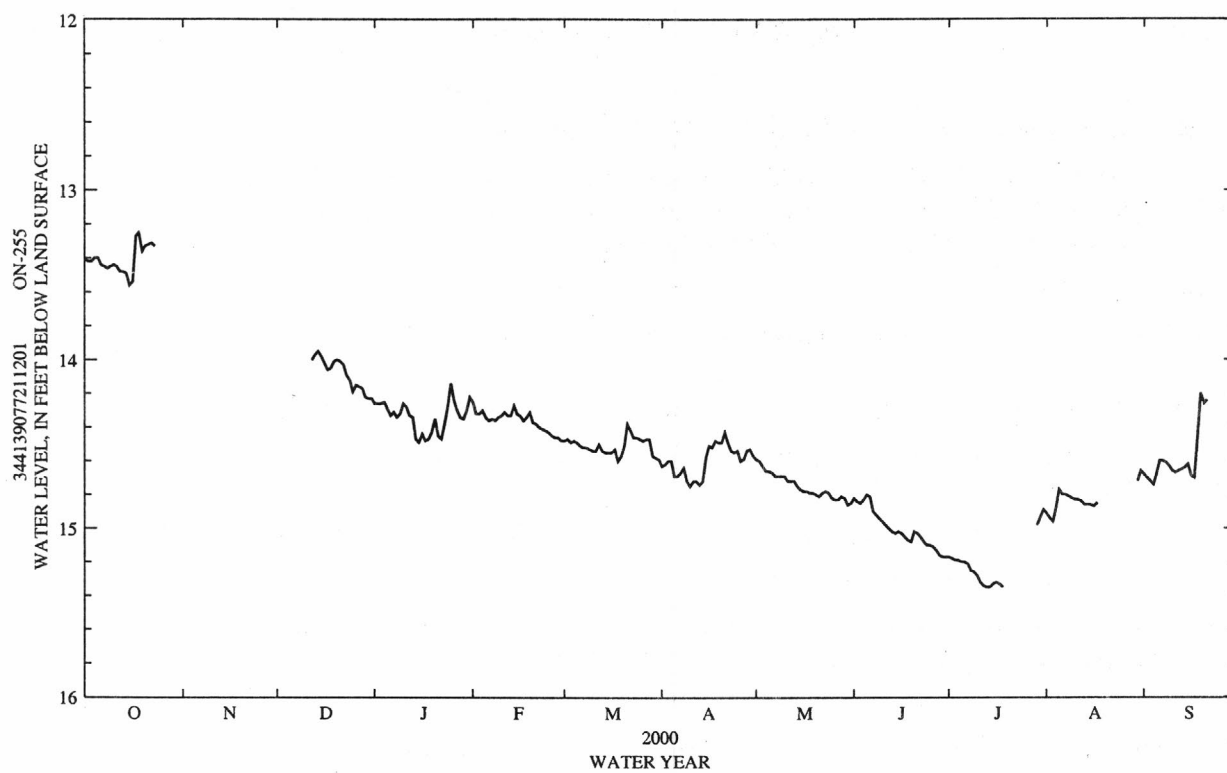
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.36 ft below land-surface datum, Oct. 8, 1996; lowest water level recorded, 16.19 ft below land-surface datum, Oct. 11, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.41	---	---	14.26	14.25	14.48	14.63	14.59	14.82	15.17	14.91	14.68
2	13.42	---	---	14.26	14.32	14.47	14.62	14.60	14.84	15.18	14.94	14.70
3	13.42	---	---	14.26	14.32	14.49	14.60	14.63	14.85	15.19	14.96	14.72
4	13.40	---	---	14.25	14.30	14.48	14.60	14.66	14.83	15.19	14.87	14.74
5	13.40	---	---	14.29	14.34	14.49	14.69	14.66	14.80	15.20	14.77	14.68
6	13.44	---	---	14.33	14.36	14.51	14.69	14.67	14.81	15.20	14.80	14.60
7	13.45	---	---	14.31	14.35	14.52	14.67	14.69	14.90	15.21	14.80	14.60
8	13.46	---	---	14.34	14.36	14.52	14.64	14.69	14.92	15.25	14.81	14.61
9	13.45	---	---	14.32	14.34	14.53	14.72	14.69	14.94	15.26	14.82	14.63
10	13.44	---	---	14.26	14.33	14.54	14.75	14.69	14.96	15.28	14.83	14.66
11	13.45	---	---	14.28	14.31	14.54	14.72	14.72	14.98	15.32	14.83	14.67
12	13.48	---	14.00	14.33	14.33	14.50	14.72	14.72	15.00	15.34	14.84	14.66
13	13.48	---	13.97	14.34	14.33	14.54	14.74	14.72	15.02	15.35	14.86	14.65
14	13.49	---	13.95	14.47	14.27	14.55	14.72	14.75	15.03	15.35	14.86	14.64
15	13.56	---	13.98	14.49	14.32	14.55	14.58	14.77	15.02	15.33	14.86	14.62
16	13.54	---	14.02	14.44	14.33	14.55	14.51	14.78	15.03	15.32	14.87	14.69
17	13.27	---	14.06	14.48	14.36	14.53	14.52	14.78	15.05	15.33	14.85	14.70
18	13.25	---	14.05	14.47	14.34	14.60	14.48	14.79	15.07	15.35	---	14.45
19	13.36	---	14.01	14.43	14.31	14.57	14.49	14.79	15.08	---	---	14.20
20	13.33	---	14.00	14.35	14.37	14.51	14.49	14.80	15.02	---	---	14.26
21	13.32	---	14.01	14.45	14.38	14.38	14.43	14.81	15.03	---	---	14.24
22	13.31	---	14.03	14.47	14.40	14.42	14.49	14.79	15.05	---	---	---
23	13.33	---	14.09	14.38	14.41	14.46	14.54	14.78	15.08	---	---	---
24	---	---	14.12	14.28	14.42	14.46	14.55	14.79	15.10	---	---	---
25	---	---	14.19	14.14	14.43	14.47	14.54	14.82	15.10	---	---	---
26	---	---	14.15	14.24	14.45	14.48	14.60	14.83	15.11	---	---	---
27	---	---	14.16	14.30	14.46	14.47	14.59	14.83	15.13	---	---	---
28	---	---	14.17	14.34	14.46	14.47	14.54	14.81	15.16	---	---	---
29	---	---	14.22	14.35	14.48	14.57	14.53	14.82	15.17	14.98	---	---
30	---	---	14.23	14.30	---	14.58	14.57	14.86	15.17	14.93	14.72	---
31	---	---	14.23	14.22	---	14.59	---	14.85	---	14.89	14.66	---
WTR YR 2000	MEAN 14.52		HIGH 13.25		LOW 15.35							





## ONslow COUNTY--Continued

344139077211202. County number, ON-256; DENR Hadnot Point Research Station well X24s2.

LOCATION.--Lat 34°41'39", long 77°21'12", Hydrologic Unit 03030001, at Camp Lejeune, 1.6 mi south of intersection of Brewster Boulevard and Stone Street Extension, on Stone Street Extension, near tack shop, in pasture. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Black Creek aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 918.0 ft, well cased 2.5 in. to 918.0 ft in the Black Creek aquifer, screened interval from 908.0 to 918.0 ft.

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

DATUM.--Land-surface datum is 19.24 ft above sea level, (levels by DENR) . Measuring point: Top of floor of shelter 4.69 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.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 27.70 ft below land-surface datum, Oct. 14, 1994; lowest water level recorded, 38.60 ft below land-surface datum, Sept. 17, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

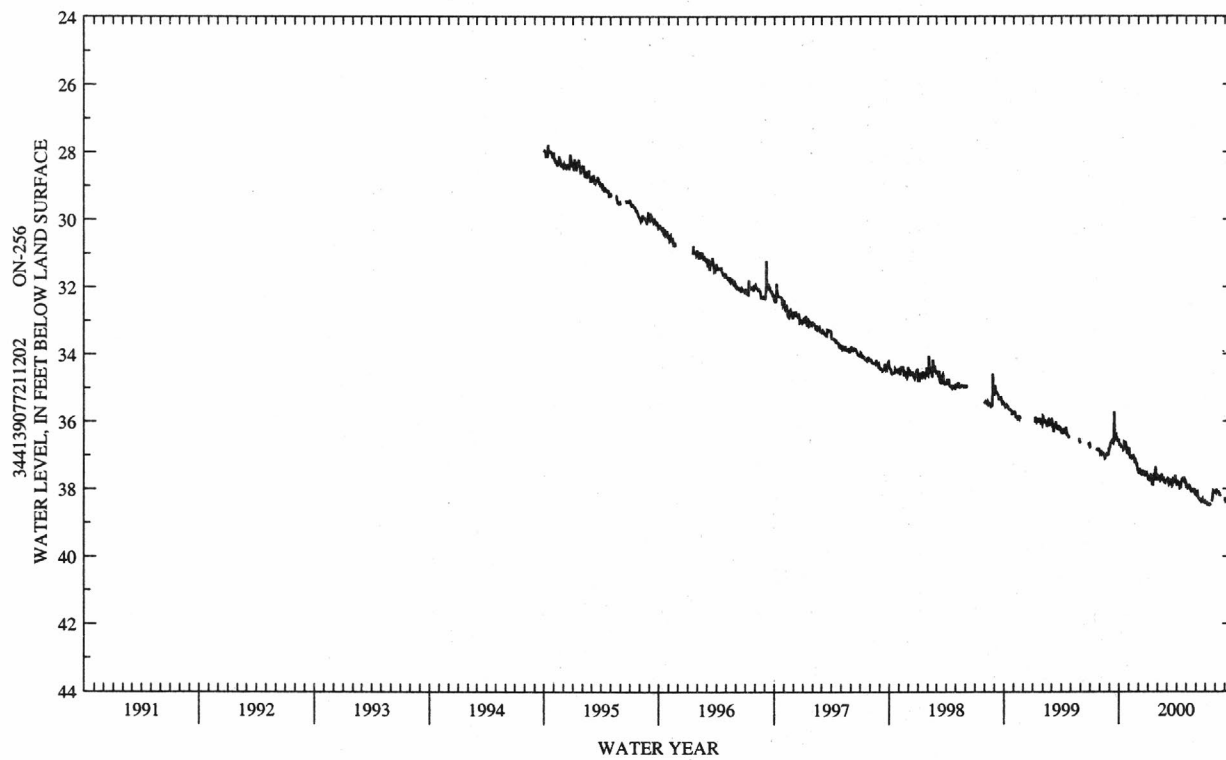
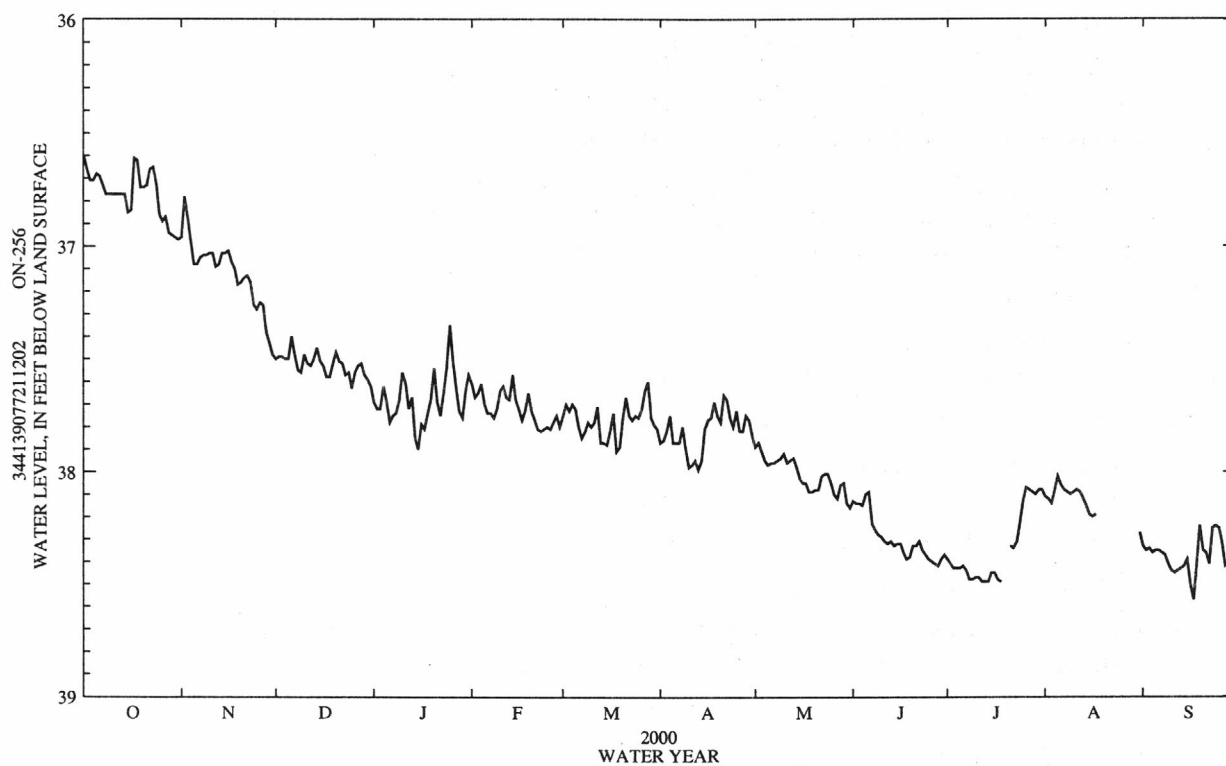
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.60	36.96	37.50	37.69	37.61	37.75	37.87	37.89	38.13	38.39	38.11	38.33
2	36.66	36.78	37.49	37.72	37.67	37.70	37.86	37.87	38.14	38.41	38.12	38.35
3	36.71	36.87	37.49	37.72	37.65	37.73	37.82	37.91	38.14	38.43	38.14	38.34
4	36.71	36.98	37.50	37.62	37.61	37.70	37.75	37.95	38.15	38.43	38.08	38.36
5	36.68	37.08	37.50	37.69	37.70	37.72	37.87	37.97	38.10	38.43	38.02	38.35
6	36.69	37.08	37.40	37.78	37.74	37.80	37.87	37.96	38.09	38.42	38.06	38.35
7	36.73	37.05	37.48	37.75	37.74	37.85	37.87	37.96	38.23	38.44	38.08	38.36
8	36.77	37.04	37.55	37.74	37.76	37.82	37.80	37.95	38.26	38.48	38.09	38.37
9	36.77	37.04	37.56	37.68	37.72	37.78	37.90	37.94	38.28	38.48	38.10	38.41
10	36.77	37.03	37.48	37.56	37.64	37.80	37.98	37.92	38.29	38.47	38.09	38.44
11	36.77	37.03	37.52	37.61	37.62	37.78	37.97	37.96	38.31	38.47	38.08	38.45
12	36.77	37.09	37.53	37.72	37.67	37.71	37.95	37.95	38.32	38.49	38.09	38.44
13	36.77	37.08	37.50	37.67	37.68	37.87	37.99	37.94	38.31	38.49	38.12	38.43
14	36.77	37.03	37.45	37.85	37.57	37.87	37.95	37.98	38.33	38.49	38.15	38.42
15	36.85	37.03	37.51	37.90	37.68	37.88	37.81	38.03	38.32	38.45	38.19	38.39
16	36.84	37.02	37.53	37.79	37.72	37.82	37.77	38.05	38.32	38.45	38.20	38.50
17	36.61	37.07	37.58	37.81	37.77	37.74	37.76	38.05	38.36	38.48	38.19	38.57
18	36.62	37.10	37.58	37.74	37.73	37.91	37.69	38.09	38.39	38.49	---	38.40
19	36.74	37.17	37.52	37.68	37.65	37.89	37.75	38.09	38.38	---	---	38.24
20	36.74	37.16	37.47	37.54	37.73	37.76	37.78	38.08	38.33	---	---	38.35
21	36.73	37.14	37.51	37.69	37.77	37.67	37.66	38.08	38.33	38.33	---	38.36
22	36.66	37.13	37.52	37.75	37.81	37.75	37.68	38.02	38.31	38.34	---	38.41
23	36.65	37.16	37.57	37.65	37.82	37.77	37.76	38.01	38.35	38.31	---	38.25
24	36.72	37.26	37.56	37.54	37.81	37.75	37.80	38.01	38.37	38.23	---	38.24
25	36.86	37.28	37.63	37.35	37.80	37.76	37.73	38.05	38.39	38.13	---	38.25
26	36.89	37.25	37.56	37.51	37.81	37.72	37.82	38.10	38.40	38.07	---	38.31
27	36.87	37.26	37.53	37.63	37.78	37.64	37.82	38.12	38.41	38.08	---	38.42
28	36.94	37.38	37.52	37.73	37.75	37.60	37.75	38.06	38.42	38.09	---	38.41
29	36.95	37.43	37.57	37.76	37.80	37.76	37.77	38.05	38.39	38.10	---	38.47
30	36.96	37.48	37.59	37.64	---	37.79	37.84	38.14	38.37	38.08	---	38.47
31	36.97	---	37.62	37.57	---	37.81	---	38.16	---	38.08	38.27	---

WTR YR 2000

MEAN 37.78

HIGH 36.60

LOW 38.57



## ONSLOW COUNTY--Continued

344139077211204. County number, ON-264; DENR Hadnot Point Research Station well X24s4.

LOCATION.--Lat 34°41'39", long 77°21'12", Hydrologic Unit 03030001, at Camp Lejeune, 1.6 mi south of intersection of Brewster Boulevard and Stone Street Extension, on Stone Street Extension, near tack shop, in pasture. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Pee Dee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 527 ft, diameter 4 in., cased to 517 ft, screened interval from 517 to 527 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 23.19 ft above sea level, (levels by DENR). Measuring point: Top of shelter floor, 3.47 ft above land-surface datum.

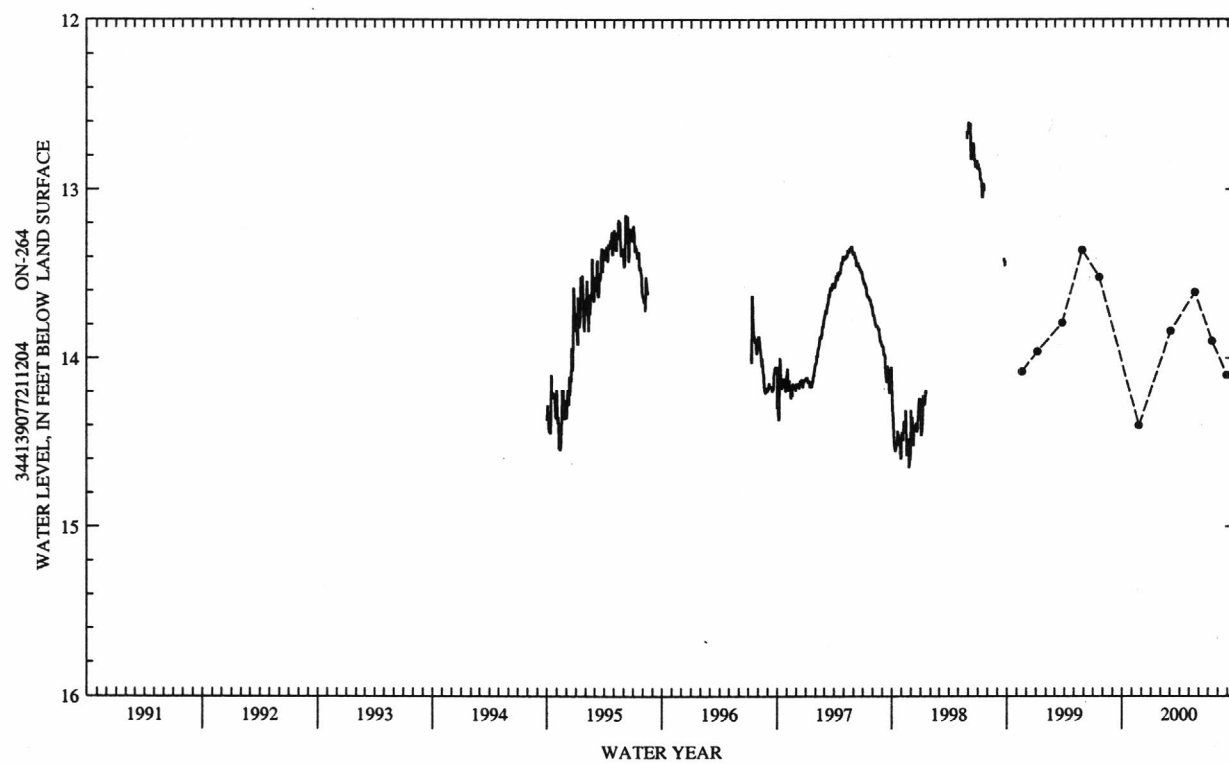
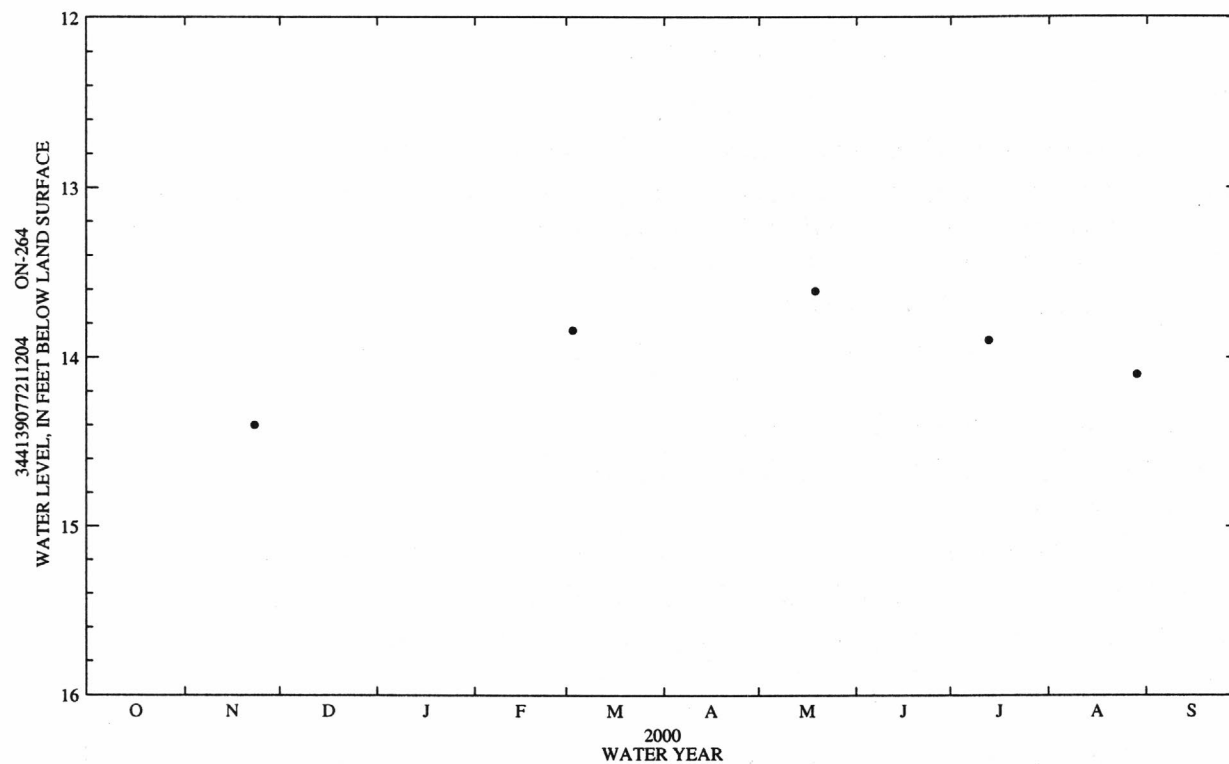
REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

PERIOD OF RECORD.--October 1994 to current year. Continuous record October 1994 to September 1998.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.08 ft below land-surface datum, June 6, 1995; lowest water level recorded, 14.57 ft below land-surface datum, Nov. 11, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 23	14.40	MAR 3	13.84	MAY 19	13.61	JUL 13	13.90	AUG 29	14.10



## ONSLOW COUNTY--Continued

344139077211205. County number, ON-265; DENR Hadnot Point Research Station well X24s5.

LOCATION.--Lat 34°41'39", long 77°21'12", Hydrologic Unit 03030001, at Camp Lejeune, 1.6 mi south of intersection of Brewster Boulevard and Stone Street Extension, on Stone Street Extension, near tack shop, in pasture. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Castle Hayne aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 295 ft, diameter 4 in., well cased to 285 ft, screened interval from 285 to 295 ft.

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

DATUM.--Land-surface datum is 23.26 ft above sea level, (levels by DENR). Measuring point: Top of shelter floor, 3.47 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

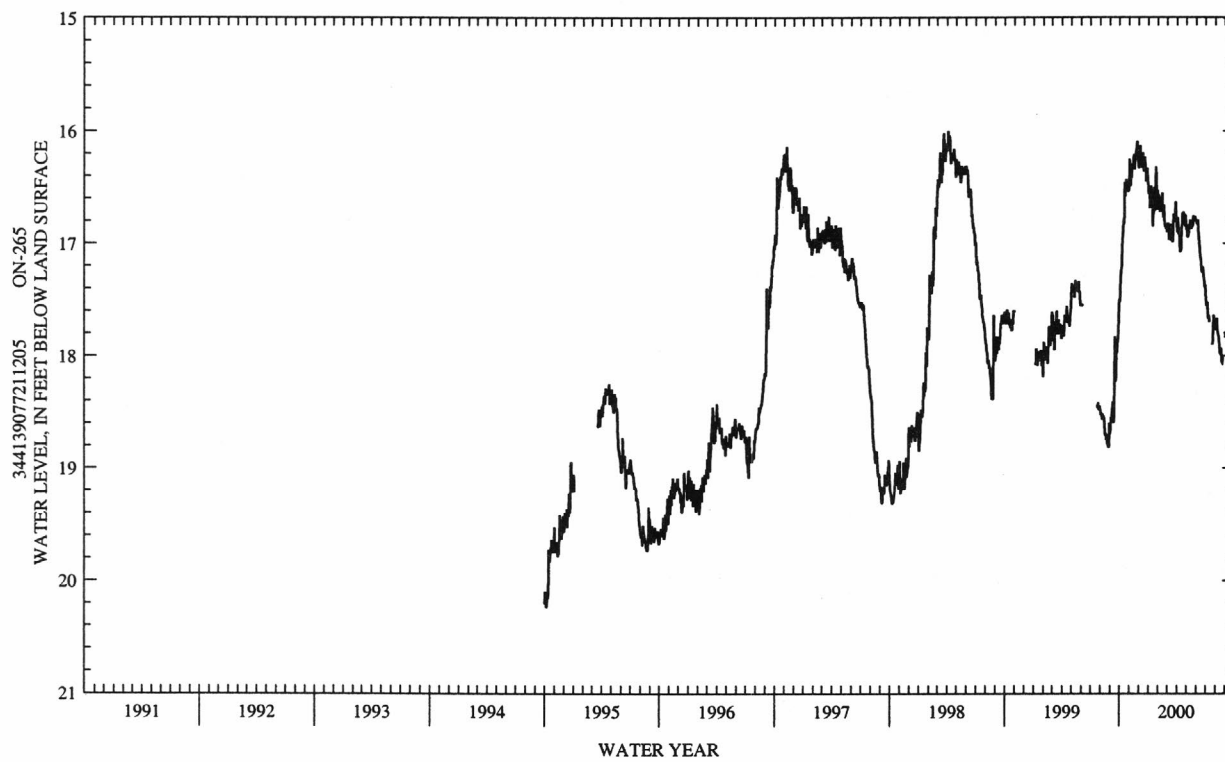
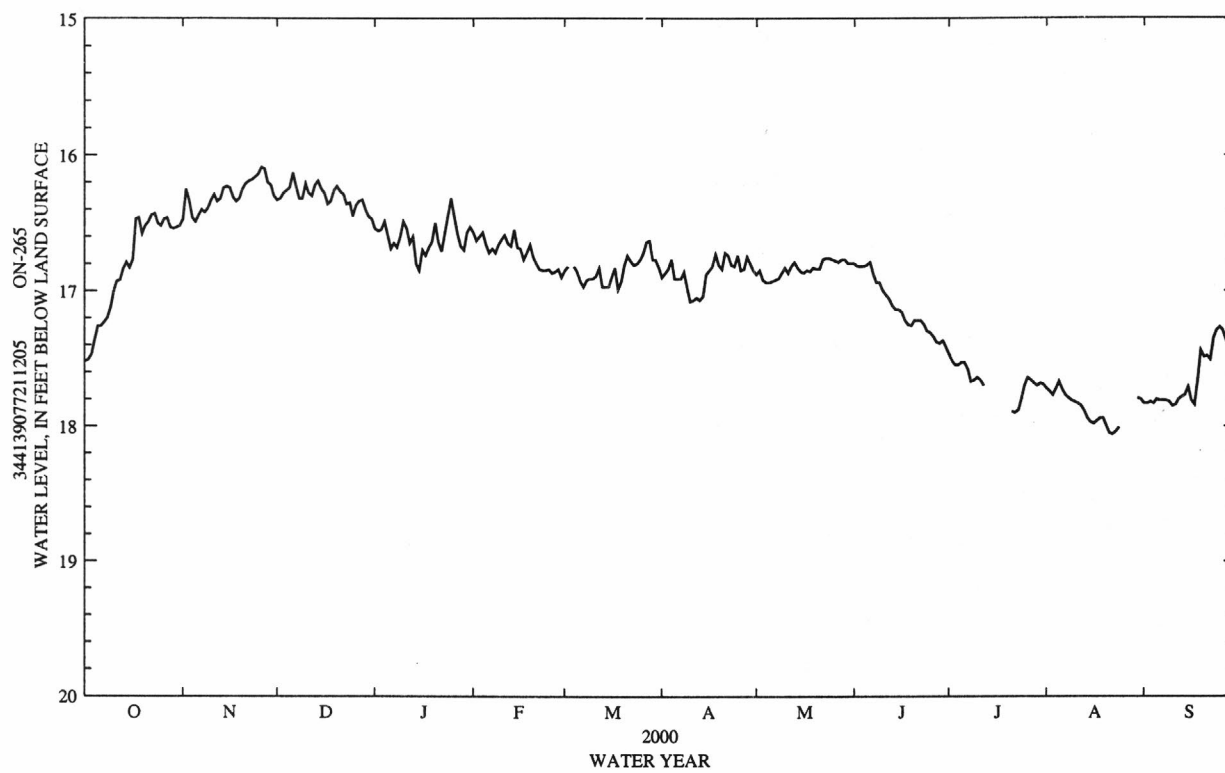
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 16.06 ft below land-surface datum, Nov. 26, 27, 1999; lowest water level recorded, 20.26 ft below land-surface datum, Oct. 7, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.52	16.47	16.33	16.54	16.57	16.85	16.90	16.88	16.80	17.47	17.72	17.83
2	17.51	16.25	16.32	16.56	16.63	16.82	16.87	16.85	16.82	17.52	17.74	17.83
3	17.47	16.33	16.28	16.55	16.60	---	16.84	16.92	16.82	17.55	17.77	17.82
4	17.36	16.46	16.26	16.49	16.57	16.82	16.77	16.94	16.82	17.55	17.72	17.83
5	17.26	16.49	16.24	16.59	16.66	16.86	16.91	16.94	16.81	17.53	17.67	17.80
6	17.26	16.44	16.13	16.69	16.72	16.93	16.91	16.93	16.79	17.53	17.73	17.81
7	17.23	16.40	16.23	16.65	16.69	16.97	16.91	16.92	16.88	17.58	17.77	17.81
8	17.20	16.42	16.32	16.68	16.72	16.92	16.86	16.91	16.94	17.67	17.79	17.81
9	17.12	16.39	16.32	16.60	16.66	16.91	16.98	16.87	16.94	17.66	17.81	17.82
10	17.00	16.33	16.21	16.49	16.62	16.91	17.08	16.83	17.00	17.64	17.82	17.85
11	16.93	16.29	16.28	16.54	16.59	16.89	17.07	16.87	17.03	17.66	17.83	17.84
12	16.92	16.34	16.30	16.65	16.65	16.83	17.05	16.82	17.06	17.70	17.85	17.80
13	16.84	16.32	16.22	16.60	16.67	16.97	17.07	16.79	17.11	---	17.89	17.78
14	16.79	16.24	16.19	16.80	16.55	16.97	17.04	16.83	17.14	---	17.94	17.77
15	16.83	16.23	16.25	16.85	16.68	16.97	16.88	16.86	17.14	---	17.97	17.71
16	16.77	16.24	16.28	16.70	16.69	16.90	16.85	16.87	17.16	---	17.98	17.81
17	16.47	16.31	16.36	16.74	16.77	16.83	16.82	16.85	17.22	---	17.96	17.84
18	16.46	16.34	16.34	16.68	16.72	16.99	16.73	16.86	17.25	---	17.94	17.65
19	16.58	16.32	16.26	16.64	16.66	16.93	16.81	16.83	17.26	---	17.94	17.44
20	16.52	16.25	16.23	16.50	16.75	16.81	16.84	16.84	17.22	---	18.00	17.49
21	16.49	16.21	16.27	16.64	16.80	16.74	16.72	16.84	17.22	17.89	18.05	17.48
22	16.44	16.19	16.29	16.71	16.84	16.78	16.74	16.77	17.22	17.90	18.06	17.51
23	16.43	16.18	16.36	16.58	16.85	16.81	16.81	16.76	17.25	17.88	18.04	17.35
24	16.50	16.16	16.35	16.45	16.85	16.80	16.82	16.76	17.30	17.80	18.01	17.29
25	16.52	16.14	16.45	16.32	16.84	16.77	16.74	16.77	17.31	17.70	---	17.27
26	16.47	16.09	16.37	16.45	16.87	16.72	16.85	16.78	17.34	17.64	---	17.29
27	16.46	16.10	16.34	16.58	16.86	16.64	16.84	16.79	17.38	17.66	---	17.37
28	16.53	16.20	16.33	16.67	16.84	16.63	16.75	16.77	17.39	17.68	---	17.33
29	16.54	16.22	16.40	16.70	16.90	16.77	16.80	16.77	17.37	17.70	---	17.31
30	16.53	16.30	16.45	16.57	---	16.77	16.85	16.80	17.42	17.68	17.79	17.26
31	16.52	---	16.47	16.53	---	16.83	---	16.80	---	17.69	17.80	---
WTR YR 2000	MEAN 16.94		HIGH 16.09		LOW 18.06							



## ONslow COUNTY--Continued

344139077211206. County number, ON-266; DENR Hadnot Point Research Station well X24s6.

LOCATION.--Lat 34°41'39", long 77°21'12", Hydrologic Unit 03030001, at Camp Lejeune, 1.6 mi south of intersection of Brewster Boulevard and Stone Street Extension, on Stone Street Extension, near tack shop, in pasture. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Castle Hayne aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 130 ft, diameter 6 in., cased to 120 ft, screened interval from 120 to 130 ft.

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

DATUM.--Land-surface datum is 23.47 ft above sea level, (levels by DENR). Measuring point: Top of shelter floor, 1.73 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.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.09 ft below land-surface datum, Oct. 18, 1996; lowest water level recorded, 19.38 ft below land-surface datum, Oct. 11, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

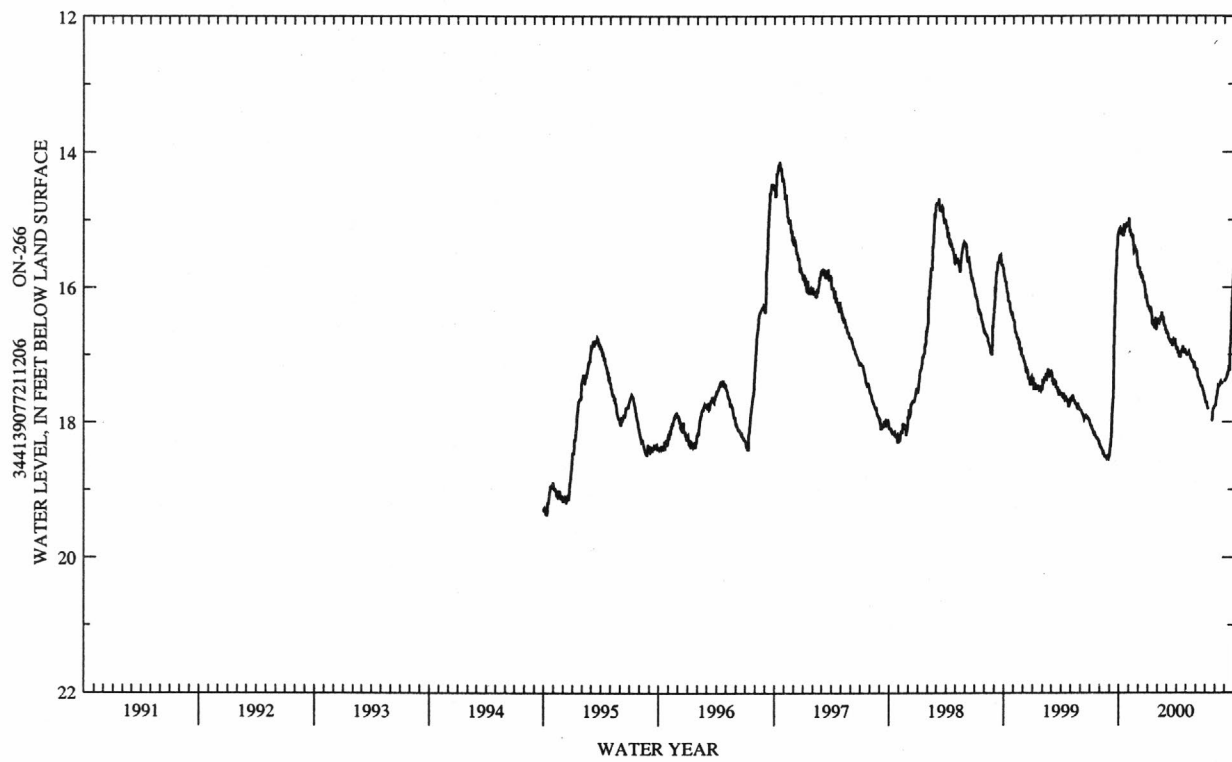
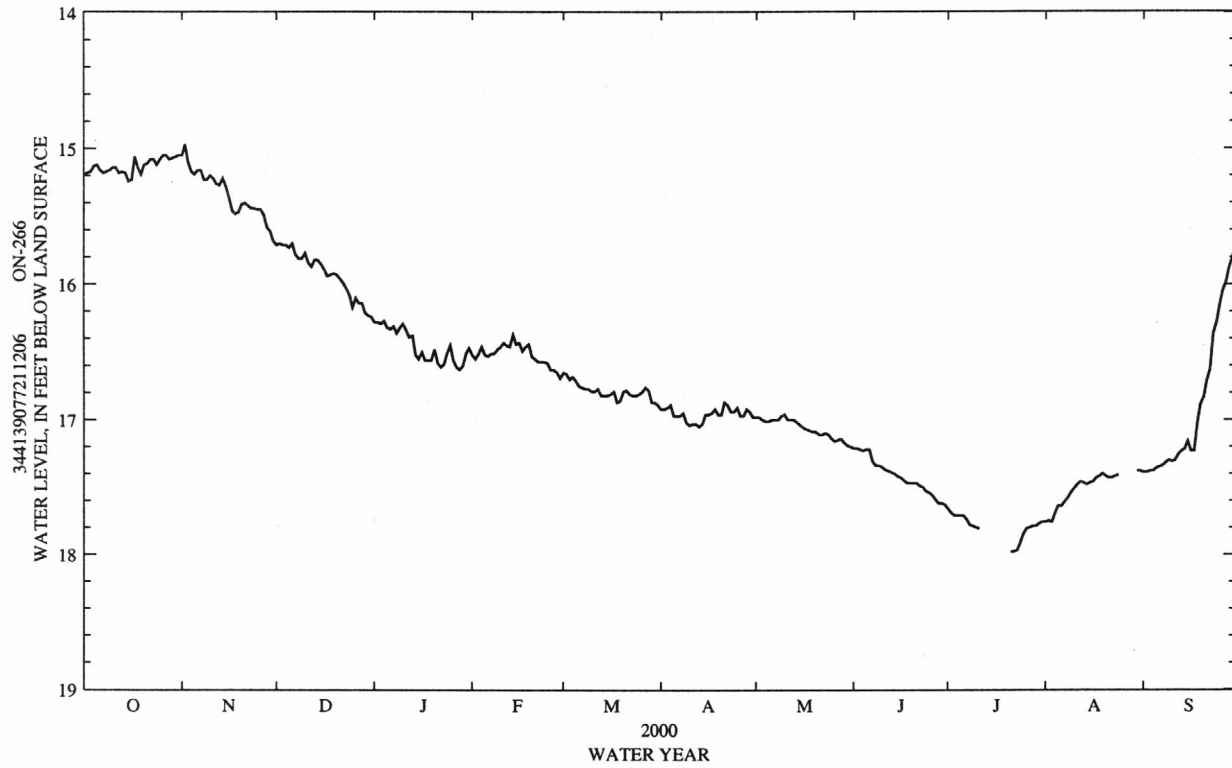
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.19	15.05	15.71	16.28	16.52	16.65	16.92	16.98	17.21	17.66	17.76	17.39
2	15.18	14.97	15.70	16.28	16.55	16.66	16.92	16.98	17.21	17.69	17.75	17.39
3	15.17	15.10	15.71	16.29	16.51	16.70	16.91	17.00	17.22	17.71	17.76	17.38
4	15.13	15.17	15.71	16.27	16.46	16.68	16.89	17.01	17.23	17.71	17.69	17.38
5	15.12	15.19	15.73	16.32	16.52	16.71	16.97	17.01	17.22	17.71	17.64	17.36
6	15.16	15.16	15.70	16.33	16.53	16.75	16.97	17.00	17.22	17.71	17.64	17.35
7	15.18	15.16	15.78	16.31	16.51	16.76	16.97	17.00	17.31	17.74	17.61	17.34
8	15.17	15.23	15.81	16.36	16.51	16.77	16.95	17.00	17.34	17.78	17.58	17.32
9	15.16	15.23	15.81	16.32	16.48	16.77	17.02	16.97	17.34	17.79	17.54	17.30
10	15.14	15.20	15.77	16.29	16.46	16.79	17.04	16.96	17.35	17.80	17.51	17.31
11	15.14	15.22	15.84	16.34	16.43	16.79	17.03	17.00	17.37	17.81	17.48	17.30
12	15.18	15.26	15.87	16.39	16.45	16.77	17.03	17.00	17.38	---	17.46	17.26
13	15.17	15.27	15.82	16.38	16.46	16.82	17.05	17.00	17.39	---	17.47	17.23
14	15.18	15.22	15.82	16.52	16.37	16.82	17.03	17.02	17.40	---	17.48	17.22
15	15.24	15.28	15.85	16.55	16.44	16.82	16.96	17.04	17.42	---	17.47	17.16
16	15.23	15.36	15.89	16.50	16.43	16.81	16.96	17.06	17.43	---	17.46	17.23
17	15.06	15.46	15.94	16.56	16.49	16.79	16.95	17.07	17.45	---	17.43	17.23
18	15.14	15.48	15.93	16.56	16.46	16.87	16.92	17.08	17.47	---	17.42	17.02
19	15.19	15.47	15.92	16.56	16.44	16.86	16.96	17.09	17.47	---	17.40	16.89
20	15.12	15.41	15.93	16.48	16.53	16.79	16.96	17.09	17.47	---	17.42	16.83
21	15.11	15.40	15.96	16.58	16.55	16.78	16.87	17.11	17.47	17.98	17.43	16.71
22	15.08	15.42	15.99	16.61	16.57	16.81	16.89	17.11	17.49	17.98	17.43	16.63
23	15.08	15.44	16.03	16.59	16.57	16.82	16.94	17.10	17.50	17.97	17.42	16.36
24	15.12	15.44	16.08	16.51	16.57	16.82	16.94	17.11	17.53	17.92	17.41	16.28
25	15.08	15.45	16.17	16.45	16.58	16.81	16.91	17.14	17.54	17.85	---	16.15
26	15.05	15.45	16.10	16.56	16.63	16.79	16.97	17.16	17.56	17.81	---	16.05
27	15.05	15.49	16.14	16.61	16.63	16.76	16.97	17.15	17.59	17.80	---	15.98
28	15.08	15.58	16.14	16.63	16.65	16.78	16.92	17.14	17.62	17.79	---	15.88
29	15.07	15.61	16.21	16.60	16.69	16.87	16.94	17.17	17.62	17.79	---	15.81
30	15.06	15.68	16.23	16.51	---	16.87	16.98	17.19	17.63	17.77	17.38	15.73
31	15.05	---	16.24	16.47	---	16.89	---	17.20	---	17.76	17.38	---

WTR YR 2000

MEAN 16.61

HIGH 14.97

LOW 17.98





## ONSLOW COUNTY--Continued

344139077211207. County number, ON-267; DENR Hadnot Point Research Station well X24s7.

LOCATION.--Lat 34°41'39", long 77°21'12", Hydrologic Unit 03030001, at Camp Lejeune, 1.6 mi south of intersection of Brewster Boulevard and Stone Street Extension, on Stone Street Extension, near tack shop, in pasture. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 40 ft, diameter 4 in., cased to 30 ft, screened interval from 30 to 40 ft.

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

DATUM.--Land-surface datum is 24.06 ft above sea level, (levels by DENR). Measuring point: Top of shelter floor, 0.93 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

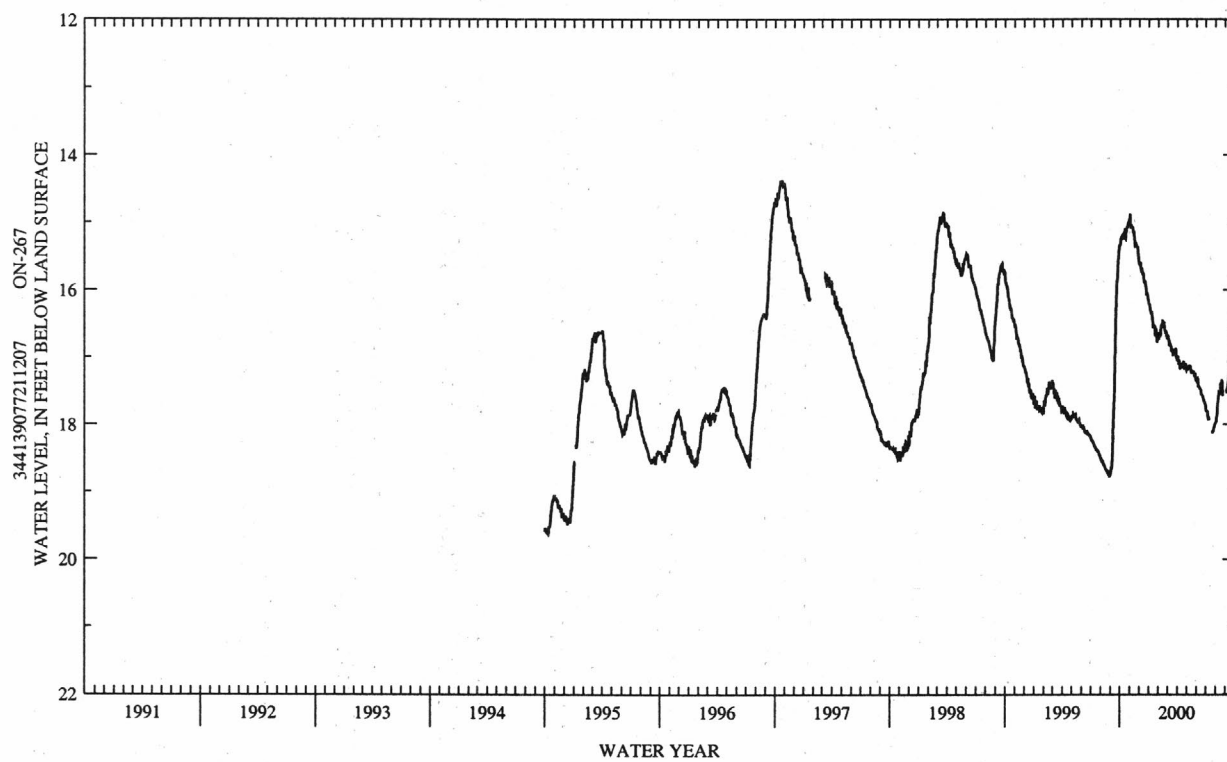
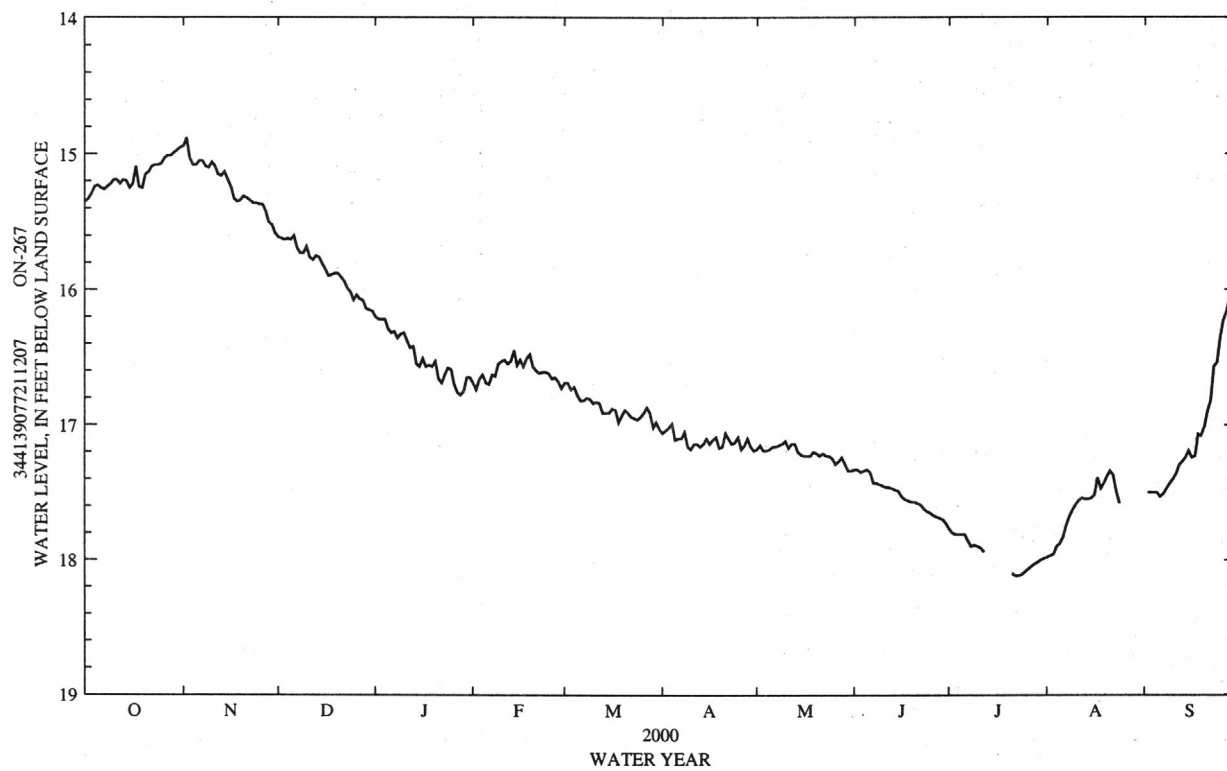
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.35 ft below land-surface datum, Oct. 18, 1996; lowest water level recorded, 19.63 ft below land-surface datum, Oct. 11, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.35	14.94	15.61	16.20	16.69	16.69	17.06	17.18	17.33	17.77	17.98	---
2	15.33	14.88	15.62	16.22	16.74	16.69	17.04	17.15	17.33	17.80	17.97	17.50
3	15.29	15.03	15.63	16.22	16.66	16.74	17.02	17.19	17.35	17.81	17.96	17.50
4	15.24	15.08	15.62	16.22	16.63	16.72	16.99	17.19	17.34	17.81	17.90	17.50
5	15.23	15.08	15.63	16.29	16.69	16.78	17.11	17.18	17.33	17.81	17.88	17.50
6	15.25	15.05	15.60	16.32	16.70	16.82	17.10	17.16	17.35	17.81	17.83	17.53
7	15.26	15.05	15.69	16.31	16.63	16.82	17.10	17.16	17.43	17.86	17.75	17.51
8	15.24	15.09	15.73	16.36	16.64	16.80	17.05	17.15	17.43	17.90	17.68	17.47
9	15.22	15.10	15.73	16.33	16.55	16.81	17.16	17.14	17.44	17.89	17.63	17.43
10	15.19	15.06	15.68	16.32	16.53	16.84	17.18	17.12	17.45	17.90	17.59	17.40
11	15.19	15.09	15.76	16.38	16.52	16.83	17.14	17.17	17.46	17.91	17.56	17.36
12	15.22	15.15	15.78	16.43	16.55	16.84	17.14	17.14	17.46	17.94	17.54	17.30
13	15.19	15.16	15.75	16.42	16.53	16.91	17.16	17.14	17.47	---	17.55	17.27
14	15.20	15.13	15.76	16.55	16.45	16.91	17.14	17.20	17.48	---	17.55	17.24
15	15.25	15.19	15.81	16.57	16.56	16.91	17.10	17.22	17.49	---	17.54	17.19
16	15.22	15.24	15.85	16.51	16.52	16.88	17.14	17.23	17.53	---	17.52	17.24
17	15.09	15.33	15.90	16.57	16.57	16.89	17.11	17.23	17.55	---	17.39	17.23
18	15.24	15.35	15.89	16.56	16.51	16.98	17.09	17.23	17.56	---	17.47	17.07
19	15.25	15.34	15.88	16.57	16.48	16.93	17.17	17.20	17.57	---	17.43	17.08
20	15.15	15.31	15.88	16.53	16.57	16.89	17.16	17.21	17.57	---	17.38	17.01
21	15.13	15.32	15.91	16.66	16.60	16.91	17.06	17.23	17.58	18.10	17.34	16.90
22	15.09	15.34	15.94	16.69	16.62	16.94	17.10	17.21	17.59	18.12	17.37	16.82
23	15.08	15.36	15.99	16.63	16.61	16.95	17.14	17.23	17.62	18.12	17.49	16.57
24	15.08	15.36	16.02	16.58	16.61	16.96	17.13	17.23	17.64	18.11	17.58	16.54
25	15.07	15.37	16.08	16.59	16.62	16.94	17.09	17.25	17.65	18.09	---	16.35
26	15.03	15.37	16.04	16.70	16.66	16.91	17.18	17.29	17.67	18.07	---	16.23
27	15.01	15.42	16.07	16.76	16.65	16.87	17.15	17.27	17.68	18.05	---	16.16
28	15.01	15.50	16.08	16.78	16.68	16.91	17.10	17.24	17.69	18.03	---	16.06
29	14.99	15.52	16.14	16.75	16.73	17.02	17.16	17.29	17.70	18.02	---	16.00
30	14.97	15.58	16.15	16.65	---	16.98	17.19	17.34	17.73	18.00	17.47	15.93
31	14.95	---	16.16	16.65	---	17.03	---	17.34	---	17.99	---	---
WTR YR 2000	MEAN 16.67		HIGH 14.88		LOW 18.12							



## ONslow COUNTY--Continued

344037077253901. County number, ON-291; Ragged Point Well

LOCATION.--Lat 34°40'37", long 77°25'39", Hydrologic Unit 03030001, 2.05 mi east of Verona, on Town Point Road, 0.9 mi north on TLZ Eagle road. Owner: U.S. Geological Survey.

AQUIFER.--Castle Hayne aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 180 ft, diameter 2 in., cased to 170 ft, screened interval from 170 to 180 ft.

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

DATUM.--Land-surface datum is 25 ft above sea level (from topographic map). Measuring point: Top of shelter floor, 2.87 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

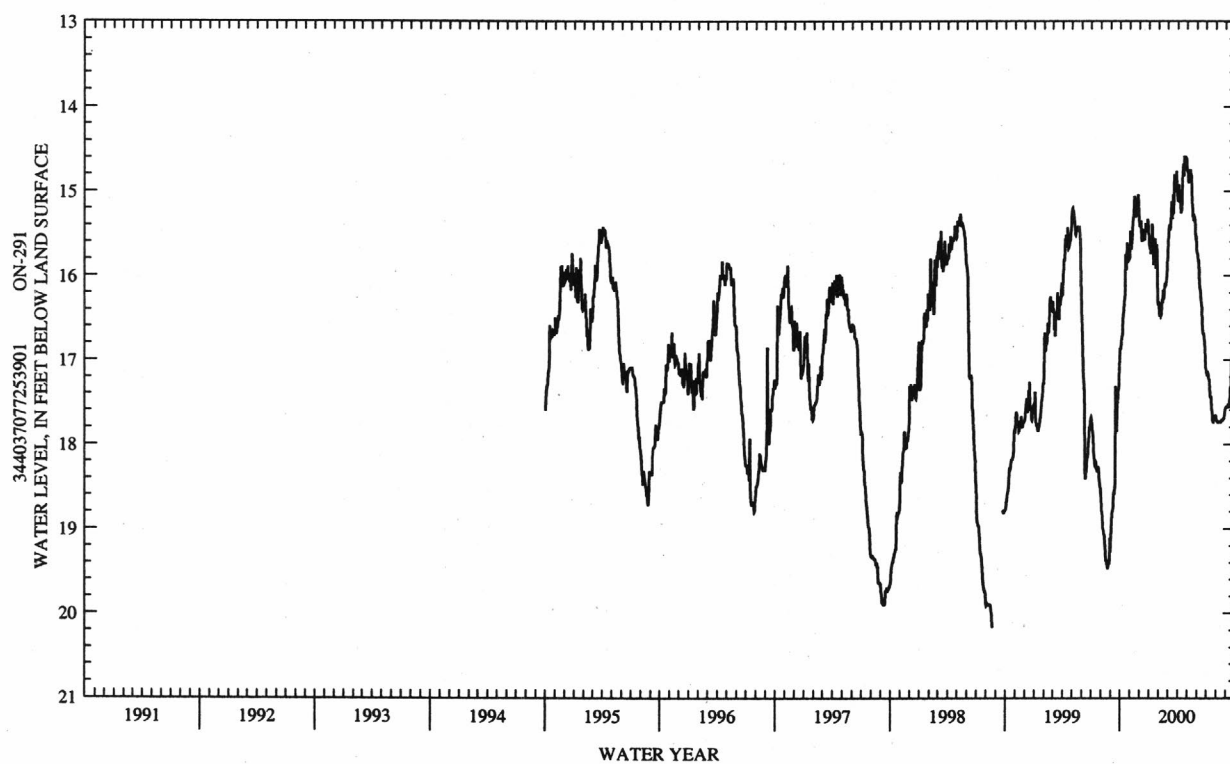
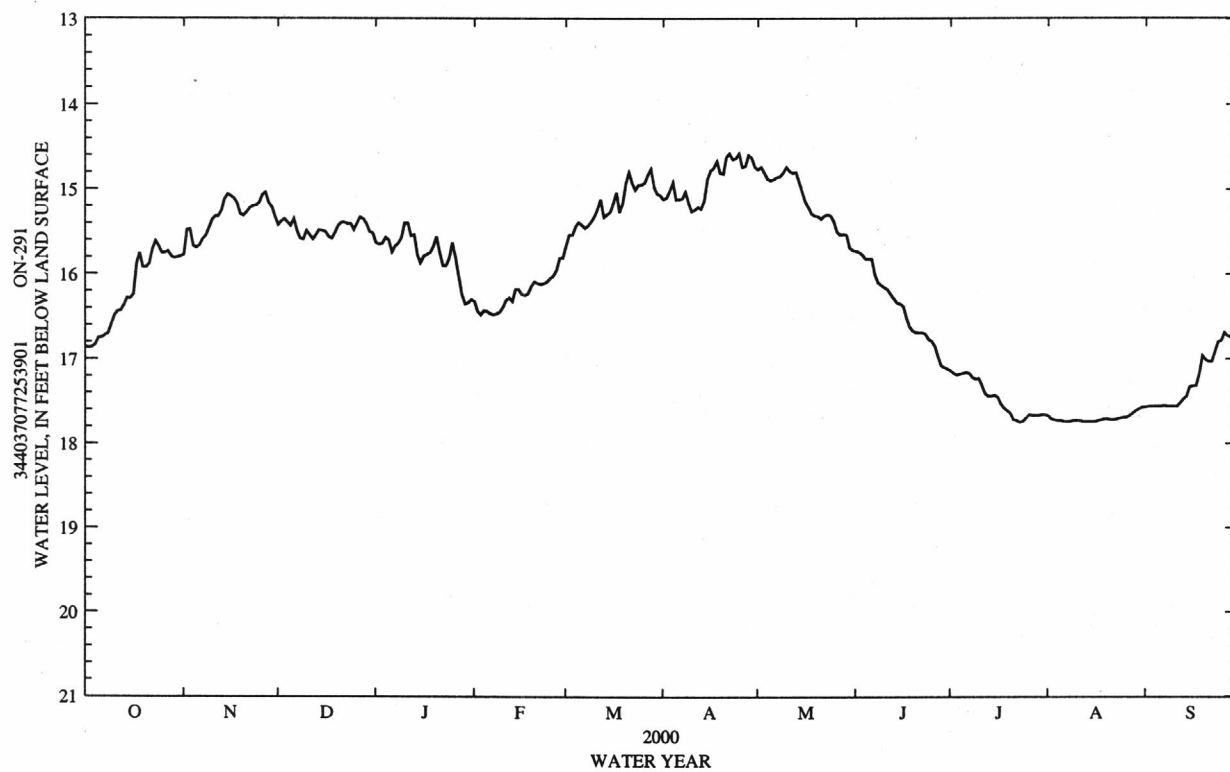
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.53 ft below land-surface datum, July 23, 2000; lowest water level recorded, 20.18 ft below land-surface datum, Aug. 21, 1998.

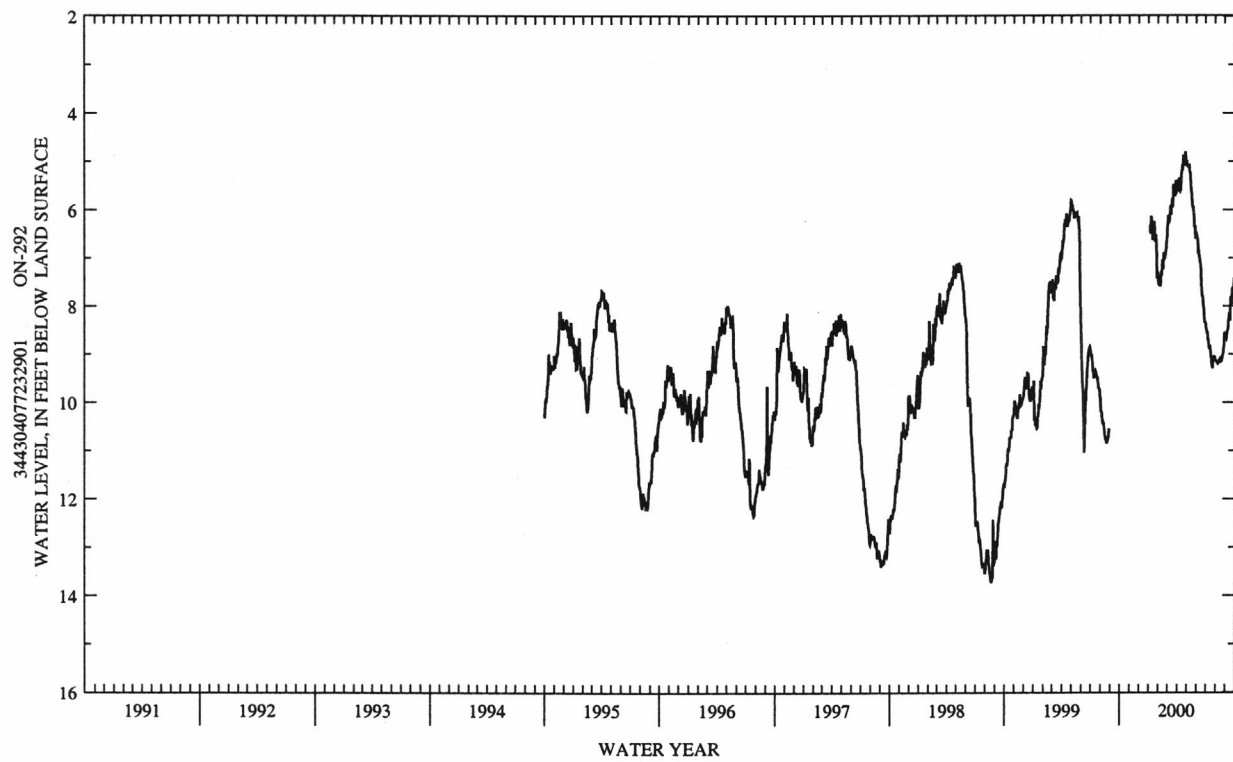
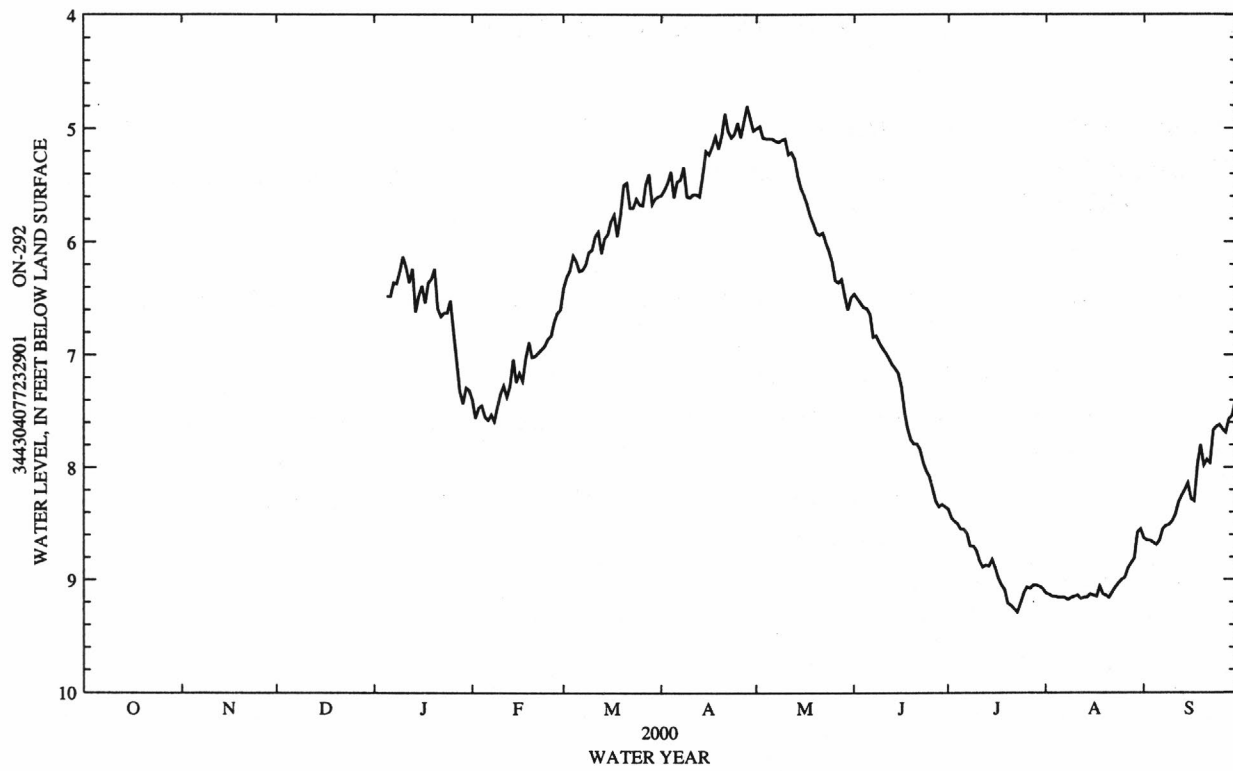
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.86	15.77	15.42	15.63	16.32	15.66	15.12	14.77	15.73	17.14	17.67	17.57
2	16.87	15.48	15.38	15.65	16.44	15.54	15.10	14.74	15.74	17.17	17.71	17.56
3	16.86	15.47	15.35	15.64	16.48	15.54	15.02	14.81	15.77	17.19	17.72	17.56
4	16.83	15.67	15.39	15.57	16.43	15.44	14.92	14.88	15.82	17.18	17.73	17.56
5	16.75	15.69	15.43	15.60	16.44	15.39	15.12	14.90	15.82	17.17	17.73	17.56
6	16.75	15.66	15.35	15.74	16.47	15.42	15.12	14.88	15.82	17.16	17.74	17.56
7	16.72	15.59	15.49	15.67	16.48	15.46	15.11	14.86	16.01	17.17	17.74	17.55
8	16.70	15.55	15.58	15.64	16.47	15.43	15.03	14.85	16.10	17.22	17.74	17.56
9	16.59	15.46	15.59	15.57	16.45	15.38	15.16	14.80	16.13	17.24	17.73	17.56
10	16.49	15.36	15.49	15.40	16.39	15.32	15.26	14.74	16.16	17.23	17.73	17.56
11	16.44	15.32	15.54	15.40	16.31	15.23	15.24	14.79	16.18	17.31	17.73	17.56
12	16.43	15.32	15.59	15.55	16.28	15.12	15.21	14.81	16.24	17.41	17.74	17.52
13	16.37	15.25	15.54	15.54	16.32	15.33	15.23	14.80	16.29	17.44	17.74	17.47
14	16.28	15.12	15.48	15.77	16.18	15.30	15.13	14.92	16.34	17.44	17.74	17.44
15	16.29	15.06	15.49	15.87	16.18	15.27	14.88	15.04	16.35	17.43	17.74	17.33
16	16.24	15.08	15.50	15.79	16.24	15.17	14.78	15.15	16.38	17.45	17.74	17.32
17	15.88	15.11	15.56	15.77	16.25	15.04	14.75	15.21	16.52	17.53	17.73	17.32
18	15.75	15.17	15.58	15.75	16.23	15.27	14.67	15.29	16.62	17.58	17.72	17.17
19	15.92	15.29	15.51	15.68	16.14	15.16	14.81	15.31	16.67	17.61	17.71	16.96
20	15.92	15.31	15.43	15.56	16.09	14.93	14.82	15.32	16.69	17.64	17.71	17.01
21	15.88	15.27	15.39	15.74	16.11	14.80	14.62	15.35	16.69	17.72	17.72	17.03
22	15.71	15.22	15.39	15.90	16.12	14.93	14.58	15.31	16.69	17.73	17.72	17.03
23	15.61	15.20	15.41	15.90	16.11	15.01	14.65	15.30	16.71	17.75	17.71	16.91
24	15.67	15.19	15.41	15.82	16.09	14.95	14.64	15.31	16.77	17.74	17.70	16.80
25	15.75	15.16	15.48	15.63	16.05	14.95	14.58	15.38	16.79	17.70	17.69	16.78
26	15.75	15.07	15.40	15.80	16.02	14.92	14.74	15.50	16.85	17.66	17.69	16.69
27	15.73	15.04	15.33	16.03	15.95	14.83	14.73	15.54	16.97	17.67	17.67	16.73
28	15.79	15.16	15.35	16.24	15.81	14.76	14.60	15.53	17.08	17.67	17.64	16.74
29	15.81	15.21	15.41	16.35	15.81	14.97	14.63	15.54	17.10	17.67	17.61	16.74
30	15.80	15.32	15.50	16.34	---	15.05	14.74	15.69	17.12	17.66	17.59	16.70
31	15.79	---	15.52	16.30	---	15.07	---	15.72	---	17.66	17.57	---
WTR YR 2000	MEAN 16.08		HIGH 14.58		LOW 17.75							







## ONSLOW COUNTY--Continued

343609077171301. County number, ON-293; Sneads Ferry Road Well

LOCATION.--Lat 34°36'09", long 77°17'13", Hydrologic Unit 03030001, at Camp Lejeune, approximately 6.0 mi south on Sneads Ferry Road. Owner: U.S. Geological Survey.

AQUIFER.--Castle Hayne aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 235 ft, diameter 2 in., cased to 225 ft, screened interval from 225 to 235 ft.

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

DATUM.--Land-surface datum is 40 ft above sea level (from topographic map). Measuring point: Top of shelter floor, 2.30 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

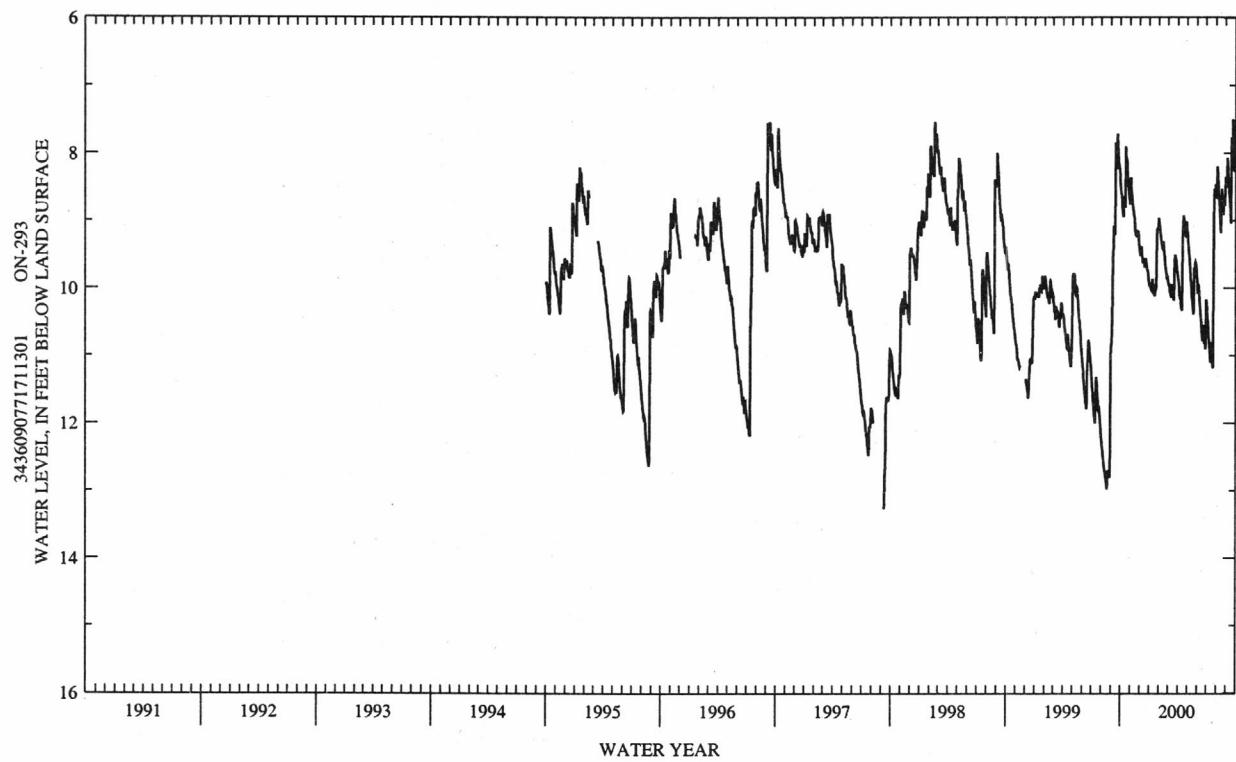
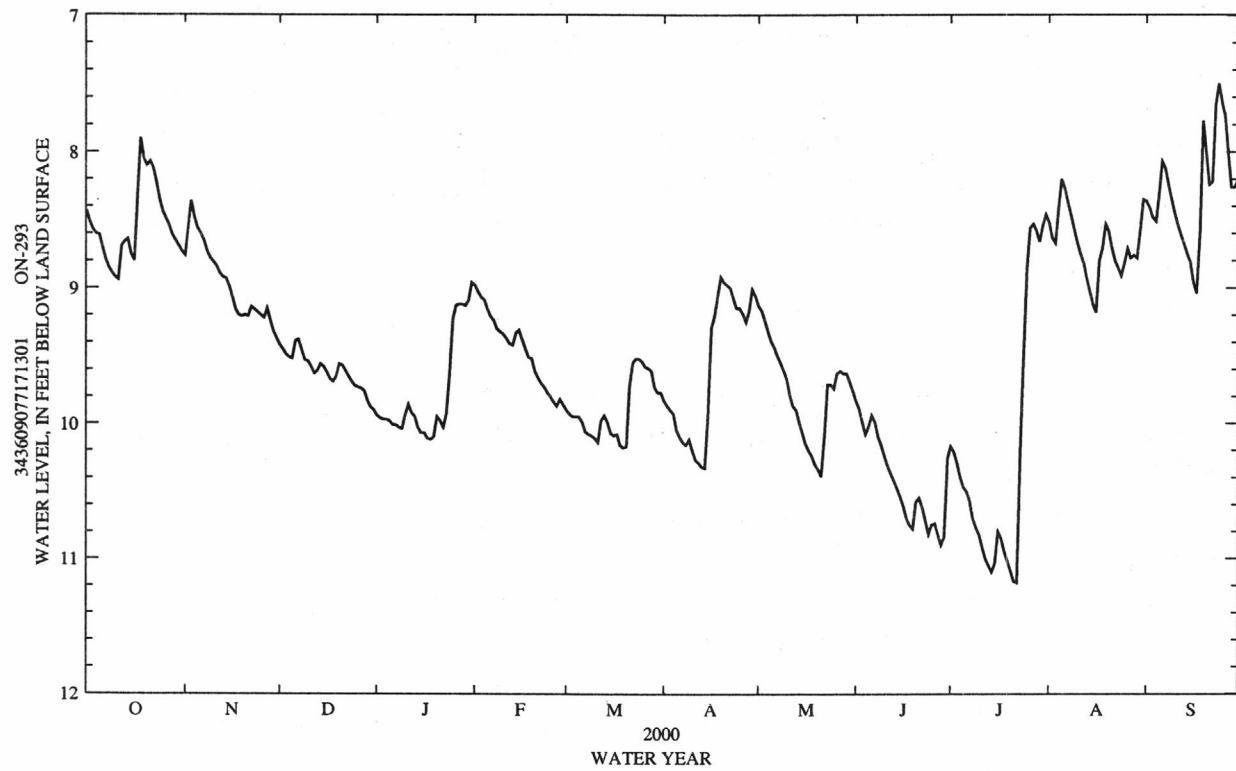
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.46 ft below land-surface datum, July 22, 2000; lowest water level recorded, 13.28 ft below land-surface datum, Sept. 10, 11, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.43	8.76	9.42	9.94	8.98	9.90	9.83	9.13	9.83	10.17	8.52	8.36
2	8.51	8.56	9.45	9.96	9.03	9.93	9.87	9.17	9.89	10.21	8.63	8.41
3	8.57	8.36	9.49	9.97	9.07	9.95	9.90	9.24	9.99	10.29	8.67	8.48
4	8.60	8.48	9.51	9.97	9.09	9.95	9.93	9.32	10.08	10.39	8.41	8.51
5	8.61	8.56	9.52	9.98	9.16	9.95	10.05	9.39	10.02	10.47	8.20	8.31
6	8.70	8.60	9.39	10.01	9.21	9.99	10.10	9.44	9.94	10.50	8.27	8.07
7	8.79	8.65	9.38	10.01	9.24	10.06	10.14	9.50	9.99	10.57	8.37	8.12
8	8.85	8.73	9.46	10.03	9.30	10.08	10.16	9.55	10.10	10.70	8.47	8.24
9	8.89	8.78	9.53	10.04	9.32	10.09	10.12	9.61	10.16	10.77	8.57	8.35
10	8.92	8.81	9.54	9.94	9.34	10.11	10.20	9.67	10.24	10.82	8.67	8.45
11	8.94	8.84	9.58	9.86	9.37	10.14	10.27	9.79	10.31	10.91	8.75	8.54
12	8.69	8.89	9.63	9.92	9.41	9.98	10.29	9.87	10.37	11.00	8.82	8.61
13	8.66	8.92	9.61	9.95	9.42	9.94	10.32	9.90	10.42	11.05	8.93	8.68
14	8.64	8.93	9.56	10.03	9.33	9.99	10.33	9.99	10.48	11.10	9.02	8.75
15	8.75	8.99	9.58	10.07	9.31	10.07	9.93	10.07	10.54	11.04	9.12	8.81
16	8.80	9.07	9.62	10.07	9.38	10.09	9.29	10.15	10.61	10.80	9.18	8.96
17	8.31	9.16	9.67	10.11	9.45	10.08	9.21	10.20	10.70	10.85	8.80	9.04
18	7.90	9.20	9.69	10.12	9.51	10.16	9.06	10.24	10.75	10.95	8.71	8.60
19	8.05	9.21	9.65	10.10	9.52	10.18	8.92	10.30	10.78	11.02	8.53	7.77
20	8.10	9.20	9.56	9.95	9.61	10.17	8.96	10.34	10.58	11.09	8.58	8.01
21	8.07	9.21	9.57	9.98	9.66	9.72	8.98	10.39	10.55	11.17	8.70	8.24
22	8.12	9.14	9.61	10.03	9.70	9.55	9.00	10.10	10.62	11.18	8.80	8.22
23	8.23	9.16	9.65	9.93	9.73	9.52	9.08	9.71	10.72	10.20	8.85	7.65
24	8.35	9.18	9.69	9.64	9.77	9.52	9.15	9.71	10.82	9.50	8.91	7.50
25	8.44	9.20	9.72	9.23	9.80	9.54	9.15	9.74	10.75	8.86	8.82	7.64
26	8.49	9.22	9.73	9.13	9.84	9.58	9.19	9.63	10.74	8.56	8.71	7.74
27	8.54	9.15	9.74	9.12	9.87	9.59	9.25	9.61	10.82	8.53	8.78	8.02
28	8.61	9.24	9.76	9.12	9.82	9.61	9.17	9.63	10.90	8.58	8.76	8.26
29	8.65	9.32	9.83	9.13	9.86	9.73	9.01	9.63	10.84	8.66	8.78	8.26
30	8.69	9.37	9.88	9.09	---	9.77	9.06	9.69	10.26	8.54	8.58	8.21
31	8.73	---	9.90	8.96	---	9.77	---	9.76	---	8.46	8.35	---
WTR YR 2000	MEAN 9.44		HIGH 7.50		LOW 11.18							





## ONSLOW COUNTY--Continued

343842077241501. County number, ON-294; Town Creek Well 1

LOCATION.--Lat 34°38'42", long 77°24'15", Hydrologic Unit 03030001, 4 mi east of Verona, 0.4 mi north of Town Point Road, on dirt road. Owner: U.S. Geological Survey.

AQUIFER.--Surficial Aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 23 ft, diameter 2 in., screened interval from 12 to 22 ft.

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

DATUM.--Land-surface datum is 65 ft above sea level (from topographic map). Measuring point: Top of shelter floor, 2.43 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

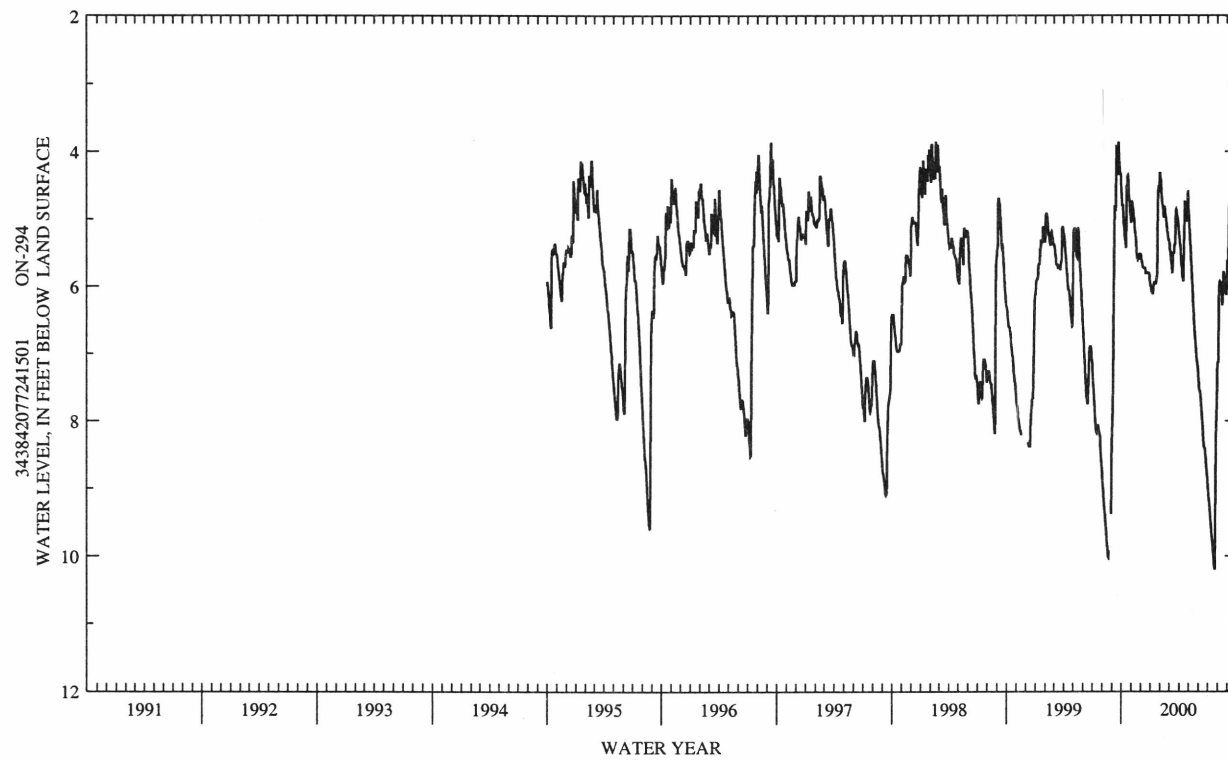
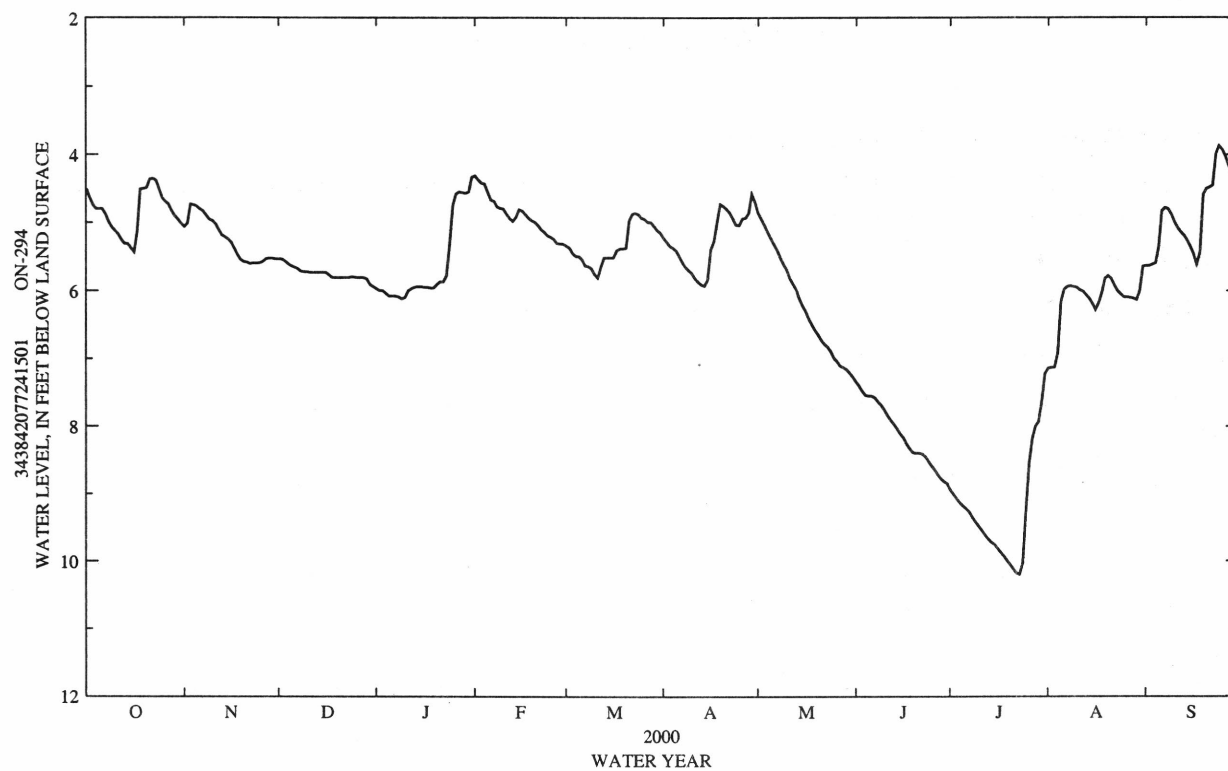
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.82 ft below land-surface datum, Sept. 16, 1999; lowest water level recorded, 10.20 ft below land-surface datum, July 22, 23, 24, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.51	5.06	5.53	5.97	4.31	5.34	5.22	4.86	7.34	8.94	7.14	5.63
2	4.63	5.01	5.53	6.00	4.37	5.37	5.28	4.95	7.40	9.01	7.13	5.63
3	4.74	4.73	5.56	6.00	4.42	5.45	5.34	5.04	7.48	9.07	7.13	5.61
4	4.80	4.74	5.60	6.04	4.43	5.49	5.37	5.14	7.54	9.13	6.91	5.59
5	4.80	4.76	5.63	6.08	4.56	5.49	5.41	5.23	7.55	9.18	6.16	5.35
6	4.80	4.80	5.65	6.08	4.67	5.54	5.49	5.32	7.55	9.22	5.98	4.83
7	4.88	4.83	5.67	6.08	4.69	5.63	5.58	5.40	7.58	9.27	5.94	4.78
8	4.99	4.89	5.71	6.09	4.77	5.64	5.65	5.51	7.64	9.35	5.93	4.80
9	5.07	4.95	5.72	6.12	4.79	5.67	5.70	5.61	7.69	9.42	5.94	4.88
10	5.12	4.97	5.72	6.10	4.80	5.76	5.74	5.69	7.76	9.48	5.95	4.99
11	5.17	5.02	5.73	6.00	4.87	5.81	5.82	5.82	7.84	9.54	5.99	5.08
12	5.25	5.10	5.73	5.97	4.94	5.65	5.87	5.90	7.91	9.61	6.01	5.14
13	5.31	5.18	5.73	5.95	4.98	5.51	5.91	5.98	7.97	9.67	6.06	5.19
14	5.31	5.21	5.73	5.94	4.92	5.51	5.93	6.11	8.04	9.72	6.11	5.26
15	5.37	5.24	5.73	5.94	4.81	5.51	5.84	6.22	8.11	9.75	6.19	5.35
16	5.43	5.29	5.73	5.95	4.83	5.51	5.39	6.30	8.17	9.81	6.28	5.46
17	5.13	5.38	5.77	5.95	4.88	5.41	5.28	6.41	8.26	9.87	6.18	5.61
18	4.51	5.47	5.81	5.96	4.93	5.38	4.99	6.50	8.33	9.93	6.03	5.43
19	4.50	5.54	5.81	5.96	4.97	5.38	4.73	6.58	8.39	9.99	5.82	4.59
20	4.49	5.57	5.81	5.91	4.99	5.37	4.76	6.65	8.40	10.05	5.78	4.50
21	4.36	5.58	5.81	5.87	5.04	4.97	4.80	6.73	8.40	10.12	5.82	4.48
22	4.35	5.60	5.81	5.87	5.10	4.87	4.85	6.79	8.41	10.18	5.92	4.45
23	4.38	5.59	5.81	5.78	5.14	4.86	4.94	6.83	8.45	10.20	6.00	3.99
24	4.51	5.59	5.80	5.33	5.19	4.88	5.03	6.89	8.52	10.03	6.05	3.87
25	4.64	5.59	5.80	4.75	5.21	4.93	5.04	6.99	8.59	9.23	6.09	3.93
26	4.69	5.57	5.81	4.58	5.24	4.95	4.94	7.04	8.65	8.55	6.09	4.02
27	4.73	5.53	5.81	4.55	5.30	4.99	4.93	7.11	8.72	8.18	6.10	4.16
28	4.83	5.52	5.81	4.56	5.31	4.99	4.86	7.13	8.78	8.00	6.11	4.26
29	4.90	5.52	5.83	4.57	5.31	5.05	4.58	7.16	8.82	7.93	6.13	4.39
30	4.95	5.53	5.91	4.55	---	5.11	4.70	7.21	8.85	7.63	6.00	4.48
31	5.01	---	5.94	4.33	---	5.15	---	7.27	---	7.22	5.64	---
WTR YR 2000	MEAN 5.97		HIGH 3.87		LOW 10.20							



## ONSLOW COUNTY--Continued

344203077182001. County number, ON-295; Wallace Creek Well

LOCATION.--Lat 34°42'03", long 77°18'20", Hydrologic Unit 03030001, at Camp Lejeune, 1.8 mi from the Piney Green gate, on dirt road. Owner: U.S. Geological Survey.

AQUIFER.--Castle Hayne aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 253 ft, diameter 2 in., cased to 243 ft, screened interval from 243 to 253 ft.

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

DATUM.--Land-surface datum is 35 ft above sea level (from topographic map). Measuring point: Top of shelter, 2.38 ft above land-surface datum.

REMARKS.--Well is part of U.S. Marine Corps Base, Camp Lejeune, North Carolina, Water Resources Network project.

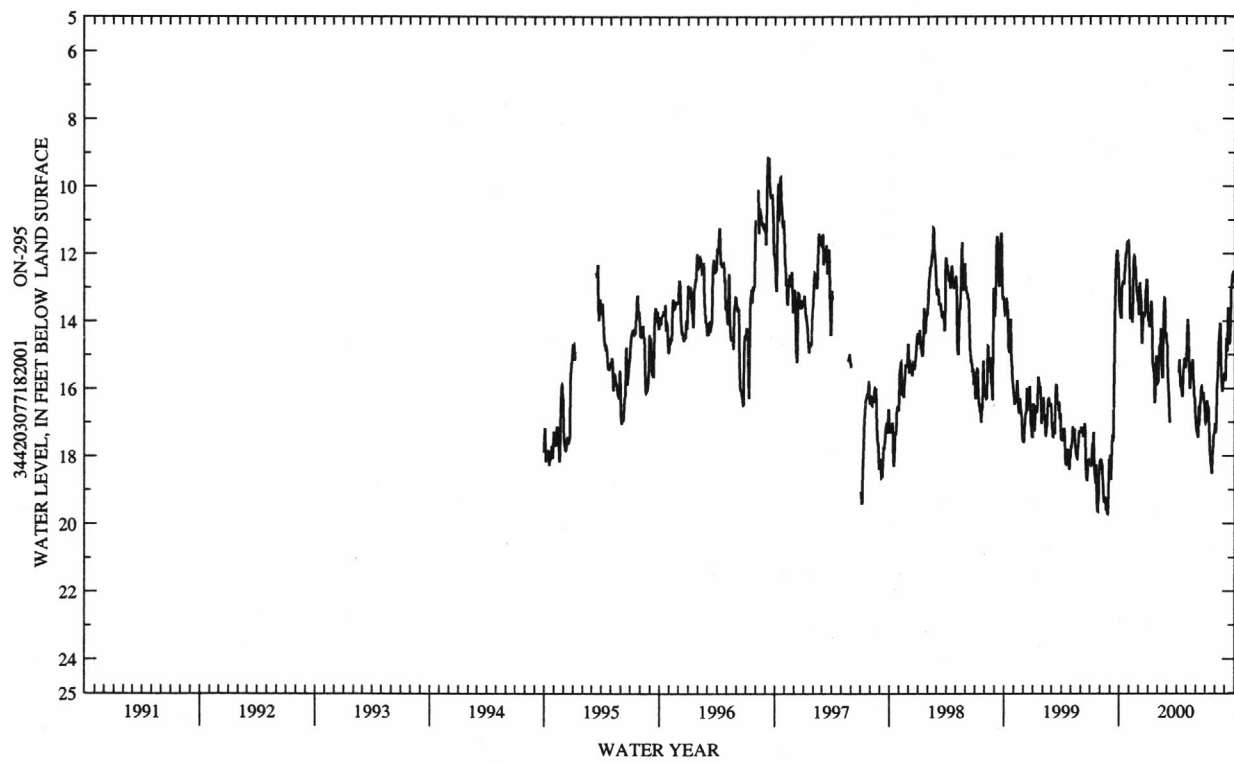
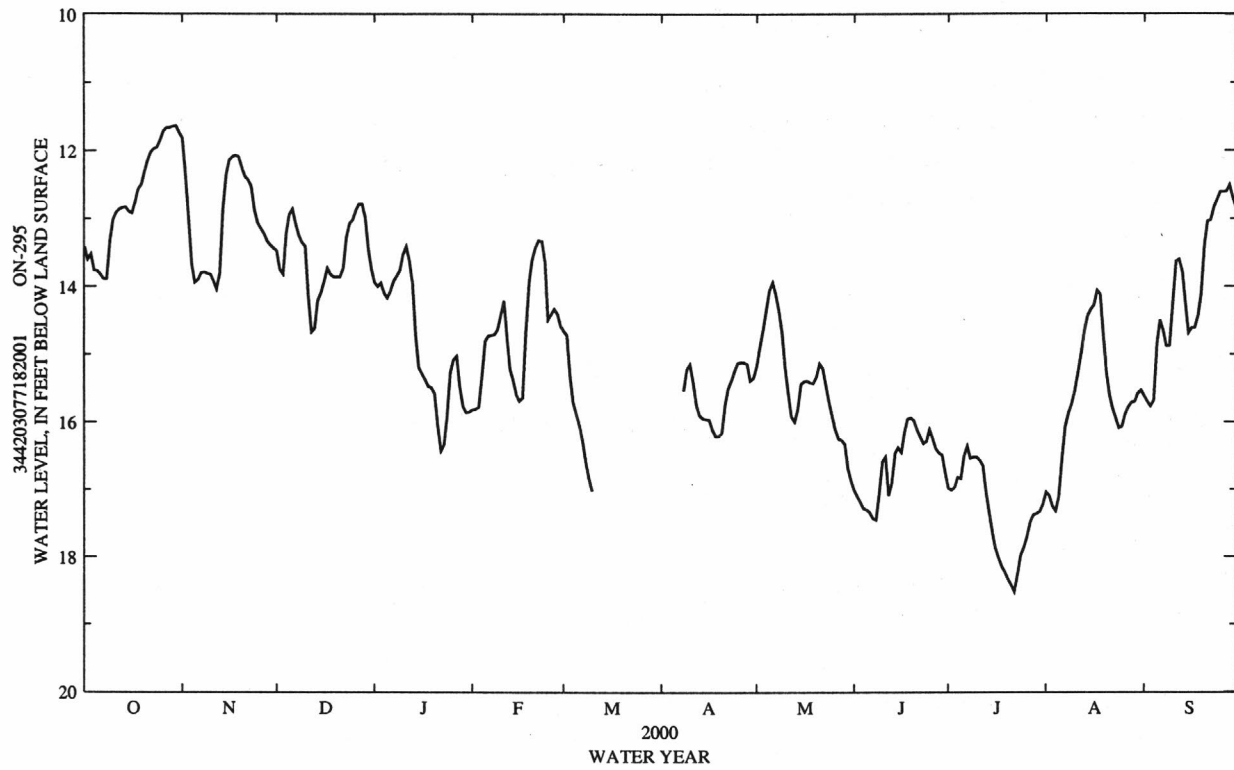
PERIOD OF RECORD.--October 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.07 ft below land-surface datum, Sept. 12, 1996; lowest water level recorded, 19.72 ft below land-surface datum, Aug. 24, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.42	11.81	13.47	13.94	15.82	14.66	---	15.18	17.01	16.98	17.04	15.61
2	13.60	12.34	13.75	14.00	15.81	14.72	---	14.89	17.10	17.01	17.09	15.70
3	13.52	12.96	13.82	13.95	15.78	15.33	---	14.64	17.19	16.97	17.25	15.77
4	13.76	13.66	13.22	14.10	15.35	15.71	---	14.34	17.28	16.82	17.32	15.68
5	13.77	13.94	12.94	14.17	14.81	15.88	---	14.06	17.30	16.84	17.11	14.85
6	13.82	13.90	12.86	14.06	14.73	16.06	---	13.94	17.34	16.51	16.52	14.50
7	13.89	13.80	13.07	13.92	14.72	16.28	---	14.12	17.43	16.36	16.07	14.65
8	13.89	13.79	13.25	13.85	14.71	16.60	15.53	14.35	17.45	16.54	15.87	14.88
9	13.32	13.81	13.35	13.76	14.63	16.83	15.22	14.69	17.07	16.52	15.74	14.88
10	13.01	13.82	13.41	13.53	14.42	17.02	15.15	15.19	16.59	16.52	15.54	14.24
11	12.91	13.92	14.13	13.41	14.21	---	15.42	15.58	16.52	16.57	15.28	13.63
12	12.86	14.04	14.67	13.62	14.76	---	15.75	15.92	17.09	16.65	14.98	13.60
13	12.84	13.80	14.62	13.96	15.22	---	15.90	16.00	16.90	17.03	14.66	13.78
14	12.83	12.85	14.21	14.71	15.38	---	15.95	15.81	16.46	17.35	14.44	14.25
15	12.89	12.35	14.09	15.19	15.59	---	15.96	15.44	16.38	17.64	14.34	14.69
16	12.92	12.14	13.93	15.29	15.69	---	15.97	15.40	16.45	17.88	14.28	14.61
17	12.76	12.09	13.73	15.37	15.64	---	16.11	15.39	16.16	18.02	14.06	14.61
18	12.57	12.07	13.82	15.47	14.68	---	16.21	15.42	15.96	18.15	14.12	14.43
19	12.50	12.09	13.86	15.49	13.94	---	16.21	15.43	15.94	18.23	14.75	14.11
20	12.31	12.25	13.86	15.58	13.60	---	16.16	15.33	15.98	18.33	15.27	13.39
21	12.14	12.38	13.86	16.05	13.42	---	15.75	15.14	16.12	18.42	15.59	13.04
22	12.02	12.43	13.73	16.43	13.32	---	15.51	15.21	16.22	18.52	15.80	13.02
23	11.97	12.53	13.28	16.34	13.33	---	15.39	15.46	16.32	18.26	15.94	12.83
24	11.95	12.88	13.07	15.92	13.63	---	15.25	15.70	16.29	17.98	16.09	12.73
25	11.84	13.06	13.02	15.27	14.49	---	15.13	15.92	16.11	17.86	16.07	12.61
26	11.71	13.15	12.88	15.08	14.41	---	15.12	16.12	16.25	17.70	15.88	12.61
27	11.66	13.22	12.79	15.03	14.33	---	15.12	16.25	16.40	17.48	15.78	12.60
28	11.66	13.33	12.79	15.47	14.41	---	15.15	16.27	16.46	17.38	15.71	12.51
29	11.64	13.39	12.98	15.77	14.58	---	15.39	16.33	16.49	17.36	15.70	12.70
30	11.63	13.43	13.44	15.86	---	---	15.35	16.69	16.76	17.33	15.58	12.84
31	11.73	---	13.75	15.85	---	---	---	16.87	---	17.23	15.53	---
WTR YR 2000	MEAN 14.87		HIGH 11.63		LOW 18.52							



## ORANGE COUNTY

355522079043001. Local number, NC-126; County number, OR-069.

LOCATION.--Lat 35°55'22", long 79°04'30", Hydrologic Unit 03030002, in Chapel Hill, west of University of North Carolina campus, southeast of intersection of Cameron Avenue and Ransom Street. Owner: Chi Psi Fraternity.

AQUIFER.--Unconfined saprolite derived from granite of Paleozoic age.

WELL CHARACTERISTICS.--Dug observation well, depth 48 ft, diameter 36 in., lined with rock; measured depth 46.2 ft, August 1986.

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

DATUM.--Land-surface datum is 511.50 ft above sea level. Measuring point: Top of shelf, 3.27 ft above land-surface datum (since July 1981).

REMARKS.-- Well is part of terrane-effects network. Well found dry from October 13, 1988 to January 24, 1989. No periodic measurements made from January 24 to July 19, 1989.

PERIOD OF RECORD.--Miscellaneous water-level measurements March 1948 to current year. Continuous record began December 1999.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.22 ft below land-surface datum, May 14, 1984; lowest water level occurred during periods when well was dry, Oct. 11 to Dec. 31, 1940, and Oct. 13, 1988 to Jan. 24, 1989.

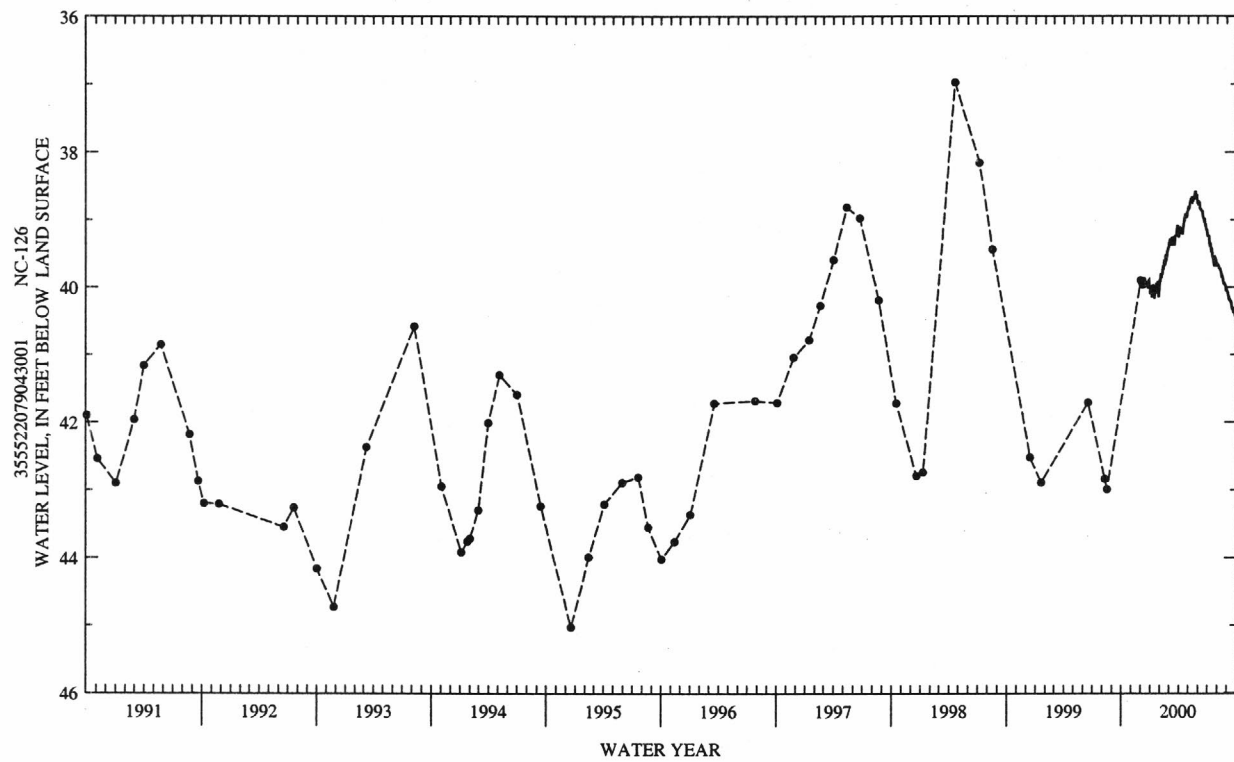
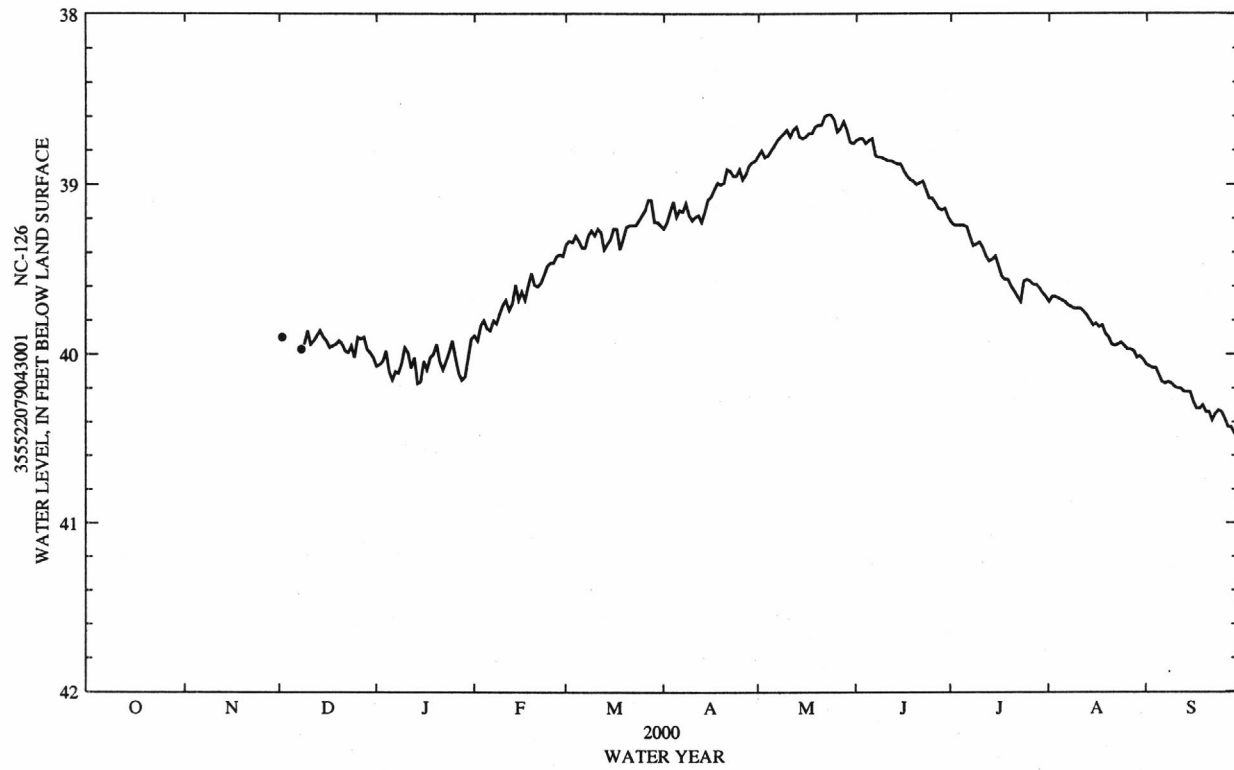
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	39.90	DEC 8	39.97

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD DECEMBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	40.10	39.85	39.33	39.19	38.80	38.74	39.24	39.68	40.12
10	---	---	39.86	39.96	39.71	39.30	39.21	38.68	38.85	39.34	39.73	40.19
15	---	---	39.90	40.16	39.68	39.32	39.09	38.73	38.88	39.42	39.83	40.22
20	---	---	39.92	39.94	39.59	39.25	38.99	38.65	39.00	39.60	39.90	40.34
25	---	---	40.02	39.92	39.46	39.18	38.91	38.62	39.08	39.56	39.95	40.34
EOM---	---	40.02	39.91	39.42	39.24	38.86	38.76	39.19	39.66	40.03	40.46	
WTR YR 2000		MEAN 39.51		HIGH 38.59	MAY 23		LOW 40.47	SEP 29				



## PASQUOTANK COUNTY

362050076163705. Local number, NC-150; DENR Elizabeth City Forest Service Research Station well D11v5; County number, PK-199.

LOCATION.--Lat 36°20'50", long 76°16'37", 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 sea level (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, 10.29 ft below land-surface datum, Aug. 26, 1995.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

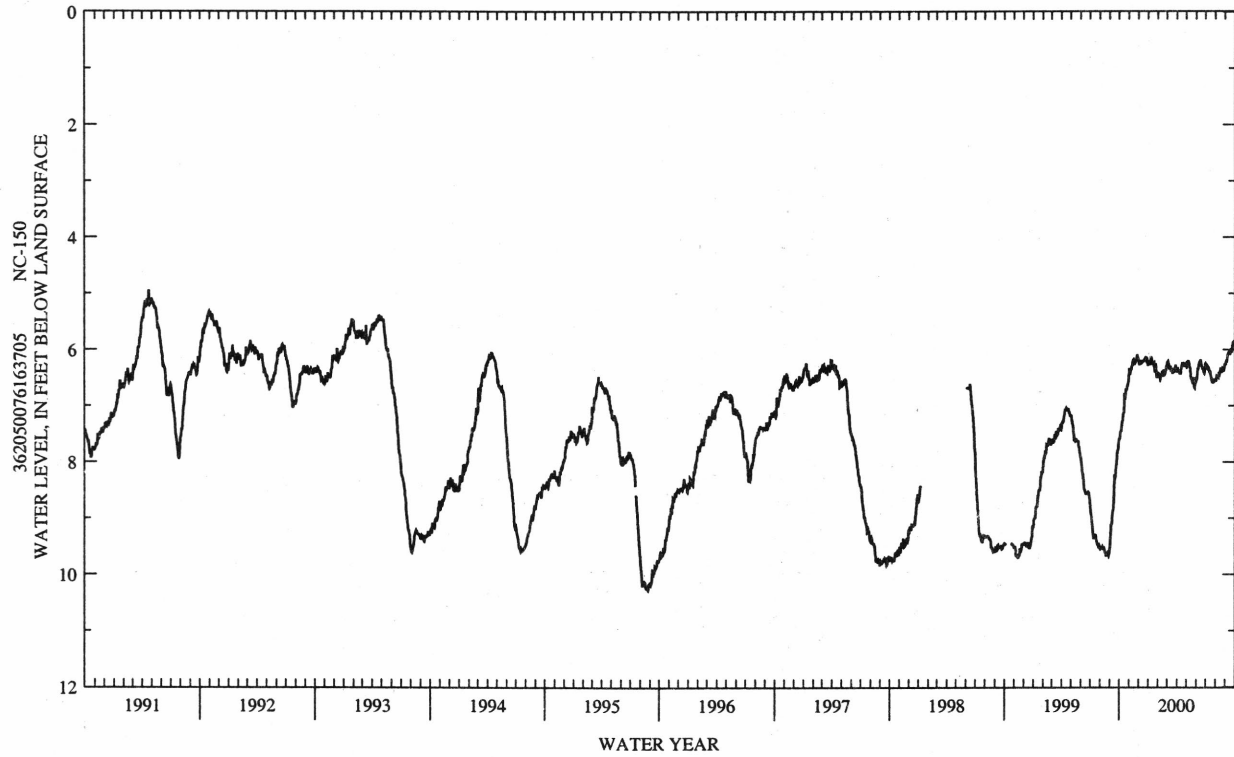
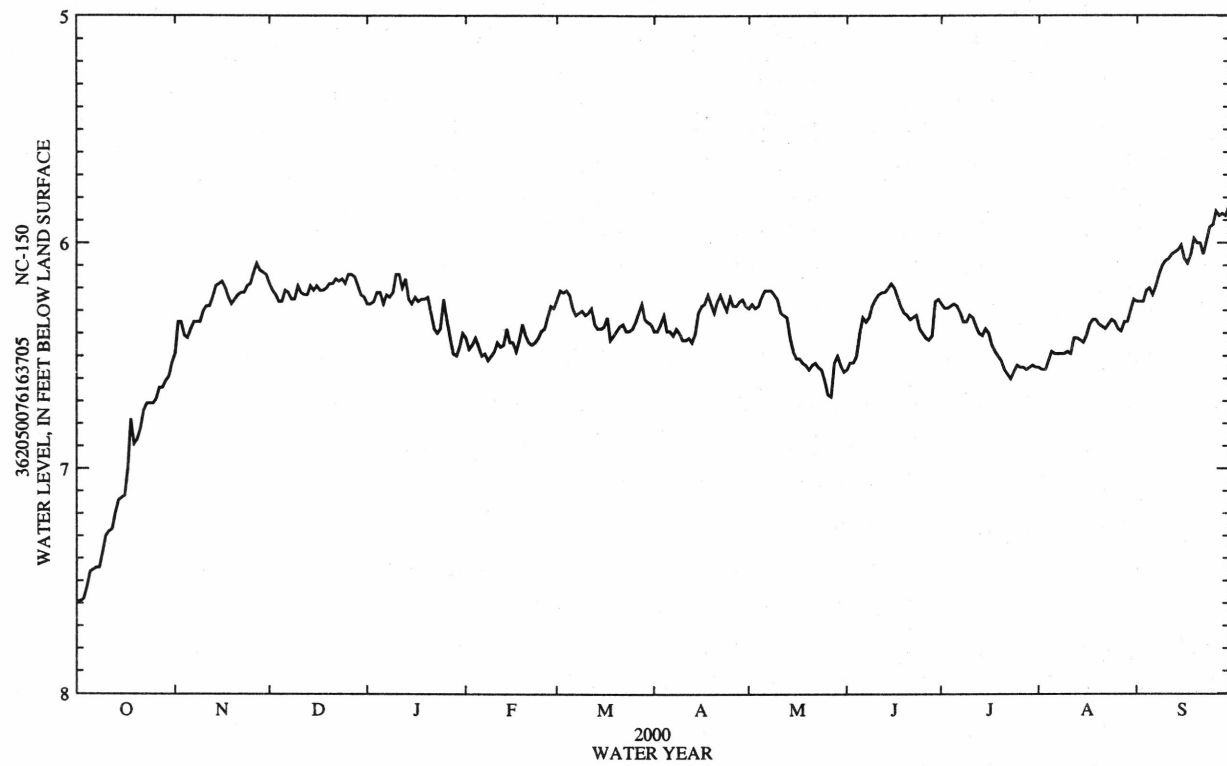
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.59	6.49	6.18	6.27	6.42	6.25	6.39	6.29	6.56	6.27	6.55	6.26
2	7.59	6.35	6.21	6.27	6.47	6.21	6.39	6.27	6.53	6.29	6.56	6.26
3	7.58	6.35	6.23	6.26	6.45	6.22	6.36	6.29	6.53	6.29	6.56	6.26
4	7.53	6.41	6.26	6.22	6.42	6.21	6.32	6.28	6.50	6.28	6.52	6.21
5	7.46	6.42	6.26	6.22	6.46	6.23	6.39	6.24	6.40	6.27	6.48	6.20
6	7.45	6.38	6.21	6.27	6.50	6.29	6.39	6.21	6.33	6.28	6.49	6.23
7	7.44	6.35	6.22	6.23	6.49	6.32	6.41	6.21	6.35	6.31	6.49	6.19
8	7.44	6.35	6.25	6.24	6.52	6.31	6.38	6.21	6.33	6.35	6.49	6.14
9	7.37	6.35	6.25	6.22	6.50	6.30	6.40	6.23	6.28	6.35	6.49	6.10
10	7.30	6.30	6.19	6.14	6.48	6.32	6.43	6.25	6.25	6.32	6.48	6.08
11	7.28	6.28	6.22	6.14	6.44	6.31	6.43	6.31	6.23	6.33	6.49	6.07
12	7.27	6.28	6.23	6.20	6.46	6.29	6.42	6.32	6.22	6.37	6.42	6.05
13	7.20	6.24	6.23	6.16	6.45	6.36	6.44	6.33	6.22	6.40	6.42	6.04
14	7.14	6.19	6.19	6.25	6.38	6.38	6.40	6.42	6.20	6.41	6.43	6.03
15	7.13	6.18	6.21	6.27	6.44	6.38	6.31	6.48	6.18	6.38	6.44	6.01
16	7.12	6.17	6.19	6.24	6.44	6.37	6.28	6.51	6.20	6.40	6.41	6.07
17	7.00	6.20	6.21	6.26	6.48	6.33	6.27	6.51	6.24	6.45	6.36	6.09
18	6.78	6.24	6.21	6.25	6.43	6.43	6.23	6.53	6.28	6.48	6.34	6.05
19	6.89	6.27	6.20	6.25	6.36	6.41	6.27	6.54	6.31	6.50	6.34	5.98
20	6.87	6.25	6.18	6.24	6.41	6.39	6.31	6.56	6.32	6.52	6.36	6.00
21	6.82	6.23	6.18	6.31	6.44	6.37	6.26	6.54	6.34	6.56	6.37	6.00
22	6.74	6.22	6.16	6.38	6.45	6.36	6.23	6.53	6.33	6.58	6.38	6.05
23	6.71	6.22	6.17	6.40	6.44	6.39	6.27	6.55	6.32	6.60	6.36	5.99
24	6.71	6.19	6.16	6.38	6.42	6.39	6.30	6.56	6.38	6.57	6.34	5.93
25	6.71	6.18	6.18	6.25	6.39	6.38	6.24	6.61	6.40	6.54	6.35	5.92
26	6.69	6.13	6.14	6.34	6.38	6.35	6.28	6.67	6.42	6.55	6.38	5.86
27	6.64	6.09	6.14	6.42	6.33	6.31	6.28	6.68	6.43	6.55	6.39	5.88
28	6.64	6.12	6.15	6.49	6.28	6.27	6.26	6.53	6.41	6.56	6.35	5.87
29	6.61	6.13	6.19	6.50	6.29	6.34	6.25	6.50	6.26	6.55	6.35	5.88
30	6.59	6.14	6.23	6.46	---	6.35	6.28	6.54	6.25	6.54	6.30	5.84
31	6.53	---	6.24	6.40	---	6.36	---	6.57	---	6.55	6.25	---

WTR YR 2000

MEAN 6.38

HIGH 5.84

LOW 7.59





## PASQUOTANK COUNTY--Continued

361829076163201. Local number, NC-195; County number, PK-141.

LOCATION.--Lat 36°18'29", long 76°16'32", 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 sea level (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, 0.70 ft above land-surface datum, Jan. 4, 1992; lowest water level recorded, 5.96 ft below land-surface datum, Oct. 12, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

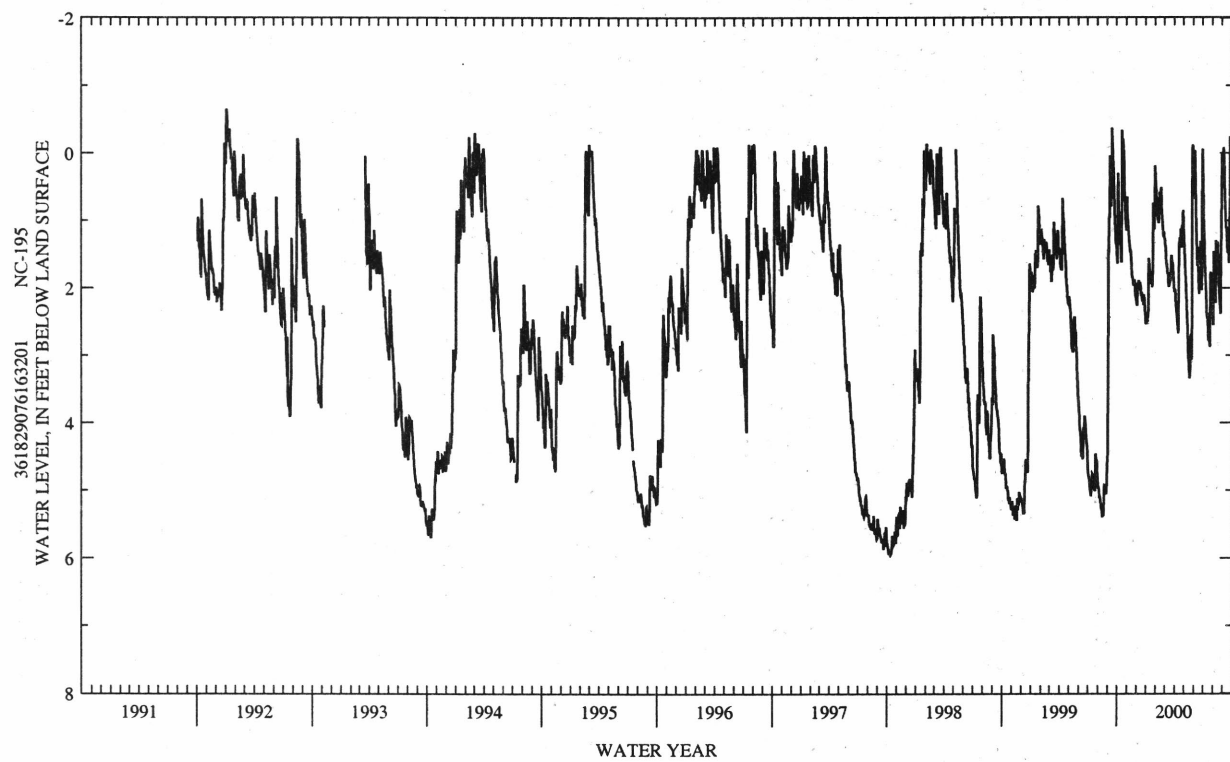
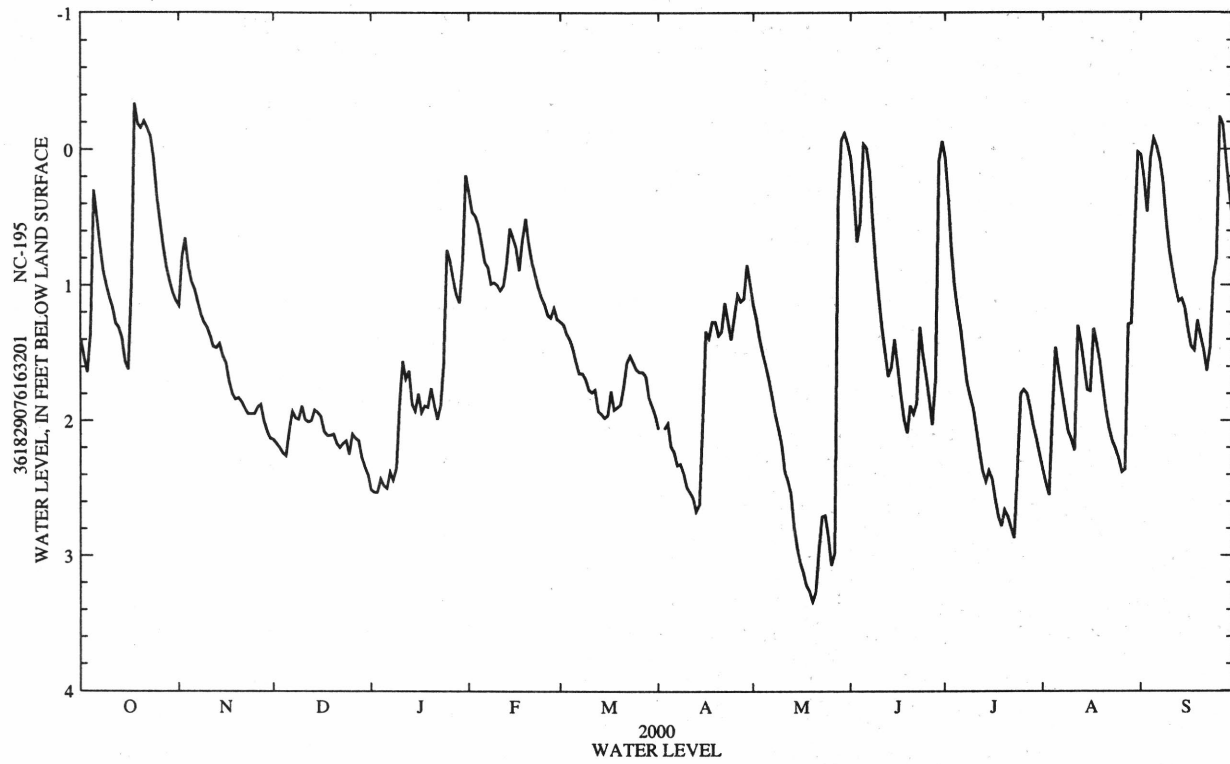
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.40	1.15	2.14	2.51	.32	1.27	2.06	1.14	.06	.06	2.36	.04
2	1.53	.79	2.17	2.53	.46	1.29	---	1.25	.31	.35	2.46	.22
3	1.64	.65	2.20	2.53	.49	1.36	2.06	1.39	.68	.73	2.55	.46
4	1.36	.86	2.24	2.43	.56	1.40	2.02	1.50	.54	1.00	1.94	.06
5	.30	.97	2.26	2.48	.70	1.47	2.19	1.59	-.04	1.18	1.46	-.08
6	.49	1.03	2.07	2.50	.83	1.57	2.23	1.70	-.01	1.32	1.62	-.02
7	.71	1.12	1.93	2.38	.87	1.65	2.33	1.82	.16	1.52	1.78	.08
8	.89	1.21	1.98	2.44	.99	1.65	2.32	1.95	.53	1.71	1.94	.24
9	1.00	1.27	1.99	2.35	.98	1.69	2.39	2.06	.84	1.82	2.08	.52
10	1.09	1.31	1.89	1.88	1.00	1.77	2.49	2.17	1.10	1.91	2.14	.74
11	1.16	1.37	1.99	1.56	1.04	1.79	2.53	2.37	1.31	2.06	2.22	.89
12	1.28	1.45	2.01	1.69	1.00	1.77	2.57	2.44	1.50	2.23	1.30	1.02
13	1.31	1.46	2.00	1.63	.84	1.93	2.67	2.54	1.67	2.37	1.42	1.12
14	1.39	1.43	1.92	1.88	.58	1.95	2.62	2.78	1.60	2.45	1.58	1.10
15	1.56	1.52	1.94	1.93	.65	1.98	2.02	2.94	1.40	2.37	1.77	1.17
16	1.62	1.57	1.97	1.80	.72	1.96	1.34	3.05	1.61	2.43	1.78	1.33
17	.97	1.71	2.08	1.94	.89	1.78	1.39	3.12	1.82	2.58	1.32	1.45
18	-.34	1.80	2.11	1.89	.67	1.92	1.27	3.22	1.99	2.71	1.43	1.48
19	-.19	1.84	2.11	1.90	.51	1.90	1.27	3.26	2.09	2.78	1.56	1.26
20	-.16	1.83	2.10	1.76	.69	1.88	1.37	3.34	1.89	2.66	1.74	1.38
21	-.21	1.86	2.17	1.88	.83	1.75	1.34	3.27	1.95	2.71	1.92	1.48
22	-.16	1.91	2.20	1.99	.92	1.57	1.13	2.94	1.87	2.79	2.06	1.63
23	-.10	1.95	2.17	1.89	1.02	1.52	1.27	2.71	1.31	2.87	2.15	1.46
24	.06	1.95	2.15	1.58	1.09	1.57	1.40	2.70	1.51	2.36	2.21	.95
25	.34	1.95	2.25	.74	1.14	1.62	1.23	2.86	1.66	1.80	2.28	.80
26	.52	1.90	2.10	.82	1.22	1.64	1.07	3.07	1.84	1.77	2.38	-.24
27	.70	1.88	2.13	.96	1.24	1.64	1.12	2.98	2.03	1.80	2.36	-.18
28	.86	2.00	2.15	1.07	1.17	1.67	1.10	.39	1.69	1.91	1.29	.06
29	.96	2.08	2.27	1.13	1.25	1.83	.85	-.07	.09	2.04	1.28	.31
30	1.05	2.13	2.34	.81	---	1.89	.99	-.12	-.06	2.14	.63	.49
31	1.11	---	2.40	.19	---	1.96	---	-.04	---	2.25	.02	---

WTR YR 2000

MEAN 1.53

HIGH -.34

LOW 3.34



## PASQUOTANK COUNTY--Continued

362601076230702. Local number, NC-203; DENR Morgans Corner Research Station well C12w2; County number, PK-190.

LOCATION.--Lat 36°26'01", long 76°23'07", Hydrologic Unit 03010205, near Morgans Corners on Secondary Road 1360 0.8 mi northeast of U.S. Highway 158. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Surficial aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 37 ft, diameter 2.5 in., cased to 27 ft, screened interval from 27 to 32 ft

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

DATUM.--Land-surface datum is 12.42 ft above sea level. Measuring point: Top of casing, 1.72 ft above land-surface datum.

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

PERIOD OF RECORD.--Miscellaneous water-level measurements October 1997 to current year. Continuous record began August 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.98 ft below land-surface datum, August 24, 2000; lowest water level measured, 6.40 ft below land-surface datum, Oct. 30, 1998.

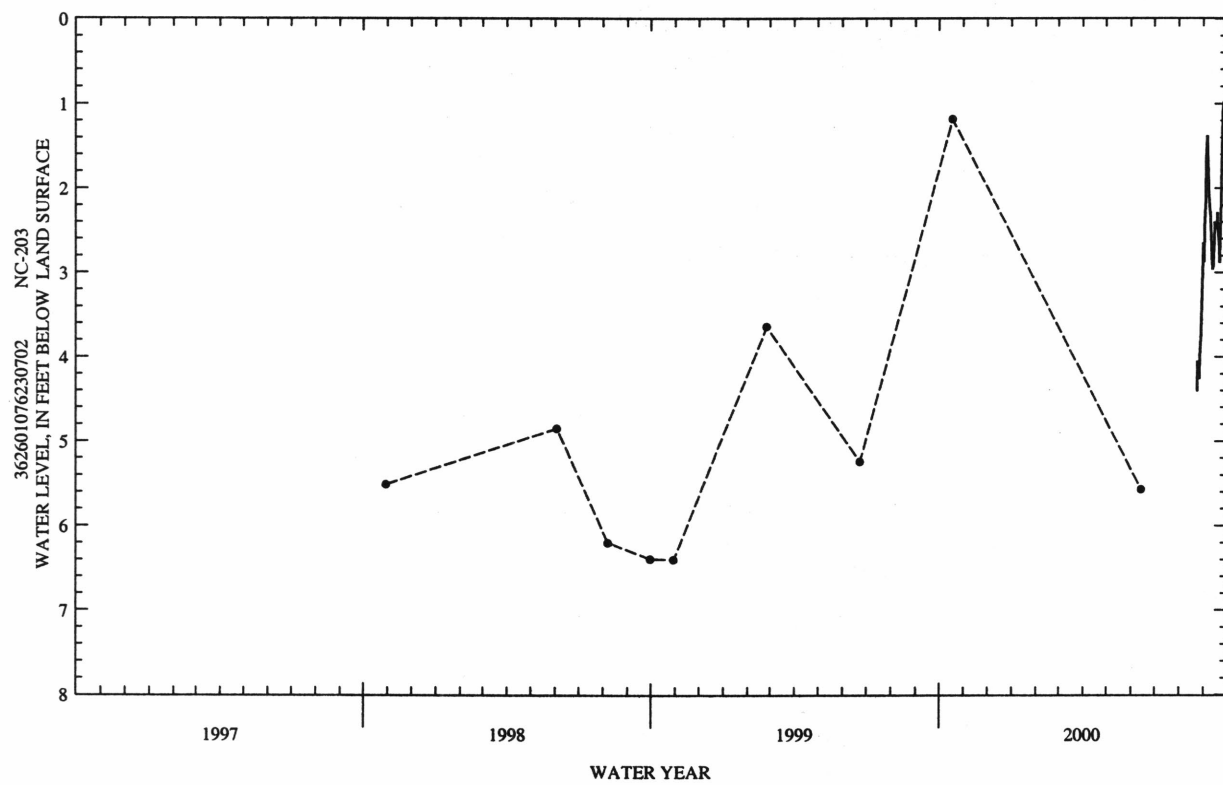
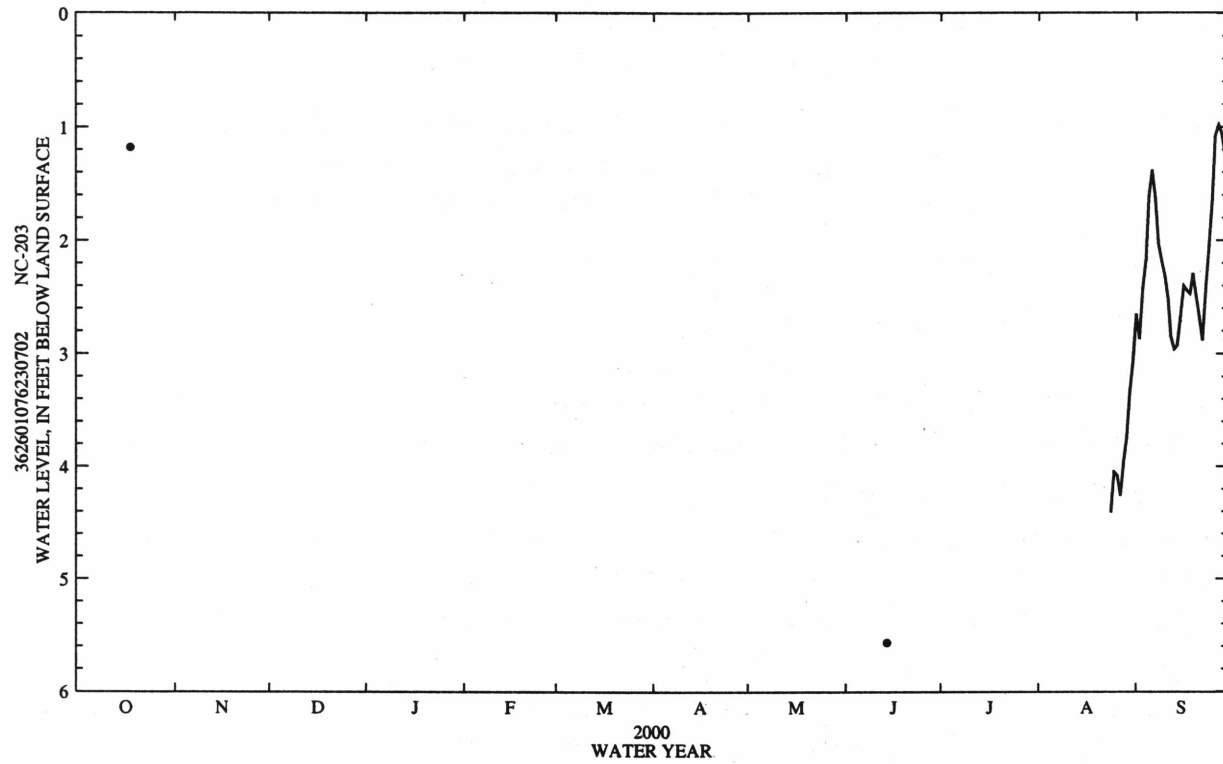
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	1.18	JUN 14	5.57

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD AUGUST 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	---	1.61
10	---	---	---	---	---	---	---	---	---	---	---	2.31
15	---	---	---	---	---	---	---	---	---	---	---	2.67
20	---	---	---	---	---	---	---	---	---	---	---	2.51
25	---	---	---	---	---	---	---	---	---	---	4.05	1.65
EOM---	---	---	---	---	---	---	---	---	---	3.06	1.39	
WTR YR 2000		MEAN 2.52		HIGH .98 SEP 27				LOW 4.41 AUG 24				



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## PASQUOTANK COUNTY--Continued

362601076230704. Local number, NC-204: DENR Morgans Corner Research Station well C12w4; County number, PK-191.

LOCATION.--Lat 36°26'00", long 76°22'00", Hydrologic Unit 03010205, near Morgans Corners on Secondary Road 1360 0.8 mi northeast of U.S. Highway 158. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 648 ft, diameter 4 in., cased to 385 ft, screened interval from 385 to 420 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 12.42 ft above sea level. Measuring point: Top of casing, 2.40 ft above land-surface datum; revised from 2.90 ft above land-surface datum, June 23, 1999. Locking cap installed.

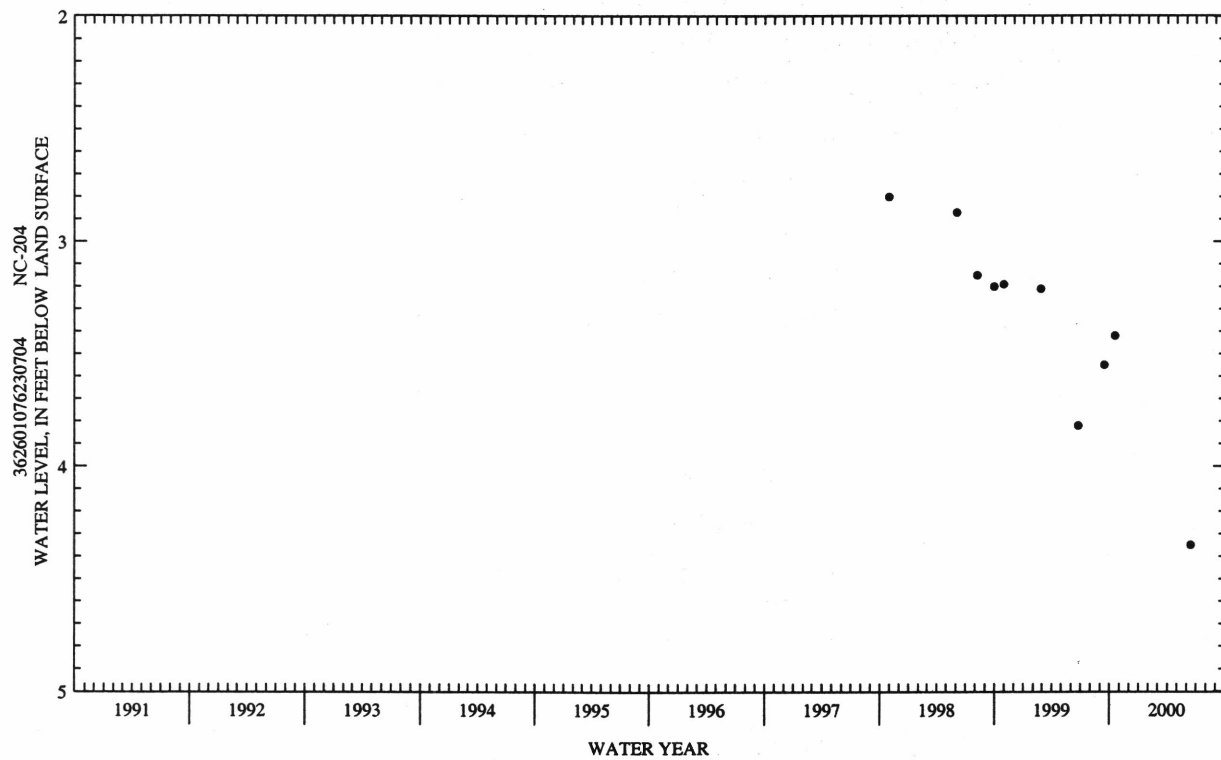
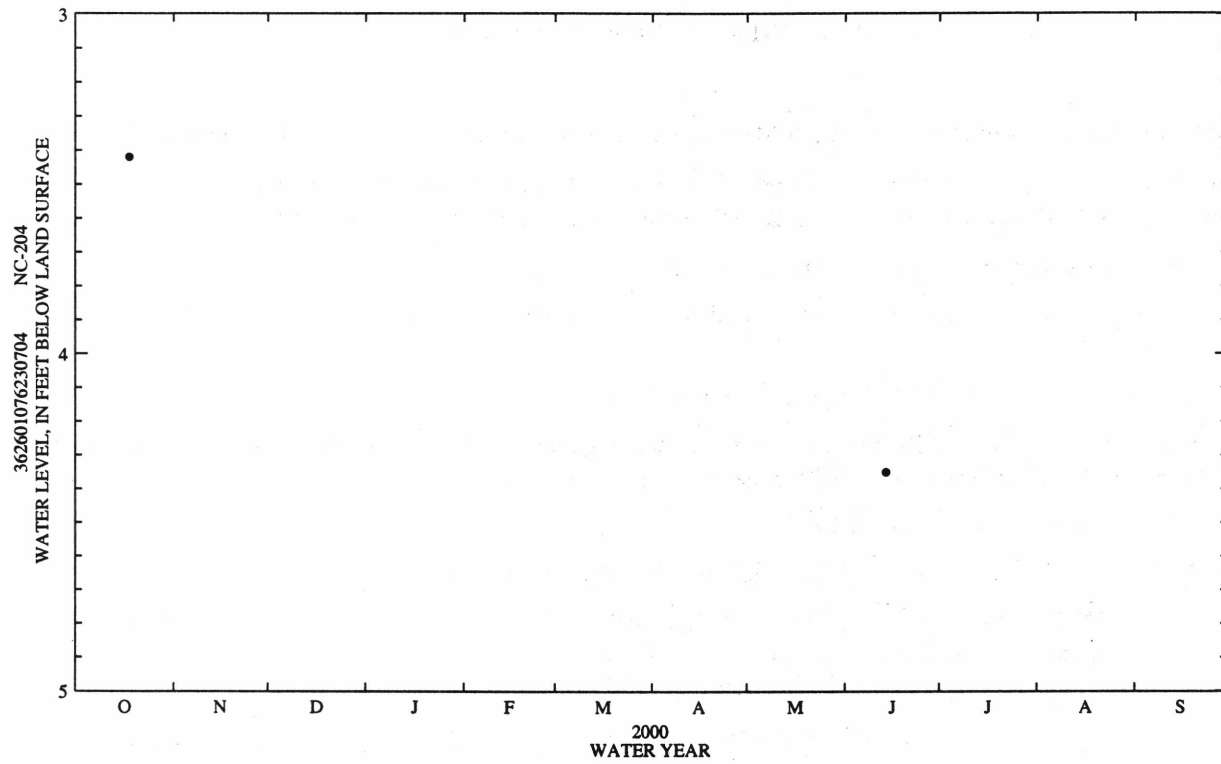
REMARKS.-- Well is part of areal-effects network.

PERIOD OF RECORD.--Miscellaneous water-level measurements September 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.42 ft above land-surface datum, Sept. 2, 1981; lowest water level measured, 4.35 ft below land-surface, June 14, 2000.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	3.42	JUN 14	4.35



## PASQUOTANK COUNTY--Continued

362601076230705. Local number, NC-205: DENR Morgans Corner Research Station well C12w5; County number, PK-192.

LOCATION.--Lat 36°26'00", long 76°22'00", Hydrologic Unit 03010205, near Morgans Corners on Secondary Road 1360, 0.8 mi northeast of U.S. Highway 158. 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 1,310 ft, diameter 2.5 in., cased to 1,300 ft, screened interval from 1,300 to 1,310 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 13.11 ft above sea level. Measuring point: Top of casing, 3.58 ft above land-surface datum; revised from 4.22 ft above land-surface datum, June 3, 1998.

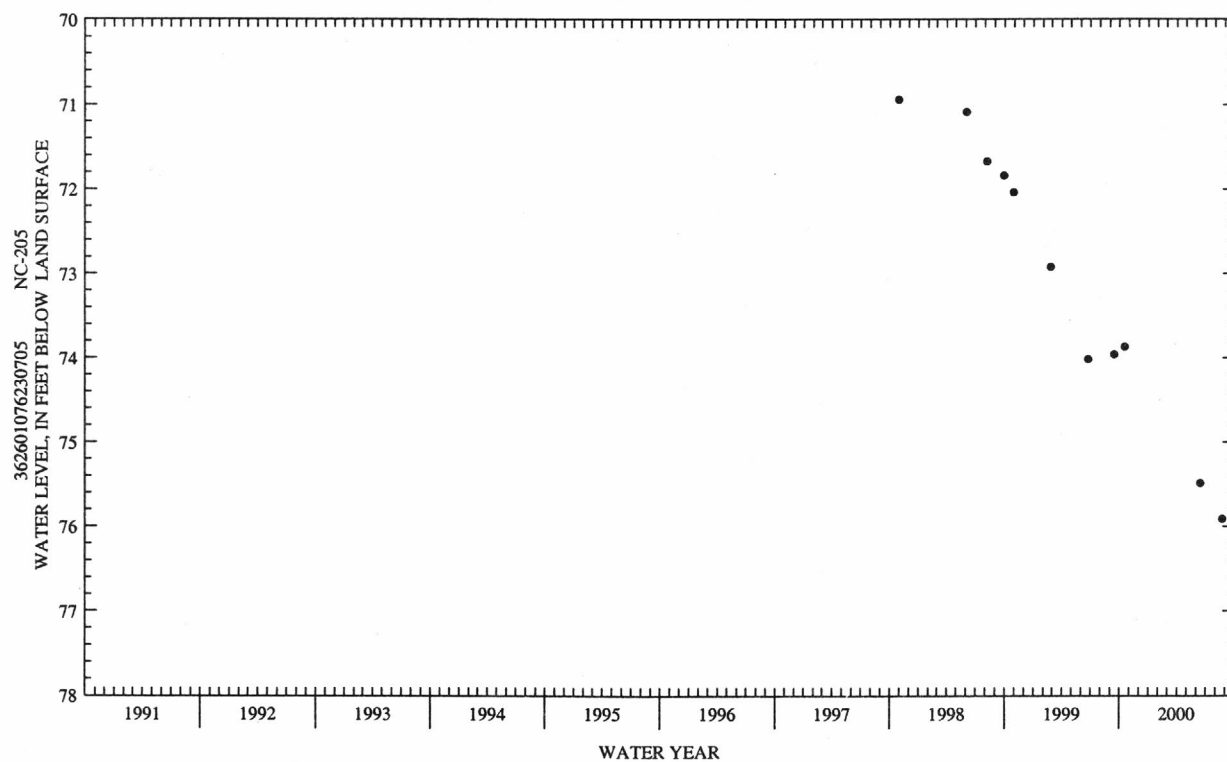
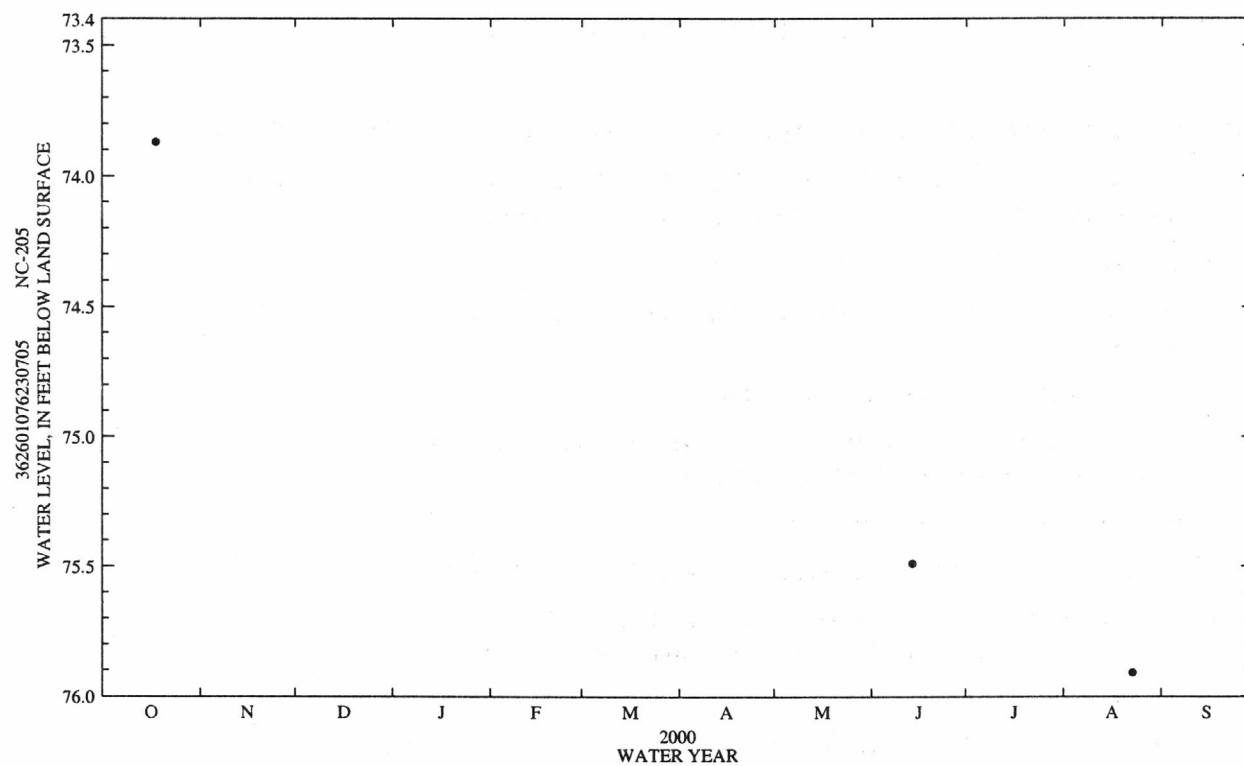
REMARKS.-- Well is part of induced-effects network.

PERIOD OF RECORD.--Miscellaneous water-level measurements September 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 51.47 ft below land-surface datum, Sept. 2, 1981; lowest water level measured, 75.91 ft below land-surface datum, Aug. 23, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	73.87	JUN 14	75.49	AUG 23	75.91





## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## PITT COUNTY

353219077153801. Local number, NC-160; County number, PI-532.

LOCATION.--Lat 35°32'19", long 77°15'38", 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 ft 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 sea level (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, 8.84 ft below land-surface datum, Nov. 6, 7, 8, 1978.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

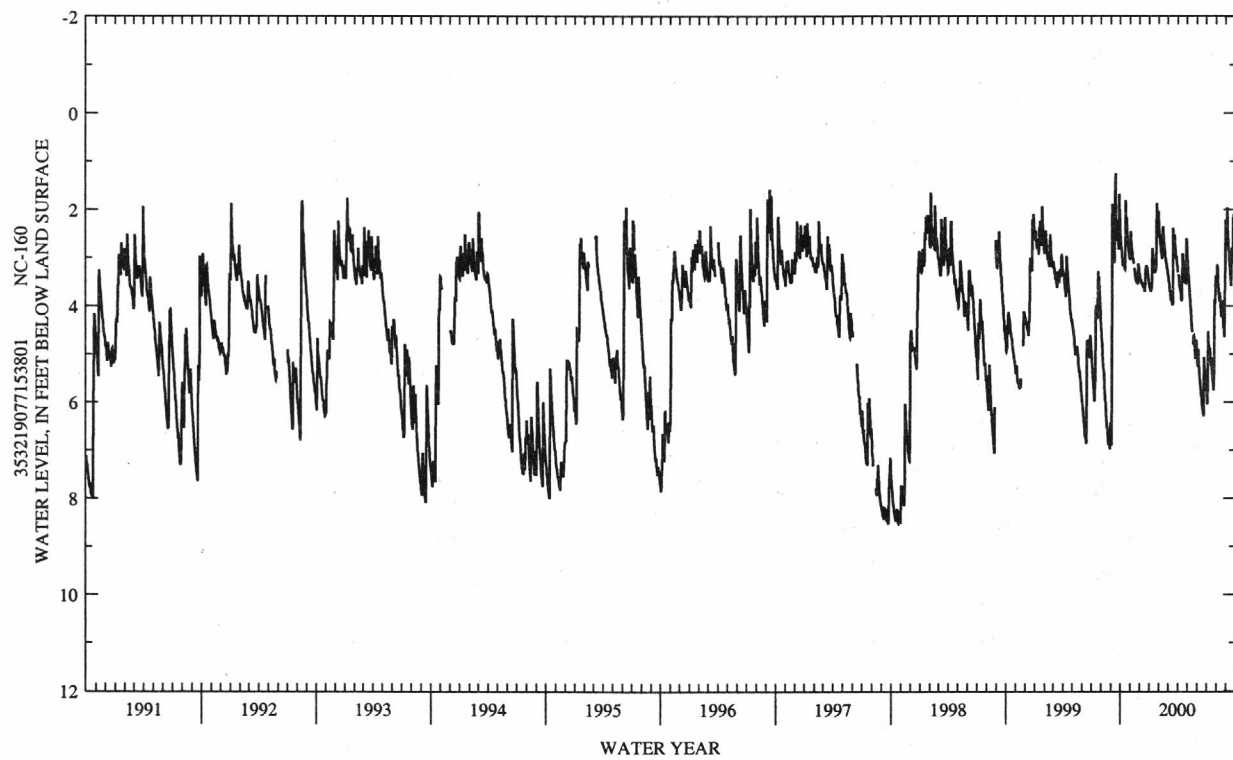
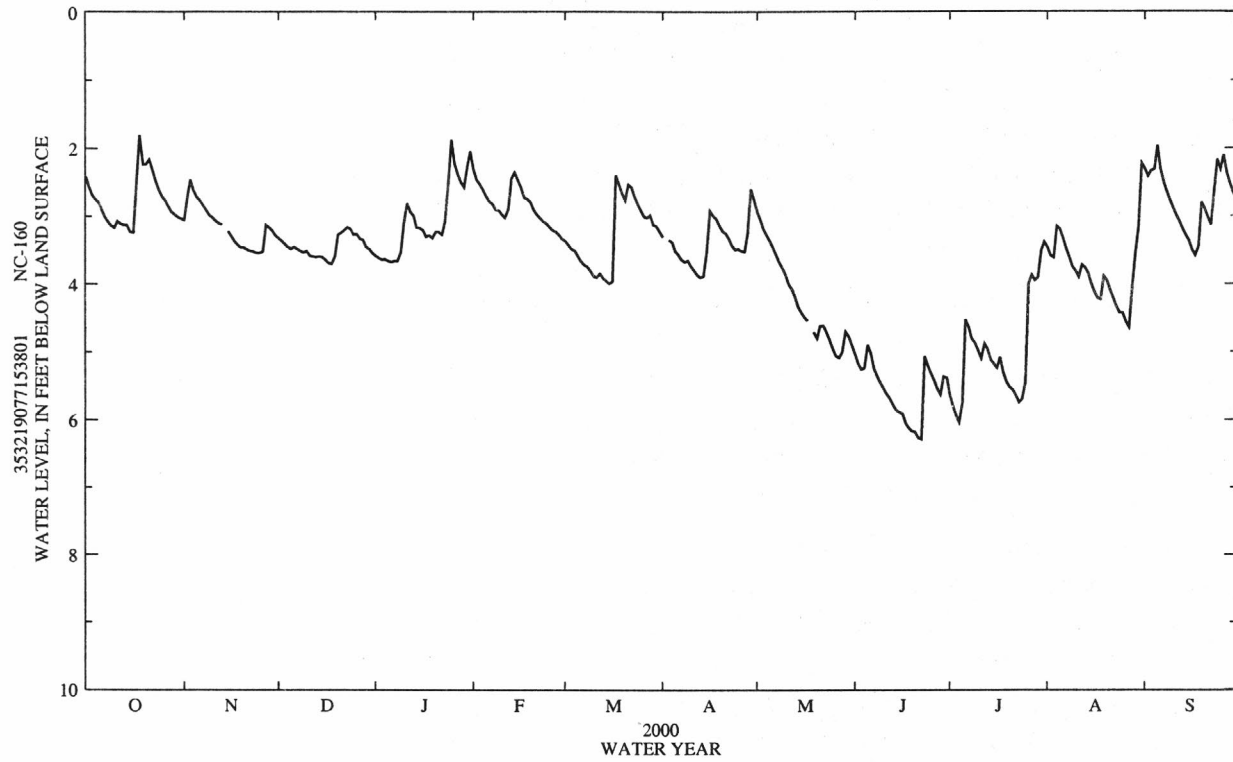
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.42	3.05	3.32	3.58	2.31	3.36	3.30	2.93	5.03	5.63	3.46	2.30
2	2.57	2.72	3.36	3.61	2.46	3.42	---	3.05	5.17	5.80	3.58	2.41
3	2.69	2.46	3.41	3.64	2.53	3.48	3.35	3.18	5.26	5.93	3.61	2.33
4	2.75	2.62	3.45	3.63	2.61	3.50	3.38	3.28	5.24	6.04	3.15	2.31
5	2.80	2.72	3.48	3.66	2.71	3.58	3.51	3.36	4.90	5.76	3.19	1.96
6	2.90	2.77	3.45	3.67	2.78	3.66	3.56	3.46	5.02	4.53	3.33	2.31
7	3.01	2.84	3.48	3.66	2.82	3.71	3.64	3.57	5.25	4.64	3.48	2.50
8	3.08	2.91	3.51	3.66	2.90	3.74	3.67	3.68	5.36	4.81	3.61	2.64
9	3.14	2.98	3.53	3.53	2.91	3.80	3.65	3.77	5.45	4.87	3.75	2.77
10	3.17	3.02	3.51	3.10	2.97	3.88	3.74	3.86	5.54	4.98	3.81	2.88
11	3.07	3.06	3.58	2.81	3.02	3.90	3.80	4.01	5.62	5.10	3.90	2.99
12	3.11	3.10	3.59	2.93	2.89	3.84	3.86	4.07	5.69	4.88	3.72	3.08
13	3.13	3.12	3.60	2.99	2.44	3.91	3.90	4.19	5.78	4.96	3.76	3.19
14	3.13	---	3.59	3.16	2.35	3.95	3.88	4.34	5.86	5.12	3.84	3.28
15	3.23	3.22	3.60	3.17	2.46	3.99	3.52	4.42	5.89	5.18	4.00	3.36
16	3.24	3.29	3.64	3.20	2.57	3.96	2.92	4.49	5.91	5.24	4.12	3.50
17	2.45	3.37	3.69	3.30	2.72	2.39	2.99	4.54	6.05	5.08	4.21	3.58
18	1.81	3.42	3.70	3.28	2.74	2.52	3.04	---	6.12	5.31	4.23	3.45
19	2.24	3.46	3.59	3.32	2.79	2.66	3.13	4.71	6.17	5.44	3.89	2.80
20	2.23	3.46	3.27	3.23	2.90	2.76	3.22	4.80	6.18	5.52	3.95	2.90
21	2.16	3.49	3.24	3.23	2.97	2.53	3.25	4.62	6.27	5.56	4.09	3.02
22	2.32	3.51	3.20	3.27	3.02	2.57	3.33	4.61	6.29	5.64	4.21	3.13
23	2.48	3.52	3.16	3.07	3.07	2.71	3.43	4.71	5.07	5.75	4.33	2.60
24	2.61	3.54	3.19	2.52	3.10	2.82	3.49	4.82	5.20	5.70	4.43	2.17
25	2.71	3.54	3.27	1.87	3.15	2.91	3.48	4.95	5.31	5.45	4.43	2.31
26	2.77	3.52	3.26	2.22	3.20	3.00	3.51	5.06	5.42	4.00	4.56	2.10
27	2.85	3.13	3.33	2.38	3.22	3.02	3.52	5.09	5.54	3.87	4.64	2.37
28	2.93	3.16	3.35	2.49	3.27	2.98	3.25	5.00	5.63	3.95	4.03	2.52
29	2.97	3.21	3.45	2.57	3.33	3.12	2.60	4.70	5.37	3.91	3.55	2.66
30	3.01	3.28	3.48	2.27	---	3.14	2.76	4.77	5.38	3.51	3.17	2.75
31	3.03	---	3.54	2.04	---	3.22	---	4.90	---	3.38	2.22	---

WTR YR 2000

MEAN 3.61

HIGH 1.81

LOW 6.29



## PITT COUNTY--Continued

353146077193403. Local number, NC-184; DENR Conley Research Station well N23p3; County number, PI-536.

LOCATION.--Lat 35°31'46", long 77°19'34", Hydrologic Unit 03020203, 0.2 mi west of State Highway 43 on Secondary Road 1711 at Conley High School, and 6 mi southeast of Greenville. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Peedee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 132 ft, diameter 4 in., cased to 122 ft, screened interval from 122 to 132 ft.

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

DATUM.--Land-surface datum is 69 ft above sea level (from topographic map). Measuring point: Top of instrument shelf, 3.63 ft above land-surface datum.

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

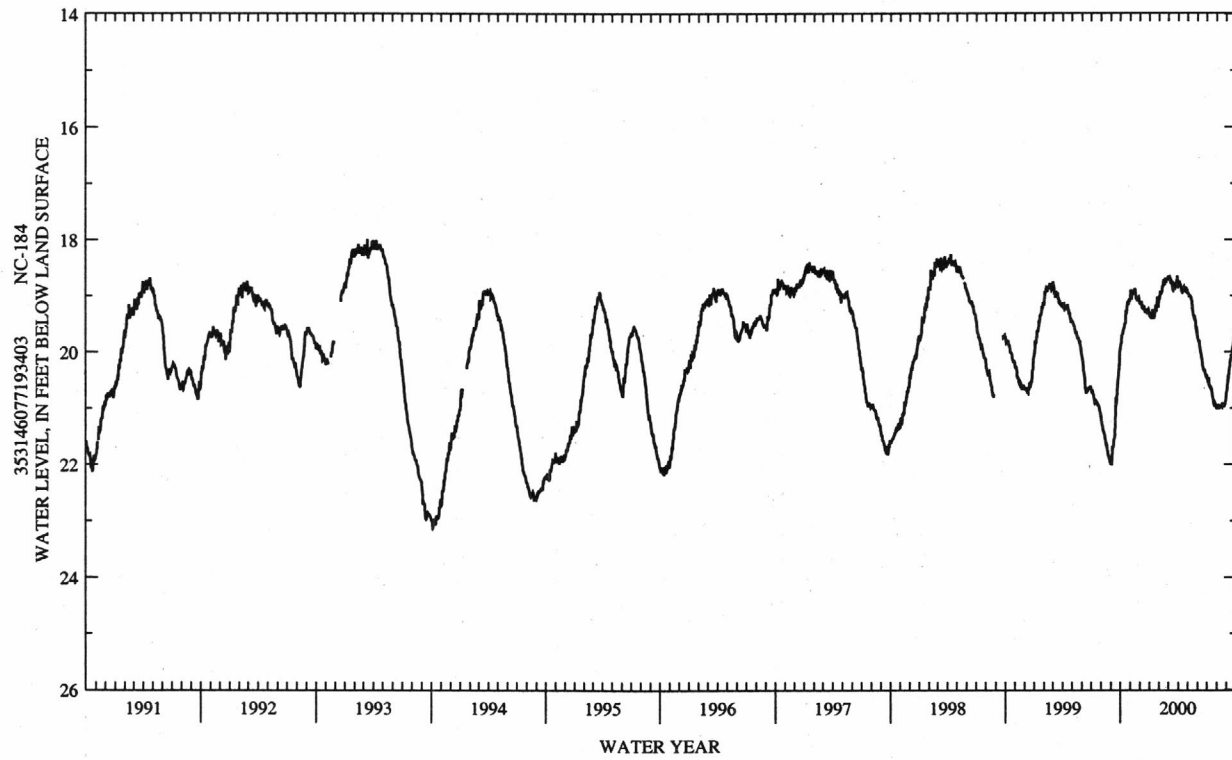
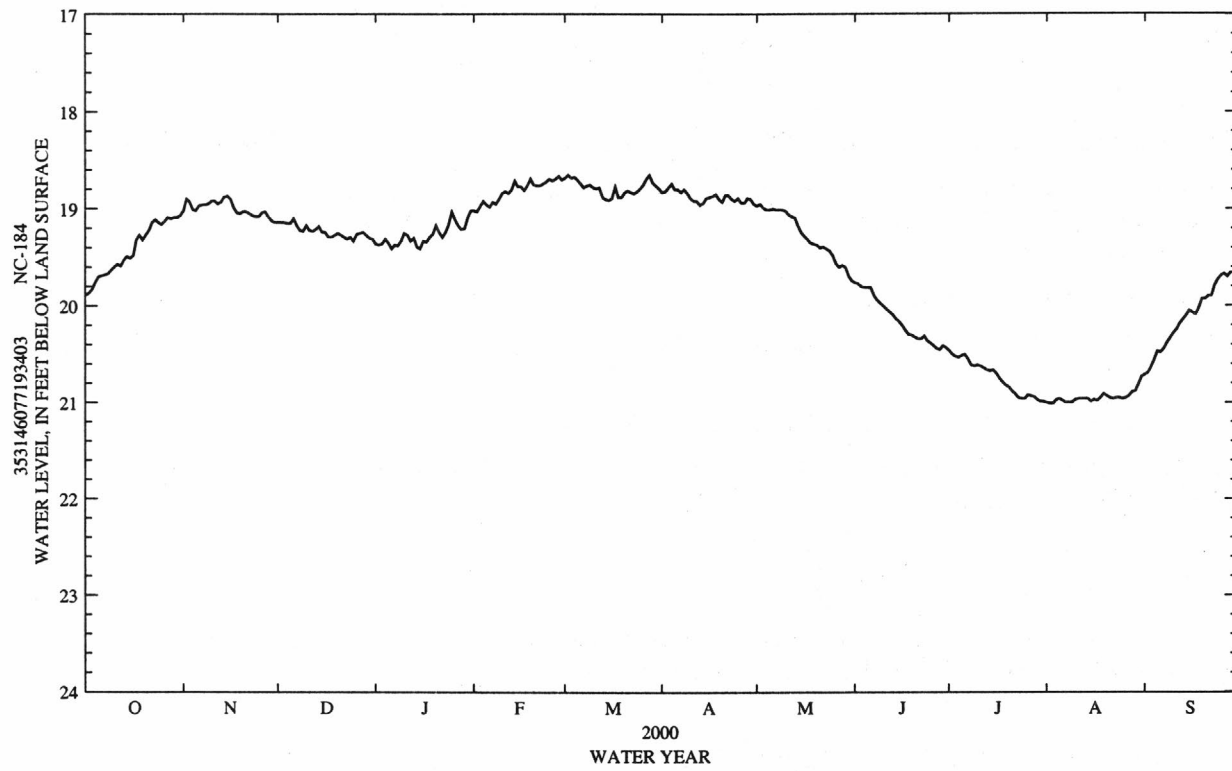
PERIOD OF RECORD.--June 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 17.84 ft below land-surface datum, May 24, 1989; lowest water level recorded, 23.15 ft below land-surface datum, Oct. 6, 1993.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.89	19.02	19.14	19.36	19.02	18.68	18.83	18.97	19.76	20.46	21.00	20.71
2	19.87	18.90	19.14	19.37	19.03	18.65	18.82	18.95	19.77	20.50	21.01	20.69
3	19.83	18.93	19.14	19.36	18.97	18.68	18.78	18.99	19.80	20.52	21.01	20.63
4	19.76	19.01	19.15	19.31	18.92	18.67	18.74	19.01	19.81	20.53	20.97	20.55
5	19.70	19.02	19.15	19.35	18.96	18.70	18.80	19.01	19.81	20.51	20.96	20.47
6	19.69	18.97	19.10	19.41	18.98	18.74	18.80	19.00	19.81	20.50	20.98	20.48
7	19.68	18.96	19.17	19.37	18.93	18.78	18.83	19.01	19.89	20.55	21.00	20.44
8	19.67	18.96	19.22	19.38	18.95	18.76	18.80	19.01	19.94	20.61	21.00	20.38
9	19.63	18.95	19.23	19.33	18.90	18.75	18.84	19.01	19.97	20.62	21.00	20.33
10	19.60	18.92	19.17	19.25	18.84	18.78	18.89	19.02	20.00	20.61	20.97	20.28
11	19.57	18.92	19.22	19.27	18.82	18.79	18.92	19.06	20.03	20.62	20.96	20.24
12	19.59	18.95	19.23	19.33	18.84	18.78	18.92	19.08	20.06	20.64	20.96	20.18
13	19.53	18.93	19.21	19.30	18.80	18.88	18.96	19.09	20.09	20.66	20.96	20.14
14	19.49	18.88	19.18	19.39	18.71	18.90	18.94	19.17	20.13	20.67	20.96	20.10
15	19.51	18.87	19.24	19.41	18.77	18.91	18.89	19.24	20.16	20.66	20.99	20.05
16	19.48	18.90	19.24	19.33	18.77	18.89	18.88	19.28	20.20	20.70	20.97	20.07
17	19.32	18.99	19.29	19.34	18.81	18.77	18.87	19.31	20.25	20.75	20.98	20.09
18	19.27	19.04	19.29	19.29	18.76	18.88	18.85	19.35	20.29	20.79	20.95	20.02
19	19.32	19.05	19.27	19.26	18.69	18.88	18.90	19.36	20.30	20.82	20.91	19.93
20	19.27	19.03	19.25	19.17	18.75	18.83	18.93	19.37	20.32	20.84	20.93	19.93
21	19.22	19.03	19.27	19.24	18.76	18.81	18.86	19.40	20.34	20.88	20.95	19.90
22	19.14	19.05	19.29	19.29	18.76	18.83	18.86	19.39	20.34	20.91	20.96	19.90
23	19.11	19.07	19.31	19.24	18.74	18.84	18.90	19.41	20.31	20.95	20.95	19.79
24	19.14	19.08	19.29	19.16	18.72	18.82	18.92	19.43	20.36	20.96	20.95	19.73
25	19.16	19.08	19.33	19.03	18.69	18.79	18.89	19.48	20.38	20.96	20.96	19.69
26	19.13	19.04	19.26	19.11	18.71	18.75	18.94	19.56	20.41	20.92	20.95	19.67
27	19.09	19.03	19.25	19.17	18.69	18.69	18.94	19.60	20.44	20.93	20.93	19.70
28	19.10	19.08	19.24	19.21	18.66	18.65	18.89	19.58	20.45	20.94	20.89	19.66
29	19.09	19.12	19.27	19.20	18.70	18.73	18.90	19.60	20.41	20.97	20.88	19.66
30	19.09	19.14	19.30	19.09	---	18.76	18.95	19.69	20.43	20.99	20.81	19.63
31	19.07	---	19.31	19.02	---	18.79	---	19.74	---	20.99	20.73	---
WTR YR 2000	MEAN 19.55		HIGH 18.65		LOW 21.01							



## ROBESON COUNTY

343840078550009. Local number, NC-177; DENR Littlefield School Research Station well Y42f9; County number, RB-183.

LOCATION.--Lat 34°38'40", long 78°55'00", 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 142 ft above sea level (from topographic map). 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. Miscellaneous water-level measurements June 1981 to current year. 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, 149.47 ft below land-surface datum, Sept. 17, 18, 2000.

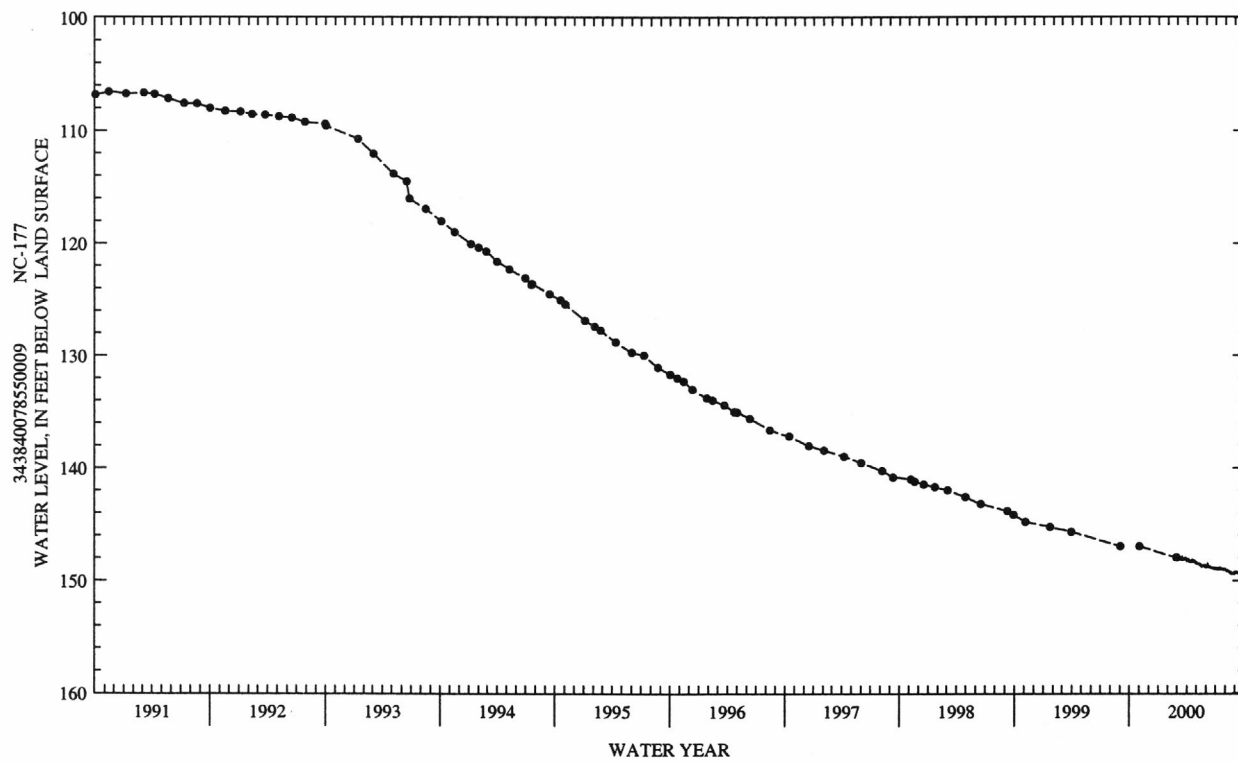
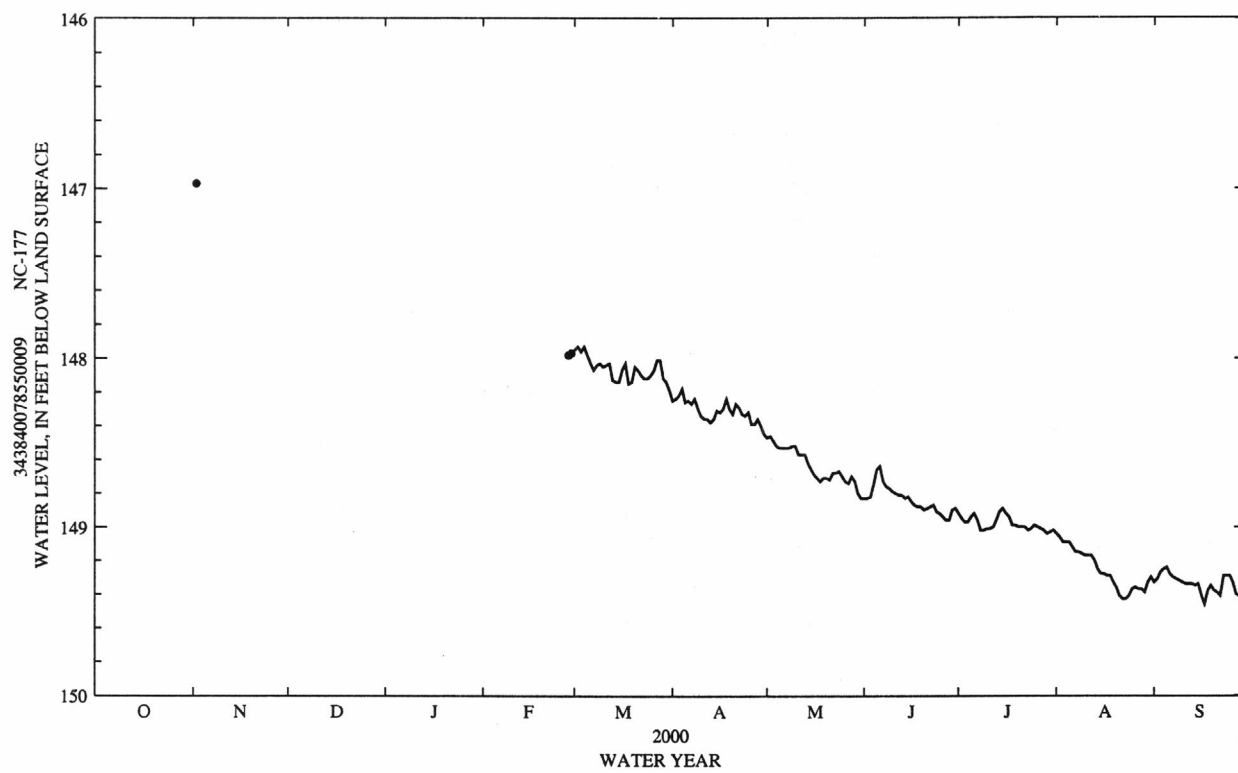
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	146.97	FEB 29	147.98	MAR 1	147.97

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD MARCH 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	147.98	148.26	148.53	148.66	148.94	149.09	149.24
10	---	---	---	---	---	148.05	148.34	148.52	148.79	149.01	149.17	149.33
15	---	---	---	---	---	148.14	148.31	148.66	148.82	148.89	149.28	149.34
20	---	---	---	---	---	148.05	148.33	148.71	148.90	149.00	149.36	149.38
25	---	---	---	---	---	148.10	148.32	148.70	148.92	148.99	149.37	149.29
WTR YR 2000	MEAN 148.77			HIGH 147.93 MAR 2			LOW 149.46 SEP 17					



## ROBESON COUNTY--Continued

343156079174702. County number, RB-148; DENR Rowland Research Station well Z47m2.

LOCATION.--Lat 34°31'55", long 79°17'47", Hydrologic Unit 03040204, in Rowland, southwest of corner of West Elm and South Railroad Streets. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 263 ft, diameter 4 in. to 230 ft, diameter 2.5 in. from 205 to 263 ft, screened intervals from 247 to 252 ft and 258 to 263 ft.

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

DATUM.--Land-surface datum is 143.15 ft above sea level (levels by DENR). Measuring point: Top of flange attached to floor of instrument shelter, 2.1 ft above land-surface datum (since December 1995).

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

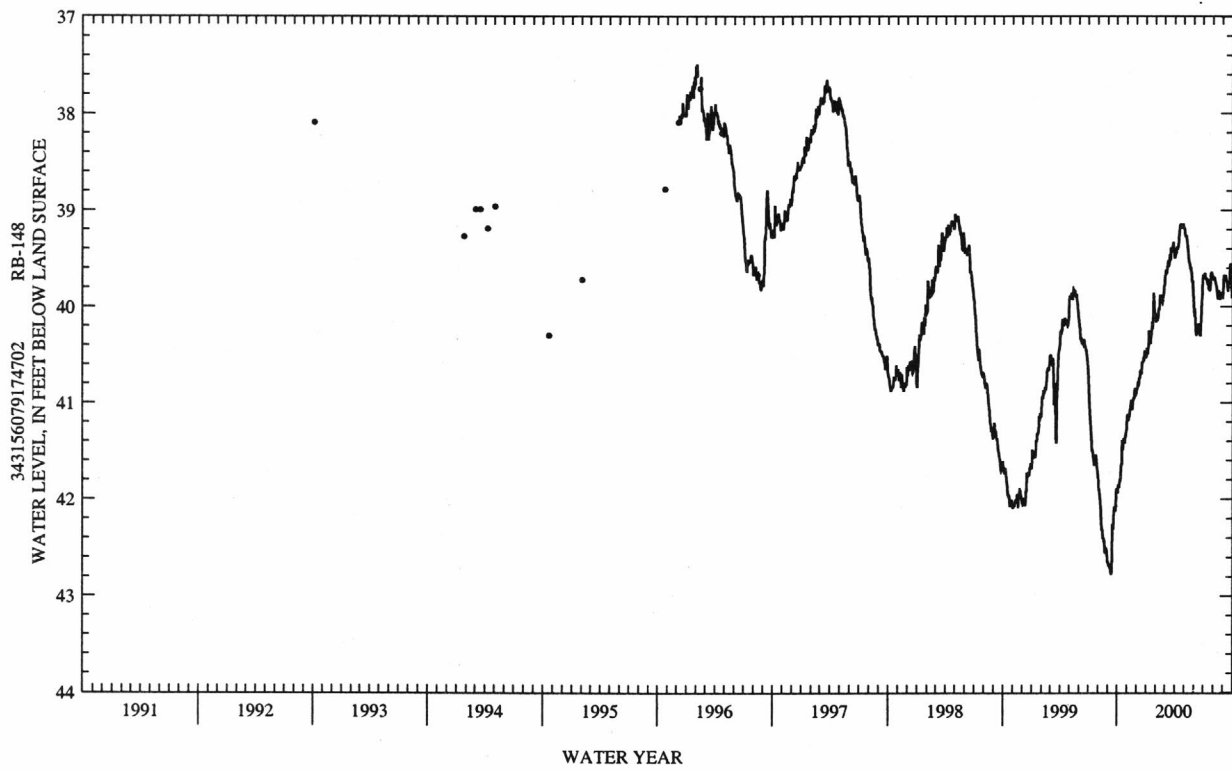
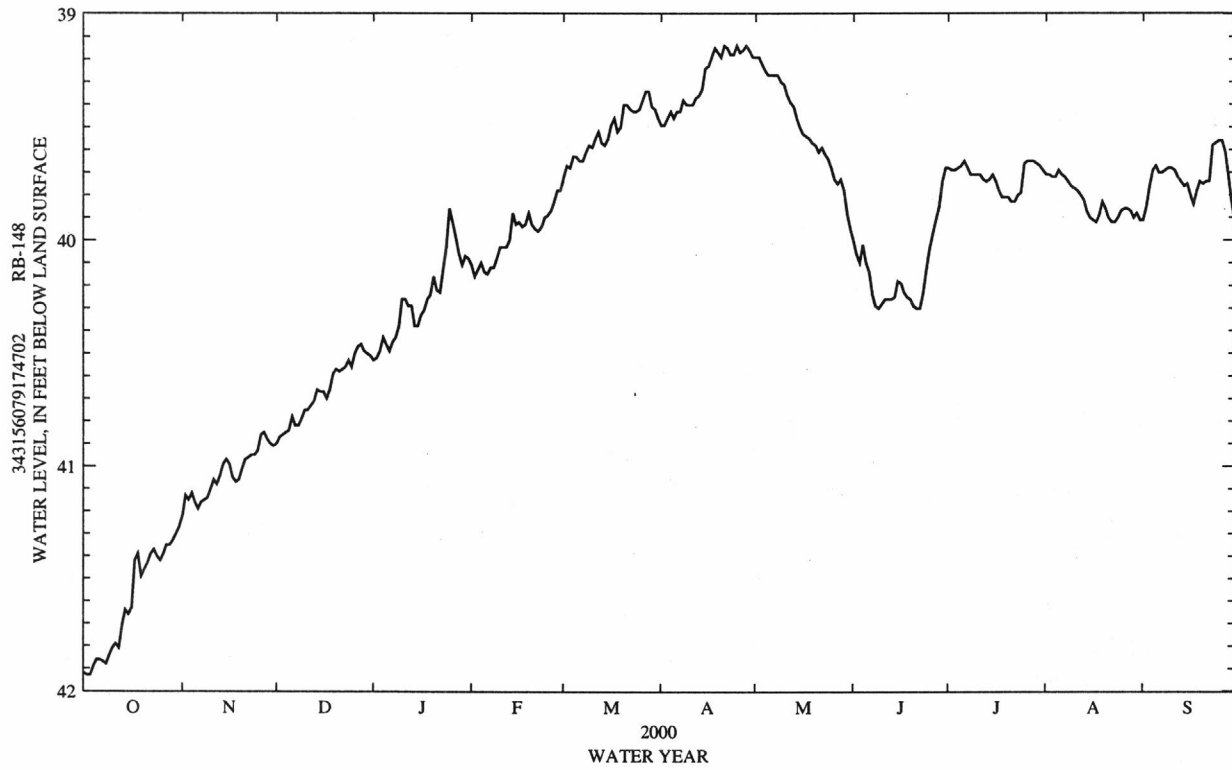
PERIOD OF RECORD.--Miscellaneous water-level measurements April 1971 to current year. Continuous record began December 1995. Records from April 1971 to January 1984 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.80 ft below land-surface datum, Apr. 30, 1971; lowest recorded, 42.79 ft below land-surface datum, Sept. 13, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.92	41.22	40.90	40.53	40.11	39.72	39.49	39.19	40.00	39.68	39.71	39.91
2	41.93	41.13	40.87	40.52	40.16	39.67	39.49	39.19	40.06	39.69	39.71	39.85
3	41.93	41.15	40.86	40.49	40.13	39.68	39.46	39.22	40.10	39.69	39.72	39.76
4	41.89	41.12	40.85	40.43	40.10	39.63	39.43	39.25	40.02	39.68	39.72	39.69
5	41.86	41.16	40.84	40.46	40.14	39.63	39.46	39.27	40.10	39.67	39.69	39.67
6	41.86	41.19	40.78	40.49	40.15	39.65	39.43	39.27	40.14	39.65	39.71	39.70
7	41.87	41.16	40.82	40.45	40.12	39.65	39.43	39.27	40.24	39.68	39.72	39.70
8	41.88	41.15	40.82	40.43	40.12	39.61	39.38	39.27	40.29	39.71	39.74	39.69
9	41.84	41.14	40.79	40.38	40.08	39.58	39.40	39.30	40.30	39.71	39.76	39.68
10	41.81	41.10	40.75	40.26	40.03	39.59	39.40	39.31	40.28	39.71	39.77	39.68
11	41.79	41.06	40.75	40.26	40.03	39.55	39.40	39.36	40.26	39.71	39.78	39.69
12	41.81	41.08	40.73	40.29	40.03	39.52	39.37	39.39	40.26	39.73	39.80	39.72
13	41.71	41.04	40.71	40.29	40.00	39.57	39.36	39.41	40.26	39.74	39.82	39.74
14	41.64	40.99	40.66	40.38	39.88	39.58	39.33	39.46	40.25	39.73	39.87	39.76
15	41.66	40.97	40.67	40.38	39.93	39.55	39.24	39.50	40.18	39.71	39.90	39.75
16	41.63	40.99	40.67	40.33	39.92	39.49	39.23	39.53	40.19	39.74	39.91	39.80
17	41.42	41.05	40.70	40.31	39.94	39.46	39.19	39.54	40.23	39.78	39.92	39.84
18	41.39	41.07	40.66	40.26	39.93	39.52	39.15	39.55	40.25	39.81	39.89	39.78
19	41.49	41.06	40.59	40.24	39.88	39.50	39.17	39.57	40.26	39.81	39.83	39.74
20	41.46	41.01	40.57	40.16	39.93	39.40	39.19	39.58	40.29	39.81	39.86	39.75
21	41.43	40.97	40.58	40.22	39.95	39.40	39.14	39.61	40.30	39.83	39.90	39.74
22	41.39	40.96	40.57	40.23	39.96	39.42	39.15	39.59	40.30	39.83	39.92	39.74
23	41.37	40.95	40.56	40.13	39.94	39.43	39.18	39.62	40.23	39.80	39.92	39.58
24	41.40	40.95	40.53	40.03	39.90	39.43	39.18	39.64	40.13	39.79	39.90	39.57
25	41.42	40.93	40.56	39.86	39.89	39.42	39.14	39.68	40.04	39.66	39.87	39.56
26	41.39	40.86	40.50	39.92	39.87	39.38	39.17	39.73	39.97	39.65	39.86	39.56
27	41.35	40.85	40.47	39.99	39.83	39.34	39.16	39.75	39.91	39.65	39.86	39.61
28	41.35	40.88	40.46	40.06	39.78	39.34	39.14	39.73	39.85	39.65	39.87	39.71
29	41.33	40.90	40.49	40.11	39.78	39.41	39.16	39.78	39.74	39.66	39.90	39.83
30	41.30	40.91	40.50	40.07	---	39.42	39.19	39.88	39.68	39.67	39.88	39.91
31	41.27	---	40.51	40.08	---	39.46	---	39.95	---	39.69	39.91	---
WTR YR 2000	MEAN 40.11		HIGH 39.14		LOW 41.93							





## ROBESON COUNTY--Continued

343840078550010. County number, RB-184; DENR Littlefield School Research Station well Y42f10.

LOCATION.--Lat 34°38'40", long 78°54'58", 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 258 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 141 ft above sea level (from topographic map). Measuring point: Top of instrument shelf, 2.28 ft above land-surface datum.

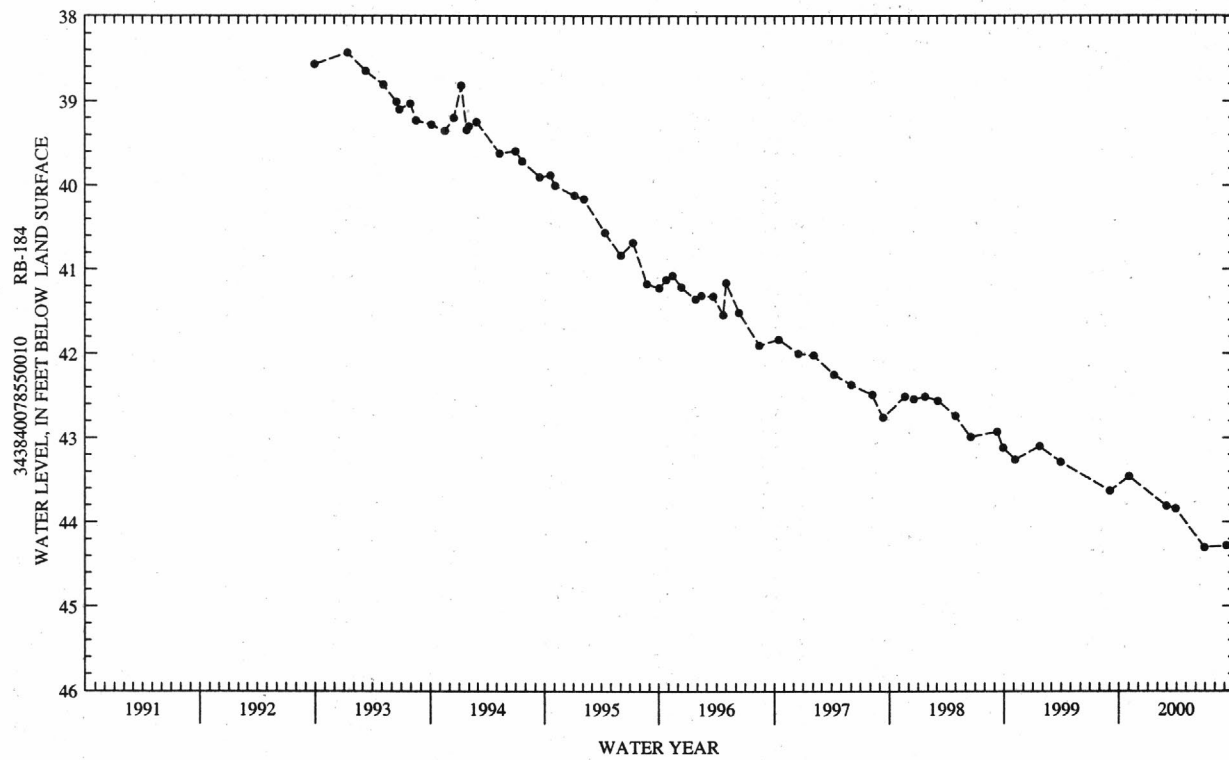
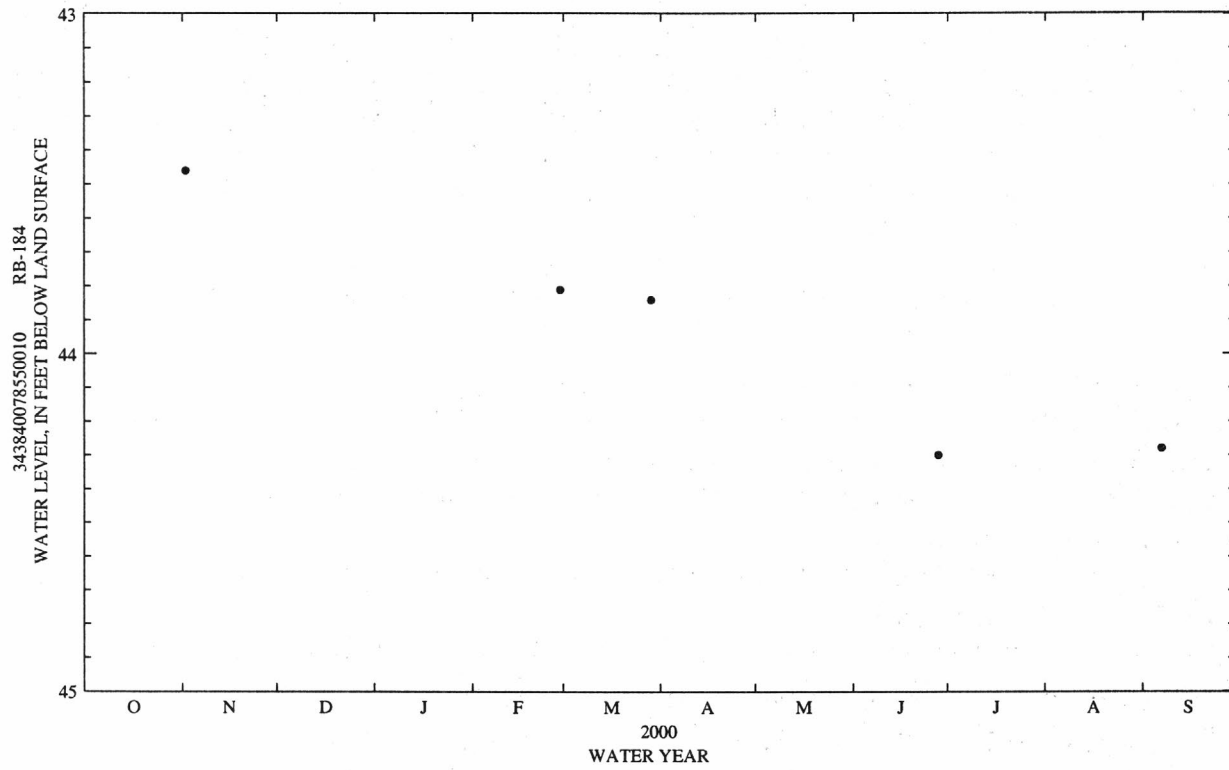
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 44.30 ft below land-surface datum, June 28, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	43.46	FEB 29	43.81	MAR 29	43.84	JUN 28	44.30	SEP 7	44.28



## ROBESON COUNTY--Continued

343840078550011. County number, RB-185; DENR Littlefield School Research Station well Y42f11.

LOCATION.--Lat 34°38'39", long 78°54'59", 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 155 ft, diameter 6 in. to 140 ft, diameter 4 in. from 140 to 155 ft, screened intervals from 140 to 145 ft and 150 to 155 ft.

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

DATUM.--Land-surface datum is 142 ft above sea level (from topographic map). Measuring point: Top of instrument shelf, 1.05 ft above land-surface datum.

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

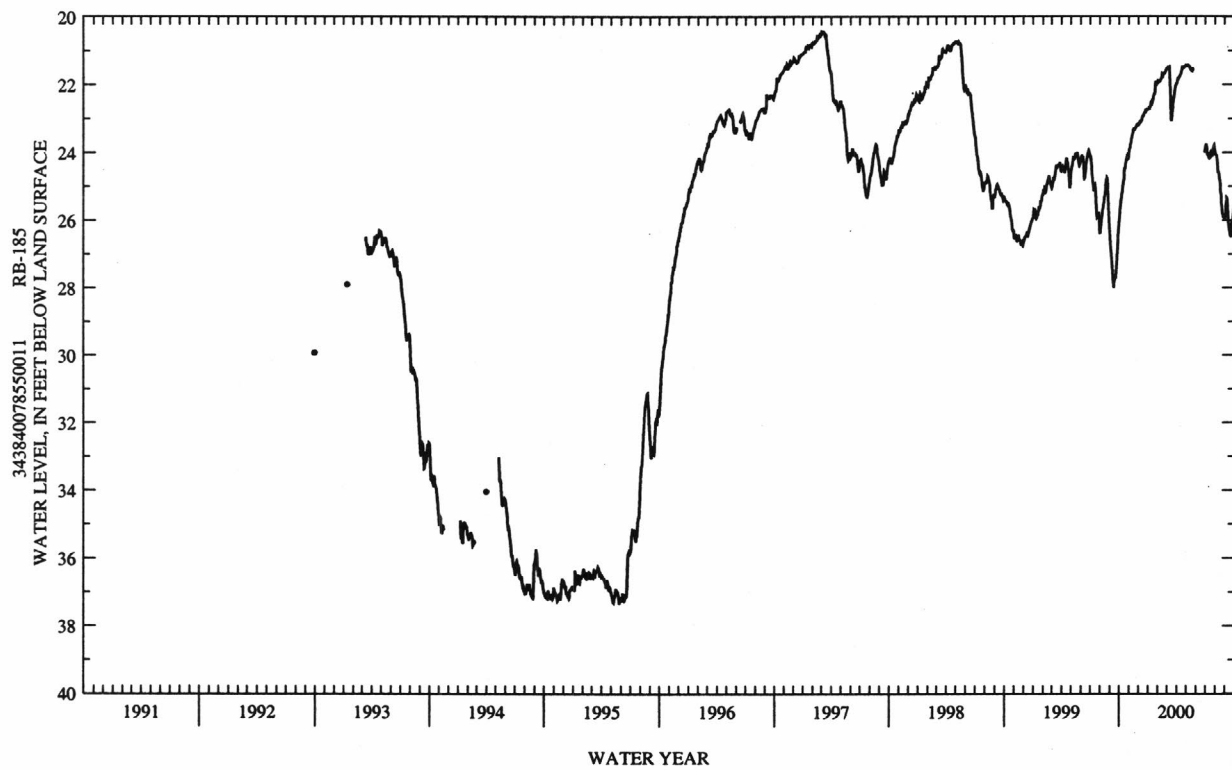
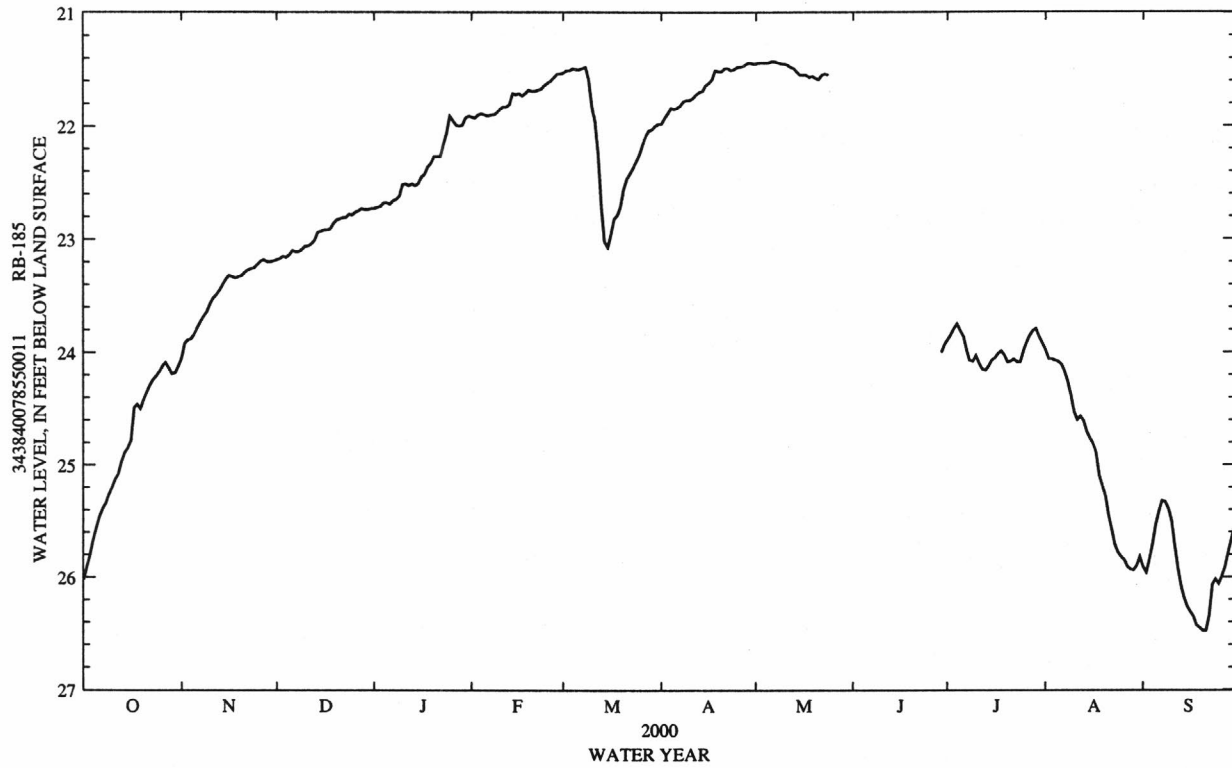
PERIOD OF RECORD.--Miscellaneous water-level measurements August 1981 to current year. Continuous record began March 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 20.41 ft below land-surface datum, Feb. 28 and Mar. 1, 1997; lowest recorded, 37.36 ft below land-surface datum, May 27, 28, 1995.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.02	24.05	23.18	22.73	21.92	21.53	21.98	21.45	---	23.89	23.98	25.91
2	25.91	23.92	23.17	22.72	21.93	21.51	21.93	21.44	---	23.84	24.06	25.96
3	25.80	23.89	23.15	22.71	21.90	21.51	21.89	21.44	---	23.79	24.06	25.84
4	25.67	23.88	23.16	22.68	21.89	21.49	21.84	21.44	---	23.75	24.07	25.70
5	25.56	23.84	23.14	22.68	21.90	21.50	21.85	21.44	---	23.81	24.08	25.54
6	25.46	23.78	23.10	22.69	21.91	21.50	21.84	21.43	---	23.86	24.11	25.42
7	25.39	23.73	23.11	22.66	21.90	21.49	21.82	21.43	---	23.98	24.17	25.32
8	25.34	23.68	23.11	22.65	21.90	21.48	21.78	21.44	---	24.07	24.26	25.33
9	25.26	23.64	23.09	22.62	21.88	21.59	21.77	21.45	---	24.08	24.38	25.39
10	25.20	23.57	23.06	22.52	21.85	21.83	21.77	21.45	---	24.03	24.53	25.50
11	25.13	23.52	23.06	22.51	21.83	21.96	21.75	21.46	---	24.10	24.60	25.72
12	25.08	23.49	23.04	22.53	21.83	22.25	21.72	21.48	---	24.15	24.57	25.90
13	24.97	23.45	23.01	22.51	21.81	22.72	21.70	21.49	---	24.16	24.61	26.08
14	24.89	23.40	22.94	22.53	21.71	23.02	21.69	21.52	---	24.12	24.70	26.18
15	24.85	23.35	22.93	22.51	21.72	23.07	21.64	21.55	---	24.07	24.76	26.26
16	24.78	23.32	22.92	22.45	21.71	22.96	21.62	21.55	---	24.05	24.81	26.31
17	24.49	23.33	22.92	22.43	21.73	22.82	21.59	21.55	---	24.01	24.89	26.35
18	24.46	23.34	22.91	22.36	21.71	22.79	21.51	21.57	---	23.99	25.09	26.43
19	24.50	23.33	22.86	22.33	21.68	22.71	21.52	21.56	---	24.03	25.19	26.45
20	24.42	23.32	22.83	22.27	21.69	22.56	21.52	21.58	---	24.09	25.28	26.48
21	24.35	23.29	22.82	22.27	21.69	22.47	21.49	21.59	---	24.08	25.44	26.48
22	24.29	23.27	22.81	22.27	21.68	22.42	21.49	21.55	---	24.06	25.57	26.34
23	24.24	23.26	22.81	22.16	21.67	22.37	21.51	21.54	---	24.09	25.71	26.07
24	24.21	23.25	22.78	22.07	21.64	22.31	21.50	21.55	---	24.09	25.78	26.02
25	24.17	23.22	22.79	21.91	21.62	22.25	21.48	---	---	23.99	25.82	26.06
26	24.12	23.19	22.76	21.95	21.60	22.16	21.48	---	---	23.91	25.85	26.00
27	24.09	23.18	22.75	21.99	21.57	22.09	21.47	---	---	23.85	25.91	25.91
28	24.14	23.20	22.73	22.00	21.54	22.04	21.45	---	---	23.81	25.93	25.79
29	24.19	23.20	22.74	21.99	21.54	22.03	21.44	---	24.00	23.79	25.94	25.67
30	24.18	23.19	22.74	21.93	---	22.00	21.45	---	23.93	23.87	25.90	25.55
31	24.12	---	22.73	21.91	---	21.98	---	---	---	23.92	25.82	---
WTR YR 2000	MEAN 23.27		HIGH 21.43		LOW 26.48							



## ROBESON COUNTY--Continued

342620078581801. County number, RB-188; DENR Boardman Research Station well AA43q1.

LOCATION.--Lat 34°26'22", long 78°58'19", 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 sea level (levels by DENR). Measuring point: Top of 4-inch casing, 2.45 ft above land-surface datum (since June 2000).

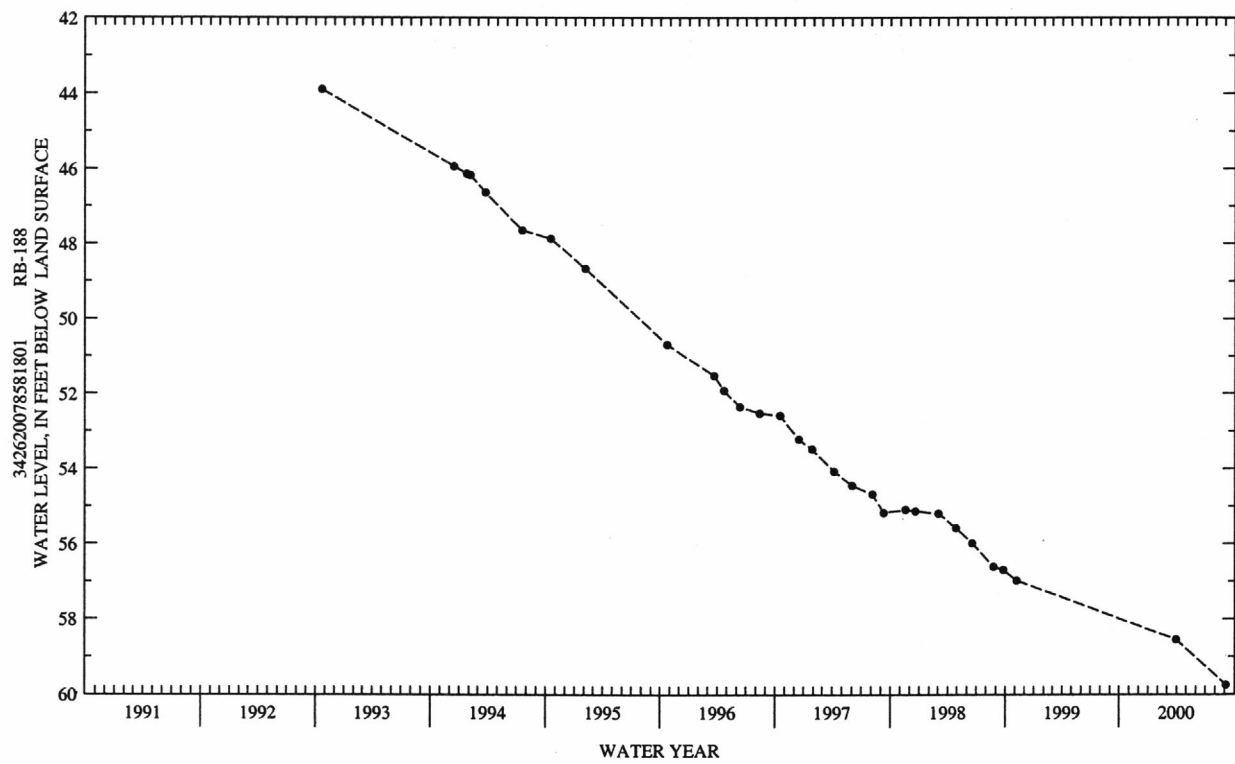
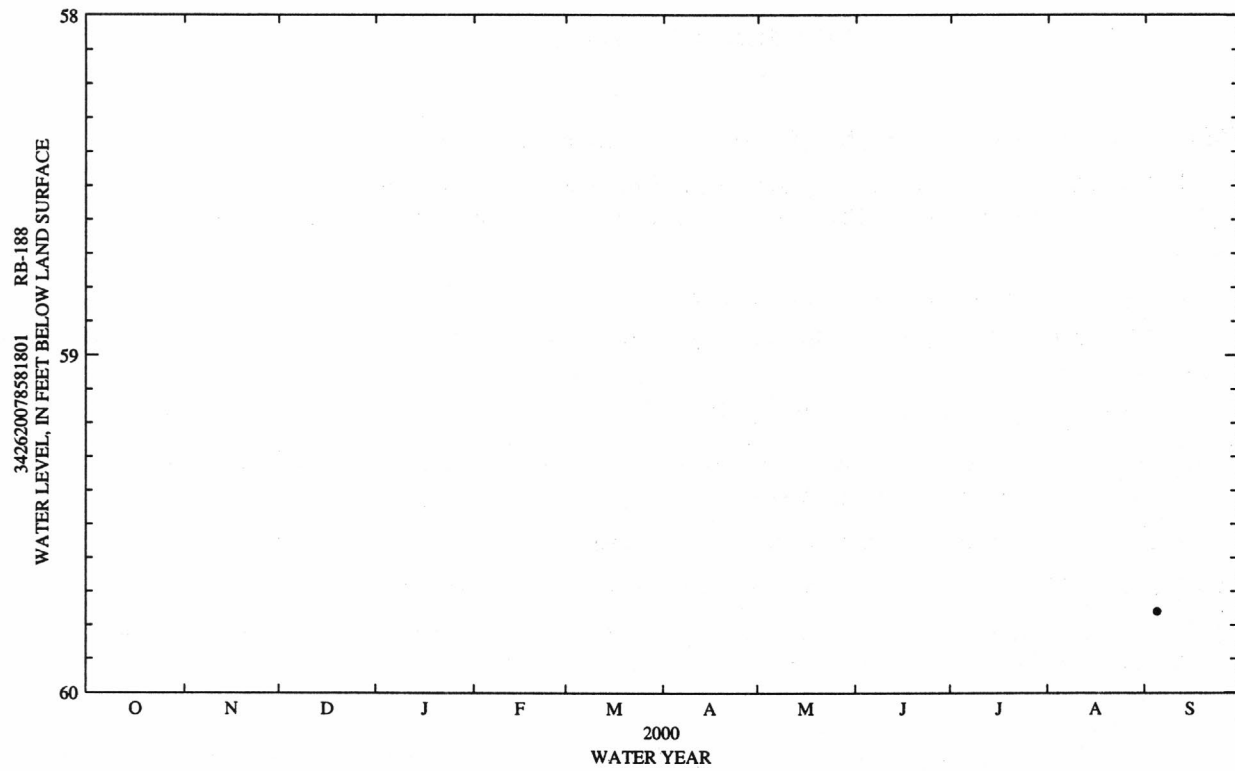
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 59.76 ft below land-surface datum, Sept. 5, 2000.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 30	58.56	SEP 5	59.76



## ROBESON COUNTY--Continued

343800079015201. County number, RB-202.

LOCATION.--Lat 34°37'57.8", long 79°01'56.4", North American Datum of 1983, Hydrologic Unit 03040203, in Lumberton off Carthage Road at McMillan's Beach City Park. Owner: City of Lumberton.

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

WELL CHARACTERISTICS.--Drilled monitoring well, depth 98 ft, diameter 2.4 in., screened interval from 45.4 to 98 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 105 ft above sea level (from topographic map). Measuring point: Top of 2.4-inch casing, 1.45 ft above land-surface datum.

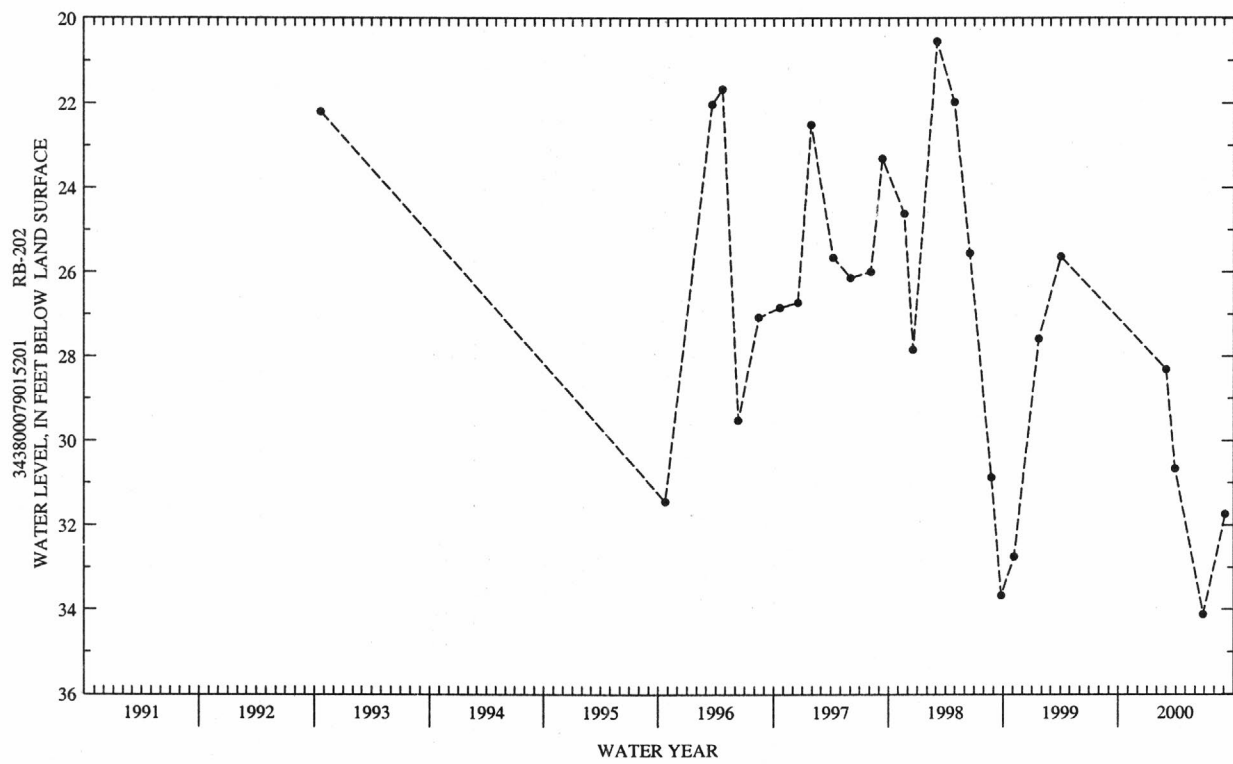
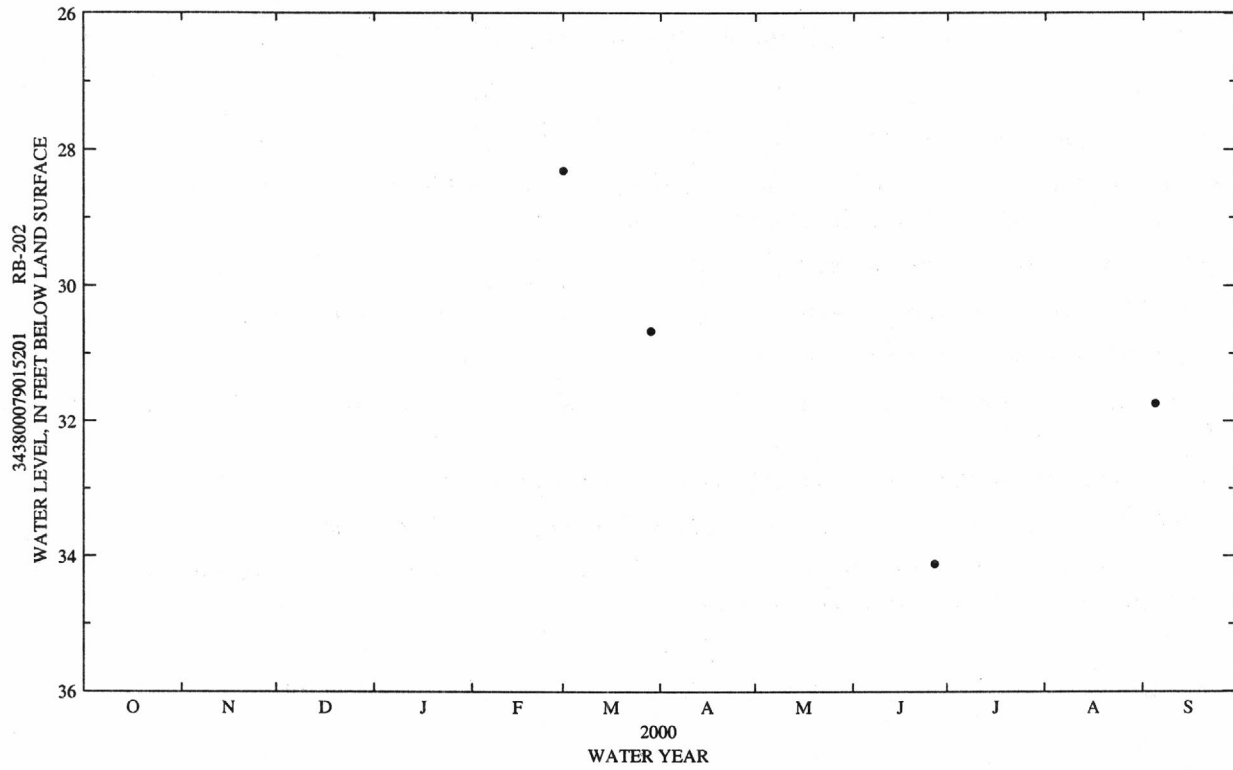
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements October 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.07 ft below land-surface datum, Oct. 25, 1988; lowest water level measured, 34.12 ft below land-surface datum, June 27, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 1	28.31	MAR 29	30.67	JUN 27	34.12	SEP 5	31.74





## ROBESON COUNTY--Continued

344621079192401. County number, RB-264.

LOCATION.--Lat 34°46'21", long 79°19'24", 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 sea level (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. Miscellaneous water-level measurements December 1993 to April 1999. Continuous record began August 1996.

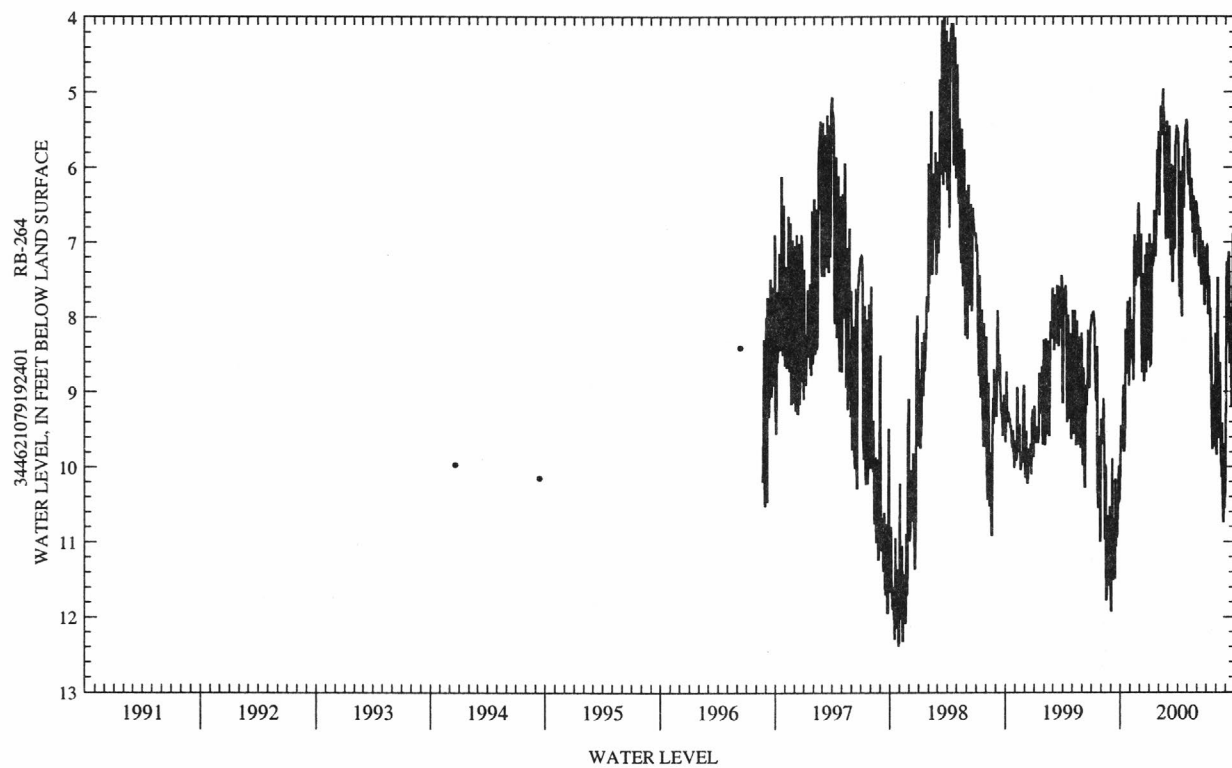
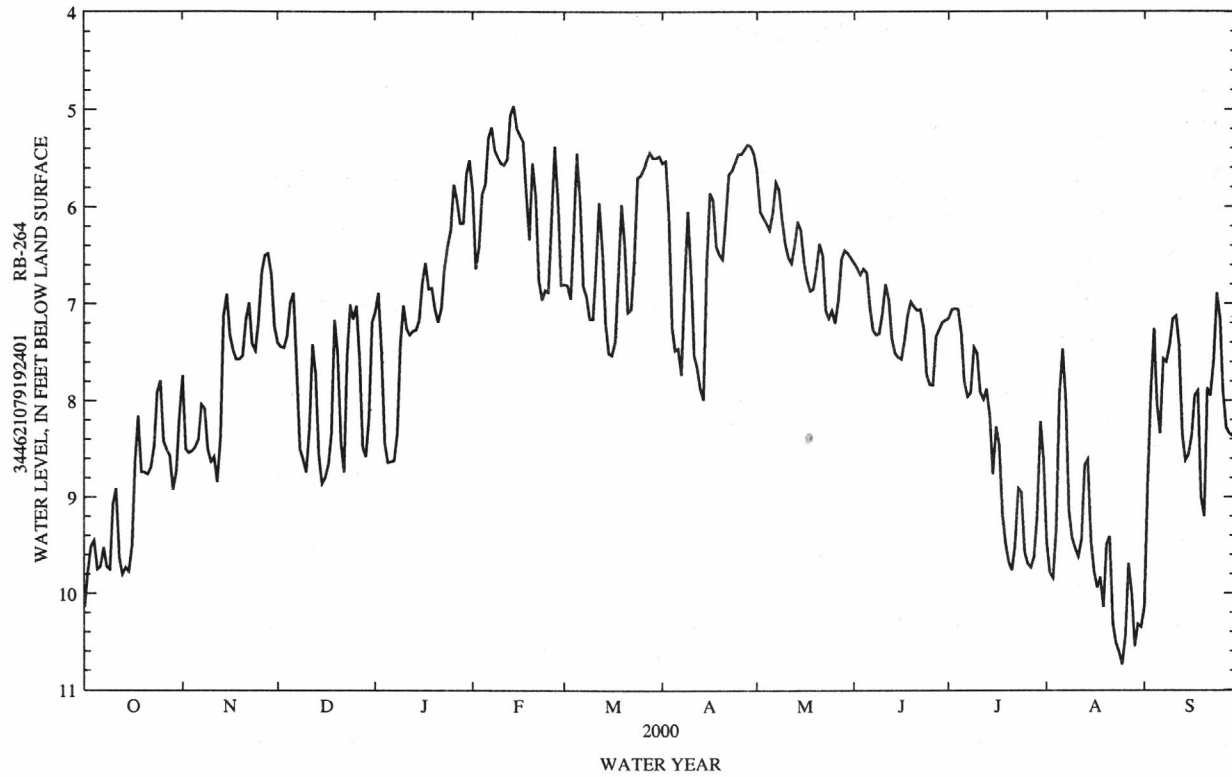
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.55 ft below land-surface datum, Mar. 22, 1998; lowest water level recorded, 12.54 ft below land-surface datum, Oct. 29, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.14	7.74	7.40	7.09	5.85	6.80	5.55	5.63	6.58	7.159.4710.14		
2	9.78	8.50	7.44	6.89	6.64	6.81	5.53	6.05	6.63	7.069.788.85		
3	9.51	8.54	7.45	7.49	6.42	6.95	6.09	6.11	6.70	7.059.847.95		
4	9.45	8.52	7.33	8.44	5.87	6.21	7.24	6.17	6.64	7.069.337.26		
5	9.75	8.48	6.99	8.64	5.77	5.45	7.48	6.24	6.68	7.317.958.04		
6	9.72	8.40	6.89	8.63	5.29	5.97	7.46	6.06	7.03	7.807.478.34		
7	9.52	8.04	7.63	8.62	5.18	6.82	7.73	5.75	7.27	7.967.997.57		
8	9.72	8.08	8.50	8.34	5.42	6.93	6.80	5.82	7.32	7.929.147.60		
9	9.75	8.50	8.60	7.40	5.49	7.16	6.05	6.14	7.31	7.459.427.43		
10	9.07	8.63	8.74	7.02	5.55	7.16	6.67	6.38	7.10	7.519.537.16		
11	8.91	8.58	8.30	7.26	5.57	6.61	7.53	6.52	6.80	7.919.627.13		
12	9.63	8.84	7.42	7.32	5.51	5.96	7.66	6.58	6.96	7.999.447.43		
13	9.80	8.38	7.71	7.28	5.06	6.46	7.87	6.39	7.36	7.888.678.35		
14	9.73	7.12	8.55	7.27	4.96	7.21	7.99	6.15	7.51	8.178.618.62		
15	9.77	6.90	8.86	7.17	5.19	7.51	6.61	6.24	7.55	8.769.468.56		
16	9.50	7.32	8.80	6.78	5.26	7.53	5.86	6.56	7.57	8.279.778.36		
17	8.63	7.48	8.67	6.58	5.33	7.39	5.93	6.75	7.38	8.469.947.95		
18	8.16	7.57	8.34	6.85	5.84	6.72	6.41	6.87	7.12	9.199.837.90		
19	8.74	7.57	7.17	6.84	6.34	5.98	6.49	6.85	6.98	9.4810.149.00		
20	8.74	7.53	7.52	7.06	5.55	6.40	6.54	6.64	7.03	9.679.499.20		
21	8.76	7.17	8.44	7.19	5.89	7.09	6.13	6.38	7.07	9.769.417.87		
22	8.69	6.99	8.74	7.05	6.76	7.06	5.67	6.50	7.06	9.5010.317.95		
23	8.47	7.41	7.54	6.64	6.96	6.56	5.63	7.07	7.25	8.9110.517.58		
24	7.91	7.48	7.01	6.41	6.86	5.70	5.55	7.15	7.73	8.9510.616.89		
25	7.79	7.16	7.16	6.24	6.88	5.68	5.46	7.07	7.83	9.5710.747.15		
26	8.42	6.67	7.02	5.77	6.10	5.61	5.46	7.20	7.84	9.6910.437.89		
27	8.50	6.50	7.55	5.94	5.38	5.51	5.41	6.96	7.34	9.739.698.28		
28	8.57	6.48	8.48	6.17	5.94	5.44	5.36	6.54	7.26	9.6210.018.34		
29	8.92	6.69	8.58	6.17	6.81	5.50	5.38	6.45	7.19	9.2010.558.37		
30	8.73	7.23	8.17	5.66	---	5.50	5.46	6.48	7.17	8.2210.328.24		
31	8.15	---	7.19	5.52	---	5.48	---	6.53	---	8.6010.35---		

WTR YR 2000      MEAN 7.51      HIGH 4.96      LOW 10.74



## ROWAN COUNTY

354057080362601. Local number, NC-193; DENR Piedmont Research Station well L63t1; County number, RO-149.

LOCATION.--Lat 35°40'57", long 80°36'26", 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.

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 sea level (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.

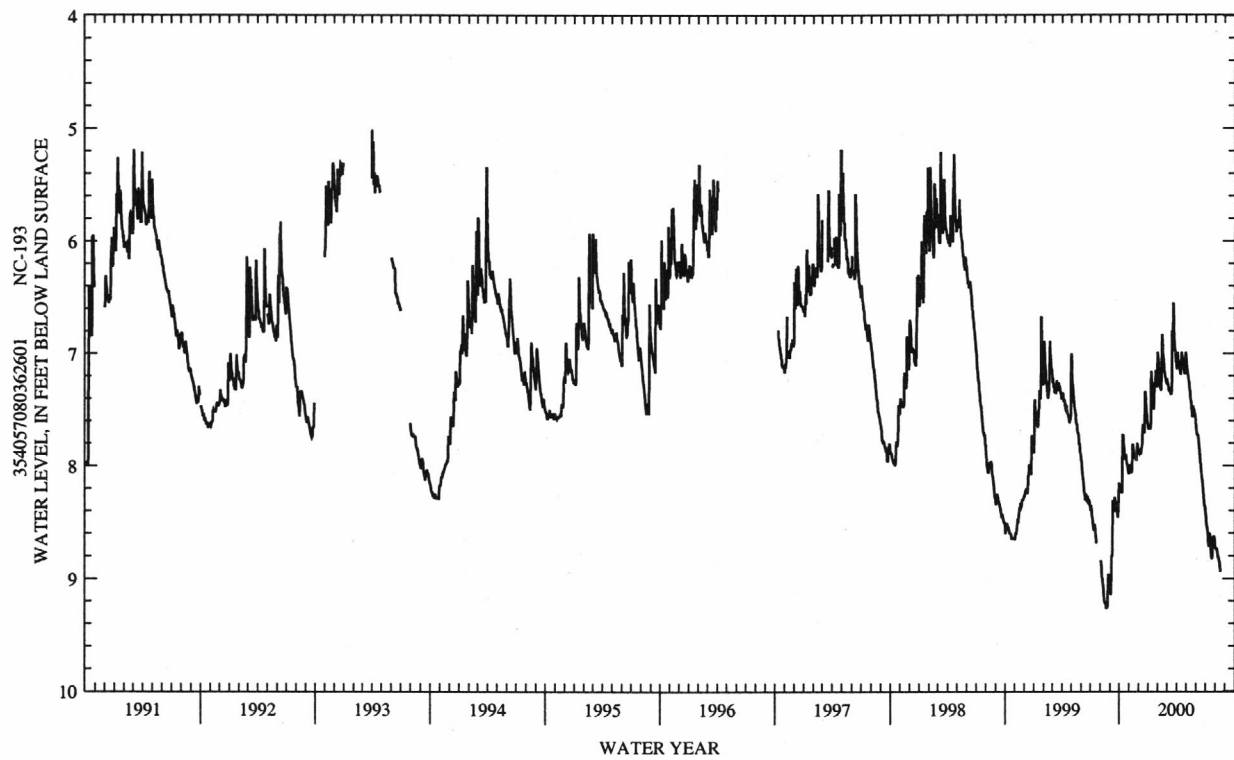
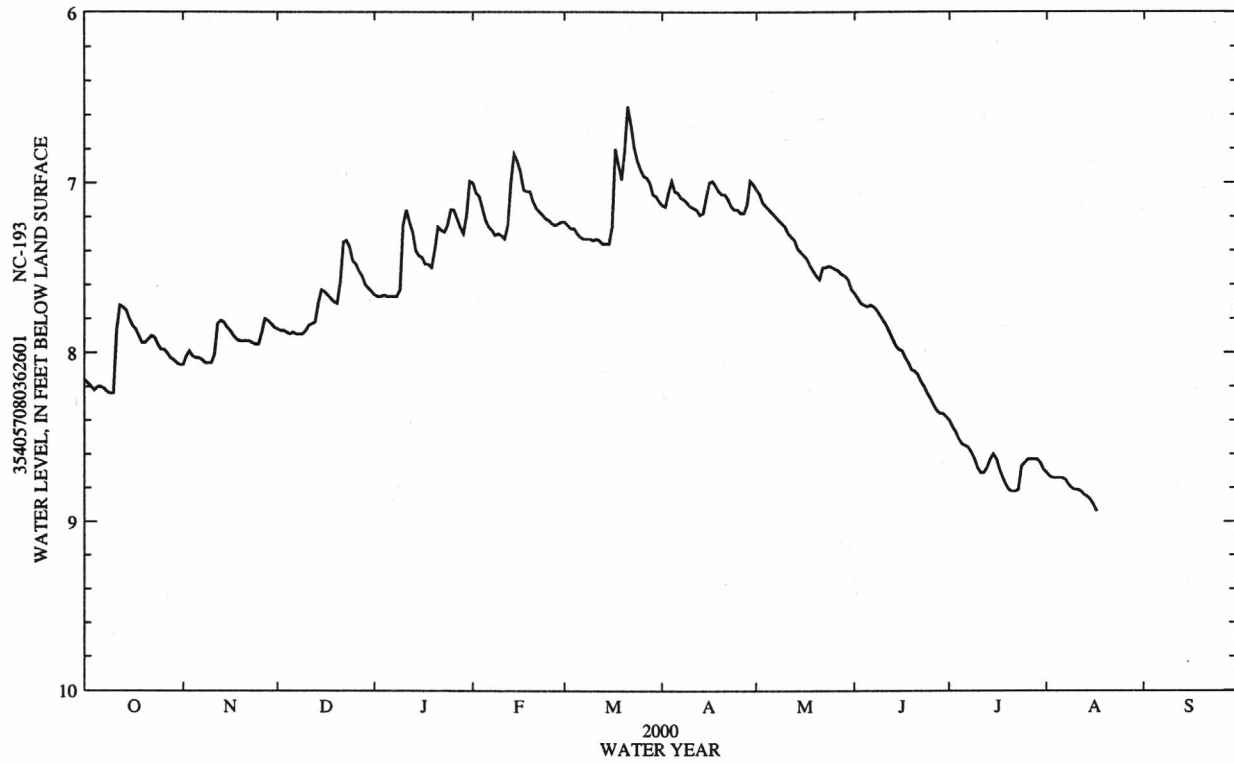
PERIOD OF RECORD.-- November 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.97 ft below land-surface datum, Mar. 30, 1993; lowest water level recorded, 9.27 ft below land-surface datum, Aug. 19, 20, 21, 1999.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.16	8.07	7.86	7.66	7.00	7.23	7.13	7.04	7.65	8.40	8.71	---
2	8.18	8.02	7.87	7.67	7.06	7.25	7.14	7.07	7.68	8.44	8.73	---
3	8.20	7.99	7.87	7.67	7.08	7.27	7.06	7.12	7.71	8.47	8.74	---
4	8.22	8.02	7.88	7.66	7.15	7.27	6.99	7.14	7.72	8.51	8.74	---
5	8.20	8.03	7.89	7.67	7.22	7.30	7.05	7.16	7.73	8.54	8.74	---
6	8.20	8.03	7.88	7.67	7.26	7.32	7.06	7.18	7.72	8.55	8.74	---
7	8.21	8.04	7.89	7.67	7.28	7.33	7.09	7.20	7.73	8.56	8.75	---
8	8.23	8.06	7.89	7.67	7.31	7.33	7.10	7.22	7.75	8.59	8.78	---
9	8.24	8.06	7.89	7.63	7.30	7.33	7.12	7.24	7.78	8.63	8.80	---
10	8.24	8.06	7.87	7.25	7.31	7.34	7.14	7.26	7.81	8.68	8.81	---
11	7.87	8.01	7.84	7.16	7.33	7.33	7.15	7.30	7.84	8.71	8.81	---
12	7.72	7.83	7.83	7.23	7.25	7.34	7.16	7.32	7.88	8.71	8.82	---
13	7.73	7.81	7.82	7.29	7.00	7.36	7.19	7.34	7.92	8.68	8.84	---
14	7.75	7.82	7.71	7.40	6.83	7.36	7.18	7.39	7.96	8.63	8.85	---
15	7.80	7.85	7.63	7.43	6.87	7.36	7.09	7.41	7.98	8.60	8.87	---
16	7.84	7.87	7.64	7.44	6.93	7.26	7.00	7.43	7.99	8.63	8.90	---
17	7.86	7.90	7.66	7.48	7.04	6.80	6.99	7.45	8.03	8.69	8.94	---
18	7.90	7.92	7.68	7.48	7.05	6.89	7.02	7.49	8.06	8.74	---	---
19	7.94	7.93	7.70	7.50	7.05	6.98	7.05	7.52	8.10	8.78	---	---
20	7.94	7.93	7.71	7.39	7.11	6.81	7.07	7.55	8.11	8.81	---	---
21	7.92	7.93	7.58	7.26	7.15	6.55	7.07	7.57	8.13	8.82	---	---
22	7.90	7.93	7.35	7.28	7.17	6.66	7.10	7.50	8.17	8.82	---	---
23	7.91	7.94	7.34	7.29	7.19	6.79	7.14	7.50	8.20	8.81	---	---
24	7.95	7.95	7.38	7.25	7.21	6.87	7.16	7.49	8.24	8.67	---	---
25	7.98	7.95	7.46	7.16	7.22	6.92	7.16	7.50	8.27	8.65	---	---
26	7.98	7.88	7.48	7.16	7.24	6.96	7.18	7.51	8.31	8.63	---	---
27	8.00	7.80	7.52	7.21	7.25	6.97	7.18	7.52	8.34	8.63	---	---
28	8.03	7.81	7.55	7.26	7.24	7.00	7.13	7.54	8.36	8.63	---	---
29	8.04	7.83	7.60	7.30	7.23	7.07	6.99	7.55	8.36	8.63	---	---
30	8.06	7.85	7.62	7.19	---	7.08	7.01	7.57	8.38	8.65	---	---
31	8.07	---	7.64	6.99	---	7.11	---	7.63	---	8.69	---	---
WTR YR 2000	MEAN 7.71		HIGH 6.55		LOW 8.94							



## SAMPSON COUNTY

345919078112204. County number, SA-113; DENR Turkey Research Station well U34b4.

LOCATION.--Lat 34°59'19.2", long 78°11'22.4", North American Datum of 1983, Hydrologic Unit 03030006, on west edge of Turkey on State Highway 24. Owner: DENR (North Carolina Department of Environment and Natural Resources).

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

WELL CHARACTERISTICS.--Drilled observation well, depth 134 ft, diameter 4 in., screened interval from 124 to 134 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 140.4 ft above sea level (levels by DENR). Measuring point: Top of 4-inch casing, 1.25 ft above land-surface datum.

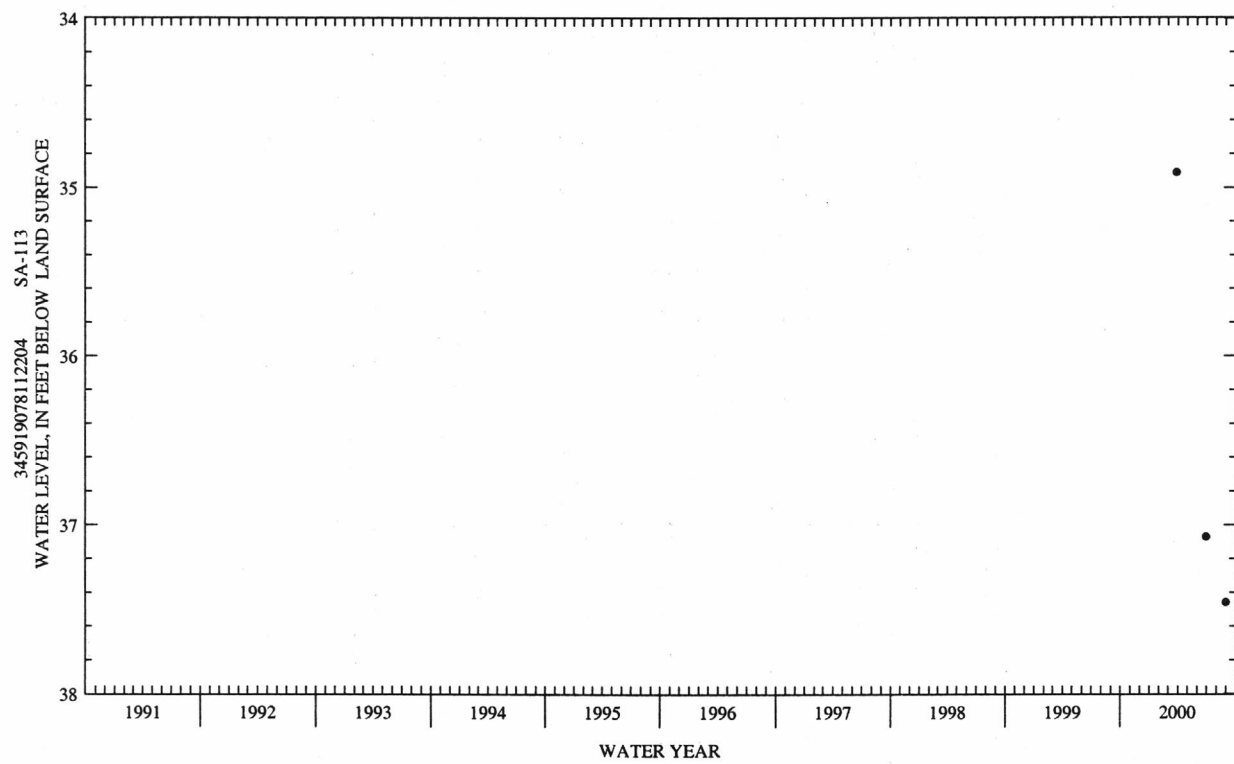
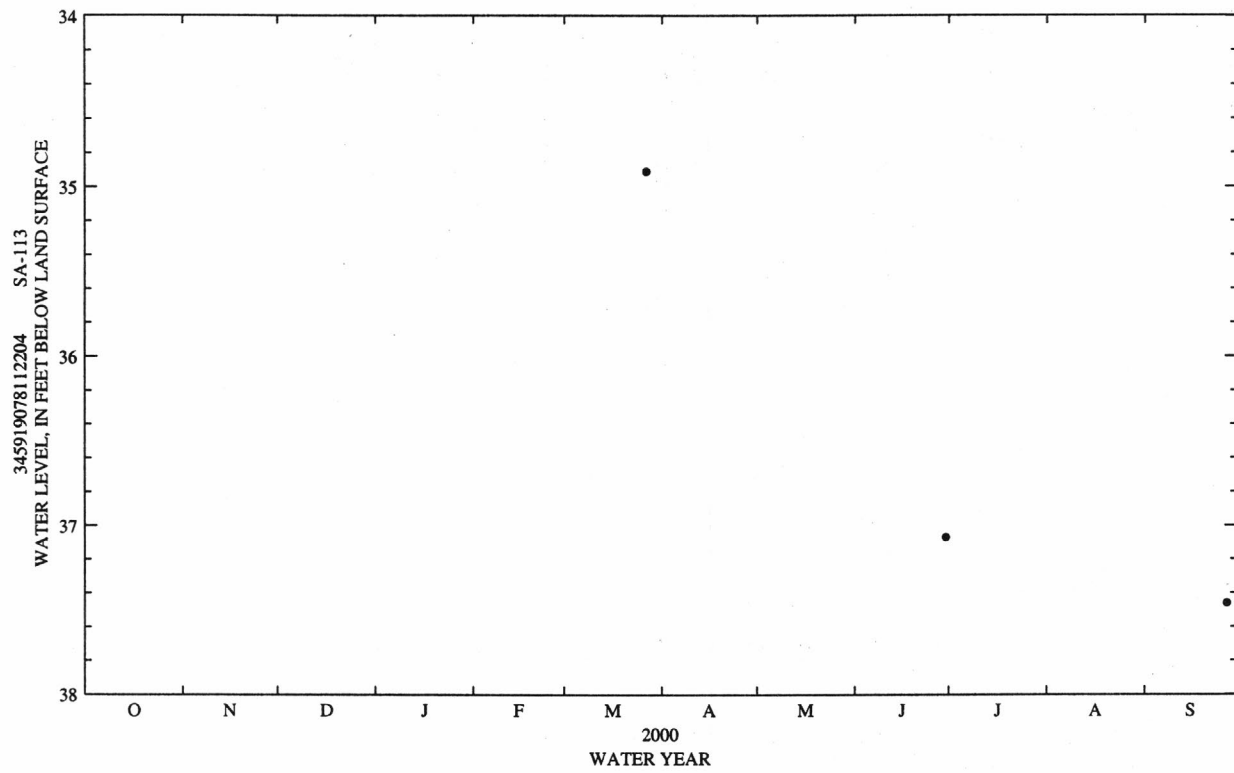
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements August 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.48 ft below land-surface datum, Aug. 25, 2000; lowest water level measured, 37.46 ft below land-surface datum, Sept. 27, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 27	34.91	JUN 30	37.07	SEP 27	37.46



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## SAMPSON COUNTY--Continued

345920078112106. County number, SA-114; DENR Turkey Research Station well U34b6.

LOCATION.--Lat 34°59'20.0", long 78°11'21.5", North American Datum of 1983, Hydrologic Unit 03030006, on west edge of Turkey on State Highway 24. 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 264 ft, diameter 6 in. to 148 ft, diameter 4 in. from 128 to 264 ft, screened interval from 254 to 264 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 141.8 ft above sea level (levels by DENR). Measuring point: Top of 6-inch casing, 1.44 ft above land-surface datum.

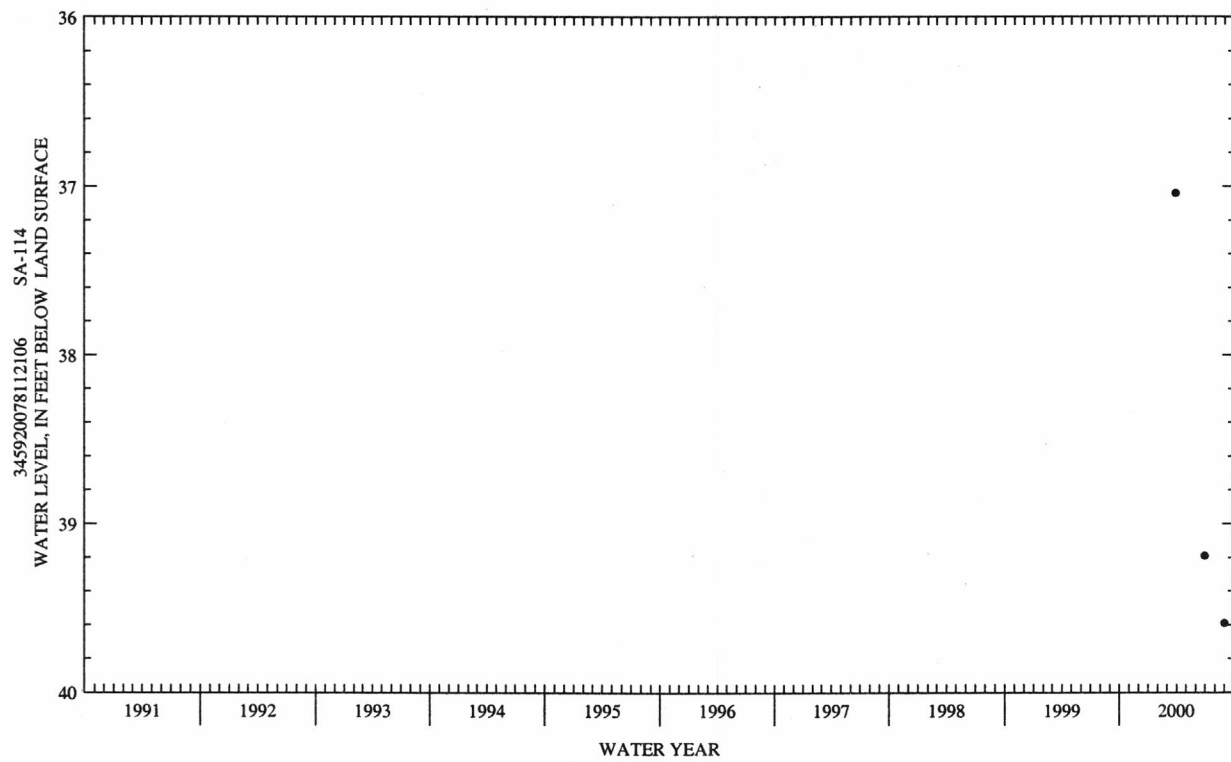
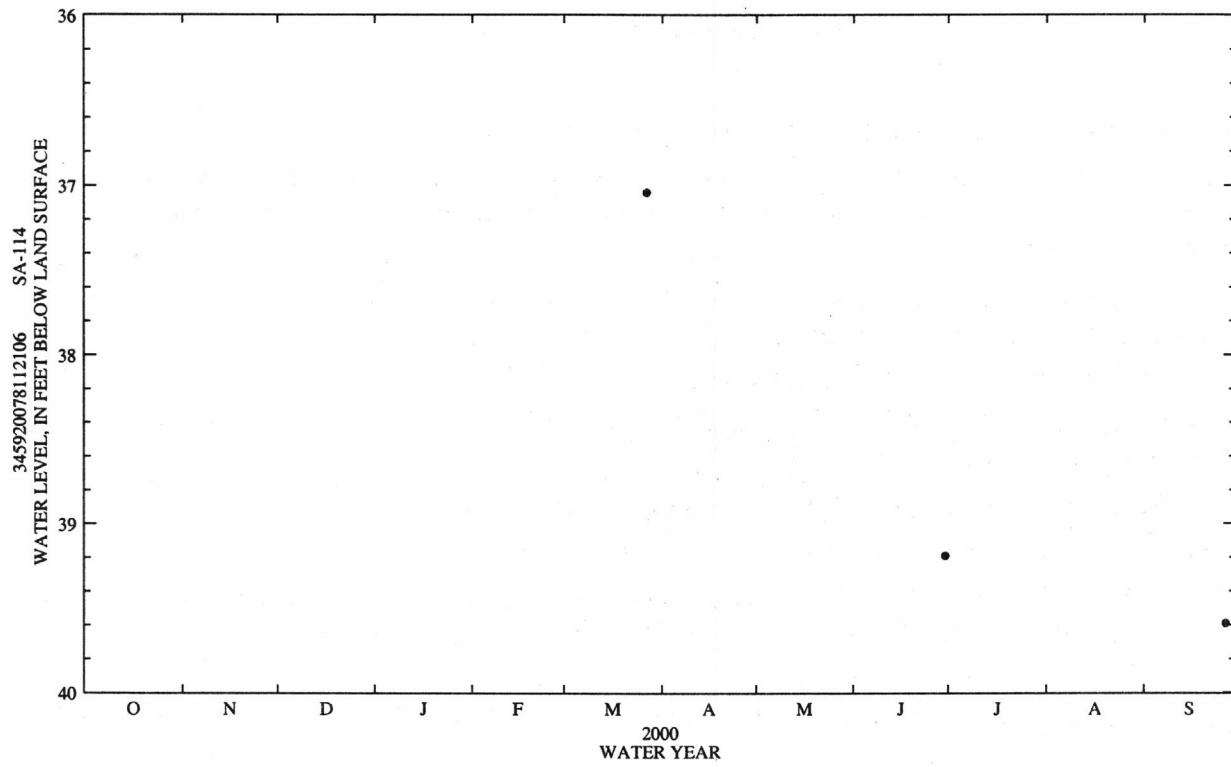
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements August 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.04 ft below land-surface datum, Mar. 27, 2000; lowest water level measured, 39.59 ft below land-surface datum, Sept. 27, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 27	37.04	JUN 30	39.19	SEP 27	39.59





## SCOTLAND COUNTY

345812079313401. Local number, NC-194; County number, SC-080.

LOCATION.--Lat 34°58'17", long 79°31'41", Hydrologic Unit 03040204, in Sandhills Game Management Area, 0.15 mi west of Secondary Road 1328, 3.4 mi east of Marston, 4.8 mi south of Hoffman, and 6.1 mi southwest of Silver Hill. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined sands in the upper Black Creek aquifer.

WELL CHARACTERISTICS.--Drilled observation well, depth 35.6 ft, diameter 4 in., cased to 30.5 ft, screened interval from 30.6 to 35.6 ft. Annular space filled with native clayey sand from 0 to 30 ft below land surface.

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

DATUM.--Land-surface datum is 433 ft above sea level (from topographic map). Measuring point: Top of casing, 2.93 ft above land-surface datum.

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

PERIOD OF RECORD.--September 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 28.28 ft below land-surface datum, May 7-12, 1998; lowest water level recorded, 33.08 ft below land-surface datum, Mar. 24, 1992 and Feb. 27, 1994.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

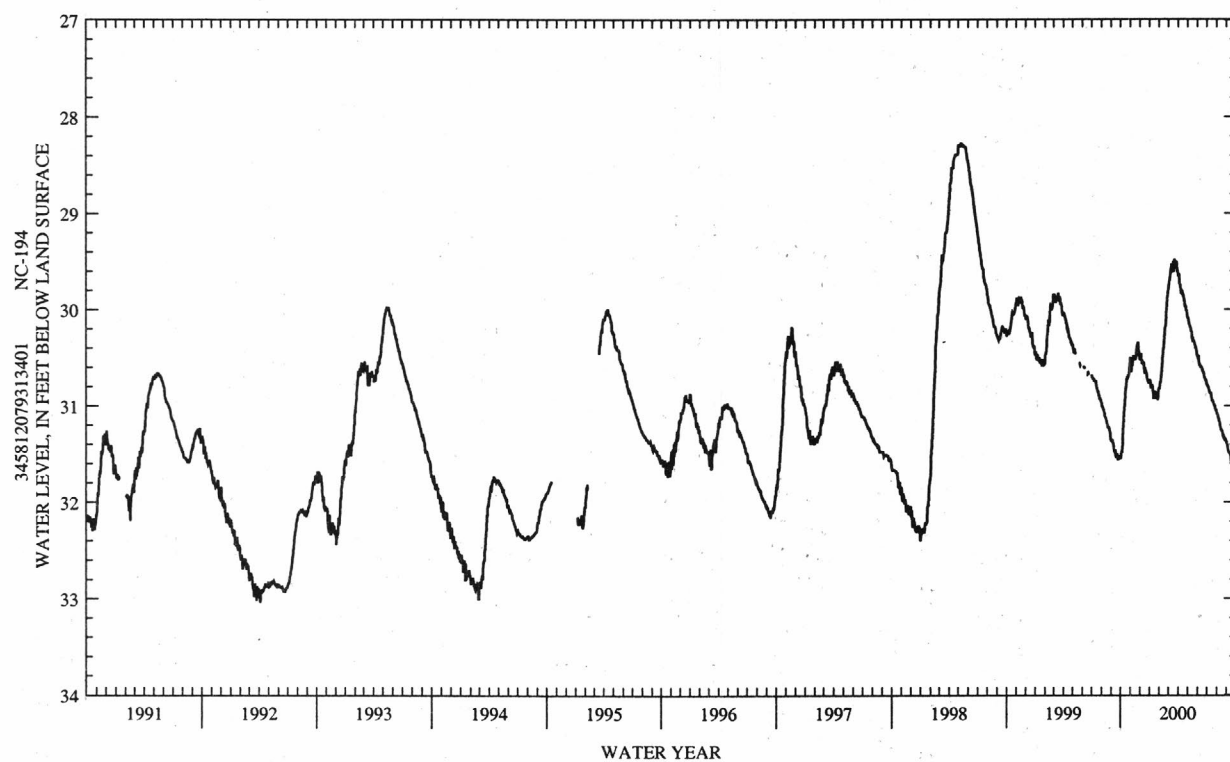
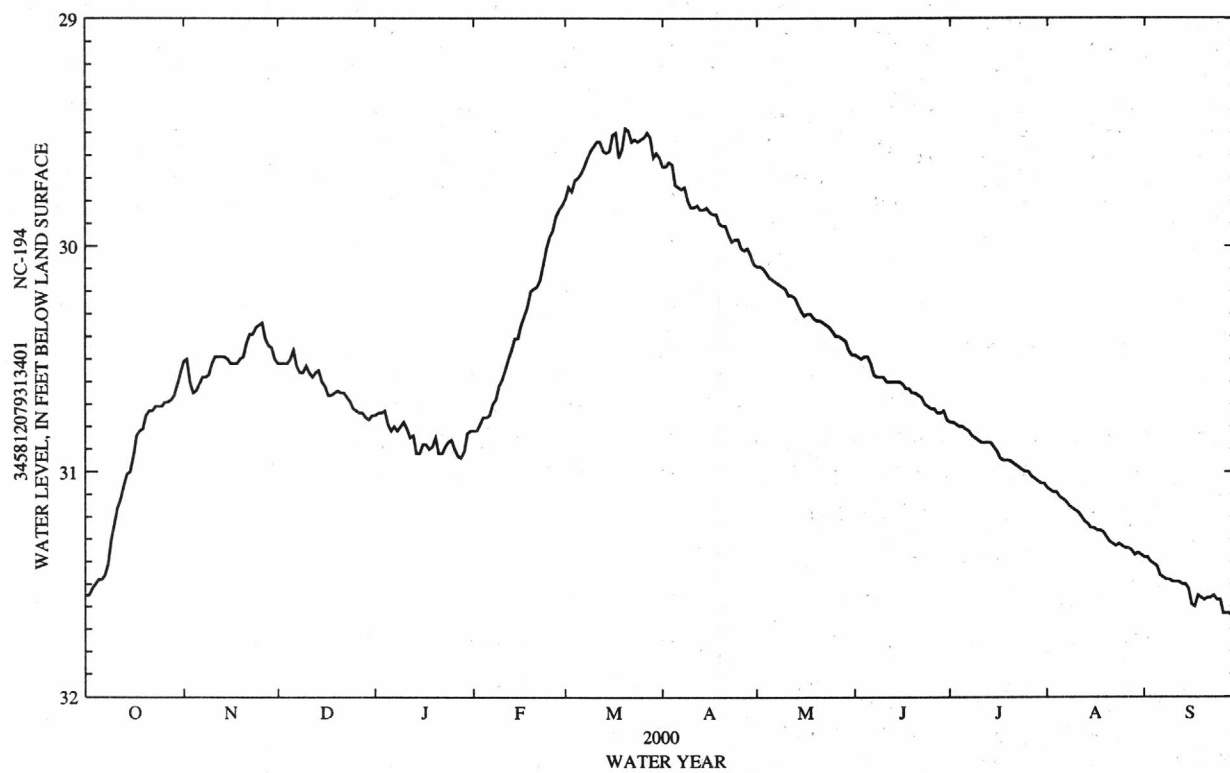
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.55	30.51	30.52	30.75	30.82	29.79	29.65	30.09	30.48	30.78	31.07	31.38
2	31.55	30.50	30.52	30.74	30.82	29.74	29.65	30.09	30.49	30.78	31.08	31.38
3	31.52	30.60	30.52	30.74	30.79	29.76	29.63	30.10	30.50	30.79	31.09	31.40
4	31.50	30.65	30.52	30.73	30.76	29.71	29.64	30.12	30.49	30.80	31.09	31.41
5	31.48	30.64	30.50	30.79	30.76	29.70	29.73	30.14	30.49	30.80	31.11	31.42
6	31.48	30.61	30.46	30.82	30.75	29.68	29.74	30.15	30.52	30.81	31.12	31.46
7	31.46	30.58	30.53	30.80	30.70	29.65	29.75	30.16	30.57	30.82	31.13	31.47
8	31.41	30.58	30.56	30.82	30.68	29.61	29.74	30.17	30.58	30.84	31.15	31.48
9	31.30	30.57	30.56	30.80	30.62	29.58	29.80	30.18	30.58	30.85	31.16	31.48
10	31.23	30.52	30.53	30.78	30.59	29.56	29.83	30.19	30.58	30.86	31.17	31.49
11	31.16	30.49	30.56	30.81	30.55	29.54	29.83	30.22	30.60	30.87	31.18	31.49
12	31.12	30.49	30.58	30.85	30.50	29.54	29.82	30.22	30.60	30.87	31.20	31.49
13	31.06	30.49	30.56	30.84	30.46	29.58	29.84	30.23	30.60	30.87	31.22	31.50
14	31.01	30.49	30.55	30.92	30.41	29.59	29.84	30.26	30.60	30.87	31.23	31.50
15	31.00	30.50	30.60	30.92	30.41	29.58	29.83	30.29	30.60	30.89	31.25	31.52
16	30.93	30.52	30.62	30.88	30.35	29.51	29.85	30.31	30.61	30.91	31.25	31.59
17	30.84	30.52	30.66	30.88	30.31	29.50	29.86	30.30	30.63	30.94	31.26	31.60
18	30.82	30.52	30.66	30.90	30.27	29.61	29.86	30.30	30.63	30.95	31.26	31.55
19	30.81	30.50	30.65	30.89	30.20	29.57	29.90	30.32	30.65	30.95	31.27	31.56
20	30.75	30.49	30.64	30.85	30.19	29.48	29.91	30.33	30.65	30.95	31.29	31.57
21	30.73	30.43	30.65	30.92	30.18	29.49	29.91	30.33	30.66	30.96	31.31	31.56
22	30.73	30.39	30.65	30.92	30.15	29.54	29.95	30.34	30.67	30.97	31.32	31.56
23	30.71	30.39	30.67	30.89	30.08	29.53	29.98	30.35	30.70	30.98	31.33	31.55
24	30.71	30.36	30.69	30.87	30.01	29.54	29.97	30.36	30.71	30.99	31.32	31.57
25	30.71	30.35	30.72	30.86	29.96	29.53	29.97	30.38	30.72	31.00	31.33	31.57
26	30.69	30.34	30.73	30.90	29.93	29.52	30.01	30.40	30.72	31.00	31.34	31.63
27	30.69	30.41	30.74	30.93	29.87	29.50	30.02	30.40	30.74	31.02	31.34	31.63
28	30.68	30.44	30.74	30.94	29.84	29.52	30.01	30.41	30.74	31.03	31.35	31.63
29	30.66	30.45	30.76	30.91	29.82	29.61	30.04	30.42	30.73	31.04	31.37	31.65
30	30.61	30.50	30.77	30.83	---	29.59	30.08	30.46	30.77	31.05	31.36	31.62
31	30.56	---	30.75	30.82	---	29.61	---	30.48	---	31.05	31.37	---

WTR YR 2000

MEAN 30.61

HIGH 29.48

LOW 31.65



## SCOTLAND COUNTY--Continued

345313079220901. County number, SC-106; Wagram well 3.

LOCATION.--Lat 34°53'13", long 79°22'09", 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 sea level (from topographic map). Measuring point: Top of nipple in well sanitary seal, 1.35 ft above land-surface datum.

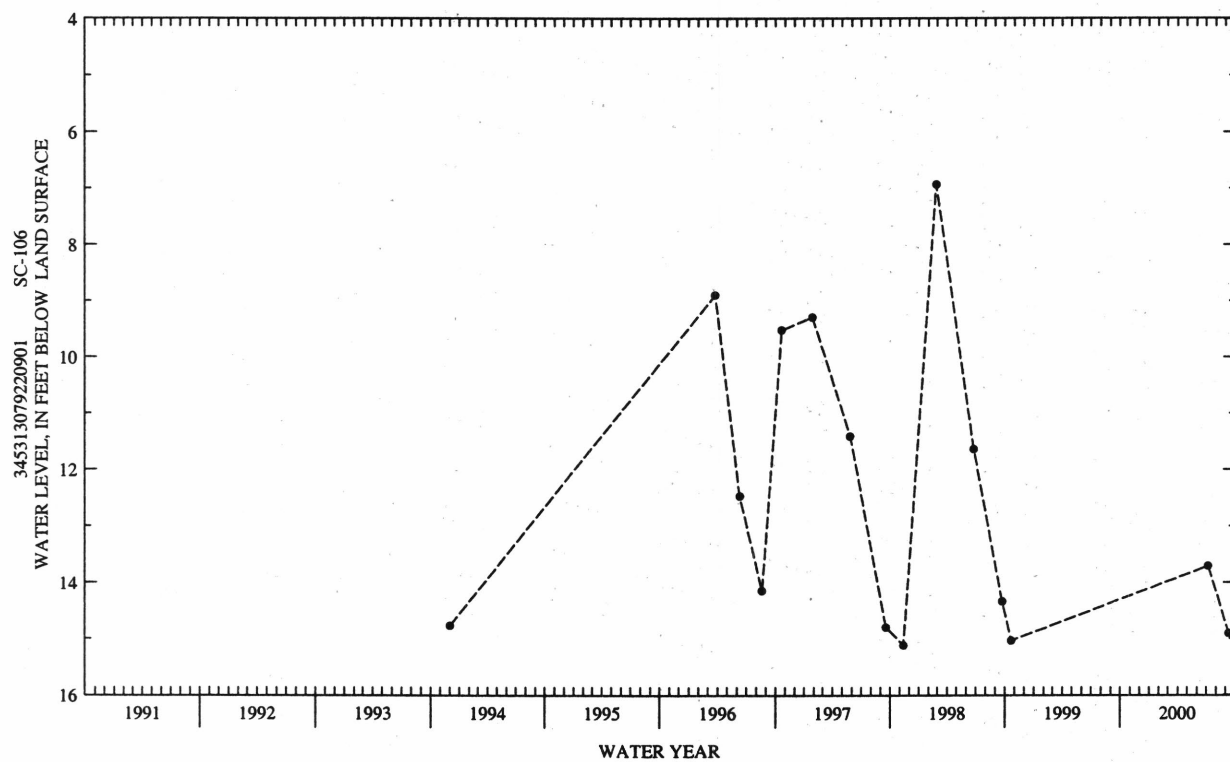
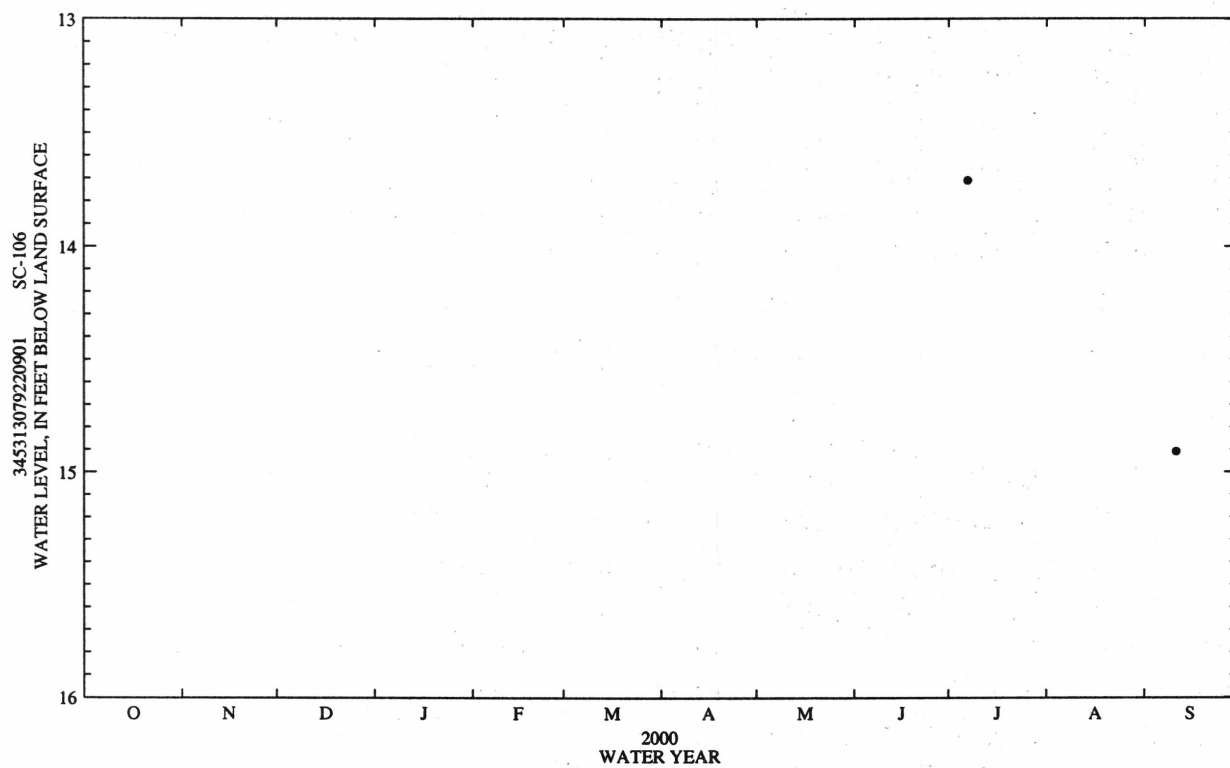
REMARKS.--Well is part of southern Coastal Plain ground-water level monitoring study.

PERIOD OF RECORD.--Miscellaneous water-level measurements 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, 15.12 ft below land-surface datum, Nov. 13, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
JUL 7	13.71	SEP 11	14.91



## 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 site.

DATUM.--Land-surface datum is 1,719.00 ft above sea level (levels by DENR). Measuring point: Top of instrument shelf, 6.90 ft above land-surface datum.

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

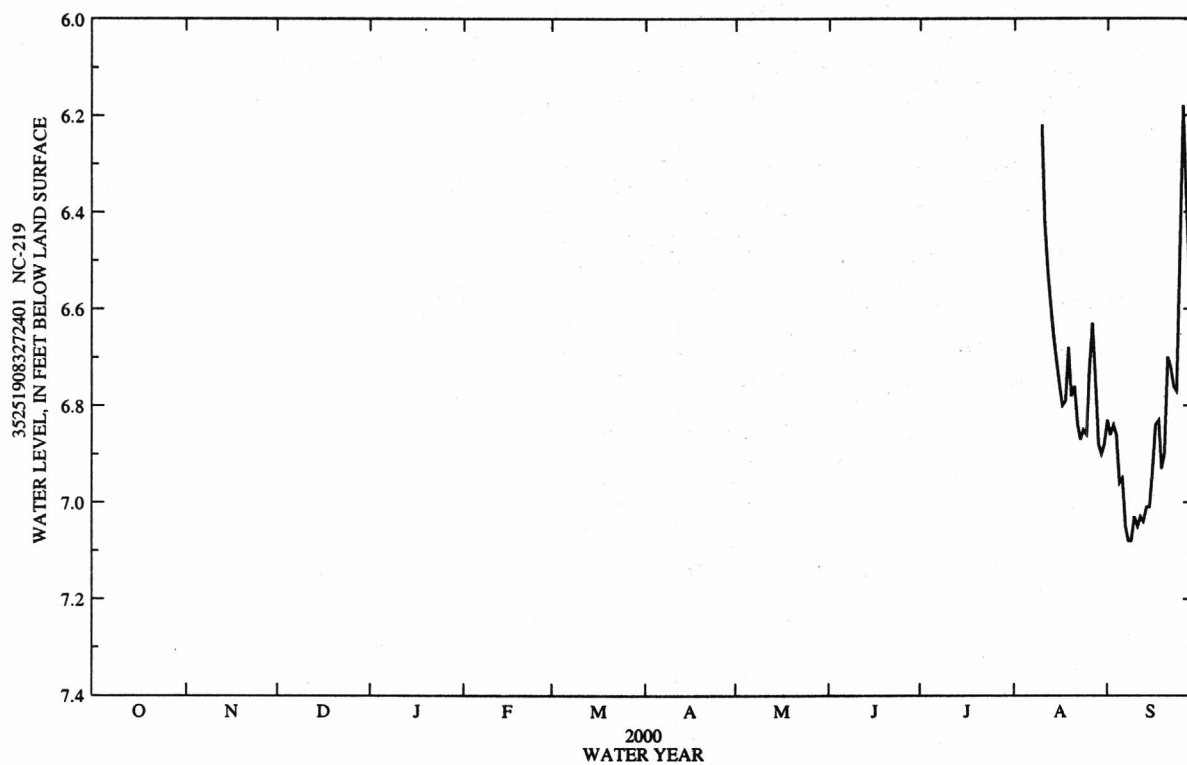
PERIOD OF RECORD.--August 2000 to September 2000. Records from February 1965 to March 1999 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.08 ft below land-surface datum, Sept. 26, 2000; lowest water level recorded, 7.08 ft below land-surface datum, Sept. 8, 9, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD AUGUST 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	6.83
2	---	---	---	---	---	---	---	---	---	---	---	6.86
3	---	---	---	---	---	---	---	---	---	---	---	6.84
4	---	---	---	---	---	---	---	---	---	---	---	6.86
5	---	---	---	---	---	---	---	---	---	---	---	6.96
6	---	---	---	---	---	---	---	---	---	---	---	6.95
7	---	---	---	---	---	---	---	---	---	---	---	7.05
8	---	---	---	---	---	---	---	---	---	---	---	7.08
9	---	---	---	---	---	---	---	---	---	---	---	7.08
10	---	---	---	---	---	---	---	---	---	---	6.22	7.03
11	---	---	---	---	---	---	---	---	---	---	6.42	7.05
12	---	---	---	---	---	---	---	---	---	---	6.52	7.03
13	---	---	---	---	---	---	---	---	---	---	6.59	7.04
14	---	---	---	---	---	---	---	---	---	---	6.66	7.01
15	---	---	---	---	---	---	---	---	---	---	6.71	7.01
16	---	---	---	---	---	---	---	---	---	---	6.76	6.94
17	---	---	---	---	---	---	---	---	---	---	6.80	6.84
18	---	---	---	---	---	---	---	---	---	---	6.79	6.83
19	---	---	---	---	---	---	---	---	---	---	6.68	6.93
20	---	---	---	---	---	---	---	---	---	---	6.78	6.90
21	---	---	---	---	---	---	---	---	---	---	6.76	6.70
22	---	---	---	---	---	---	---	---	---	---	6.84	6.72
23	---	---	---	---	---	---	---	---	---	---	6.87	6.76
24	---	---	---	---	---	---	---	---	---	---	6.85	6.77
25	---	---	---	---	---	---	---	---	---	---	6.86	6.47
26	---	---	---	---	---	---	---	---	---	---	6.72	6.18
27	---	---	---	---	---	---	---	---	---	---	6.63	6.37
28	---	---	---	---	---	---	---	---	---	---	6.75	6.51
29	---	---	---	---	---	---	---	---	---	---	6.88	6.61
30	---	---	---	---	---	---	---	---	---	---	6.90	6.67
31	---	---	---	---	---	---	---	---	---	---	6.88	---
WTR YR 2000	MEAN 6.78		HIGH 6.18		LOW 7.08							



## TRANSYLVANIA COUNTY

351808082374302. Local number NC-144; County number, TR-065.

LOCATION.--Lat 35°18'08", long 82°37'43", Hydrologic Unit 06010105, at Blantyre, 0.25 mi northwest of U.S. Highway 64 on King Road (Secondary Road 1502). Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from gneiss of Paleozoic age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 70 ft, diameter 4 in., cased to 58 ft, casing perforated from 15 to 58 ft, gravel filter pack from 5 to 58 ft, backfilled with gravel and saprolite from 58 to 70 ft.

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

DATUM.--Land-surface datum is 2,147.11 ft above sea level. Measuring point: Top of casing, 1.30 ft above land-surface datum.

REMARKS.--In September 1984, well replaced nearby NC-127. Well is part of terrane-effects network.

PERIOD OF RECORD.--October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 22.20 ft below land-surface datum, Apr. 26, 1993; lowest water level recorded, 37.95 ft below land-surface datum, Dec. 23, 24, 1981.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

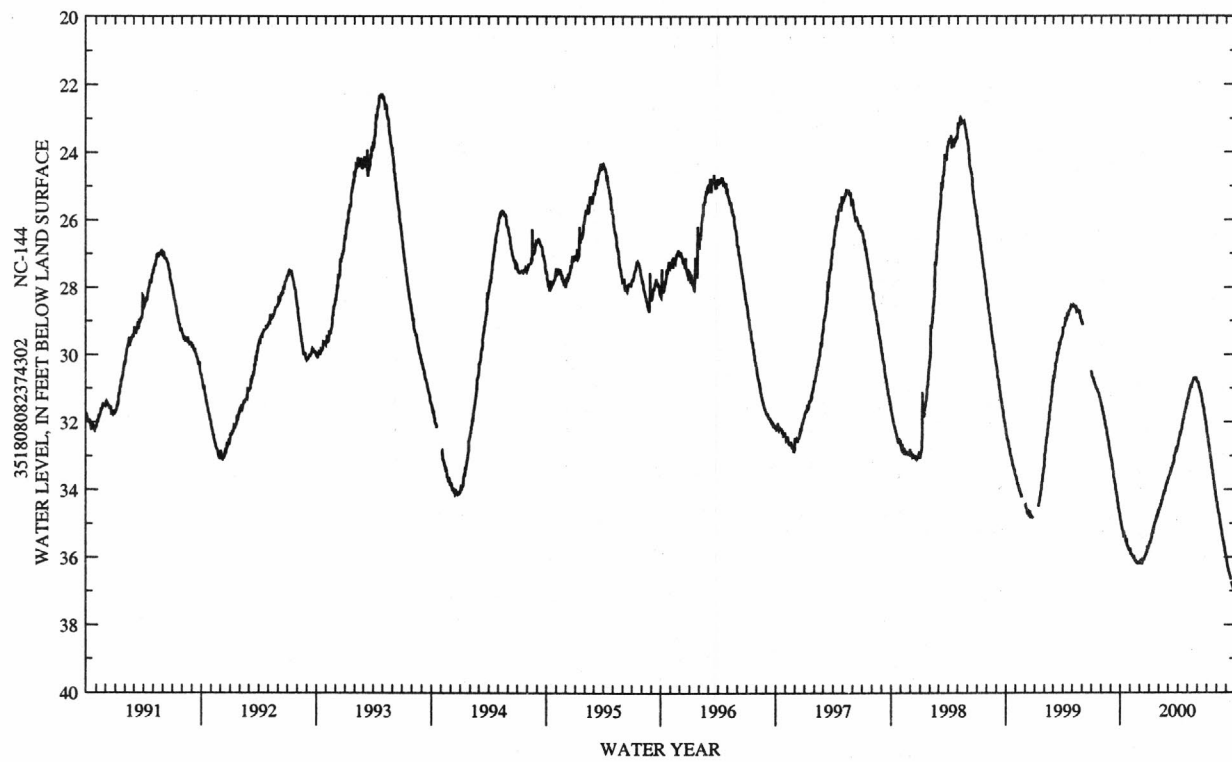
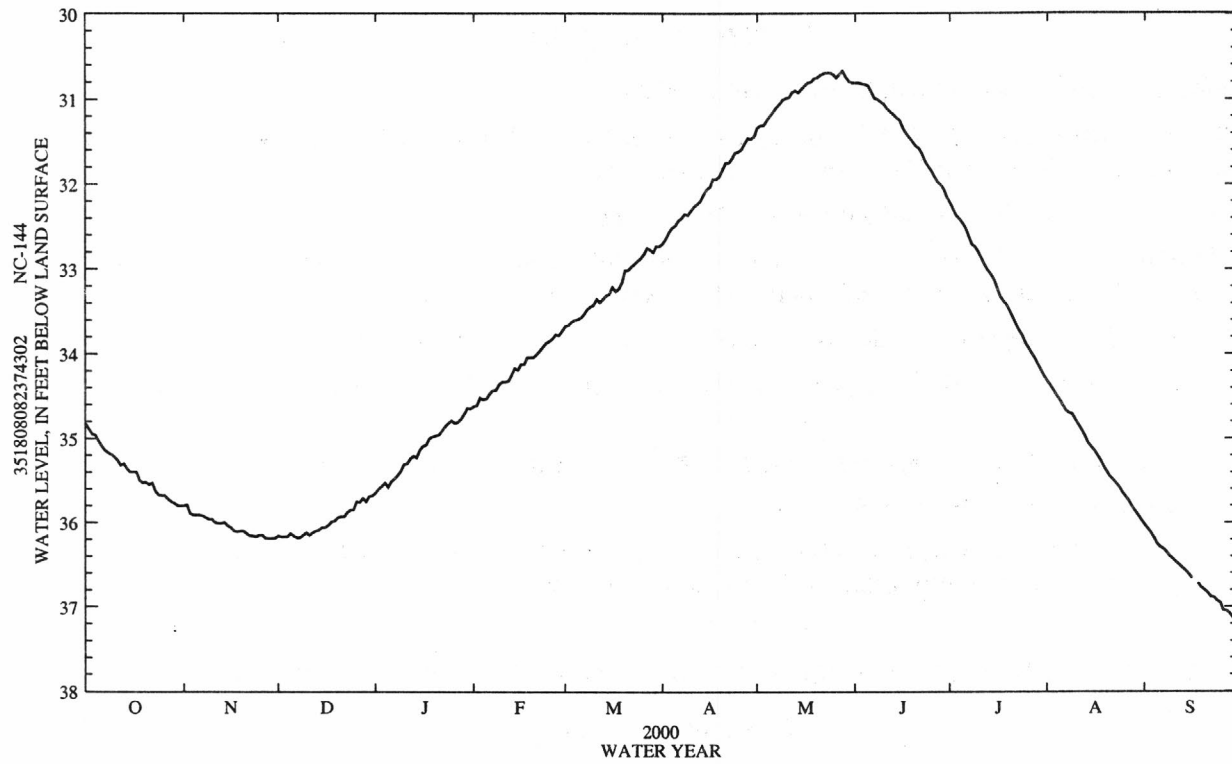
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.83	35.80	36.16	35.65	34.62	33.67	32.70	31.34	30.81	32.22	34.32	36.02
2	34.89	35.79	36.17	35.60	34.61	33.66	32.64	31.31	30.81	32.30	34.37	36.07
3	34.95	35.89	36.17	35.57	34.52	33.62	32.57	31.31	30.82	32.37	34.43	36.12
4	34.96	35.91	36.17	35.53	34.54	33.60	32.51	31.25	30.83	32.41	34.49	36.18
5	35.03	35.91	36.13	35.58	34.53	33.59	32.49	31.20	30.84	32.46	34.54	36.25
6	35.09	35.91	36.16	35.51	34.47	33.57	32.43	31.15	30.91	32.52	34.61	36.29
7	35.14	35.92	36.18	35.48	34.43	33.53	32.40	31.10	30.99	32.62	34.67	36.31
8	35.17	35.94	36.18	35.44	34.43	33.47	32.35	31.06	31.00	32.71	34.70	36.35
9	35.19	35.96	36.15	35.39	34.36	33.44	32.36	31.01	31.03	32.74	34.71	36.40
10	35.22	35.96	36.12	35.31	34.33	33.42	32.31	30.99	31.06	32.80	34.78	36.43
11	35.26	36.00	36.15	35.30	34.33	33.35	32.26	30.98	31.11	32.87	34.84	36.47
12	35.32	36.01	36.12	35.24	34.32	33.39	32.23	30.92	31.15	32.95	34.90	36.50
13	35.30	36.01	36.10	35.21	34.25	33.35	32.20	30.90	31.18	33.01	34.97	36.54
14	35.36	36.00	36.09	35.23	34.17	33.31	32.12	30.92	31.22	33.06	35.05	36.57
15	35.40	36.04	36.06	35.14	34.19	33.29	32.06	30.88	31.25	33.12	35.10	36.61
16	35.40	36.06	36.06	35.09	34.12	33.21	32.03	30.84	31.34	33.22	35.14	36.66
17	35.40	36.10	36.03	35.08	34.12	33.26	31.94	30.81	31.40	33.32	35.20	---
18	35.50	36.11	35.99	35.00	34.04	33.23	31.94	30.80	31.45	33.38	35.26	36.72
19	35.53	36.10	35.98	34.98	34.04	33.15	31.91	30.76	31.50	33.42	35.33	36.77
20	35.52	36.10	35.94	34.97	34.04	33.01	31.83	30.75	31.55	33.49	35.39	36.80
21	35.55	36.13	35.93	34.96	34.00	33.01	31.75	30.72	31.58	33.57	35.45	36.83
22	35.53	36.16	35.93	34.91	33.96	32.97	31.75	30.70	31.64	33.65	35.49	36.88
23	35.63	36.16	35.88	34.86	33.91	32.94	31.70	30.69	31.73	33.72	35.53	36.89
24	35.67	36.17	35.85	34.82	33.87	32.90	31.63	30.69	31.79	33.78	35.58	36.93
25	35.68	36.15	35.85	34.79	33.85	32.87	31.62	30.71	31.84	33.87	35.64	36.95
26	35.68	36.15	35.75	34.82	33.82	32.82	31.59	30.75	31.91	33.93	35.69	37.04
27	35.72	36.19	35.76	34.81	33.77	32.75	31.52	30.71	31.97	33.99	35.74	37.05
28	35.75	36.19	35.71	34.77	33.78	32.77	31.46	30.67	32.01	34.05	35.81	37.08
29	35.77	36.19	35.75	34.71	33.73	32.80	31.47	30.74	32.06	34.12	35.86	37.13
30	35.80	36.19	35.69	34.64	---	32.73	31.44	30.79	32.16	34.19	35.91	37.14
31	35.80	---	35.68	34.65	---	32.73	---	30.81	---	34.26	35.97	---

WTR YR 2000

MEAN 34.10

HIGH 30.67

LOW 37.14





## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## TRANSYLVANIA COUNTY--Continued

351709082434101. Local number, NC-147; County number, TR-066.

LOCATION.--Lat 35°17'09", long 82°43'41", 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.

DATUM.--Land-surface datum is 2,176.70 ft above sea level. Measuring point: Top of casing, 2.24 ft above land-surface datum.

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

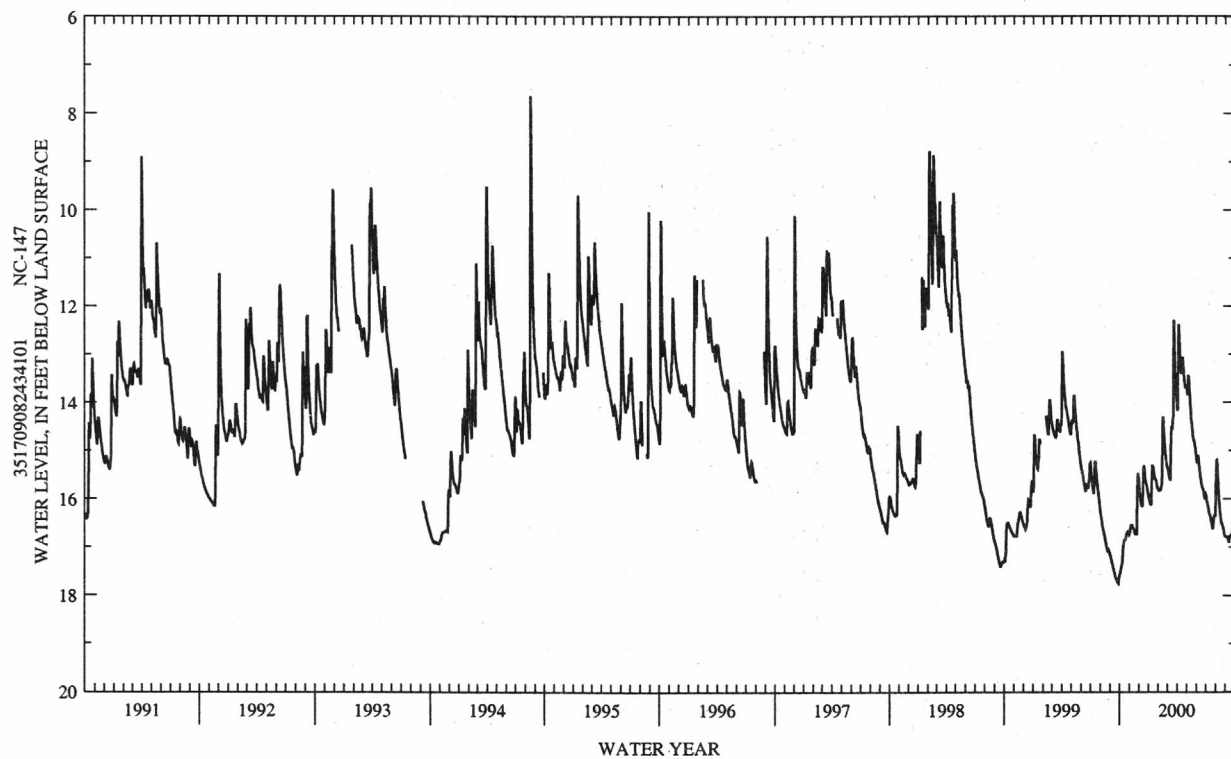
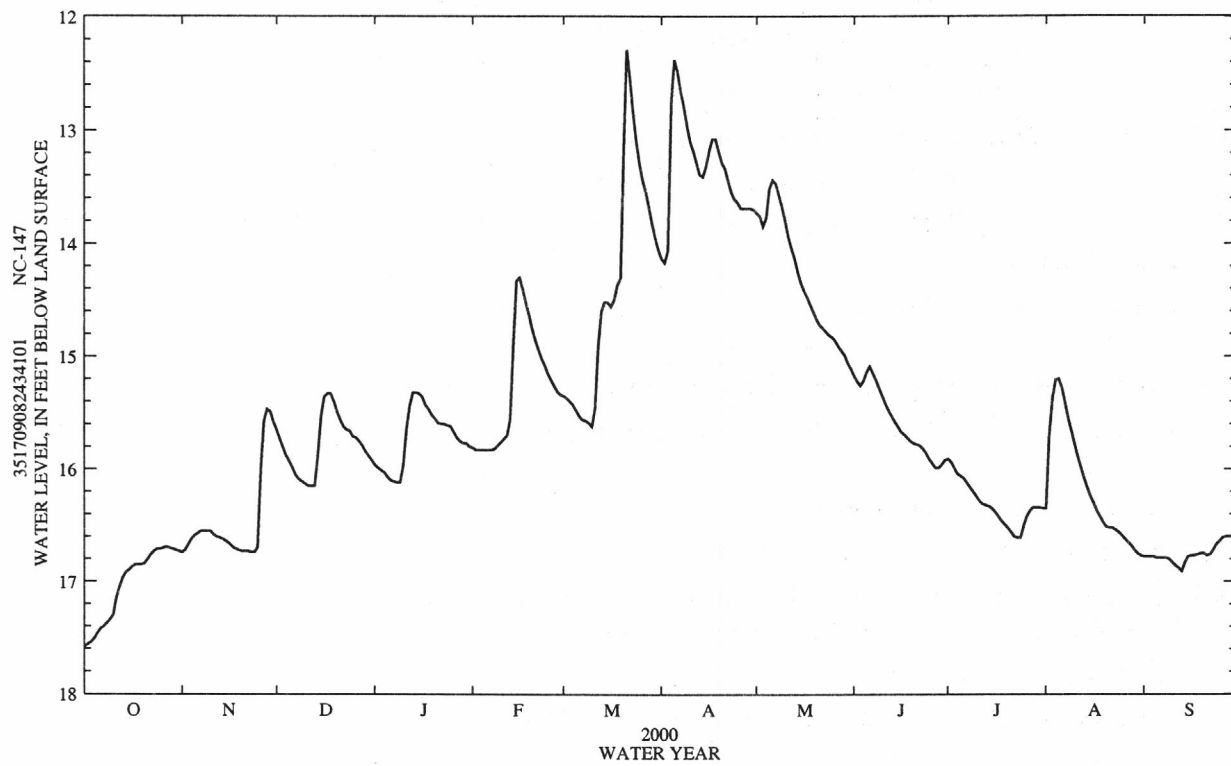
PERIOD OF RECORD.--June 1985 to current year.

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.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.58	16.74	15.65	15.96	15.81	15.35	14.13	13.73	15.17	15.91	16.35	16.78
2	17.56	16.72	15.73	15.99	15.83	15.37	14.17	13.76	15.22	15.94	15.71	16.78
3	17.54	16.67	15.81	16.01	15.83	15.40	14.06	13.85	15.26	15.99	15.37	16.78
4	17.51	16.62	15.88	16.03	15.83	15.43	12.75	13.77	15.22	16.04	15.21	16.78
5	17.46	16.59	15.93	16.07	15.83	15.48	12.38	13.52	15.14	16.06	15.20	16.79
6	17.42	16.57	15.99	16.10	15.83	15.53	12.48	13.44	15.09	16.08	15.28	16.79
7	17.40	16.55	16.05	16.11	15.83	15.56	12.66	13.47	15.15	16.12	15.41	16.79
8	17.37	16.55	16.09	16.12	15.82	15.57	12.79	13.57	15.21	16.16	15.55	16.79
9	17.34	16.55	16.11	16.12	15.79	15.59	12.97	13.68	15.28	16.20	15.66	16.80
10	17.30	16.55	16.13	15.97	15.76	15.62	13.10	13.80	15.35	16.24	15.78	16.83
11	17.15	16.58	16.15	15.64	15.73	15.46	13.19	13.94	15.42	16.28	15.89	16.86
12	17.05	16.60	16.15	15.44	15.70	14.91	13.29	14.04	15.48	16.31	15.99	16.88
13	16.97	16.61	16.15	15.32	15.55	14.60	13.39	14.13	15.53	16.32	16.08	16.91
14	16.92	16.62	15.89	15.32	14.86	14.52	13.41	14.25	15.58	16.33	16.16	16.83
15	16.90	16.64	15.53	15.33	14.33	14.52	13.32	14.35	15.62	16.35	16.24	16.78
16	16.87	16.66	15.36	15.36	14.30	14.56	13.18	14.42	15.67	16.38	16.30	16.77
17	16.85	16.69	15.33	15.43	14.41	14.50	13.08	14.47	15.69	16.42	16.37	16.77
18	16.85	16.71	15.33	15.47	14.53	14.37	13.08	14.54	15.72	16.46	16.42	16.76
19	16.85	16.72	15.40	15.52	14.64	14.31	13.19	14.60	15.75	16.49	16.47	16.75
20	16.84	16.73	15.49	15.55	14.76	13.15	13.29	14.67	15.77	16.52	16.51	16.75
21	16.80	16.73	15.56	15.59	14.86	12.29	13.34	14.72	15.78	16.56	16.52	16.77
22	16.76	16.73	15.62	15.60	14.94	12.56	13.45	14.75	15.79	16.60	16.52	16.76
23	16.73	16.74	15.65	15.60	15.02	12.86	13.55	14.78	15.82	16.61	16.54	16.72
24	16.71	16.74	15.66	15.61	15.08	13.11	13.61	14.81	15.86	16.61	16.56	16.67
25	16.71	16.70	15.71	15.62	15.15	13.30	13.64	14.83	15.91	16.50	16.59	16.64
26	16.70	16.01	15.72	15.67	15.21	13.45	13.69	14.86	15.95	16.42	16.62	16.61
27	16.69	15.58	15.75	15.72	15.26	13.55	13.69	14.91	15.99	16.37	16.65	16.60
28	16.70	15.47	15.79	15.75	15.31	13.68	13.69	14.95	15.99	16.34	16.68	16.60
29	16.71	15.49	15.84	15.77	15.34	13.83	13.69	14.99	15.96	16.34	16.72	16.60
30	16.72	15.58	15.88	15.77	---	13.95	13.70	15.06	15.92	16.34	16.75	16.62
31	16.73	---	15.92	15.80	---	14.05	---	15.11	---	16.35	16.77	---
WTR YR 2000	MEAN 15.60		HIGH 12.29		LOW 17.58							



## WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

## WASHINGTON COUNTY

354351076260502. Local number, NC-157; DENR Lake Phelps Research Station well L13i2; County number, WS-099.

LOCATION.--Lat 35°43'51", long 76°26'05", Hydrologic Unit 03010205, on south shore of Lake Phelps, south of Secondary Road 1126 on Secondary Road 1183. Owner: DENR (North Carolina Department of Environment and Natural Resources).

AQUIFER.--Yorktown aquifer of Pliocene and Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, depth 120 ft, diameter 4 in., screened interval from 110 to 120 ft; measured depth 120.2 ft, October 1986.

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

DATUM.--Land-surface datum is 16.35 ft above sea level (levels by DENR). Measuring point: Top of instrument shelf, 2.84 ft above land-surface datum; revised from 3.20 ft above land-surface datum, October 1987.

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

PERIOD OF RECORD.--October 1977 to current year. Continuous record from November 1986 to November 1990 and February 2000 to current year. Miscellaneous water-level measurements October 1980 to February 2000. Records from October 1977 to July 1986 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.89 ft below land-surface datum, May 10, 1993; lowest water level measured, 9.35 ft below land-surface datum, Feb. 24, 1981.

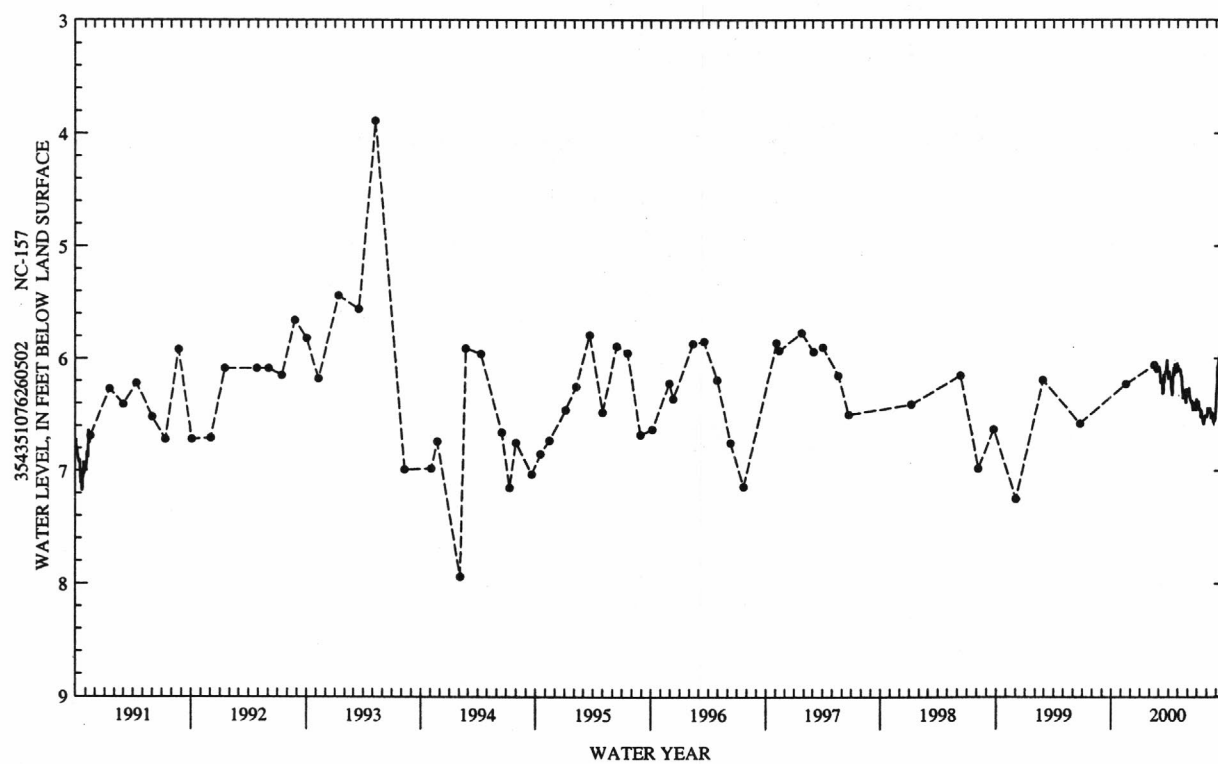
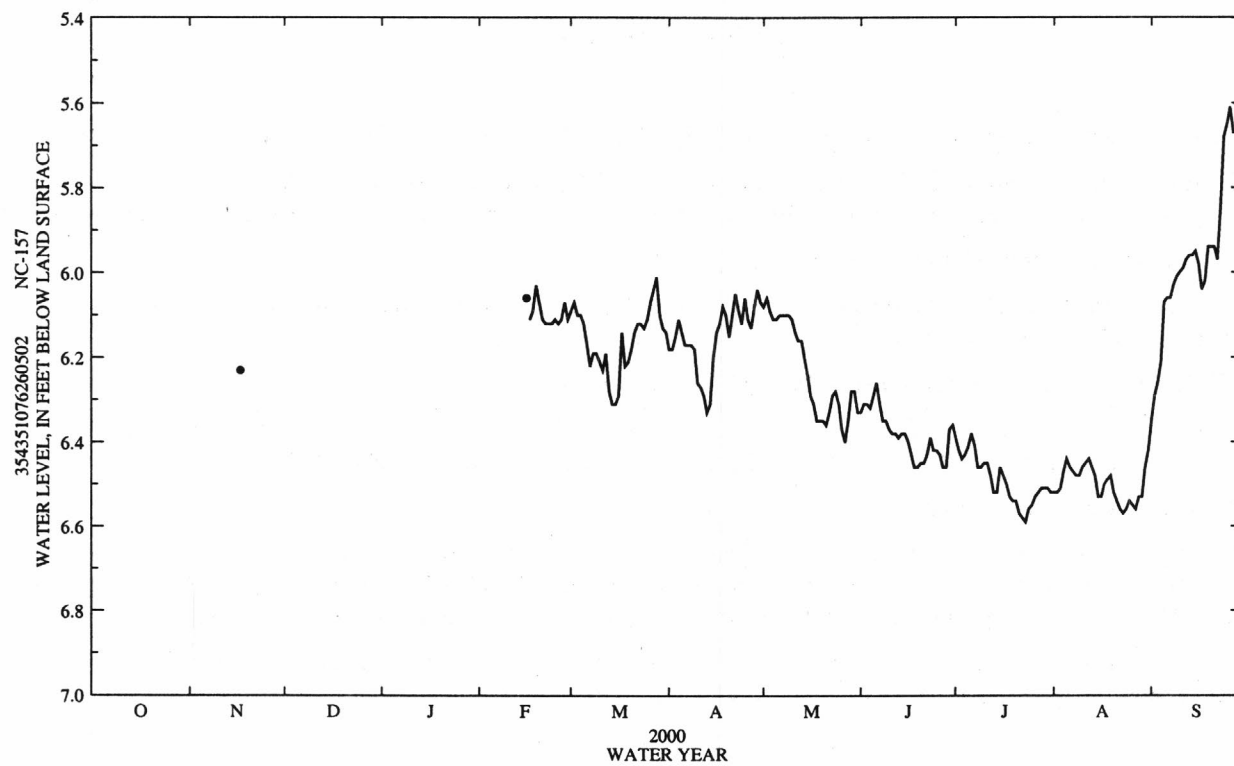
## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 17	6.23	FEB 16	6.06

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD FEBRUARY 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	6.12	6.14	6.11	6.29	6.41	6.44	6.07
10	---	---	---	---	---	6.21	6.26	6.11	6.37	6.45	6.46	6.00
15	---	---	---	---	---	6.31	6.20	6.24	6.38	6.46	6.53	5.95
20	---	---	---	---	6.07	6.18	6.15	6.35	6.45	6.54	6.52	5.94
25	---	---	---	---	6.11	6.11	6.06	6.31	6.42	6.55	6.54	5.65
EOM---	---	---	---	6.11	6.14	6.07	6.33	6.36	6.52	6.42	5.69	
WTR YR 2000	MEAN 6.26			HIGH 5.61 SEP 26			LOW 6.59 JUL 23					



## WASHINGTON COUNTY--Continued

354418076463601. Local number, NC-158; County number, WS-100.

LOCATION.--Lat 35°44'18", long 76°46'36", Hydrologic Unit 03020104, 2.4 mi west of State Highway 32 on Secondary Road 1101. Owner: U.S. Geological Survey.

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

WELL CHARACTERISTICS.--Drilled observation well, depth 15 ft, diameter 4 in., screened interval from 10 to 15 ft.

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

DATUM.--Land-surface datum is 35 ft above sea level (from topographic map). Measuring point: Top of instrument shelf, 2.49 ft above land-surface datum.

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

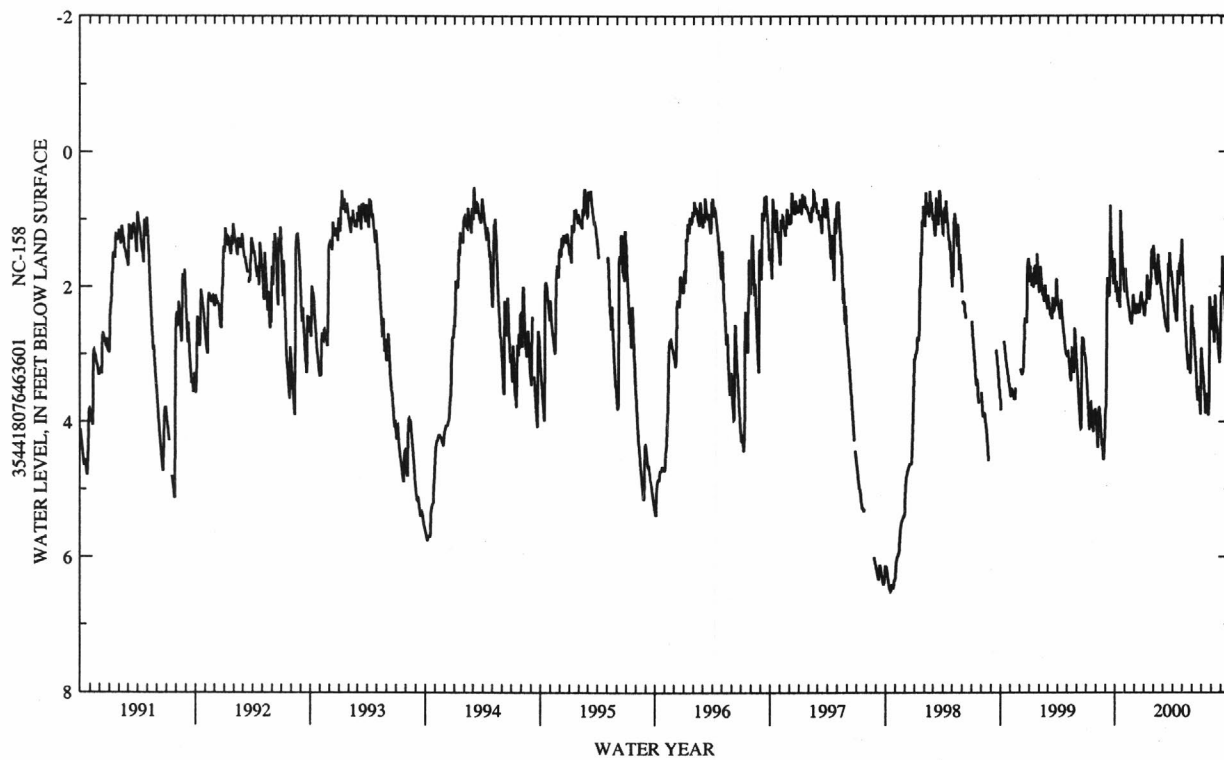
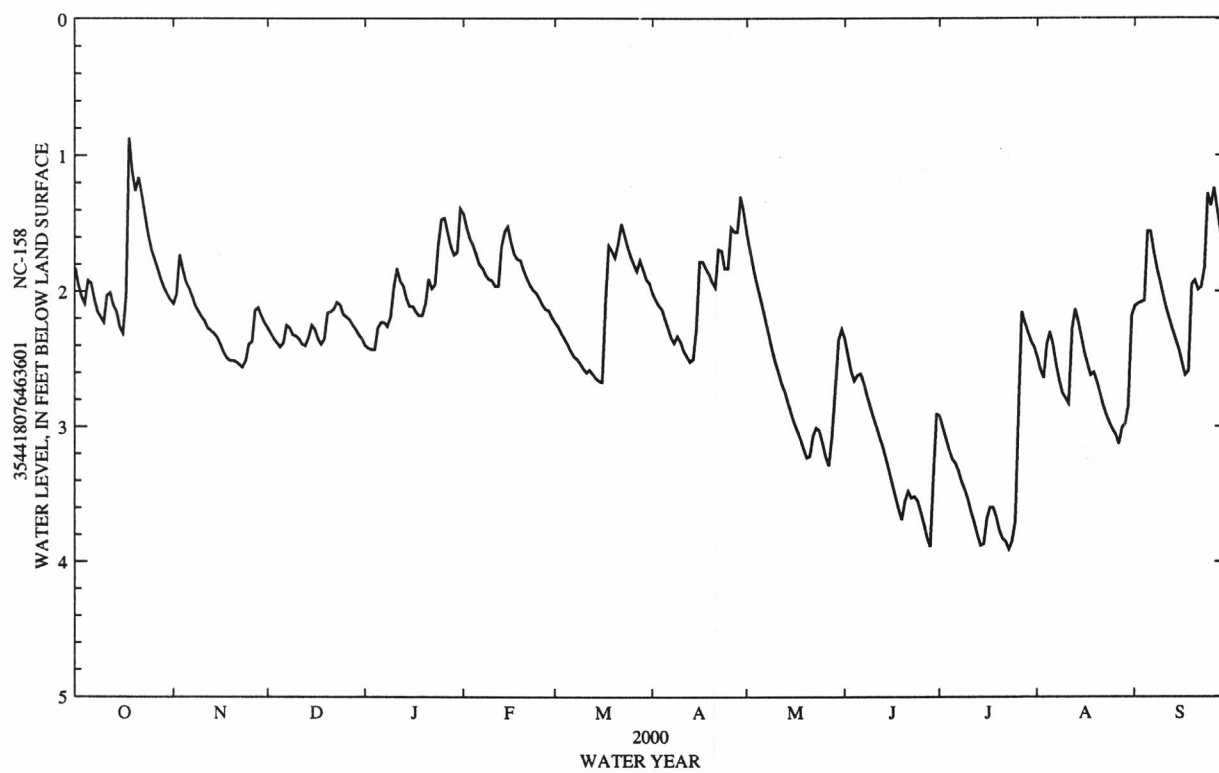
PERIOD OF RECORD.--December 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.50 ft below land-surface datum, Mar. 2, 3, 1994; lowest water level recorded, 6.51 ft below land-surface datum, Sept. 17, 18, 1998.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.83	2.09	2.27	2.40	1.43	2.23	2.01	1.57	2.35	2.92	2.49	2.11
2	1.95	2.02	2.31	2.42	1.53	2.26	2.06	1.70	2.47	3.01	2.58	2.09
3	2.04	1.73	2.35	2.43	1.61	2.31	2.10	1.82	2.59	3.09	2.64	2.08
4	2.09	1.84	2.38	2.43	1.66	2.35	2.13	1.93	2.66	3.17	2.39	2.07
5	1.92	1.93	2.41	2.27	1.73	2.39	2.20	2.02	2.62	3.24	2.30	1.56
6	1.94	1.98	2.38	2.23	1.80	2.44	2.27	2.12	2.61	3.27	2.40	1.56
7	2.06	2.04	2.25	2.23	1.83	2.48	2.34	2.22	2.68	3.33	2.54	1.71
8	2.15	2.11	2.27	2.26	1.88	2.50	2.38	2.32	2.77	3.41	2.66	1.83
9	2.19	2.15	2.32	2.19	1.91	2.53	2.33	2.43	2.85	3.47	2.75	1.93
10	2.23	2.19	2.33	1.98	1.92	2.57	2.37	2.52	2.93	3.54	2.79	2.03
11	2.03	2.22	2.35	1.83	1.96	2.60	2.44	2.60	3.00	3.63	2.83	2.13
12	2.01	2.27	2.39	1.92	1.96	2.58	2.48	2.68	3.08	3.71	2.28	2.21
13	2.10	2.29	2.40	1.96	1.67	2.61	2.52	2.74	3.15	3.80	2.13	2.29
14	2.15	2.31	2.34	2.05	1.56	2.64	2.50	2.82	3.24	3.88	2.22	2.36
15	2.26	2.34	2.25	2.11	1.52	2.66	2.28	2.90	3.33	3.87	2.34	2.43
16	2.31	2.39	2.28	2.11	1.63	2.67	1.78	2.97	3.43	3.68	2.45	2.53
17	2.03	2.45	2.35	2.15	1.72	2.07	1.78	3.03	3.52	3.60	2.54	2.62
18	.87	2.49	2.39	2.18	1.76	1.66	1.83	3.09	3.61	3.60	2.62	2.59
19	1.12	2.51	2.35	2.18	1.77	1.70	1.87	3.16	3.69	3.67	2.60	1.95
20	1.26	2.51	2.16	2.09	1.84	1.75	1.93	3.23	3.55	3.77	2.67	1.92
21	1.16	2.52	2.15	1.91	1.90	1.65	1.97	3.22	3.48	3.83	2.75	1.99
22	1.29	2.54	2.13	1.98	1.95	1.50	1.69	3.07	3.53	3.85	2.84	1.97
23	1.44	2.56	2.08	1.95	1.99	1.58	1.70	3.01	3.52	3.91	2.91	1.83
24	1.58	2.51	2.10	1.66	2.01	1.67	1.83	3.03	3.55	3.85	2.97	1.28
25	1.69	2.39	2.17	1.47	2.05	1.74	1.83	3.12	3.63	3.70	3.02	1.37
26	1.76	2.37	2.19	1.46	2.10	1.80	1.53	3.22	3.72	2.92	3.06	1.24
27	1.83	2.14	2.21	1.57	2.13	1.85	1.56	3.29	3.82	2.15	3.13	1.40
28	1.91	2.12	2.25	1.67	2.14	1.77	1.56	3.07	3.89	2.23	3.01	1.55
29	1.97	2.18	2.28	1.73	2.19	1.84	1.30	2.72	3.38	2.30	2.98	1.68
30	2.02	2.23	2.32	1.71	---	1.91	1.42	2.36	2.91	2.37	2.85	1.77
31	2.06	---	2.35	1.39	---	1.94	---	2.28	---	2.41	2.18	---
WTR YR 2000	MEAN 2.34		HIGH .87		LOW 3.91							



## WAYNE COUNTY

351849078163901. Local number, NC-148; County number, WA-154.

LOCATION.--Lat 35°18'49", long 78°16'39", 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 sea level (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, Oct. 8, 1996, Sept. 24, 25, 1997.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

## DAILY MEAN VALUES

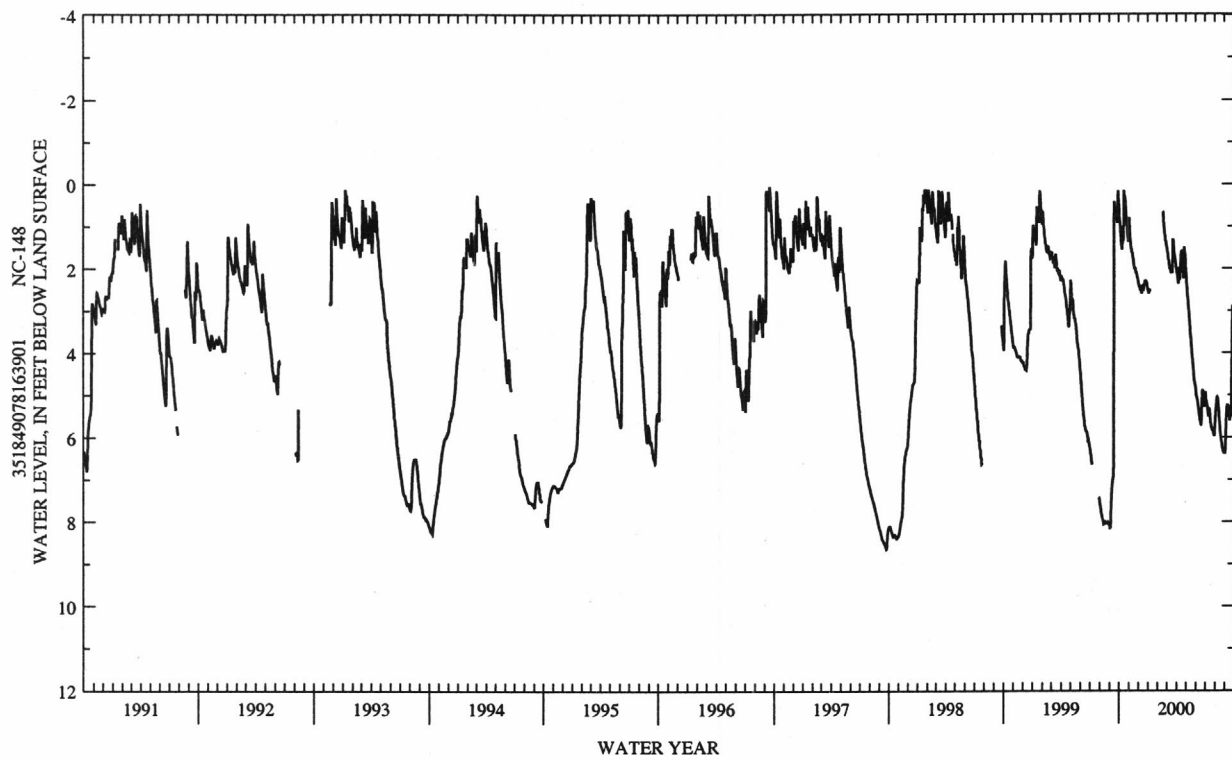
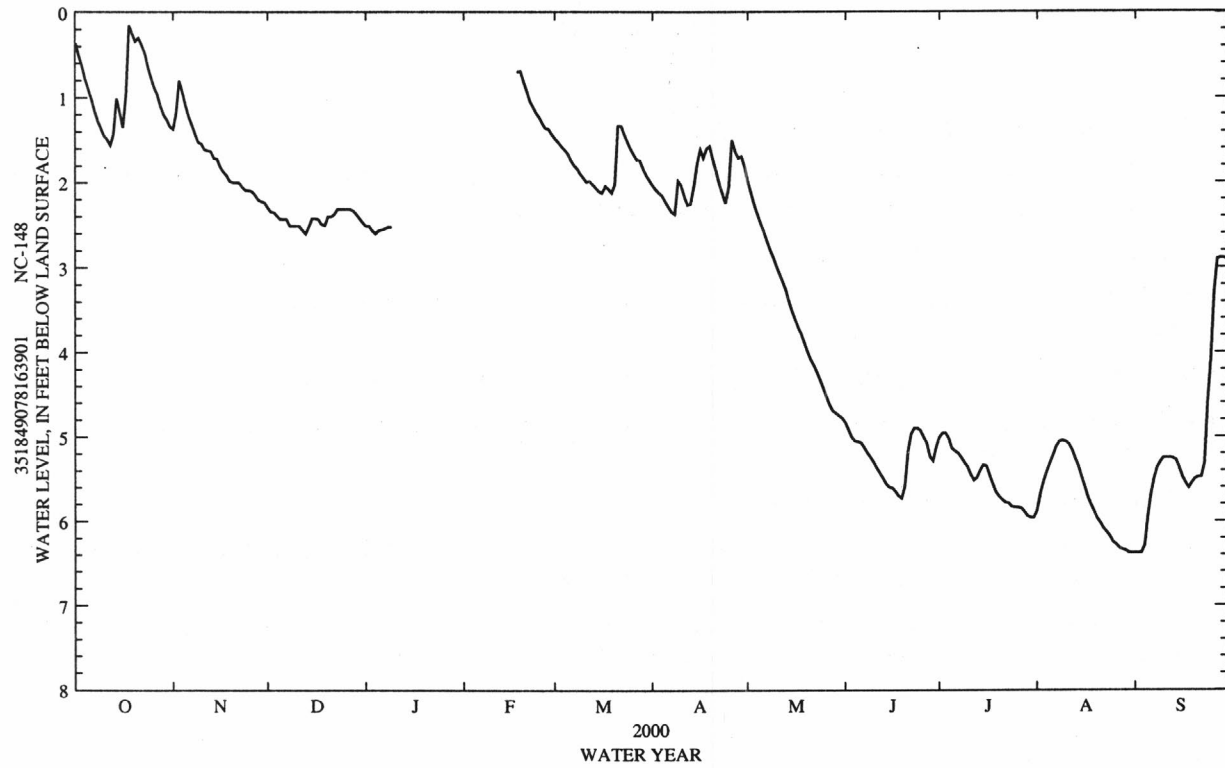
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	1.37	2.29	2.51	---	1.48	2.03	1.98	4.83	5.01	5.87	6.38
2	.50	1.18	2.34	2.51	---	1.52	2.08	2.12	4.91	4.96	5.68	6.38
3	.63	.80	2.35	2.56	---	1.57	2.12	2.25	5.00	4.96	5.53	6.38
4	.78	.94	2.39	2.60	---	1.61	2.15	2.37	5.05	5.02	5.42	6.29
5	.90	1.09	2.43	2.56	---	1.65	2.22	2.47	5.06	5.14	5.32	5.95
6	1.01	1.23	2.43	2.55	---	1.73	2.28	2.57	5.07	5.17	5.22	5.69
7	1.16	1.32	2.43	2.54	---	1.79	2.34	2.68	5.13	5.20	5.12	5.50
8	1.27	1.43	2.51	2.52	---	1.83	2.37	2.78	5.19	5.25	5.06	5.37
9	1.36	1.52	2.51	2.52	---	1.89	1.98	2.87	5.24	5.31	5.05	5.30
10	1.45	1.54	2.51	---	---	1.94	2.03	2.97	5.30	5.36	5.06	5.25
11	1.49	1.61	2.51	---	---	1.99	2.16	3.07	5.37	5.45	5.09	5.25
12	1.56	1.62	2.56	---	---	1.98	2.26	3.16	5.43	5.52	5.16	5.25
13	1.43	1.63	2.60	---	---	2.02	2.25	3.26	5.49	5.49	5.26	5.26
14	1.01	1.71	2.52	---	---	2.06	2.04	3.39	5.56	5.40	5.35	5.28
15	1.17	1.72	2.42	---	---	2.10	1.78	3.51	5.60	5.34	5.48	5.37
16	1.35	1.81	2.42	---	---	2.12	1.61	3.61	5.61	5.35	5.59	5.48
17	.96	1.87	2.43	---	---	2.04	1.71	3.70	5.65	5.46	5.72	5.55
18	.15	1.91	2.49	---	.70	2.07	1.60	3.78	5.70	5.57	5.81	5.61
19	.25	1.98	2.50	---	.69	2.12	1.57	3.88	5.73	5.66	5.89	5.55
20	.34	2.00	2.40	---	.81	2.02	1.73	3.99	5.59	5.71	5.97	5.50
21	.30	2.00	2.40	---	.92	1.33	1.86	4.08	5.17	5.75	6.02	5.48
22	.38	2.00	2.37	---	1.04	1.33	2.01	4.15	4.97	5.78	6.09	5.48
23	.48	2.05	2.31	---	1.11	1.43	2.13	4.23	4.90	5.79	6.13	5.32
24	.64	2.09	2.31	---	1.18	1.52	2.24	4.32	4.90	5.83	6.18	4.61
25	.77	2.09	2.31	---	1.23	1.60	2.05	4.42	4.93	5.84	6.25	4.07
26	.88	2.10	2.31	---	1.30	1.67	1.50	4.52	5.01	5.84	6.28	3.29
27	.96	2.14	2.31	---	1.36	1.73	1.63	4.62	5.08	5.85	6.32	2.90
28	1.10	2.20	2.33	---	1.37	1.74	1.71	4.69	5.24	5.89	6.34	2.89
29	1.20	2.22	2.37	---	1.43	1.84	1.69	4.72	5.29	5.94	6.35	2.89
30	1.26	2.23	2.42	---	---	1.91	1.81	4.75	5.12	5.96	6.38	2.91
31	1.34	---	2.47	---	---	1.97	---	4.78	---	5.96	6.38	---

WTR YR 2000

MEAN 3.28

HIGH .15

LOW 6.38





## YADKIN COUNTY

361307080293101. Local number NC-221; DENR East Bend Research Station well F61f3; County number, YD-200.

LOCATION.--Lat 36°13'07", long 80°29'31", 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.

DATUM.--Land-surface datum is 1,009.00 ft above sea level (levels by DENR). Measuring point: Top of instrument shelf, 0.56 ft above land-surface datum.

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

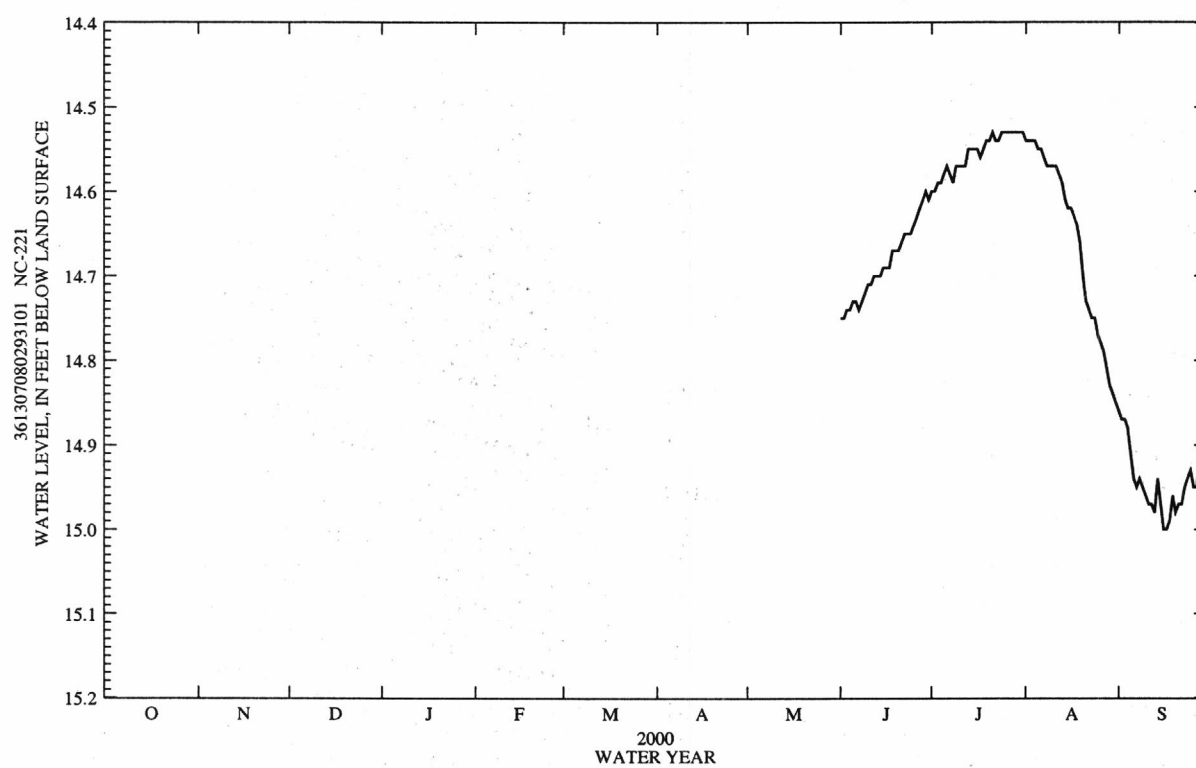
PERIOD OF RECORD.--June 2000 to September 2000. Records from June 1972 to May 2000 are unpublished and available in the files of the Groundwater Section, DENR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.51 ft below land-surface datum, July 28-30, 2000; lowest water level recorded, 15.01 ft below land-surface datum, Sept. 16-18, 2000.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, FOR PERIOD JUNE 2000 TO SEPTEMBER 2000

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	14.75	14.60	14.54	14.86
2	---	---	---	---	---	---	---	---	14.75	14.60	14.54	14.87
3	---	---	---	---	---	---	---	---	14.74	14.59	14.54	14.87
4	---	---	---	---	---	---	---	---	14.74	14.59	14.54	14.88
5	---	---	---	---	---	---	---	---	14.73	14.58	14.55	14.91
6	---	---	---	---	---	---	---	---	14.73	14.57	14.55	14.94
7	---	---	---	---	---	---	---	---	14.74	14.58	14.56	14.95
8	---	---	---	---	---	---	---	---	14.73	14.59	14.57	14.94
9	---	---	---	---	---	---	---	---	14.72	14.57	14.57	14.95
10	---	---	---	---	---	---	---	---	14.71	14.57	14.57	14.96
11	---	---	---	---	---	---	---	---	14.71	14.57	14.57	14.97
12	---	---	---	---	---	---	---	---	14.70	14.57	14.58	14.97
13	---	---	---	---	---	---	---	---	14.70	14.55	14.59	14.98
14	---	---	---	---	---	---	---	---	14.70	14.55	14.61	14.94
15	---	---	---	---	---	---	---	---	14.69	14.55	14.62	14.97
16	---	---	---	---	---	---	---	---	14.69	14.55	14.62	15.00
17	---	---	---	---	---	---	---	---	14.69	14.56	14.63	15.00
18	---	---	---	---	---	---	---	---	14.67	14.55	14.64	14.99
19	---	---	---	---	---	---	---	---	14.67	14.54	14.66	14.96
20	---	---	---	---	---	---	---	---	14.67	14.54	14.70	14.98
21	---	---	---	---	---	---	---	---	14.66	14.53	14.73	14.97
22	---	---	---	---	---	---	---	---	14.65	14.54	14.74	14.97
23	---	---	---	---	---	---	---	---	14.65	14.54	14.75	14.95
24	---	---	---	---	---	---	---	---	14.65	14.53	14.75	14.94
25	---	---	---	---	---	---	---	---	14.64	14.53	14.77	14.93
26	---	---	---	---	---	---	---	---	14.63	14.53	14.78	14.95
27	---	---	---	---	---	---	---	---	14.62	14.53	14.79	14.95
28	---	---	---	---	---	---	---	---	14.61	14.53	14.81	14.92
29	---	---	---	---	---	---	---	---	14.60	14.53	14.83	14.92
30	---	---	---	---	---	---	---	---	14.61	14.53	14.84	14.90
31	---	---	---	---	---	---	---	---	---	14.53	14.85	---
WTR YR 2000	MEAN 14.71		HIGH 14.53		LOW 15.00							



## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY SAMPLING SITES

Ground-water-quality data presented in these tables were collected from May 2000 to September 2000 and will be used to determine fate and transport of nitrogen in a Coastal Plain stream-aquifer system. The data will be used to develop a model of nitrogen movement through a small Coastal Plain watershed. This is a cooperative project between the U. S. Geological Survey, the U.S. Environmental Protection Agency National Exposure Research Laboratory, and the North Carolina Department of Environment and Natural Resources. Locations for sampling sites are shown in figure 10. Note: Land-surface datums published in WDR NC-99-2 have been revised.

## WATER QUALITY DATA, MAY 2000 TO SEPTEMBER 2000

LOCAL IDENT- IFIER	STATION	NUMBER	DATE	TIME	GEO- LOGIC UNIT	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
GR-088	353103077333402		06-13-00	1600	110QPLC	--	--	.6	5.4
			08-25-00	1400	110QPLC	760	7	.6	5.3
GR-087	353103077333404		06-29-00	1215	110QPLC	761	38	3.0	4.3
GR-147	353103077333406		06-13-00	1420	122YRKN	--	--	.1	7.1
			09-01-00	1140	122YRKN	762	5	.5	7.2
GR-094	353111077334404		06-07-00	1310	110QPLC	--	--	.2	4.7
			08-17-00	1125	110QPLC	763	13	1.2	4.6
GR-092	353122077334903		06-07-00	1500	110QPLC	--	--	.7	4.6
			08-31-00	1655	110QPLC	766	73	6.4	5.2
GR-091	353122077334904		06-07-00	1600	110QPLC	--	--	2.5	3.8
			08-31-00	1535	110QPLC	766	55	4.9	4.2
GR-109	353127077333704		08-17-00	1250	110QPLC	763	19	1.7	5.9
GR-110	353135077332701		05-31-00	1630	122YRKN	--	--	.2	7.5
GR-113	353135077332704		05-30-00	1415	110QPLC	--	--	1.6	5.3
			08-25-00	1245	110QPLC	763	--	--	5.3
GR-097	353142077332702		09-01-00	1400	110QPLC	762	90	8.5	4.3
GR-098	353142077332703		08-17-00	0945	110QPLC	763	15	1.4	4.7
GR-100	353148077332101		08-23-00	1400	122YRKN	766	4	.4	6.3
GR-103	353148077332102		05-31-00	1330	110QPLC	--	--	4.0	4.6
			08-16-00	1250	110QPLC	761	42	3.7	4.6
GR-102	353148077332103		05-31-00	1405	110QPLC	--	--	2.6	5.3
			08-16-00	1425	110QPLC	761	47	3.9	5.0
GR-151	353153077333203		06-15-00	1140	110QPLC	--	--	.2	5.8
GR-152	353153077333204		06-15-00	1250	110QPLC	--	--	.2	5.9

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY SAMPLING SITES

## WATER QUALITY DATA, MAY 2000 TO SEPTEMBER 2000

LOCAL IDENT- I- FIER	DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)
GR-088	06-13-00	185	20.1	25	7.88	1.26	4.5	17.5	--
	08-25-00	126	19.9	19	5.96	.99	3.6	12.8	8.0
GR-087	06-29-00	92	26.8	16	2.15	2.47	.6	5.3	--
GR-147	06-13-00	260	19.0	93	35.1	1.31	1.9	4.1	--
	09-01-00	207	18.7	86	32.2	1.28	1.9	4.0	--
GR-094	06-07-00	88	16.9	8	2.21	.71	1.8	7.8	--
	08-17-00	88	19.1	8	1.85	.73	1.8	7.4	--
GR-092	06-07-00	284	17.9	94	29.9	4.69	5.4	6.1	--
	08-31-00	307	21.6	100	33.1	4.86	6.6	6.1	--
GR-091	06-07-00	320	18.9	90	25.0	6.79	7.9	5.9	--
	08-31-00	360	20.5	94	25.8	7.06	9.0	6.6	--
GR-109	08-17-00	230	21.1	79	25.0	4.10	1.5	4.7	15
GR-110	05-31-00	307	17.5	140	53.0	1.83	1.8	6.7	--
GR-113	05-30-00	135	16.9	34	12.0	.85	1.4	7.8	--
	08-25-00	132	19.6	37	13.5	.91	1.3	7.6	3.0
GR-097	09-01-00	193	17.9	55	11.7	6.35	4.5	2.1	--
GR-098	08-17-00	201	18.5	62	14.0	6.44	4.2	3.1	1.2
GR-100	08-23-00	213	18.8	86	32.0	1.43	1.6	5.0	42
GR-103	05-31-00	177	18.6	52	12.7	4.93	6.8	2.0	--
	08-16-00	186	20.9	53	13.0	5.08	6.6	2.0	--
GR-102	05-31-00	64	19.1	39	11.7	2.50	5.0	1.9	--
	08-16-00	121	23.6	32	9.10	2.30	4.3	2.0	3.2
GR-151	06-15-00	190	25.6	52	18.3	1.62	1.9	6.7	--
GR-152	06-15-00	176	25.4	59	21.2	1.34	1.7	6.7	--

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY SAMPLING SITES

## WATER QUALITY DATA, MAY 2000 TO SEPTEMBER 2000

LOCAL IDENT- IFIER	DATE	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	BICAR- BONATE WAT.DIS FET FIELD HCO3 (MG/L) (29804)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
GR-088	06-13-00	13.	--	29.0	<.1	9.4	17.5	E.10	<.020
	08-25-00	--	10	21.3	<.1	10.8	9.7	<.10	<.020
GR-087	06-29-00	--	--	10.1	<.1	6.7	3.4	.11	<.020
GR-147	06-13-00	95	--	7.0	.2	23.1	5.3	E.10	.021
	09-01-00	78	--	7.0	.2	22.4	4.6	E.10	.023
GR-094	06-07-00	2	--	9.0	<.1	12.5	18.8	E.10	.045
	08-17-00	--	--	9.1	<.1	13.3	16.1	<.10	<.020
GR-092	06-07-00	--	--	30.9	.5	5.4	41.2	.14	<.020
	08-31-00	9	--	32.3	.5	6.0	45.6	.18	<.020
GR-091	06-07-00	--	--	32.9	.5	5.1	14.8	.26	<.020
	08-31-00	--	--	36.3	.5	5.6	15.4	.22	<.020
GR-109	08-17-00	--	18	20.2	.7	9.4	41.4	<.10	.020
GR-110	05-31-00	--	--	3.2	.2	28.0	3.3	<.10	.045
GR-113	05-30-00	--	--	10.8	.5	8.4	31.9	<.10	<.020
	08-25-00	--	4	11.1	.5	8.7	33.1	E.10	<.020
GR-097	09-01-00	--	--	17.2	.3	6.7	7.4	<.10	<.020
GR-098	08-17-00	--	2	15.1	.8	6.6	26.9	<.10	<.020
GR-100	08-23-00	--	51	11.8	.6	11.8	34.9	E.10	.032
GR-103	05-31-00	--	--	15.6	<.1	3.5	16.7	<.10	<.020
	08-16-00	--	--	17.4	<.1	3.4	15.3	E.10	<.020
GR-102	05-31-00	--	--	6.9	<.1	3.2	9.4	<.10	<.020
	08-16-00	--	4	9.2	<.1	2.9	8.6	<.10	<.020
GR-151	06-15-00	62	---	14.5	.3	19.4	1.1	5.2	4.51
GR-152	06-15-00	66	--	13.7	.5	15.7	1.3	1.8	1.56

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY SAMPLING SITES

## WATER QUALITY DATA, MAY 2000 TO SEPTEMBER 2000

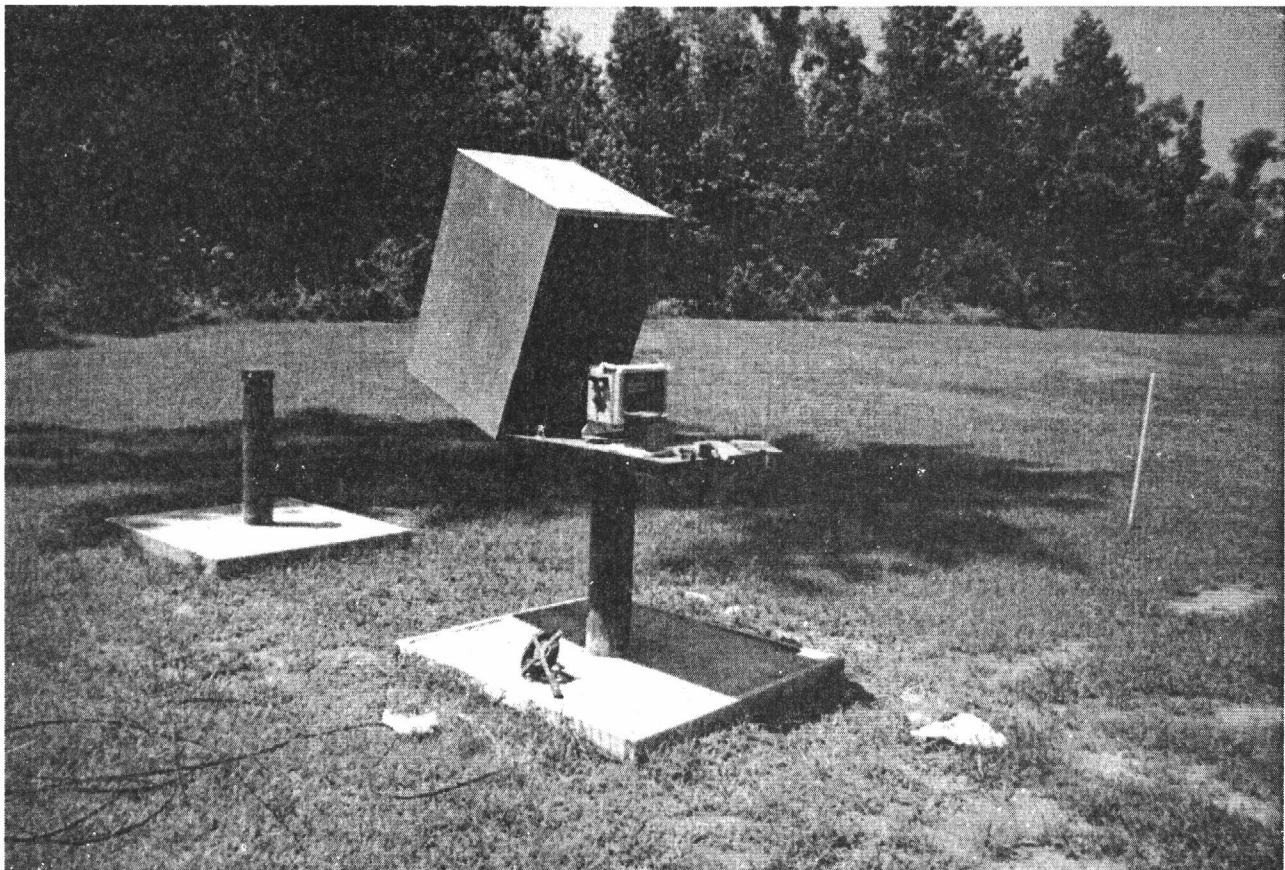
LOCAL IDENT- IFIER	DATE	NITRO- GEN, NO <sub>2</sub> +NO <sub>3</sub> DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH BELOW MP (WATER LEVEL) (FEET) (61055)
GR-088	06-13-00	.154	<.010	.009	.011	.65	5.58	7.16
	08-25-00	.788	<.010	.026	.016	.79	7.23	8.81
GR-087	06-29-00	4.97	<.010	<.006	<.010	1.4	6.15*	7.73
GR-147	06-13-00	<.050	<.010	.152	.256	<.33	18.70	20.12
	09-01-00	<.050	<.010	.150	.320	E.33	21.03	22.45
GR-094	06-07-00	<.050	<.010	<.006	<.010	E.28	5.20	7.12
	08-17-00	.149	<.010	<.006	<.010	E.28	5.60	7.52
GR-092	06-07-00	8.53	.051	E.003	<.010	.98	7.42	8.92
	08-31-00	8.61	.051	.006	<.010	1.1	7.43	8.93
GR-091	06-07-00	17.9	<.010	.222	.189	1.3	7.37	8.70
	08-31-00	20.4	<.010	.172	.070	1.6	7.32	8.65
GR-109	08-17-00	1.90	<.010	.039	.039	.62	9.21	10.59
GR-110	05-31-00	<.050	<.010	.147	.069	.63	29.27	32.02
GR-113	05-30-00	.489	<.010	.171	.126	.41	12.44	13.86
	08-25-00	.253	<.010	.150	.106	.42	15.11	16.53
GR-097	09-01-00	11.6	<.010	.053	<.010	.52	20.05	21.55
GR-098	08-17-00	8.25	.039	.705	.626	.49	22.73	22.73
GR-100	08-23-00	<.050	<.010	.509	.406	.62	6.31	9.12
GR-103	05-31-00	7.33	<.010	.053	.042	.51	5.81	7.23
	08-16-00	7.84	<.010	.045	.026	.44	6.55	7.97
GR-102	05-31-00	7.50	<.010	.018	.015	.62	5.93	7.43
	08-16-00	4.89	<.010	.018	.015	.56	6.82	8.32
GR-151	06-15-00	<.050	<.010	.901	.819	9.4	--	--
GR-152	06-15-00	<.050	<.010	.889	.813	2.7	--	--

\*Note: Sample collected from piezometer driven next to well.

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY SAMPLING SITES

## WATER QUALITY DATA, MAY 2000 TO SEPTEMBER 2000

LOCAL IDENT- I- FIER	DATE	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	PUMP OR FLOW PERIOD PRIOR TO SAM- PLING (MIN) (72004)
GR-088	06-13-00	20.00	77.4	103	.06	1210	63	20
	08-25-00	20.00	77.4	78	.06	610	46	70
GR-087	06-29-00	5.00	77.4	46	.07	170	11	10
GR-147	06-13-00	72.60	77.5	145	.03	2320	56	45
	09-01-00	72.60	77.5	135	.06	2440	54	--
GR-094	06-07-00	18.00	73.4	59	.12	910	24	14
	08-17-00	18.00	73.4	53	.13	1000	22	24
GR-092	06-07-00	12.00	64.5	226	.06	120	129	3
	08-31-00	12.00	64.5	212	.06	460	145	--
GR-091	06-07-00	8.00	64.4	230	.05	20	157	2
	08-31-00	8.00	64.4	229	.04	30	163	20
GR-109	08-17-00	23.00	73.6	145	.06	70	108	42
GR-110	05-31-00	62.36	72.5	200	.03	870	79	70
GR-113	05-30-00	26.00	72.7	86	.05	10	78	60
	08-25-00	26.00	72.7	88	.04	30	88	45
GR-097	09-01-00	21.00	61.8	115	.04	E10	35	--
GR-098	08-17-00	36.00	62.0	126	.02	60	47	--
GR-100	08-23-00	46.34	47.1	140	.05	1180	52	60
GR-103	05-31-00	23.00	47.5	105	.03	E10	29	12
	08-16-00	23.00	47.5	98	.02	<10	30	70
GR-102	05-31-00	8.00	47.9	91	.03	<10	28	12
	08-16-00	8.00	47.9	73	.02	<10	25	25
GR-151	06-15-00	3.00	--	122	<.01	1070	84	--
GR-152	06-15-00	2.00	--	112	<.01	40	50	--



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## CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	$2.54 \times 10^1$	millimeter
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter
mile (mi)	$1.609 \times 10^0$	kilometer
<i>Area</i>		
acre	$4.047 \times 10^3$	square meter
	$4.047 \times 10^{-1}$	square hectometer
	$4.047 \times 10^{-3}$	square kilometer
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer
<i>Volume</i>		
gallon (gal)	$3.785 \times 10^0$	liter
	$3.785 \times 10^0$	cubic decimeter
	$3.785 \times 10^{-3}$	cubic meter
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter
	$3.785 \times 10^{-3}$	cubic hectometer
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeter
	$2.832 \times 10^{-2}$	cubic meter
cubic-foot-per-second day [(ft <sup>3</sup> /s) d]	$2.447 \times 10^3$	cubic meter
	$2.447 \times 10^{-3}$	cubic hectometer
acre-foot (acre-ft)	$1.233 \times 10^3$	cubic meter
	$1.233 \times 10^{-3}$	cubic hectometer
	$1.233 \times 10^{-6}$	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter per second
	$2.832 \times 10^1$	cubic decimeter per second
	$2.832 \times 10^{-2}$	cubic meter per second
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second
	$6.309 \times 10^{-2}$	cubic decimeter per second
	$6.309 \times 10^{-5}$	cubic meter per second
million gallons per day (Mgal/d)	$4.381 \times 10^1$	cubic decimeter per second
	$4.381 \times 10^{-2}$	cubic meter per second
<i>Mass</i>		
ton (short)	$9.072 \times 10^{-1}$	megagram or metric ton

*Sea level:* In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.



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