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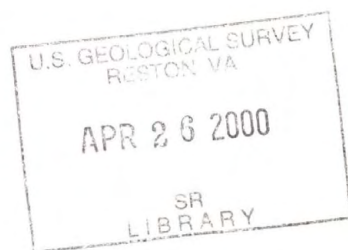
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Water Resources Data Wyoming Water Year 1999

Volume 2. Ground Water

Water-Data Report WY-99-2



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



Prepared in cooperation with the
Wyoming State Engineer and
with other State and local agencies

CALENDAR FOR WATER YEAR 1999

1998

OCTOBER							NOVEMBER							DECEMBER						
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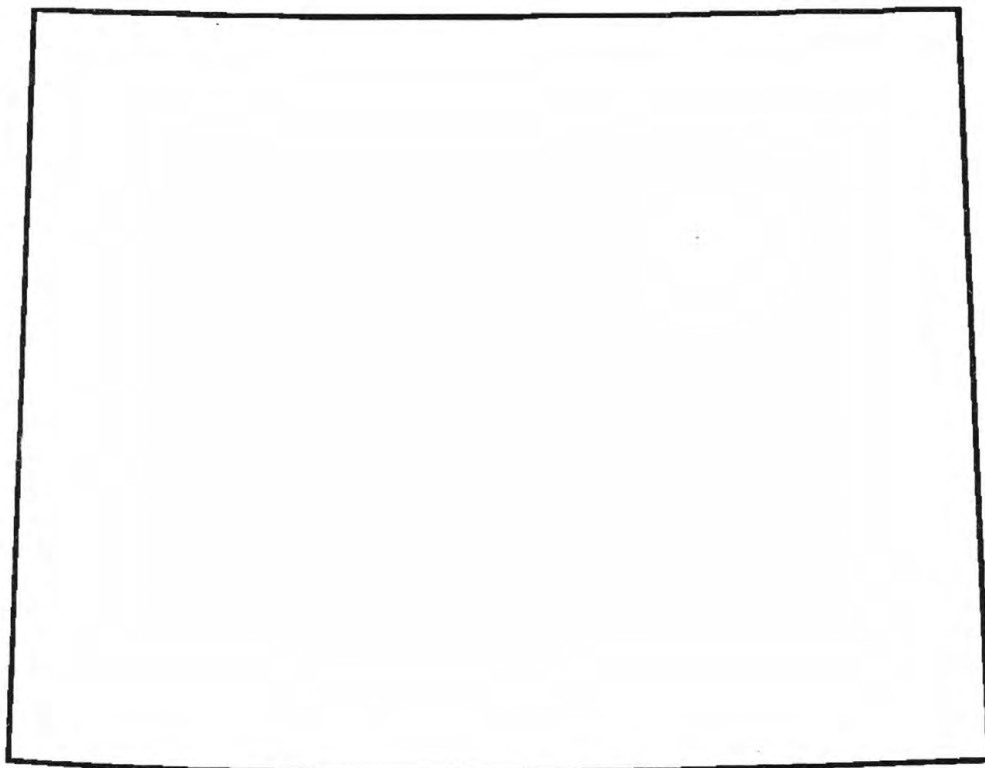
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Water Resources Data Wyoming Water Year 1999

Volume 2. GroundWater

By R.B. Swanson, J.P. Mason, D.T. Miller

Water-Data Report WY-99-2



UNITED STATES DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

GEOLOGICAL SURVEY

Charles G. Groat, Director

For information on the water program in Wyoming write to
District Chief, Water Resources Division
U.S. Geological Survey
2617 East Lincolnway, Suite B
Cheyenne, Wyoming 82001-5662

2000

PREFACE

This annual hydrologic data report of Wyoming is one of a series of annual reports that documents hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and the quality of water provide the hydrologic information needed by Federal, State and local agencies, and the private sector for administering, developing and managing our Nation's land and water resources. These records are contained in 2 volumes:

Volume 1. Surface-Water Data

Volume 2. Ground-Water Data

This report is the culmination of a concerted effort by personnel of the Wyoming District of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policies and guidelines.

Most of the data in this volume were collected by personnel from the Wyoming State Engineer's Office, and computed, and processed by personnel from the Wyoming District. The following personnel are recognized for their significant contributions to this report:

T.T. Bartos	K.J. Hedmark	M. Smalley
M.L. Clark	C.E. Miller	R. Woodruff

D. A. Trefren-Miller typed and assembled the report.

This report was prepared under the general supervision of Myron H. Brooks, District Chief, Wyoming District, in cooperation with Gordon W. Fassett, the Wyoming State Engineer.

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13. ABSTRACT (Maximum 200 words) Water resources data for the 1999 water year for Wyoming consists of records of stage, discharge and water quality of streams; stage and contents of lakes and reservoirs, and water levels and water quality of ground water. Volume 2 of this report contains water levels records for 72 wells. Additional ground-water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous studies and programs. These data together with the data in Volume 1 represent part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Wyoming.				
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GROUND-WATER LEVELS

ALBANY COUNTY

Station number, 411751105312701.	Local number, 15-073-01dba01.	Local name, Huntoon #1.	18
Station number, 411703105314001.	Local number, 15-073-12dbb01.	Local name, Huntoon #2.	19

BIG HORN COUNTY

Station number, 441351107434701.	Local number, 49-091-12dba01.	Local name, Worland-1.	21
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CAMPBELL COUNTY

Station number, 433438105225401.	Local number, 42-071-35aaa01.	Local name, Ech-8.	23
Station number, 441117105192901.	Local number, 49-070-31bbb01.	Local name, Hampshire-1.	24
Station number, 441819105305701.	Local number, 50-072-21aba01.	Local name, Gillette H-13.	25

CARBON COUNTY

Station number, 411234106424601.	Local number, 14-083-03cab01.	Local name, Helmer South.	27
Station number, 422338107145001.	Local number, 28-087-16cca01.	Local name, Split Rock #2.	28

CONVERSE COUNTY

Station number, 424420105364201.	Local number, 32-073-16cdb01.	Local name, Natural Bridge East.	30
Station number, 431140105151901.	Local number, 37-070-10cbb01.	Local name, Bill #6.	31

CROOK COUNTY

Station number, 441113104151001.	Local number, 49-062-36cbb01.	Local name, Inyan Kara Mountain CCMOW6.	33
Station number, 441113104151002.	Local number, 49-062-36cbb02.	Local name, Inyan Kara Mountain CCMOW6A.	34
Station number, 442739104214601.	Local number, 52-063-25dcd01.	Local name, Cole #3A.	35
Station number, 443453104425602.	Local number, 53-065-18bbd02.	Local name, Park Service.	36
Station number, 444854104534502.	Local number, 56-067-28aab02.	Local name, Cole #41 Minnelusa.	37

FREMONT COUNTY

Station number, 430205108243201.	Local number, 1N-4E-28acc01.	Local name, Brentwood.	39
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GOSHEN COUNTY

Station number, 414049104074501.	Local number, 20-060-30bbb01.	Local name, LaGrange #2.	41
Station number, 414051104100701.	Local number, 20-061-23ccc01.	Local name, Curt Meier.	42
Station number, 422519104095101.	Local number, 28-061-02ccd01.	Local name, Prairie Center #6.	43
Station number, 422512104135501.	Local number, 28-061-06aba01.	Local name, Goshen County #2.	44
Station number, 422928104121401.	Local number, 29-061-17aad01.	Local name, Prairie Center #4.	45
Station number, 422849104090801.	Local number, 29-061-23abb01.	Local name, Goshen County #1.	46
Station number, 422730104094801.	Local number, 29-061-26cbb01.	Local name, Prairie Center #3.	47
Station number, 423549104120901.	Local number, 30-061-09bbb01.	Local name, Prairie Center #5.	48

HOT SPRINGS COUNTY

Station number, 434136108183301.	Local number, 43-095-18cab01.	Local name, Thermopolis GTW-1.	50
Station number, 433933108121901.	Local number, 43-095-25cdc01.	Local name, Thermopolis GTW-3.	51

LARAMIE COUNTY

Station number, 410059104072401.	Local number, 12-060-07ddd01.	Local name, Laramie County #1.	53
Station number, 410100104160301.	Local number, 12-062-13baa01.	Local name, USGS southeast of Carpenter.	54
Station number, 410111104223102.	Local number, 12-063-15aaa02.	Local name, USGS southwest of Carpenter.	55
Station number, 410703104071201.	Local number, 13-060-05ccb01.	Local name, Elmer Glantz.	56
Station number, 410324104481701.	Local number, 13-066-32bbd01.	Local name, Laramie County #14.	57
Station number, 410530104574001.	Local number, 13-068-13ccc01.	Local name, Borie.	58
Station number, 411238104070801.	Local number, 14-060-05bcb01.	Local name, C.C. Gross.	59
Station number, 411022104141201.	Local number, 14-061-18ddd01.	Local name, Laramie County #2.	60
Station number, 41114104242501.	Local number, 14-063-15aaa01.	Local name, Laramie County #3.	61
Station number, 411005104355001.	Local number, 14-064-19bcc01.	Local name, Laramie County #9.	62
Station number, 411147104490501.	Local number, 14-066-07add01.	Local name, National Land #1.	63
Station number, 411210104452001.	Local number, 14-066-10aba01.	Local name, Laramie County #8.	64
Station number, 410940104435701.	Local number, 14-066-23ddd01.	Local name, Laramie County #15.	65
Station number, 411213104501401.	Local number, 14-067-12abb01.	Local name, Laramie County #10.	66
Station number, 411034104554001.	Local number, 14-067-18ddc01.	Local name, Bell #14.	67
Station number, 410930104524701.	Local number, 14-067-27bac01.	Local name, Laramie County #13.	68
Station number, 410838104530401.	Local number, 14-067-34bbc01.	Local name, Laramie County #11.	69
Station number, 410827104501601.	Local number, 14-067-36acb01.	Local name, Pioneer Park.	70
Station number, 410757104582302.	Local number, 14-068-35ddc02.	Local name, King #3.	71
Station number, 411531104194701.	Local number, 15-062-20aaa01.	Local name, Laramie County #4.	72
Station number, 412227104081402.	Local number, 16-060-07bbb02.	Local name, USGS southwest of Albin.	73
Station number, 411136104125301.	Local number, 16-061-17aaa01.	Local name, Laramie County #5.	74
Station number, 412343104053101.	Local number, 17-060-33cbb01.	Local name, USGS south of Albin.	75
Station number, 412605104203001.	Local number, 17-062-17ccc01.	Local name, Laramie County #6A.	76
Station number, 412400104533901.	Local number, 17-067-33baa01.	Local name, MX-North.	77

NIORARA COUNTY

Station number, 424709104194101.	Local number, 32-062-05baa01.	Local name, Niobrara County #1.	79
Station number, 424244104202001.	Local number, 32-062-32bbb01.	Local name, Node Well.	80
Station number, 430422104183201.	Local number, 36-062-28ab01.	Local name, ETSI T-2.	81
Station number, 430422104183202.	Local number, 36-062-28ab02.	Local name, ETSI O-2.	82
Station number, 430421104200701.	Local number, 36-062-28bbd01.	Local name, ETSI T-1.	83

GROUND-WATER LEVELS--Continued

PLATTE COUNTY

Station number, 420246104590302.	Local number, 24-068-22aab02.	Local name, Platte County #1A.....	85
Station number, 420718104553901.	Local number, 25-067-19dda01.	Local name, Ed Wilhelm.....	86
Station number, 420524104530201.	Local number, 25-067-34ccd01.	Local name, Platte County #2.....	87
Station number, 420859104565001.	Local number, 25-068-12dda01.	Local name, Platte County #4.....	88
Station number, 420840105000401.	Local number, 25-068-15bbd01.	Local name, Platte County #6.....	89
Station number, 420748104565001.	Local number, 25-068-24aad01.	Local name, Platte County #3.....	90
Station number, 420613105024401.	Local number, 25-068-31aaa01.	Local name, Platte County #7.....	91
Station number, 421443104574601.	Local number, 26-068-12cbd01.	Local name, E. Rutherford.....	92
Station number, 421128104575801.	Local number, 26-068-36bbb01.	Local name, Platte County #5.....	93

SWEETWATER COUNTY

Station number, 413850109150601.	Local number, 19-105-10bbb01.	Local name, Rock Springs Golf Course....	95
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TETON COUNTY

Station number, 433059110511802.	Local number, 41-117-14bdc02.	Local name, Teton Pines.....	97
Station number, 433517110493001.	Local number, 42-117-24dab01.	Local name, Teton Village.....	98

WASHAKIE COUNTY

Station number, 440621107273801.	Local number, 48-089-25ada01.	Local name, Mills.....	100
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WESTON COUNTY

Station number, 434539104233401.	Local number, 44-063-26cac01.	Local name, Townsend Well.....	102
Station number, 435610104433001.	Local number, 46-066-25dbb01.	Local name, Terra Resources.....	103
Station number, 440530104381001.	Local number, 48-065-35ccb01.	Local name, Town of Upton #4.....	104

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State, county, municipal, and other Federal agencies, obtains a large amount of data pertaining to the water resources of Wyoming each water year. These data, accumulated through many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the U.S. Geological Survey, the data are published annually in this report series entitled, "Water Resources Data - Wyoming".

Water resources data for Wyoming in this volume consists of records of ground-water levels and water quality of ground water for water year 1999, which began October 1, 1998, and ended September 30, 1999. This report contains historic water levels from 72 observation wells in the form of tables and hydrographs. The locations of counties in Wyoming with the number of observation wells listed in this report are shown in figure 1. Additional ground-water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements.

Since 1940, the U.S. Geological Survey, in cooperation with State, county, municipal, and other Federal agencies, periodically has measured ground-water levels in a large number of wells in Wyoming. Ground-water levels were systematically measured in 72 observation wells in 16 counties in Wyoming, as of September 1999. Seventy of these observation wells are part of the cooperative observation-well program conducted by the U.S. Geological Survey and the Wyoming State Engineer's Office. The other two observation wells are part of a cooperative project conducted by the U.S. Geological Survey and the Teton Conservation District. Water-level data were collected at 62 of the 72 observation wells by Wyoming State Engineer personnel; data at the remaining ten wells were collected by U.S. Geological Survey personnel. The wells are located primarily in areas where ground water is used in large quantities for irrigation or municipal purposes.

Prior to 1997 only miscellaneous ground-water data were published in this report. In the past the majority of ground-water level data collected in Wyoming was published in other report series of the U.S. Geological Survey. 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 may be consulted in the libraries of the principal cities of the United States or may be purchased from U.S. Geological Survey, Earth Science Information Center, Federal Center, Building 810, Box 25425, Denver, Colorado 80225. Wyoming ground water level data and hydrographs can be found in a series of 14 open-file reports published by the U.S. Geological Survey between 1973 and 1995.

Beginning with the 1971 water year, streamflow, water quality, and ground-water data were published in official Survey reports on a State-boundary basis. These official 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 volume is identified as "U.S. Geological Survey Water-Data Report WY-99-2." These water-data reports are for sale, in paper copy or on microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page, by telephone at (307) 778-2931, or by email at state_rep_wy@usgs.gov. Hydrologic data for Wyoming is available on the World Wide Web at :

<http://wy.water.usgs.gov>

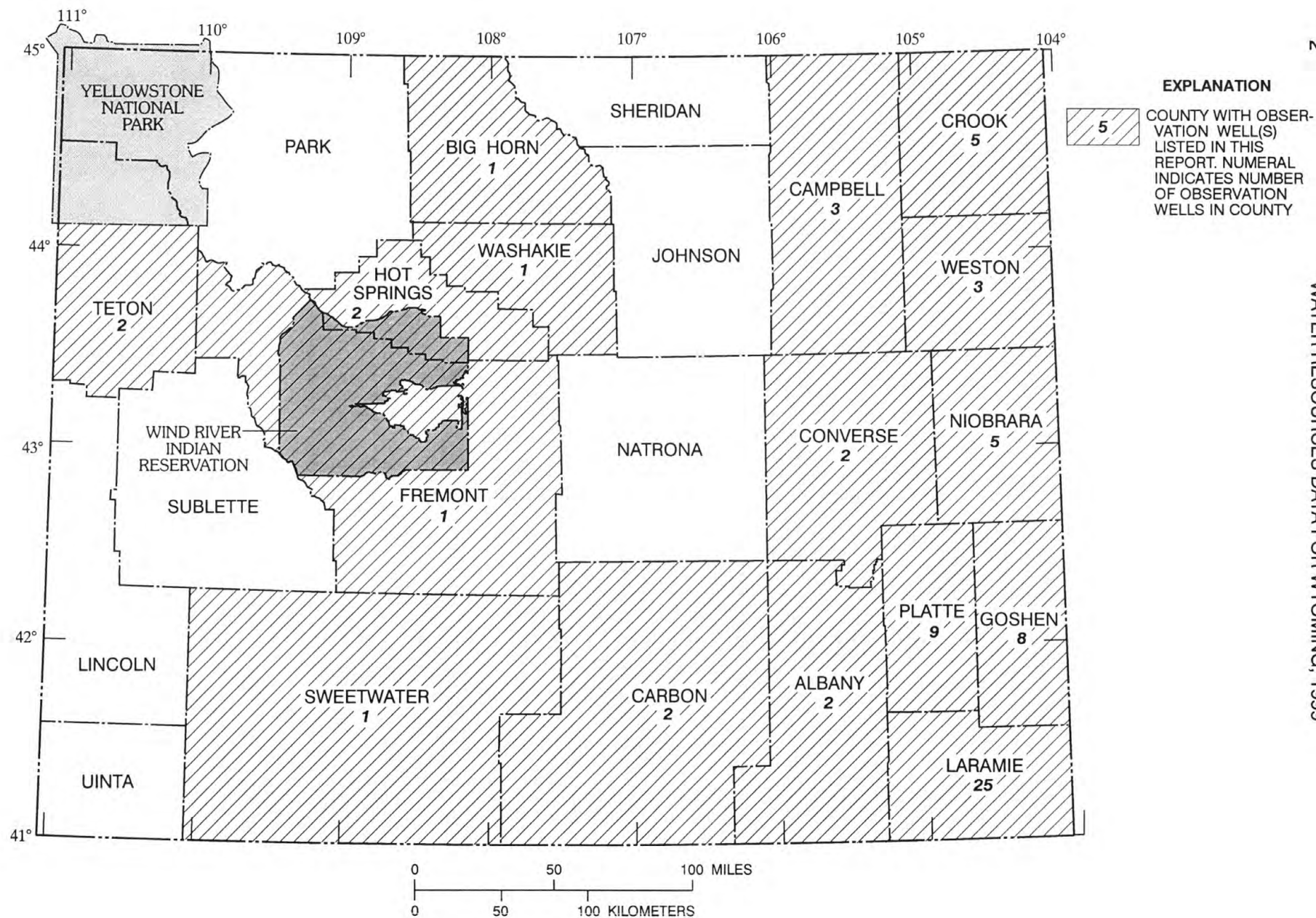


Figure 1. Location of counties in Wyoming with observation wells, as of September 1999.

COOPERATION

The U.S. Geological Survey and organizations of the State of Wyoming have had cooperative agreements for the systematic collection of streamflow records since 1895, for ground-water levels since 1940, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the U.S. Geological Survey are:

Wyoming State Engineer's Office, Gordon W. Fassett, State Engineer

Wyoming Department of Agriculture, Ronald Micheli, Commissioner

Wyoming Department of Environmental Quality, Dennis Hemmer, Director

Town of Torrington, Mike Varney, Mayor

Teton Conservation District, Rik Gay, Coordinator

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

Grand Teton National Park, National Park Service, U.S. Department of the Interior

Bureau of Land Management, U.S. Department of the Interior.

SUMMARY OF HYDROLOGIC CONDITIONS

Ground-Water Levels

Ground-water levels in observation wells throughout the state showed no clear trend in water year 1999. When the highest water level in 1999 was compared to the highest water level in 1998, slightly more observation wells had a decrease, but a similar number of observation wells had an increase.

Ground-water levels were monitored in a statewide network of 72 observation wells. Wells completed in the High Plains aquifer and located in areas of ground-water withdrawal in southeast and south-central Wyoming constitute 60 percent of the observation-well network. Ground water is withdrawn from the High Plains aquifer for irrigation in Niobrara County, Platte County, Goshen County, and the eastern part of Laramie County. Substantial ground-water withdrawals from the High Plains aquifer for municipal and domestic use occur in central Laramie County.

Water levels were measured in at least one observation well in 16 of the 23 counties in Wyoming. During 1999, a continuous record of water levels was collected from 55 wells equipped with float-driven digital water-level recorders or electronic data recorders, two wells equipped with pressure-sensing transducers and electronic data recorders, and a continuous record of hydraulic heads above land surface was obtained from two flowing wells equipped with pressure-sensing transducers and electronic data recorders. The remaining 13 wells periodically were measured by hand using a steel tape, electric tape, or an air line.

Changes in water levels for the statewide observation-well network and for wells specifically completed in the High Plains aquifer are summarized in table 1. Many of the observation wells in these networks are located in areas of extensive ground-water use. Water levels from some of these wells may reflect local ground-water conditions, rather than regional ground-water conditions. The changes in water levels from water year 1998 to water year 1999 were determined from the difference between the highest water levels measured each year. Some wells in the network were not included in the comparison of water-level changes between years because insufficient data were collected at the wells to make accurate comparisons. Many of the wells that were not included in the comparison of water-level changes between years were hand-measured wells, where only two or three measurements per year were collected.

Table 1--Changes in ground-water levels in statewide observation-well network and wells completed in the High Plains aquifer.

[Hydrographs for five representative observation wells in southeast Wyoming are shown in figure 2.]

Observation-well networks	Water years ¹	Number of wells	Increase in water level (number of wells)	Average increase (in feet)	Decrease in water level (number of wells)	Average decrease (in feet)	No change in water level (number of wells)	Insufficient data for comparison (number of wells)
Statewide network	1998-99	72	25	1.74	28	-1.15	2	17
High Plains aquifer	1998-99	44	17	0.83	23	-0.85	1	3

¹ Water year is from October 1 to September 30 of the following year.

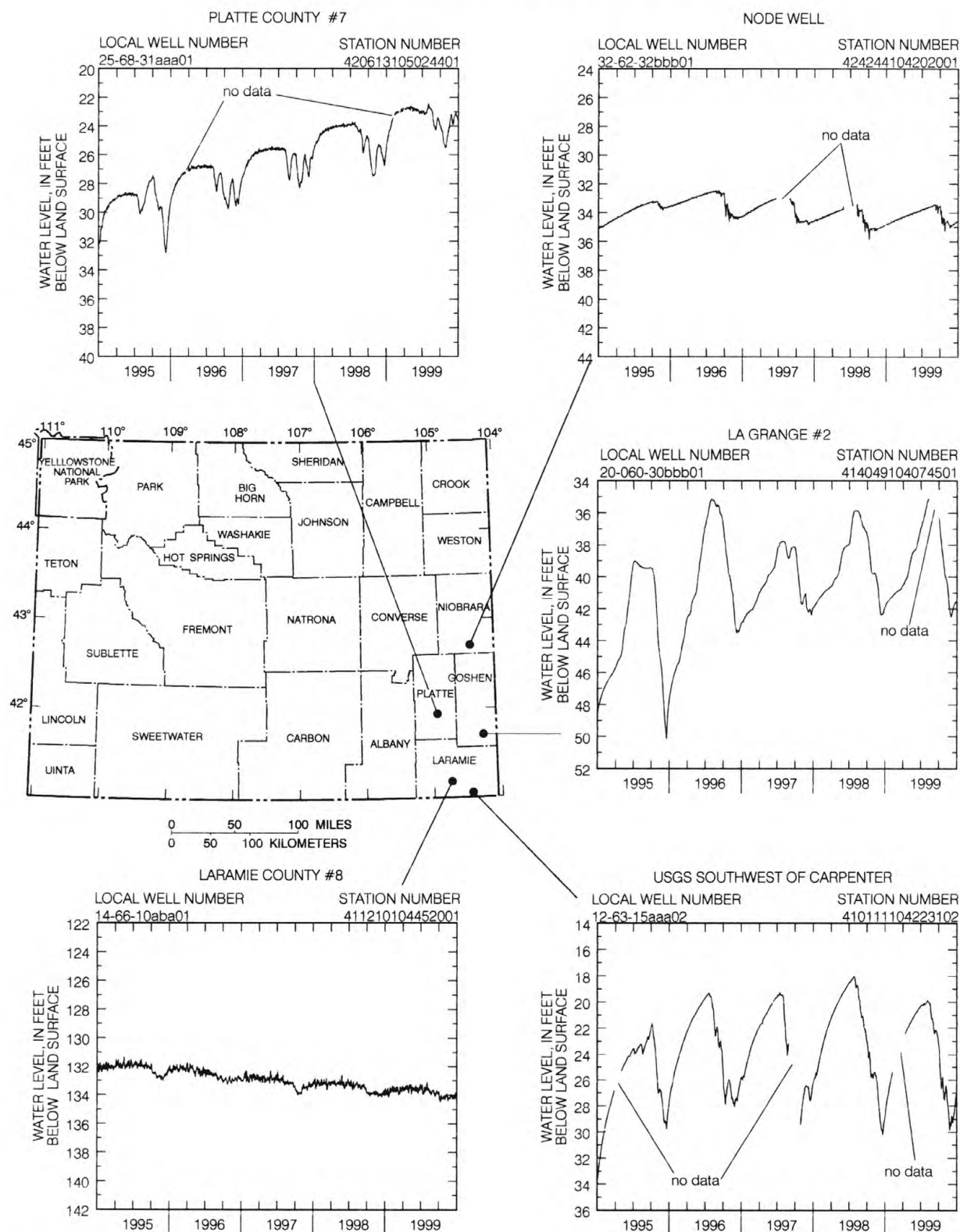


Figure 2. Water-level hydrographs for observation wells in areas of extensive ground-water withdrawals, water year 1995 through water year 1999.

EXPLANATION OF THE RECORDS

Numbering System for Wells

All wells listed in this report, except for one well located on the Wind River Indian Reservation, are identified according to the Federal township-range system of land subdivision, and also are assigned a local number. An example of a local number in this report is 14-063-15aaa01 (fig. 3). The first number (14) denotes the township, the second number (063) denotes the range, and the third number (15) denotes the section. The first letter following the section number denotes the quarter section (160-acre tract); the second letter, the quarter-quarter section (40-acre tract); and the third letter, if shown, the quarter-quarter-quarter section (10-acre tract). These subsections are designated a, b, c, and d in a counter-clockwise direction, beginning in the northeastern quadrant. The last two numbers in the local number are a sequence number indicating the order of inventory. For example, in figure 3, observation well 14-063-15aaa01 is the first well inventoried in the northeastern quarter of the northeastern quarter of the northeastern quarter of section 15, township 14 north (T. 14 N.), range 63 west (R. 63 W.). All wells in the counties have ranges west of the Sixth Principal Meridian, and townships north of the 40th Parallel Base Line.

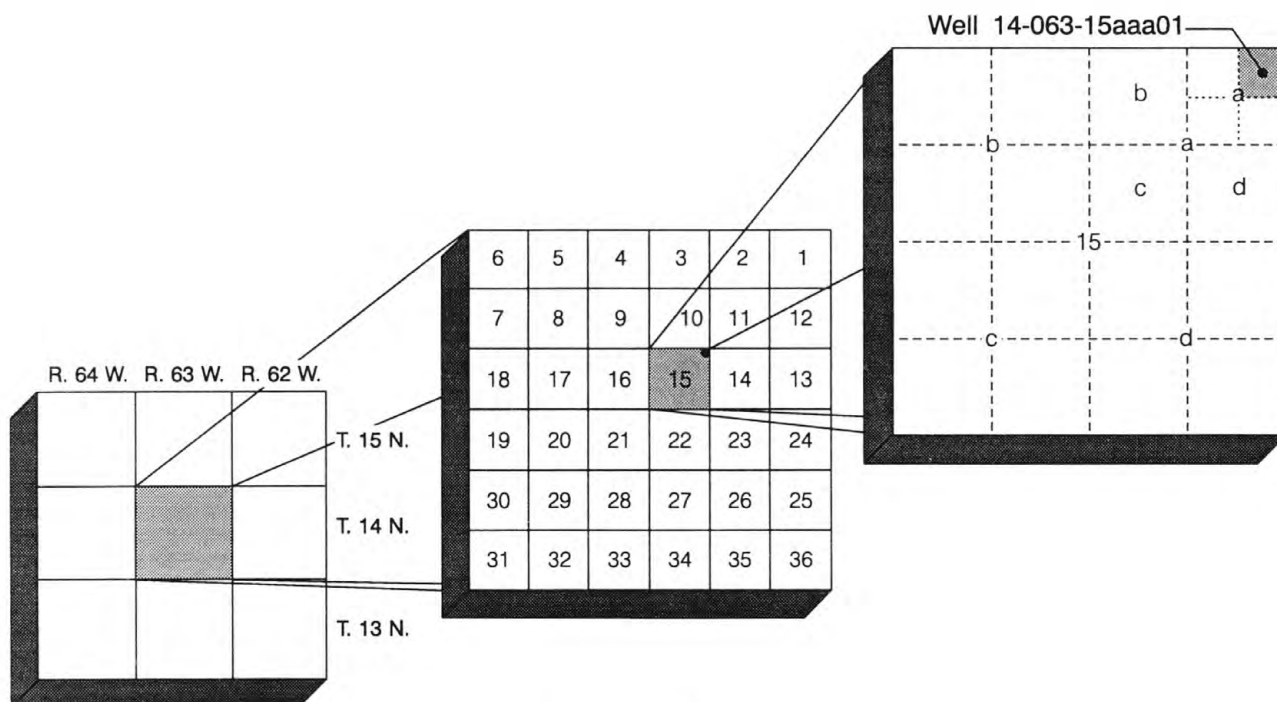


Figure 3. Federal township-range system for numbering wells.

On the Wind River Indian Reservation, the township-range system is based on the Wind River Meridian and Base Line system. Townships are denoted as north or south of the base line and ranges are denoted as east or west of the meridian. Wells may be located in the northeastern, northwestern, southwestern, or southeastern quadrants of this base-line and meridian net. For example, in figure 4, observation well 1N-4E-28acc01 is the first well inventoried in the southwestern quarter of the southwestern quarter of the northeastern quarter of section 28, township 1 north, range 4 east, in the northeastern quadrant of the Wind River Indian Reservation.

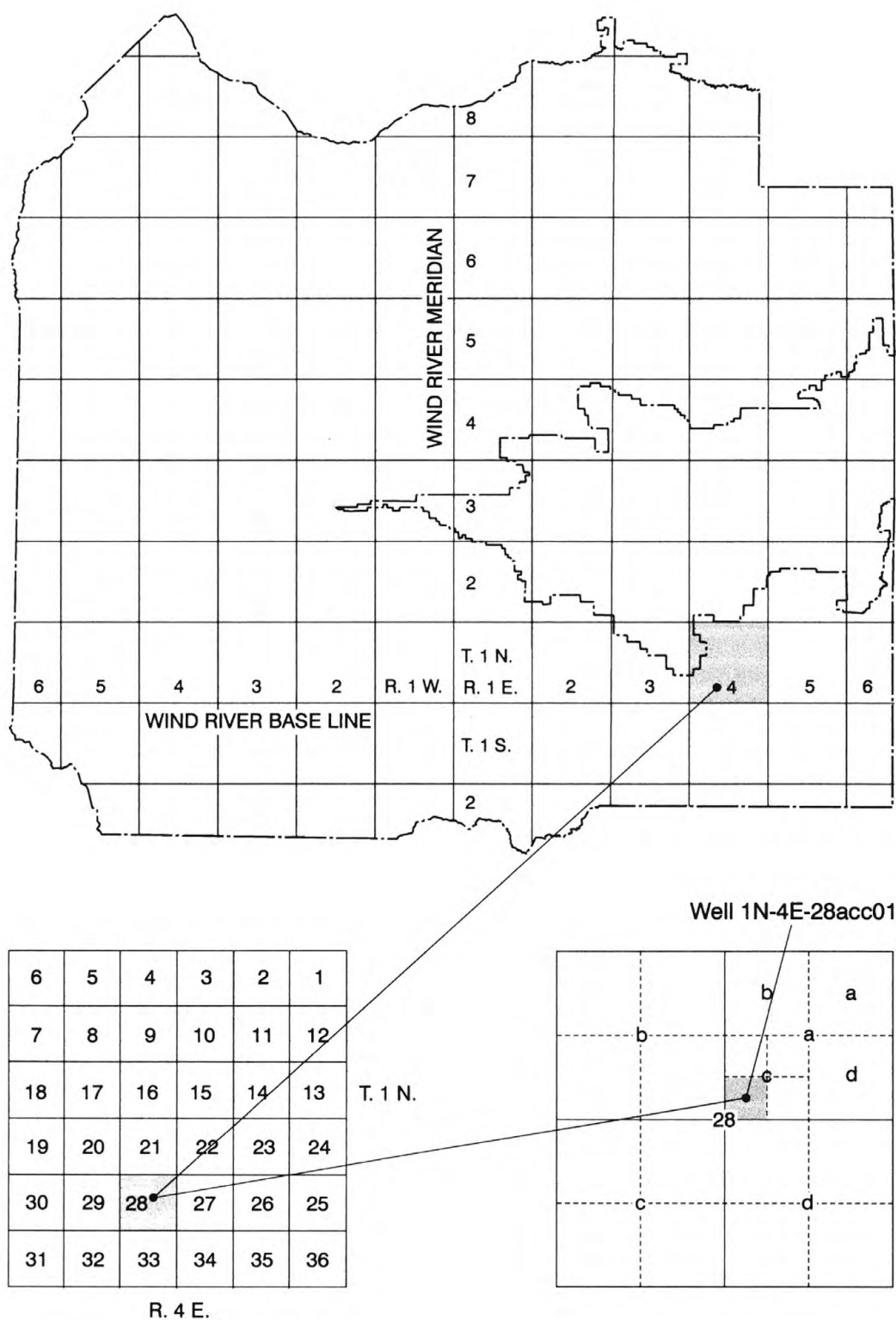


Figure 4. System for numbering wells on the Wind River Indian Reservation.

Latitude-Longitude System

Identification numbers also are assigned to wells according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of north latitude, the next seven digits denote degrees, minutes, and seconds of west longitude, and the last two digits (assigned sequentially) identify the order of inventory of sites if more than one site lies within a 1-second grid (fig. 5). The identification number, once assigned, has no locational significance. If the initial determination of latitude and longitude is found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description.

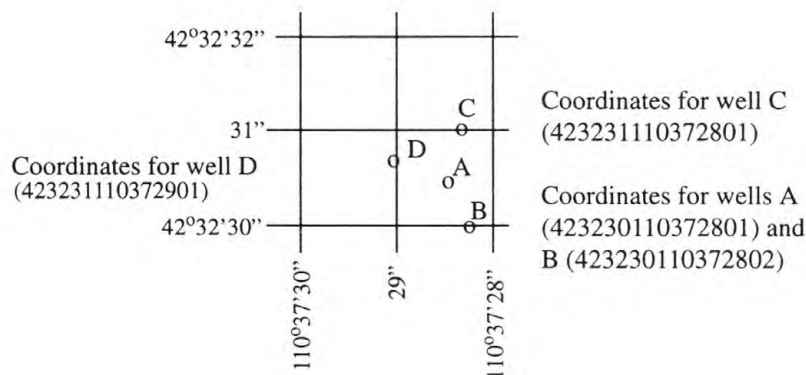


Figure 5. System for assigning identification numbers to wells (latitude and longitude).

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 of consistent accuracy and precision.

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

Presentation of Data

Water-level data are presented by county; the counties for which water-level data are available are listed alphabetically. Records of observation wells for each county are preceded by a map showing the location of the wells in that county (figs. 6-21). Water-level hydrographs or hydraulic-head hydrographs for the period of record for each well follow the map for each county. A table above each hydrograph lists water-level measurements taken during water year 1999. For wells equipped with continuous water-level recorders, the table lists the daily maximum recorded water level for every fifth day and the end of the month (EOM). The daily maximum recorded water level in a well is the water level recorded for the day with the minimum distance from the land surface to the water level in the well. Data for artesian wells are listed as daily maximum in feet of hydraulic head and are the maximum difference in the water surface to the land surface at the well. For hand-measured wells, the table lists all water-level measurements obtained during water year 1999.

The hydrographs for the 72 observation wells were plotted using data from either continuous water-level records or periodic water-level measurements. The daily maximum water level was used for plotting hydrographs for wells equipped with continuous recorders. The hydrographs show water-level fluctuations and water-level trends. If more precise water levels are needed, tabulations of actual water-level measurements are available from the U.S. Geological Survey, 2617 East Lincolnway, Suite B, Cheyenne, Wyoming 82001-5662 (telephone (307) 778-2931).

Miscellaneous ground-water-level measurements and ground-water quality data are listed at the end of the volume. These data are from wells that are not part of a systematic observation network. Both miscellaneous water-level and water-quality data are presented in tabular form.

Station manuscript

Station number: See text description of numbering system for wells (pg. 6).

Local number: See text description of numbering system for wells (pg.6).

Local name: Local reference name of observation well.

Location: Latitude, longitude, and legal description of well.

Hydrologic unit: Geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight digit number.

Aquifer: The geologic formation, group of formations, or part of a formation that the well is completed in.

Well characteristics: Depth of well, in feet below land surface.

Datum: Elevation of land surface in feet above sea level. Water levels are given in feet below or above this datum plane.

Measuring point: Arbitrary permanent reference point from which the distance to the water surface is measured to obtain the water level. The height of the measuring point above or below the land surface is subtracted or added to the water-level measurement to give the depth to water below the land surface or feet of head above the land surface.

Period of record: Years for which water-level measurements are available.

Extremes for period of record: The highest and lowest water levels or hydraulic heads recorded for the period of record which represent the static water levels, in feet below land surface, or hydraulic heads, in feet above land surface, unless otherwise footnoted.

Explanation of Hydrographs

_____ Water-level or hydraulic-head data collected by digital or electronic data recorders. Missing sections of lines indicate periods of no data. Typically, intermittent periods of no data are the result of recording equipment malfunctions.

□---□ Individual water-level measurements. Dashed line represents periods of no data between measurements.

Ground-Water Quality

Records of ground-water quality in this report differ from records of ground-water levels because for most sampling sites they consist of only one or two sets of measurements for the water year. The quality of ground water ordinarily changes slowly; therefore, for most general purposes, one annual sampling, or a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurements of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where ground-water quality may change more rapidly, samples maybe collected more frequently to identify the nature of the changes.

Data Collection

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties, but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Procedures for on-site measurements and for collecting, treating, and shipping ground-water samples as well as methods used by the U.S. Geological Survey laboratories are given in the publication "Techniques of Water-Resources Investigations" (TWRI), Book 1, Chapter D2. The values included in this report represent water-quality conditions at the time of sampling, consistent with available sampling techniques and methods of analysis. All samples were obtained by trained personnel. The wells sampled were pumped for a sufficient time period to assure that the water collected came directly from the aquifer and to minimize exposure to the atmosphere and to the materials comprising the casings.

Data Presentation

The records of ground-water quality are published in a section titled **QUALITY OF GROUND WATER** immediately following the ground-water-levels records. Data for quality of ground water are grouped by special study and then listed alphabetically by county, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water.

Remark Codes

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

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
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
ND	Not detected

ACCESS TO WATER DATA

The U.S. Geological Survey provides some water-quality and ground-water data through the World Wide Web (WWW). These data may be accessed at

<http://water.usgs.gov>

In addition, data can be provided in various machine-readable formats. 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.)

DEFINITION OF TERMS

Terms related to ground water, 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).

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

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian well is one in which the water is under sufficient hydrostatic pressure to rise above the top of the aquifer. A flowing artesian well is one in which the water rises above the land surface.

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.

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.

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.

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.

Continuous-record station is a site that meets the following conditions:

Groundwater levels or pressure head are recorded at some interval on a continuous basis. The recording interval is usually 60 minutes, but may be less or more frequent.

Datum used in this report is land surface and all ground-water levels are referenced to land surface. The land surface elevation, source for the elevation data, and measuring point are also listed.

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 CaCO_3) can be converted to carbonate concentration by multiplying by 0.60.

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 (CaCO_3).

Hydrologic head as used in this report, is the height above land surface of the column of water that can be supported by the hydraulic pressure at a well.

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.

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, 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 mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

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.

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.

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 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 (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

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.

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 more than 800 radioactive isotopes.

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

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

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 dissolved substance.

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.

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.)

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.

Water level is the water-surface elevation of the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.

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.)

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.

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The U.S.G.S. 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 B of book 3 (Applications of Hydraulics) pertains to ground 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.G.S., 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 made in the form of a 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 mention the "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, chap. 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, chap. 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, chap. D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI book 2, chap. 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, chap. E1. 1971. 126 pages.
 - 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS–TWRI book 2, chap. E2. 1990. 150 pages.
- TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S.
GEOLOGICAL SURVEY--Continued

Section F. Drilling and Sampling Methods

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

Book 3. Applications of Hydraulics

Section B. Ground-Water Techniques

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI book 3, chap. B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS–TWRI book 3, chap. 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, chap. 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, chap. 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, chap. 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, chap. B7. 1992. 190 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, chap. A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H.C. Riggs: USGS-TWRI book 4, chap. A2. 1968. 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, chap. 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, chap. 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, chap. 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, chap. 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, chap. 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, chap. 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, chap. A6. 1982. 181 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, chap. 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, chap. 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, chap. 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, chap. 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, chap. 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. 1996. 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, chap. 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, chap. C2. 1978. 90 pages.

Book 8. Instrumentation

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY--**Continued*****Section A. Instruments for Measurement of Water Level***

- 8-A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS-TWRI book 8, chap. A1. 1968. 23 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, chap. A4. 1999. 156 p.
- 9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A5. 1999. 149 p.
- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS-TWRI book 9, chap. A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, edited by D.N. Myers and F.D. Wilde: USGS-TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS-TWRI book 9, chap. A8. 1998. 48 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, chap. A9. 1998. 60 pages.

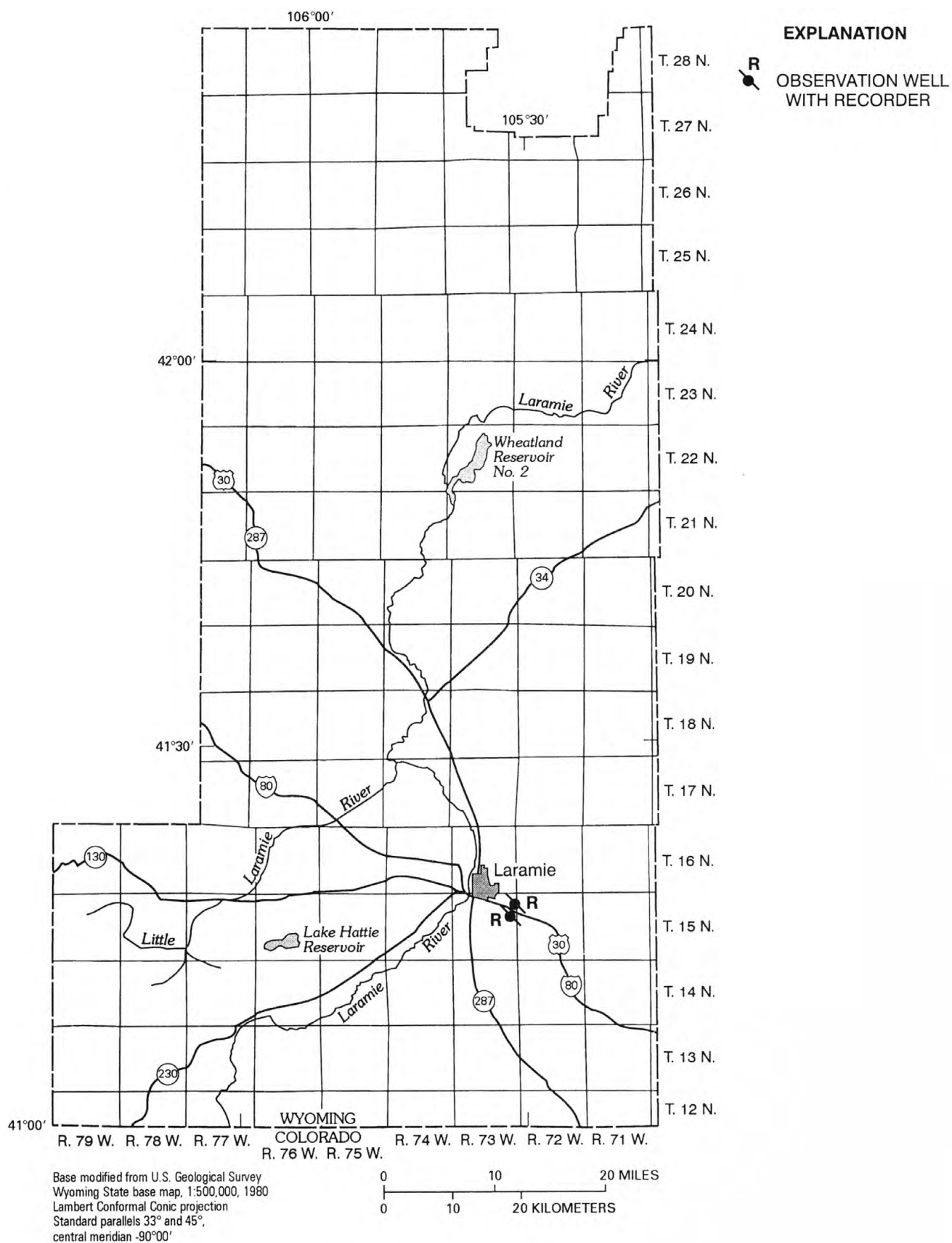


Figure 6. Location of observation wells in Albany County, Wyoming.

GROUND-WATER LEVELS

ALBANY COUNTY

Station number, 411751105312701. Local number, 15-073-01dba01. Local name, Huntoon #1.

Location.--Lat 41°17'51", long 105°31'27", in NE¹/₄ NW¹/₄ SE¹/₄ sec.1, T.15 N., R.73 W., Hydrologic Unit 10180010.

Aquifer.--Casper Formation.

WELL CHARACTERISTICS.--Depth of well, 182 ft below land surface.

DATUM.--Elevation of land surface is 6,500 ft above sea level, from topographic map. Measuring point: top of casing, 0.9 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

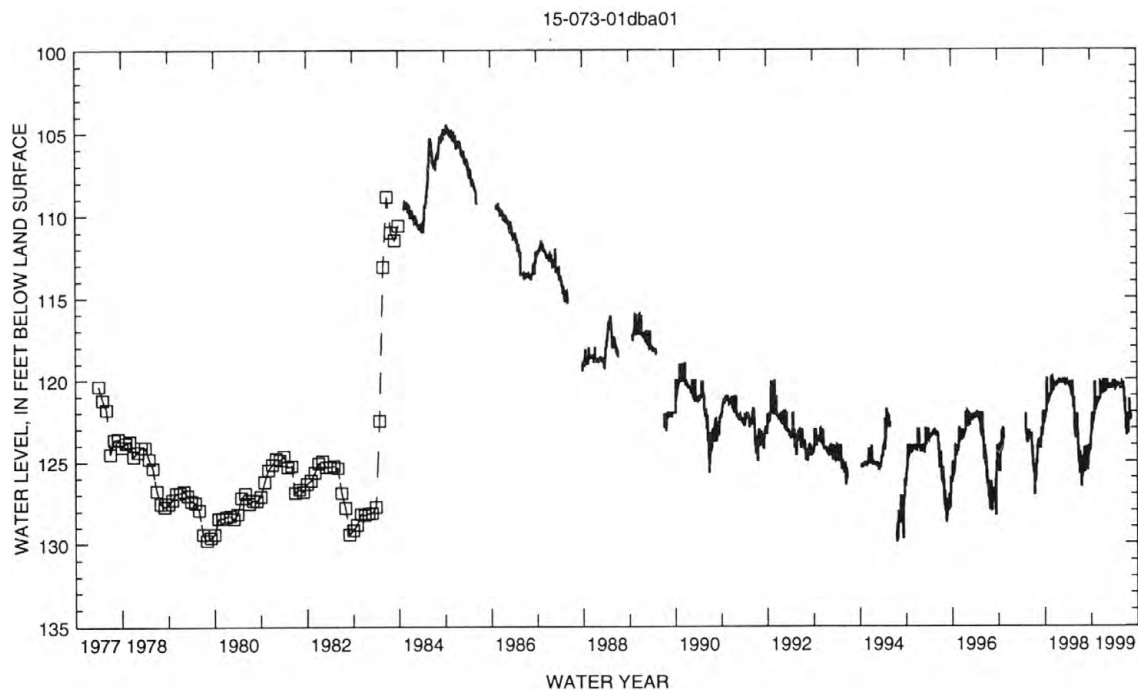
PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 104.45 ft below land surface, Oct. 17, 1984; lowest, 129.95 ft below land surface, July 22, 1994.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	123.35	120.18	121.19	120.84	120.54	120.42	120.36	120.29	120.25	122.24	122.02	---
10	122.11	121.78	121.31	120.03	120.40	120.40	120.05	120.37	120.29	123.12	122.16	---
15	122.06	121.68	121.19	120.61	120.60	120.51	120.56	120.25	120.25	122.28	122.54	---
20	122.69	121.12	120.18	120.56	120.61	120.58	120.38	120.40	120.62	122.31	---	---
25	122.44	121.14	120.19	120.67	120.52	120.48	120.36	120.59	121.27	123.17	---	---
EOM	122.20	121.43	120.81	120.70	120.55	120.24	120.46	120.38	121.55	122.32	---	---

WTR YR 1999: HIGHEST 120.00 (JAN 13, FEB 8); LOWEST 123.76 (OCT 1)



ALBANY COUNTY

Station number, 411703105314001. Local number, 15-073-12dbb01. Local name, Huntoon #2.

LOCATION.--Lat 41°17'03", long 105°31'40", in NW¹/₄ NW¹/₄ SE¹/₄ sec.12, T.15 N., R.73 W., Hydrologic Unit 10180010.

AQUIFER.--Casper Formation.

WELL CHARACTERISTICS.--Depth of well, 243 ft below land surface.

DATUM.--Elevation of land surface is 6,500 ft above sea level, from topographic map. Measuring point: top of casing, 1.30 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

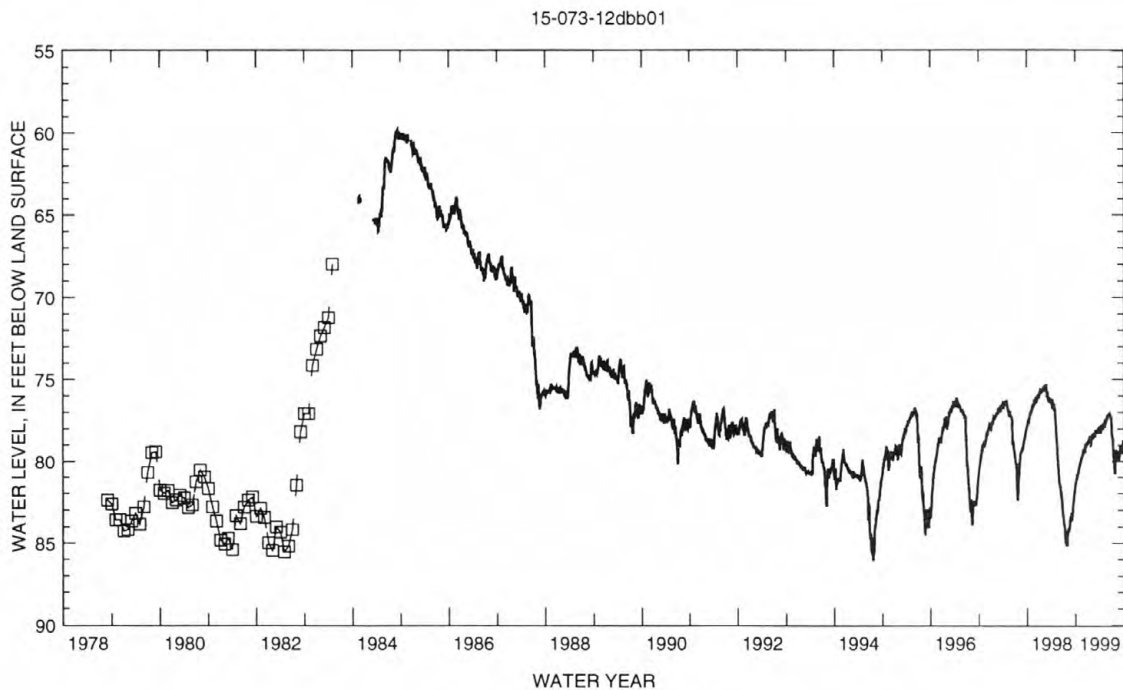
PERIOD OF RECORD.--1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 59.84 ft below land surface, Sept. 7, 1984; lowest, 86.08 ft below land surface, July 24, 1994.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	81.40	80.17	79.40	78.88	78.54	78.23	78.03	77.85	77.21	78.06	79.28	79.23
10	81.07	80.05	79.39	78.77	78.29	78.19	77.99	77.76	77.24	78.58	79.47	79.20
15	80.97	79.84	79.23	78.63	78.37	78.14	78.11	77.62	77.15	79.06	79.48	79.41
20	80.94	79.76	79.04	78.53	78.47	78.20	77.90	77.61	77.15	79.72	79.56	79.46
25	80.75	79.71	79.04	78.55	78.23	78.11	77.88	77.51	77.20	80.35	79.72	79.14
EOM	80.48	79.59	78.84	78.76	78.35	77.87	77.91	77.28	77.30	80.53	79.79	78.71

WTR YR 1999: HIGHEST 77.10 (JUN 17, 18); LOWEST 81.51 (OCT 1)



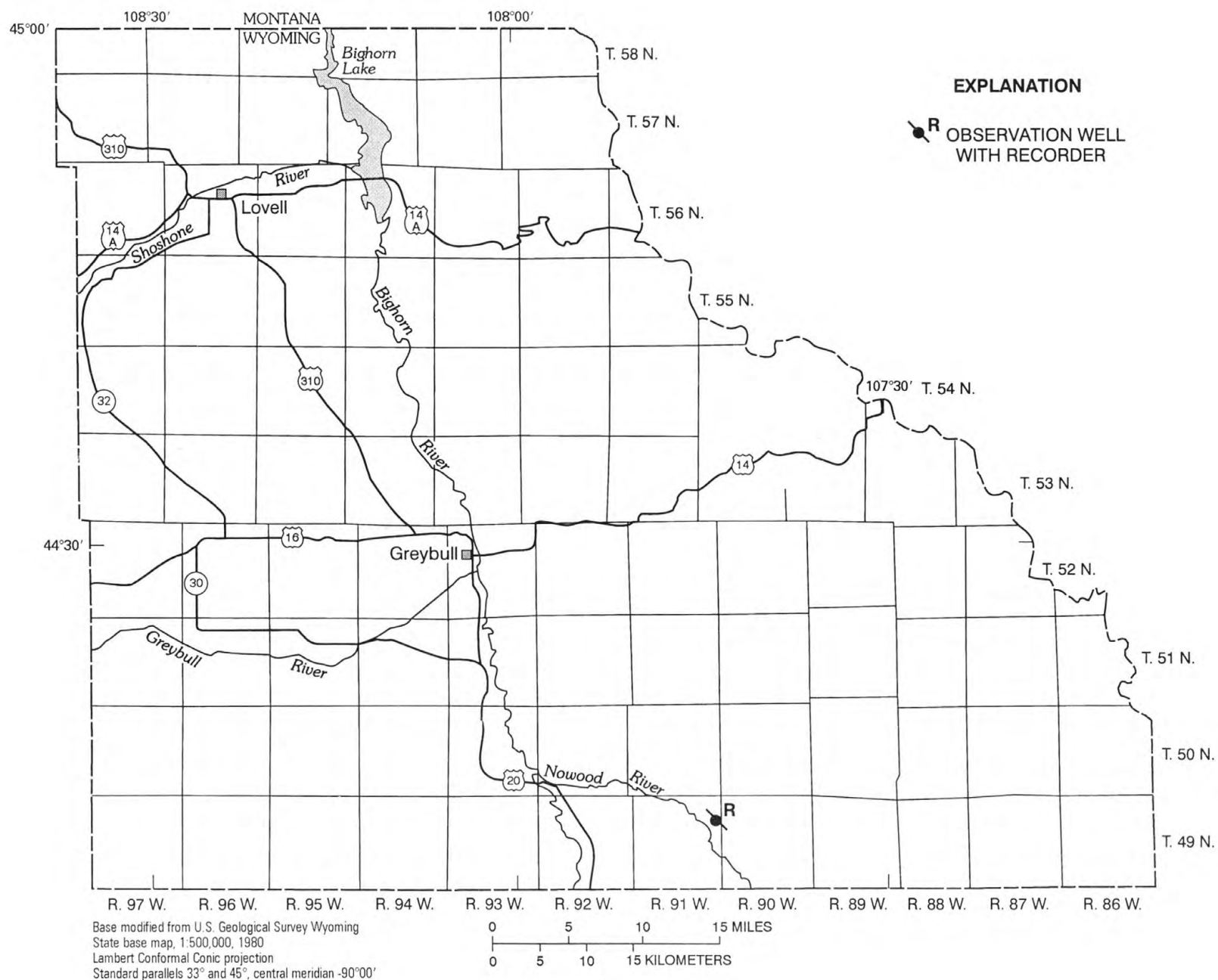


Figure 7. Location of observation well in Big Horn County, Wyoming.

BIG HORN COUNTY

Station number, 441351107434701. Local number, 49-091-12dba01. Local name, Worland-1.

LOCATION.--Lat 44°13'53", long 107°43'41", in NE¹/₄ NW¹/₄ SE¹/₄ sec.12, T.49 N., R.91 W., Hydrologic Unit 10080008.

AQUIFER.--Madison Limestone.

WELL CHARACTERISTICS.--Depth of well, 2,730 ft below land surface.

DATUM.--Elevation of land surface is 4,421.7 ft above sea level, from levels.

REMARKS.--Shut-in pressure was measured by pressure transducer and converted to hydraulic head above land surface for illustration purposes. Hydraulic head, in feet above land surface, was calculated by multiplying the shut-in pressure in pounds per square inch times 2.307. The accuracy of the hydraulic head measurements is ± 5.0 ft. Data collected by U.S. Geological Survey.

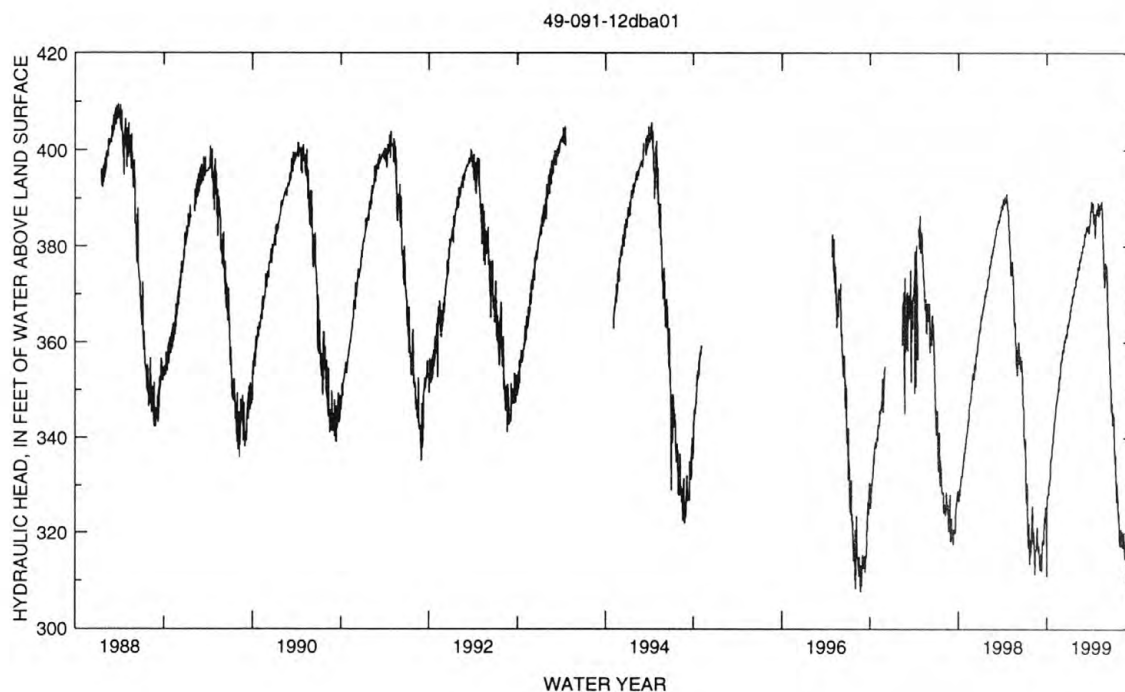
PERIOD OF RECORD.--1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest hydraulic head, 409.50 ft above land surface, Mar. 26, 1988; lowest, 307.59 ft above land surface, Aug. 23, 1996.

HYDRAULIC HEAD, IN FEET ABOVE LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	327.47	343.88	357.42	365.14	373.69	380.39	389.40	387.13	375.37	344.57	319.84	317.17
10	330.05	347.11	358.21	367.45	375.54	382.24	388.48	388.71	368.84	334.63	317.76	318.22
15	331.44	349.19	360.28	368.37	377.16	384.09	386.40	388.78	361.44	330.21	319.61	320.77
20	335.56	349.89	361.44	369.99	377.39	383.63	381.68	384.55	354.74	327.24	314.62	324.70
25	338.33	352.20	362.36	371.38	378.77	382.70	387.16	376.00	345.49	323.24	312.68	324.56
EOM	342.26	356.13	363.75	373.23	380.16	387.09	387.16	376.46	344.60	319.84	309.97	325.16

WTR YR 1999: HIGHEST 389.40 (APR 5, MAY 17); LOWEST 309.97 (AUG 31)



WATER RESOURCES DATA FOR WYOMING, 1999

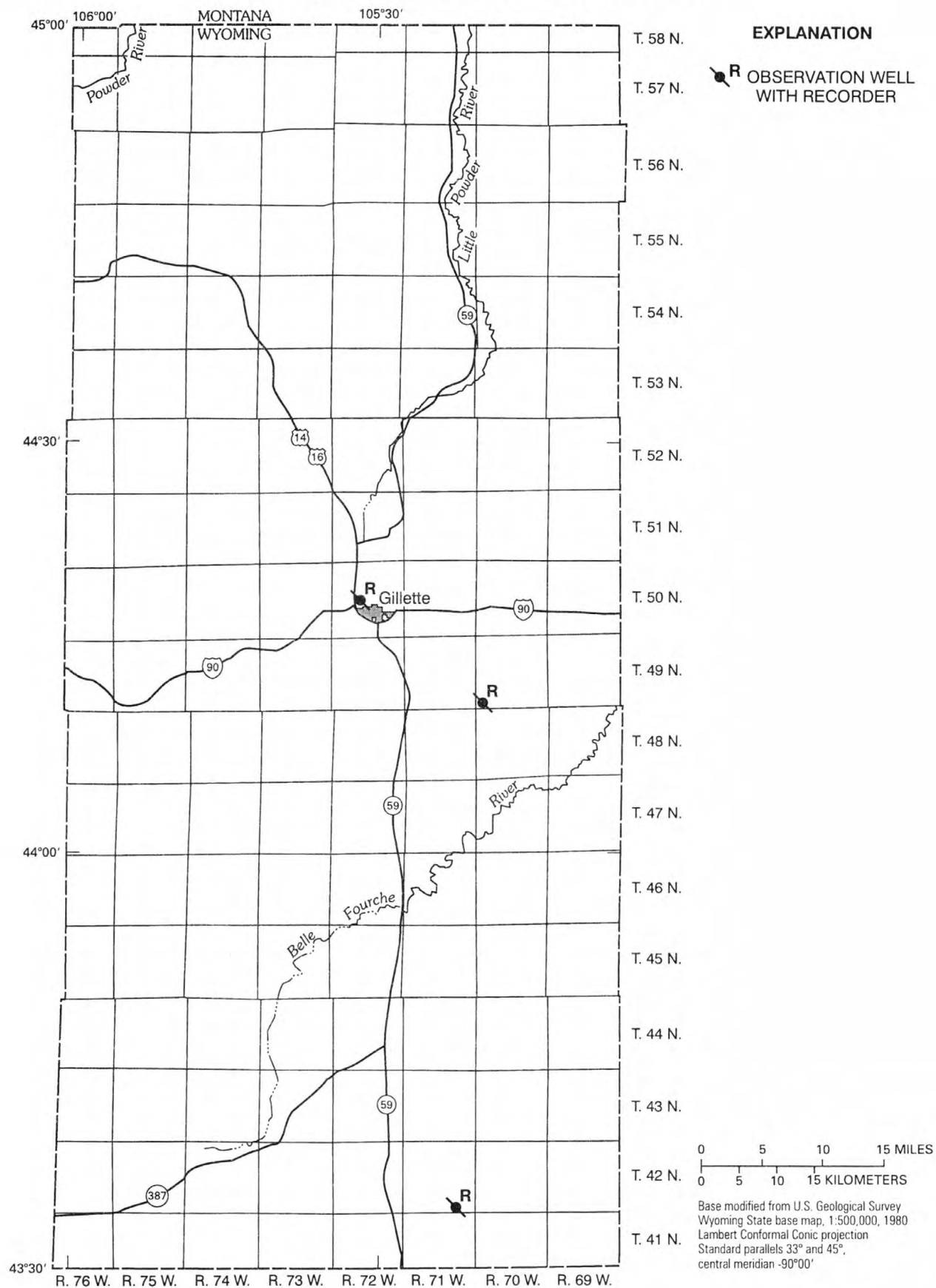


Figure 8. Location of observation wells in Campbell County, Wyoming.

CAMPBELL COUNTY

Station number, 433438105225401. Local number, 42-071-35aaa01. Local name, Ech-8.

LOCATION.--Lat 43°34'38", long 105°22'54", in NE¹/₄ NE¹/₄ NE¹/₄ sec.35, T.42 N., R.71 W., Hydrologic Unit 10120101.

AQUIFER.--Wasatch Formation.

WELL CHARACTERISTICS.--Depth of well, 399 ft below land surface.

DATUM.--Elevation of land surface is 4,732 ft above sea level, from topographic map. Measuring point: top of casing, 1.15 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer;s Office and reviewed by U.S. Geological Survey.

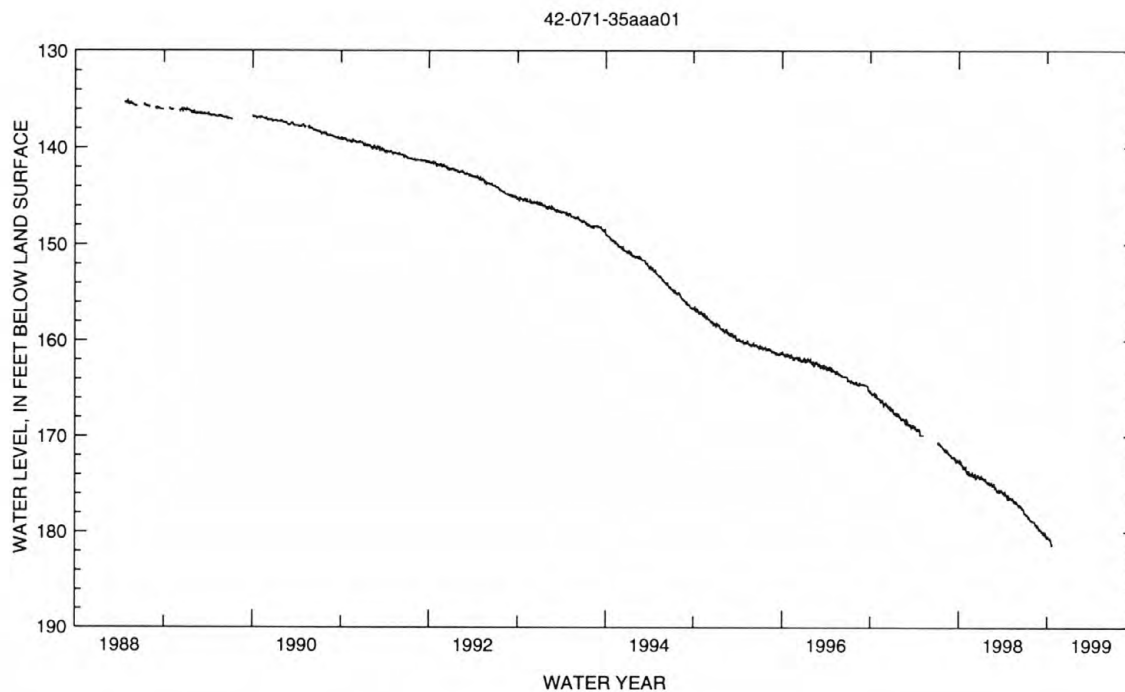
PERIOD OF RECORD.--1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 135.13 ft below land surface, May 3, 1988; lowest, 181.41 ft below land surface, Oct. 21, 1998.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	180.47	---	---	---	---	---	---	---	---	---	---	---
10	180.65	---	---	---	---	---	---	---	---	---	---	---
15	180.70	---	---	---	---	---	---	---	---	---	---	---
20	181.34	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
EOM	---	---	---	---	---	---	---	---	---	---	---	---

WTR YR 1999: HIGHEST 180.45 (OCT 4); LOWEST 181.41 (OCT 21)



GROUND-WATER LEVELS

CAMPBELL COUNTY

Station number, 441117105192901. Local number, 49-070-31bbb01. Local name, Hampshire-1.

LOCATION.--Lat 44°11'17", long 105°19'29", in NW¹/₄ NW¹/₄ NW¹/₄ sec.31, T.49 N., R.70 W., Hydrologic Unit 10120201.

AQUIFER.--Fox Hills Formation.

WELL CHARACTERISTICS.--Depth of well, 3,750 ft below land surface.

DATUM.--Elevation of land surface is 4,620 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land surface.

REMARKS.--Because of the extreme depths to water and well construction, the accuracy of water-level measurements is ± 2.0 ft.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

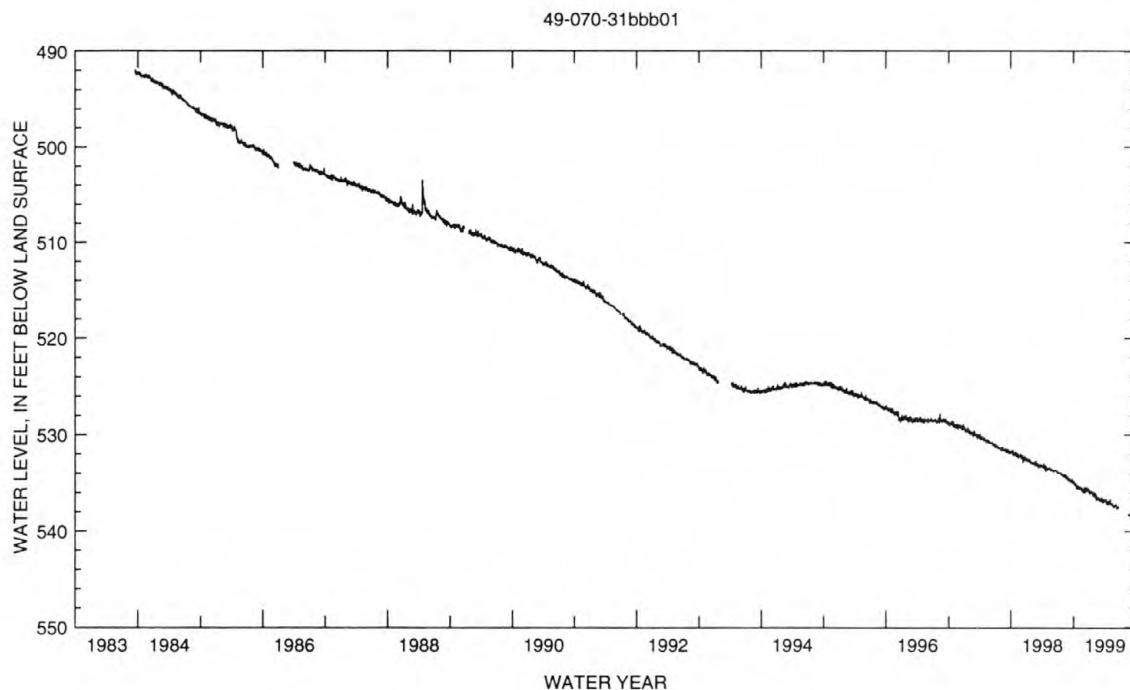
PERIOD OF RECORD.--1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 491.98 ft below land surface, Sept. 17, 1983; lowest, 539.05 ft below land surface, Sept. 28, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	534.36	534.95	535.34	535.90	536.26	536.61	536.87	536.93	537.29	---	---	538.41
10	534.47	534.91	535.73	535.89	536.12	536.64	536.69	537.12	537.49	---	---	538.41
15	534.48	534.93	535.76	535.87	536.50	536.61	537.18	537.16	537.64	---	---	538.63
20	535.04	535.14	535.80	535.89	536.64	536.98	536.83	537.33	537.50	---	538.24	538.81
25	534.84	535.25	535.74	536.21	536.52	536.83	536.95	537.40	---	---	538.23	538.50
EOM	535.01	535.33	535.70	536.22	536.73	536.72	537.19	537.29	---	---	538.26	538.82

WTR YR 1999: HIGHEST 534.36 (OCT 5); LOWEST 539.05 (SEPT 28)



CAMPBELL COUNTY

Station number, 441819105305701. Local number, 50-072-21aba01. Local name, Gillette H-13.

LOCATION.--Lat 44°18'19", long 105°30'57", in NE¹/₄ NW¹/₄ NE¹/₄ sec.21, T.50 N., R.72 W., Hydrologic Unit 10120201.

AQUIFER.--Wasatch Formation.

WELL CHARACTERISTICS.--Depth of well, 320 ft below land surface.

DATUM.--Elevation of land surface is 4,500 ft above sea level, from topographic map. Measuring point: top of casing, 6.35 ft below land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

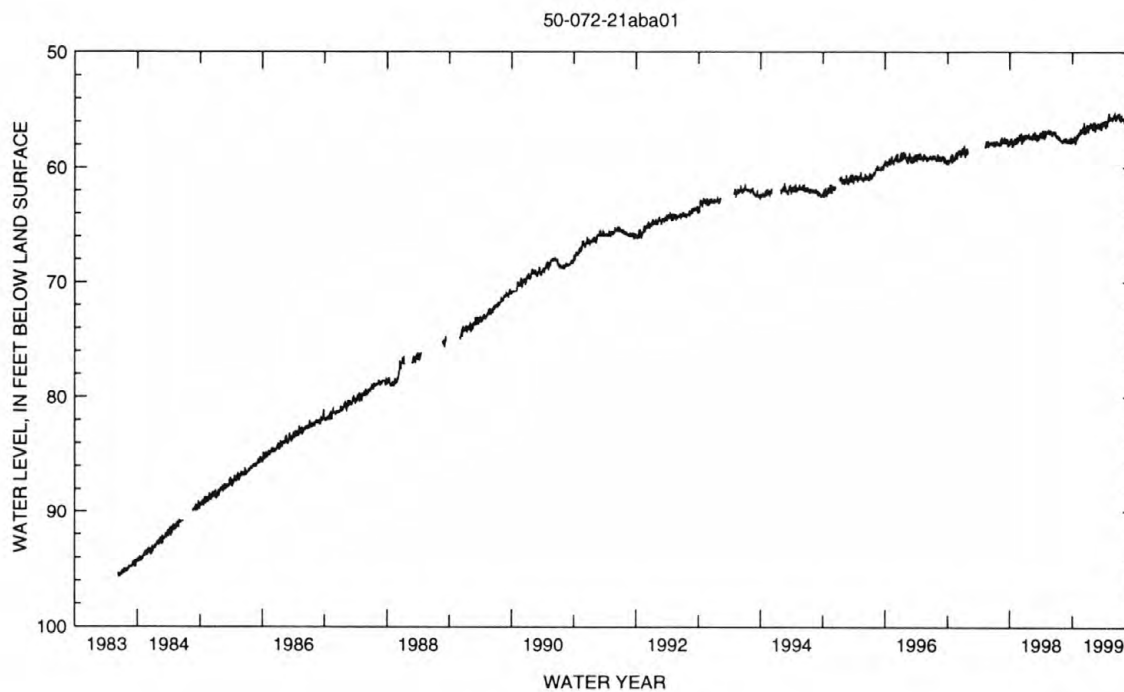
PERIOD OF RECORD.--1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 55.27 ft below land surface, July 3, 1999; lowest, 95.71 ft below land surface, June 14, 1983.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	57.47	57.21	56.73	56.60	56.34	56.31	56.21	55.65	55.37	55.67	55.91	56.09
10	57.44	56.99	57.08	56.43	56.02	56.32	55.94	55.74	55.75	56.00	55.79	55.99
15	57.25	56.84	57.01	56.29	56.50	56.22	56.58	55.66	55.85	55.55	55.79	56.16
20	57.88	56.89	56.89	56.18	56.62	56.70	55.91	55.80	55.58	55.82	56.04	56.29
25	57.45	56.93	56.65	56.54	56.22	56.27	55.91	55.73	55.34	55.72	56.00	55.74
EOM	57.51	56.81	56.40	56.38	56.51	56.04	56.04	55.48	55.52	55.85	55.93	56.03

WTR YR 1999: HIGHEST 55.27 (JUL 3); LOWEST 57.88 (OCT 20)



WATER RESOURCES DATA FOR WYOMING, 1999

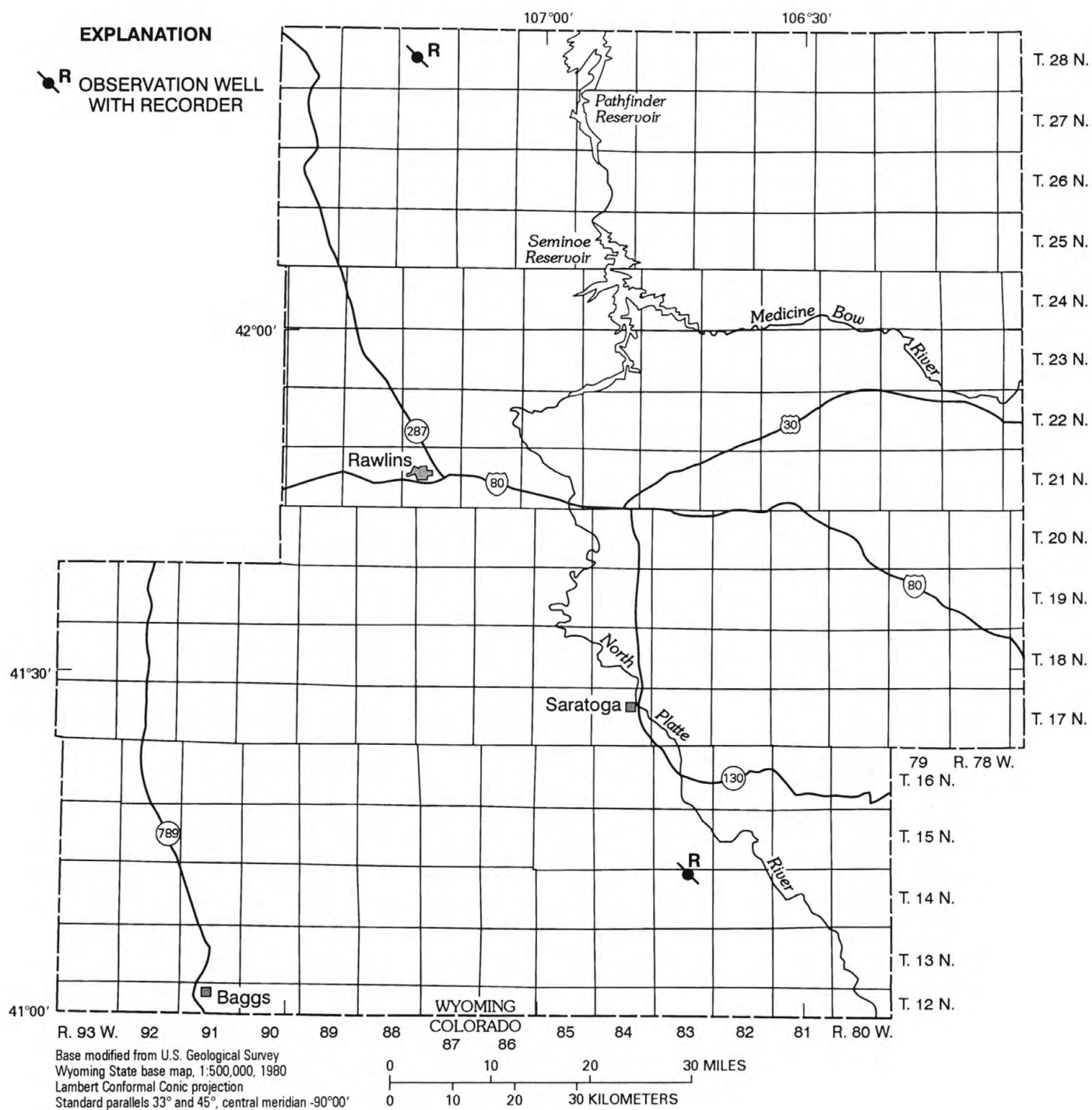


Figure 9. Location of observation wells in Carbon County, Wyoming.

CARBON COUNTY

Station number, 411234106424601. Local number, 14-083-03cab01. Local name, Helmer South.

LOCATION.--Lat 41°12'34", long 106°42'46", in NW¹/4 NE¹/4 SW¹/4 sec.3, T.14 N., R.83 W., Hydrologic Unit 10180002.

AQUIFER.--North Park Formation.

WELL CHARACTERISTICS.--Depth of well, 58 ft below land surface.

DATUM.--Elevation of land surface is 7,245 ft above sea level, from topographic map. Measuring point: top of casing, 5.40 ft below land surface.

REMARKS.--Data collected by U.S. Geological Survey.

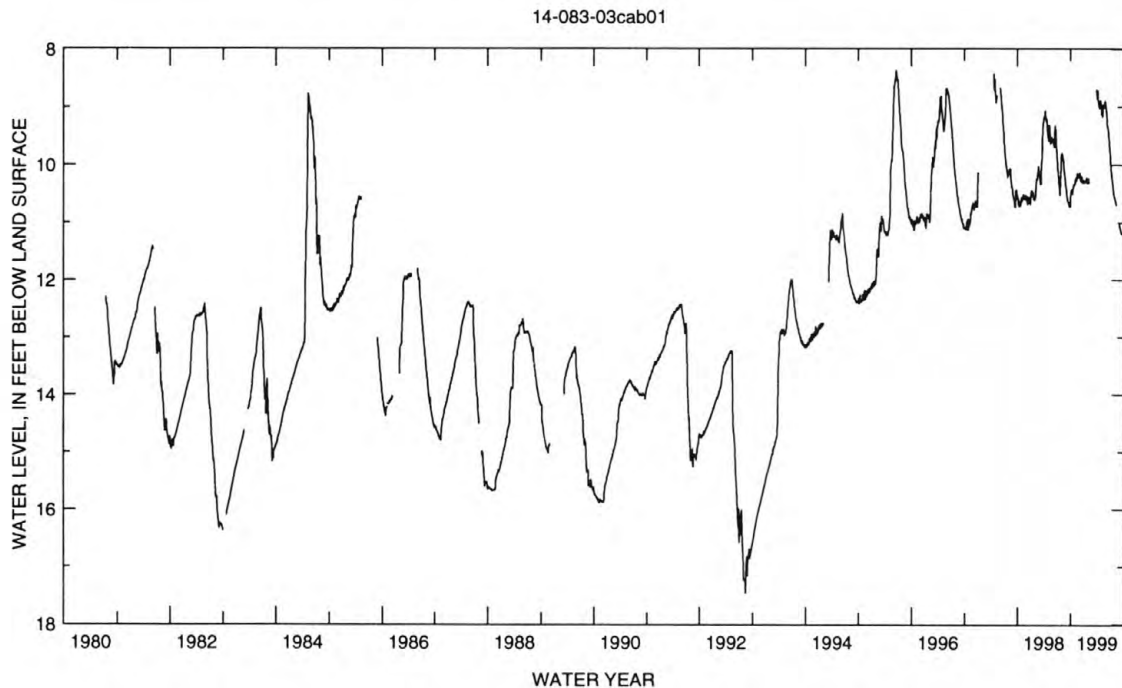
PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.37 ft below land surface, June 20, 1995; lowest, 17.47 ft below land surface, Aug. 13, 1992.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	10.50	10.27	10.16	10.30	10.31	---	8.86	9.09	9.05	9.95	10.60	11.06
10	10.42	10.24	10.26	10.30	---	---	8.80	9.17	9.19	10.12	10.64	11.12
15	10.44	10.21	10.28	10.27	---	---	8.97	8.97	9.34	10.23	---	11.16
20	10.42	10.20	10.23	10.25	---	---	9.00	8.98	9.43	10.34	---	11.20
25	10.34	10.22	10.30	10.27	---	---	8.89	8.95	9.55	10.47	---	11.18
EOM	10.35	10.20	10.26	10.28	---	8.71	9.00	8.93	9.72	10.57	---	11.18

WTR YR 1999: HIGHEST 8.70 (MAR 30); LOWEST 11.22 (SEPT 28)



GROUND-WATER LEVELS

CARBON COUNTY

Station number, 422338107145001. Local number, 28-087-16cca01. Local name, Split Rock #2.

LOCATION.--Lat 42°23'38", long 107°14'50", in NE¹/4 SW¹/4 SW¹/4 sec.16, T.28 N, R.87 W., Hydrologic Unit 10180006.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 812 ft below land surface.

DATUM.--Elevation of land surface is 6,000 ft above sea level, from topographic map. Measuring point: top of casing, 1.95 ft above land surface.

REMARKS.--A twenty-day pumping test was conducted in September and October 1981.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

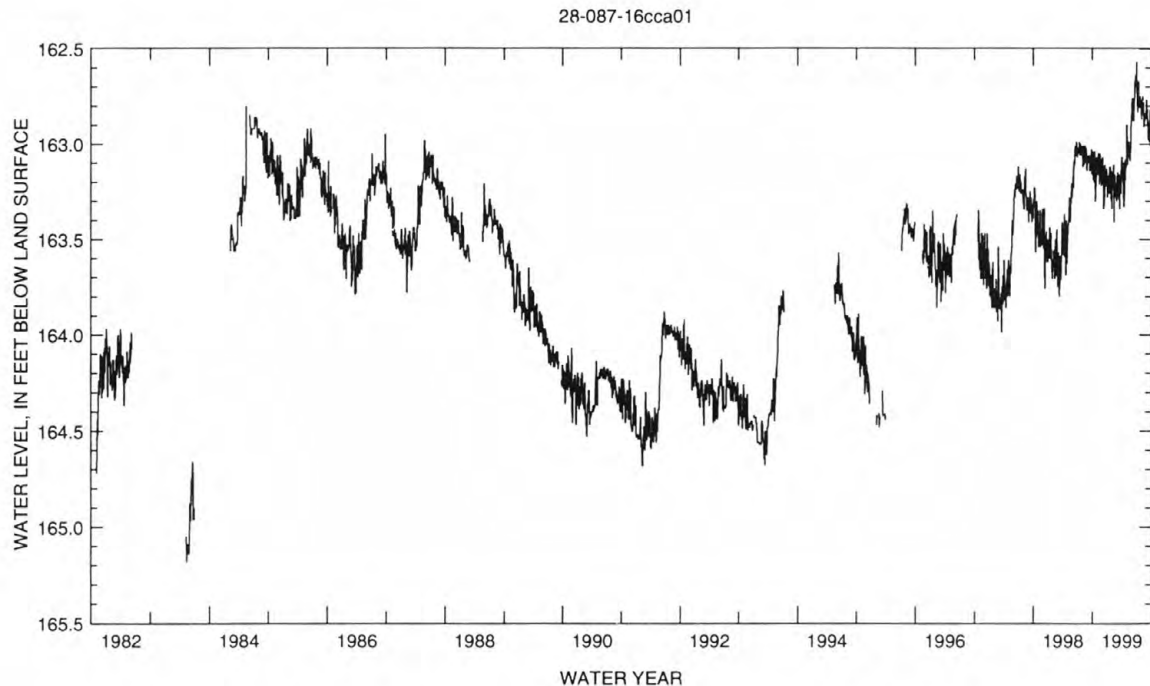
PERIOD OF RECORD.--1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 162.57 ft below land surface, Feb. 13, 1999; lowest, 163.41 ft

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	163.06	163.12	163.09	163.24	163.20	163.17	163.12	162.97	162.77	162.67	162.79	162.84
10	163.10	163.06	163.34	163.25	163.11	163.18	163.10	163.03	162.81	162.83	162.76	162.87
15	163.04	163.13	163.28	163.20	163.27	163.22	163.33	162.99	162.85	162.67	162.77	162.94
20	163.24	163.19	163.15	163.15	163.23	163.34	163.14	163.03	162.74	162.78	162.88	162.95
25	163.17	163.16	163.21	163.29	163.21	163.24	163.09	163.02	162.64	162.75	162.84	162.82
EOM	163.16	163.11	163.14	163.25	163.30	163.09	163.12	162.86	162.66	162.77	162.82	162.94

WTR YR 1999: HIGHEST 162.57 (JUL 3); LOWEST 163.41 (FEB 13)



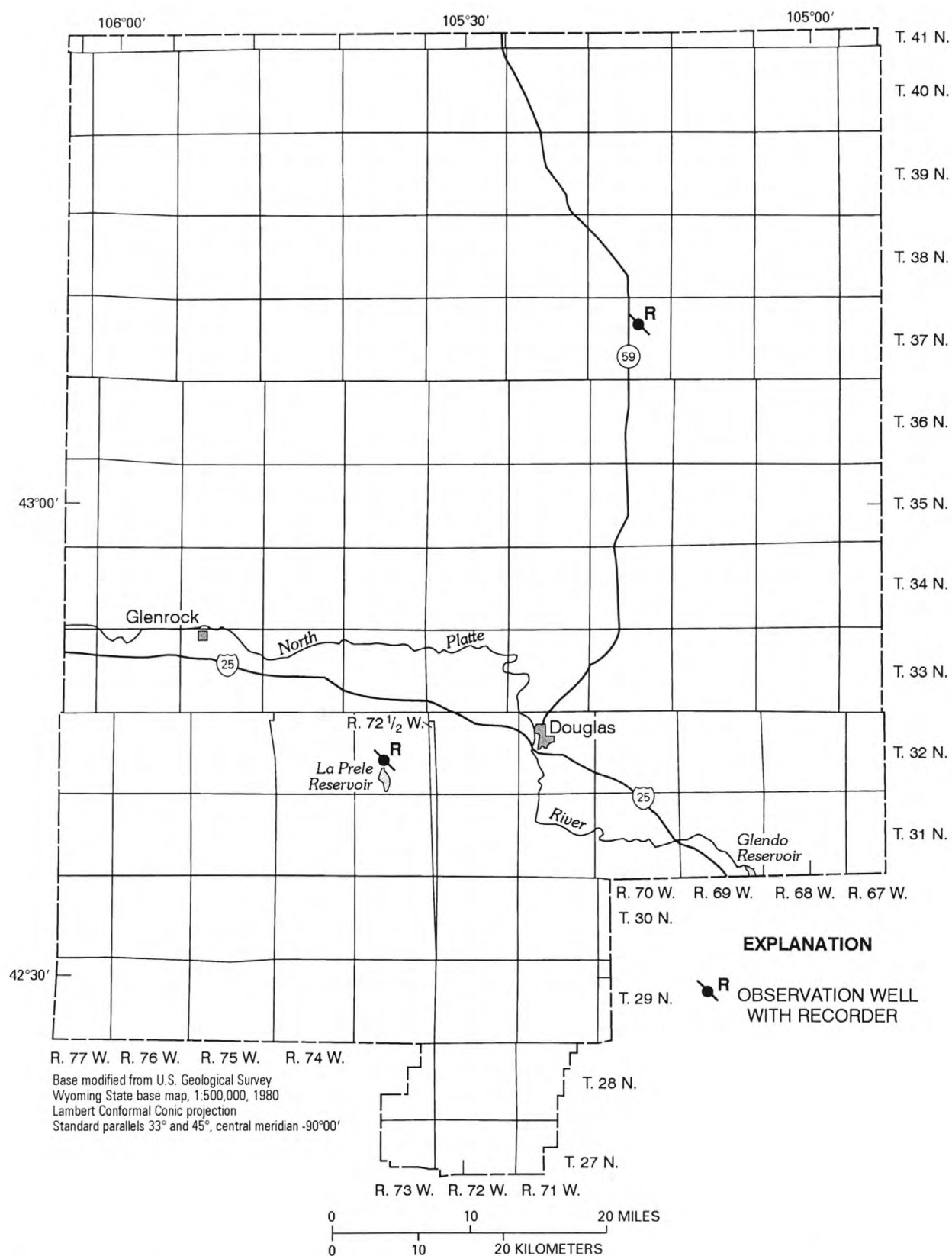


Figure 10. Location of observation wells in Converse County, Wyoming.

GROUND-WATER LEVELS

CONVERSE COUNTY

Station number, 424420105364201. Local number, 32-073-16cdb01. Local name, Natural Bridge East.

LOCATION.--Lat 42°44'20", long 105°36'42", in NW¹/₄ SE¹/₄ SW¹/₄ sec.16, T.32 N., R.73 W., Hydrologic Unit 10180007.

AQUIFER.--Casper Formation.

WELL CHARACTERISTICS.--Depth of well, 220 ft below land surface.

DATUM.--Elevation of land surface is 5,316.4 ft above sea level, from levels. Measuring point: top of casing, 1.70 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

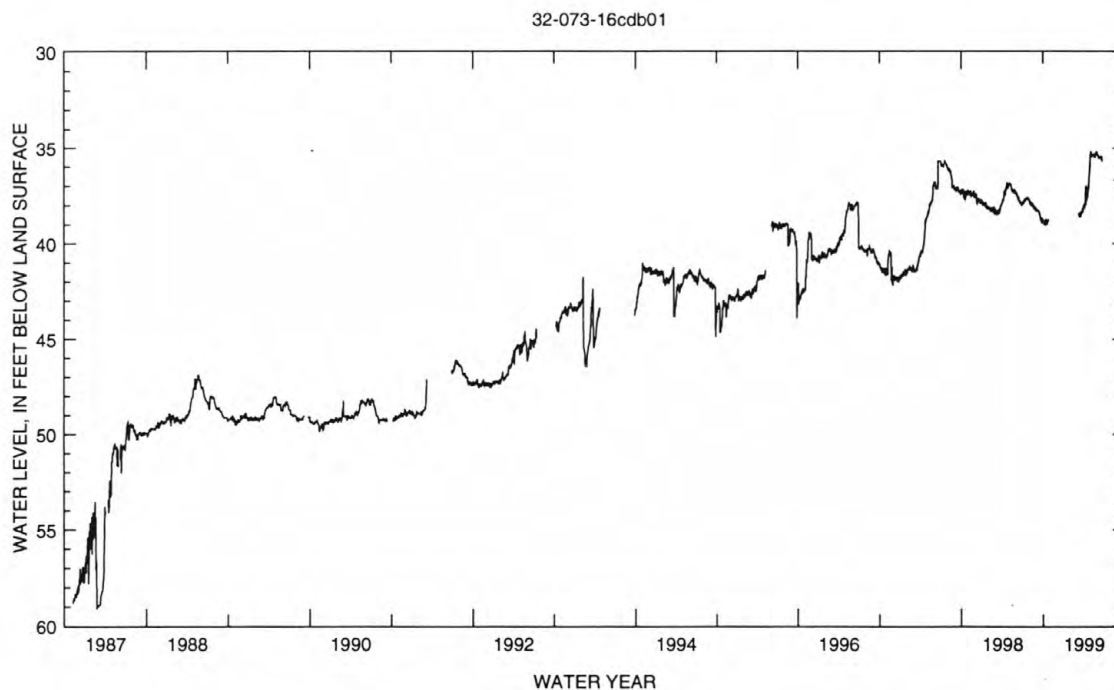
PERIOD OF RECORD.--1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 35.19 ft below land surface, May 3, 4, 1999; lowest, 59.12 ft below land surface, Feb. 21, 1987.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	38.88	---	---	---	---	---	38.09	35.36	35.40	---	---	36.94
10	38.85	---	---	---	---	38.44	37.00	35.46	35.53	---	---	36.97
15	38.72	---	---	---	---	38.43	37.69	35.37	35.52	---	---	37.12
20	38.96	---	---	---	---	38.53	37.31	35.45	35.57	---	36.68	37.25
25	38.79	---	---	---	---	38.31	36.56	35.33	---	---	36.71	37.11
EOM	---	---	---	---	---	38.11	35.63	35.23	---	---	36.81	37.30

WTR YR 1999: HIGHEST 35.19 (MAY 3, 4); LOWEST 39.05 (OCT 12)



CONVERSE COUNTY

Station number, 431140105151901. Local number, 37-070-10cbb01. Local name, Bill #6.

LOCATION.--Lat 43°11'40", long 105°15'19", in NW¹/₄ NW¹/₄ SW¹/₄ sec.10, T.37 N., R.70 W., Hydrologic Unit 10120105.

AQUIFER.--Wasatch Formation.

WELL CHARACTERISTICS.--Depth of well, 268 ft below land surface.

DATUM.--Elevation of land surface is 4,720 ft above sea level, from topographic map. Measuring point: top of casing, 0.40 ft above land surface.

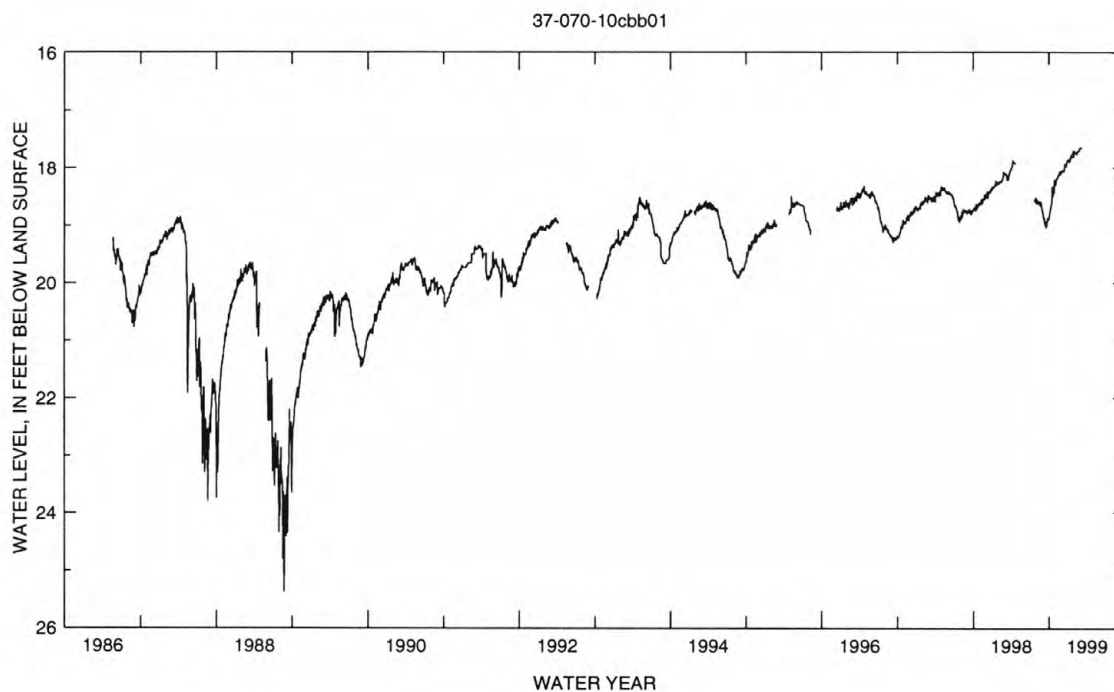
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

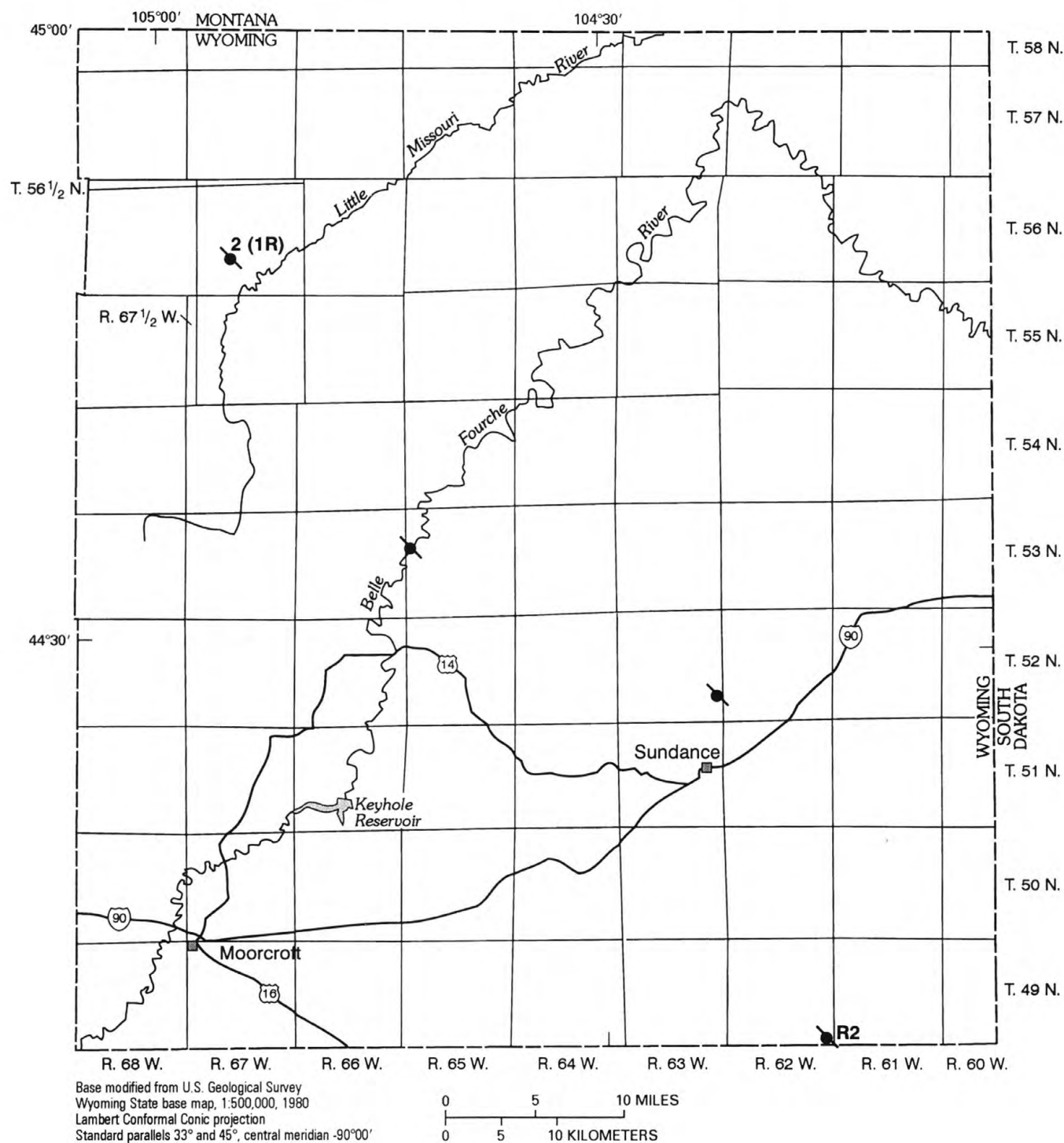
PERIOD OF RECORD.--1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.64 ft below land surface, Mar. 7, 1999; lowest, 25.38 ft below land surface, Aug. 31, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	18.77	18.25	18.05	17.88	---	17.66	---	---	---	---	---	18.28
10	18.67	18.18	18.07	17.86	---	---	---	---	---	---	---	18.33
15	18.62	18.14	18.03	17.81	17.73	---	---	---	---	---	---	18.31
20	18.49	18.14	17.97	17.76	17.71	---	---	---	---	---	18.27	18.25
25	18.42	18.09	17.95	17.81	17.71	---	---	---	---	---	18.32	18.10
EOM	18.29	18.07	17.88	17.74	17.66	---	---	---	---	---	18.43	18.19
WTR YR 1999:	HIGHEST		17.64	(MAR 7);		LOWEST	18.88	(OCT 1)				





EXPLANATION

- ² OBSERVATION WELL--
Number near well
is number of wells
at that location
- ^R OBSERVATION WELL
WITH RECORDER

Figure 11. Location of observation wells in Crook County, Wyoming.

CROOK COUNTY

Station number, 441113104151001. Local number, 49-062-36cbb01. Local name, Inyan Kara Mountain CCMOW6.

LOCATION.--Lat 44°11'13", long 104°15'10", in NW¹/₄ NW¹/₄ SW¹/₄ sec.36, T.49 N., R.62 W., Hydrologic Unit 10120201.

AQUIFER.--Madison Formation.

WELL CHARACTERISTICS.--Depth of well, 1,280 ft below land surface.

DATUM.--Elevation of land surface is 5,403 ft above sea level, from topographic map. Measuring point: top of casing, 0.60 ft below land surface.

REMARKS.--This well was included in the Wyoming State Engineer's Office/U.S. Geological Survey cooperative program on Oct. 1, 1997. Data prior to Oct. 1, 1998 is available from the Wyoming State Engineer's Office.

COOPERATION.--Data collected by the Wyoming State Engineer's Office and compiled and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1994 to current year.

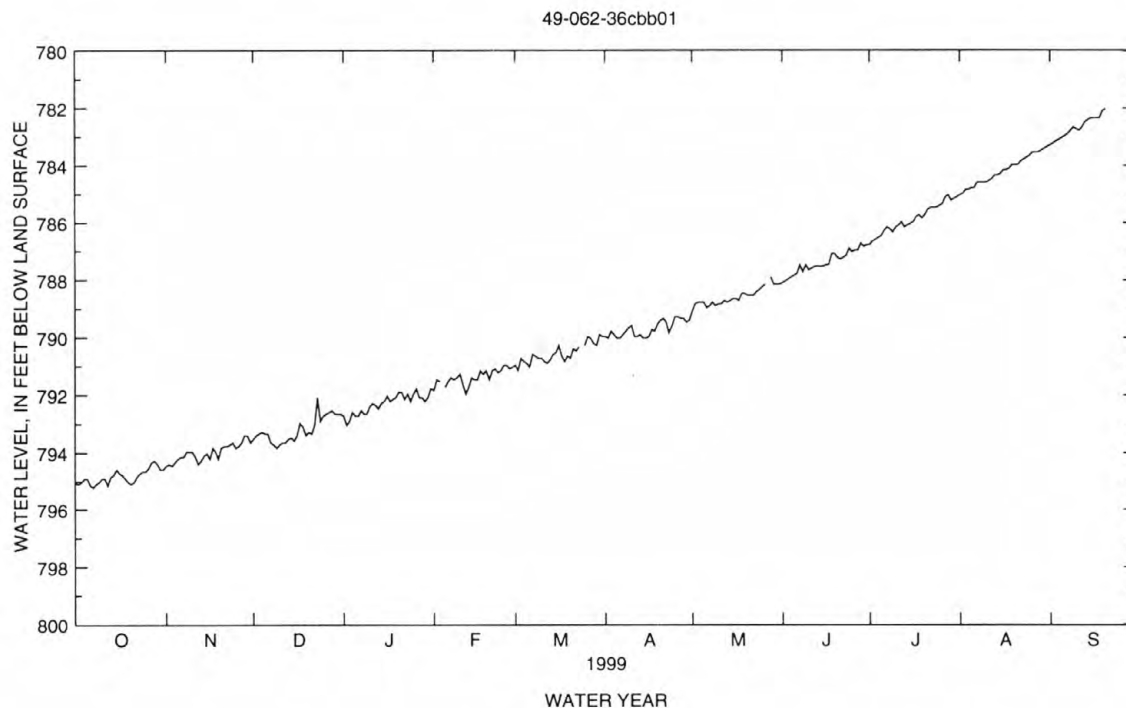
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 782.03 ft below land surface, Sept. 20, 1999; lowest, 840.05* ft below land surface, Apr. 22, 1995.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	794.90	794.22	793.34	792.72	791.72	790.90	790.03	788.78	787.84	786.47	784.78	783.03
10	794.90	793.97	793.72	792.40	791.28	790.72	789.59	788.84	787.65	786.15	784.59	782.72
15	794.59	794.03	793.59	792.22	791.47	790.53	790.03	788.65	787.53	786.03	784.28	782.34
20	795.09	793.84	793.28	791.90	791.47	790.72	789.40	788.53	787.22	785.72	783.97	782.03
25	794.65	793.84	792.72	791.97	790.97	790.28	789.28	788.22	787.03	785.40	783.65	---
EOM	794.59	793.65	792.65	791.78	791.03	789.97	789.40	788.15	786.78	785.09	783.34	---

WTR YR 1999: HIGHEST 782.03 (SEPT 20); LOWEST 795.22 (OCT 7)

* Data from the Wyoming State Engineer's Office prior to the well's inclusion in the U.S. Geological Survey's cooperative program.



CROOK COUNTY

Station number, 441113104151002. Local number, 49-062-36cbb02. Local name, Inyan Kara Mountain CCMOW6A.

LOCATION.--Lat 44°11'13", long 104°15'10", in NW¹/₄ NW¹/₄ SW¹/₄ sec.36, T.49 N., R.62 W., Hydrologic Unit 10120201.

AQUIFER.--Minnelusa Formation.

WELL CHARACTERISTICS.--Depth of well, 500 ft below land surface.

DATUM.--Elevation of land surface is 5,403 ft above sea level, from topographic map. Measuring point: top of casing, 0.90 ft below land surface.

REMARKS.--This well was included in the Wyoming State Engineer's Office/U.S. Geological Survey cooperative program on Oct. 1, 1997. Data prior to Oct. 1, 1998 is available from the Office of the Wyoming State Engineer.

COOPERATION.--Data collected by the Wyoming State Engineer's Office and compiled and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1995 to current year.

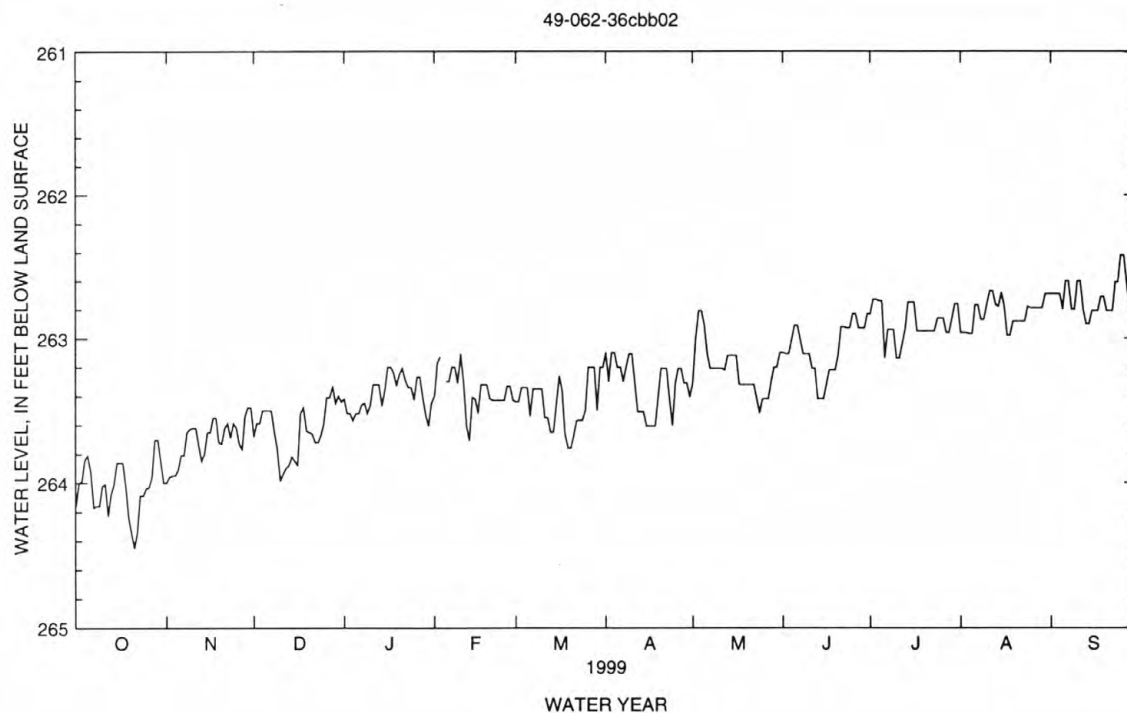
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 262.42 ft below land surface, Sept. 25, 26, 1999; lowest, 267.30* ft below land surface, Mar. 1, 1995.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	263.81	263.91	263.50	263.52	263.30	263.34	263.20	262.91	262.91	262.74	262.97	262.80
10	264.02	263.62	263.99	263.47	263.11	263.35	263.11	263.21	263.11	263.14	262.77	262.60
15	263.86	263.65	263.85	263.36	263.42	263.46	263.61	263.12	263.42	262.75	262.68	262.81
20	264.35	263.73	263.65	263.25	263.42	263.76	263.21	263.32	263.12	262.95	262.88	262.81
25	264.04	263.62	263.59	263.43	263.43	263.50	263.31	263.42	262.83	262.86	262.79	262.42
EOM	264.00	263.48	263.44	263.45	263.43	263.20	263.41	263.10	262.83	262.76	262.69	262.72

WTR YR 1999: HIGHEST 262.42 (SEPT 25,26); LOWEST 264.45 (OCT 21)

* Data from the Wyoming State Engineer's Office prior to the well's inclusion in the U.S. Geological Survey's cooperative program.



CROOK COUNTY

Station number, 442739104214601. Local number, 52-063-25dcd01. Local name, Cole #3A.

LOCATION.--Lat 44°27'39", long 104°21'46", in SE¹/₄ SW¹/₄ SE¹/₄ sec. 25, T.52 N., R.63 W., Hydrologic Unit 10120203.

AQUIFER.--Madison Limestone.

WELL CHARACTERISTICS.--Depth of well, 1,120 ft below land surface.

DATUM.--Elevation of land surface is 4,740 ft above sea level, from topographic map. Measuring point: top of casing, 2.0 ft above land surface.

REMARKS.--Data reflect static and pumping water levels.

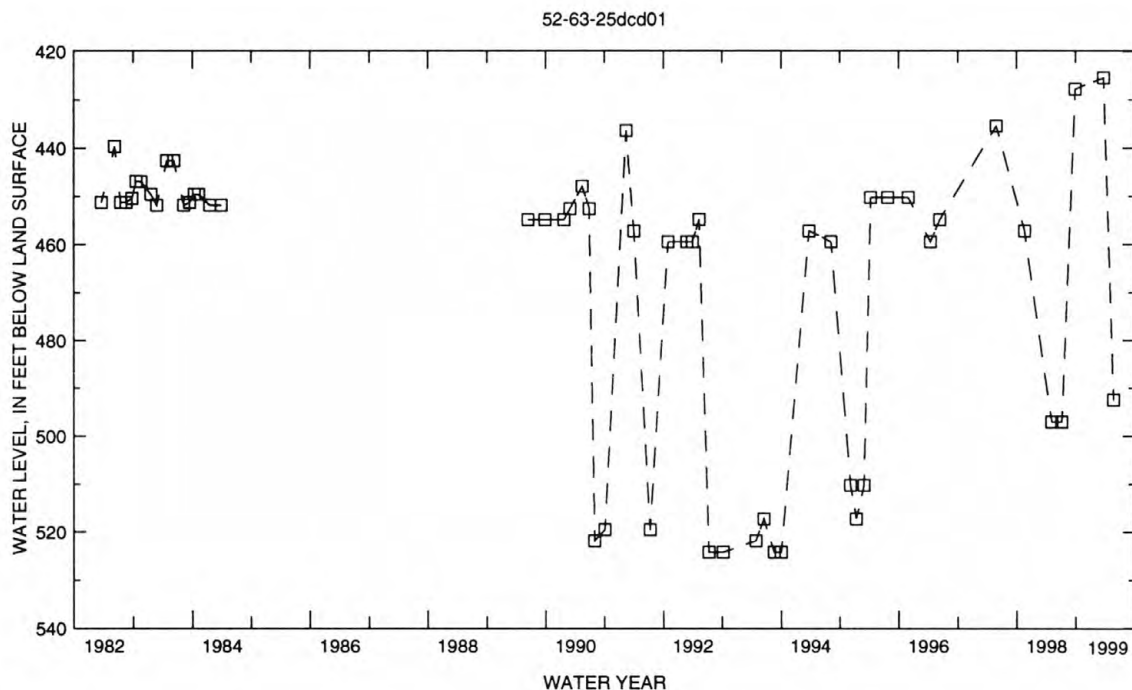
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1982 to 1984, 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 425.48 ft below land surface, Mar. 23, 1999; lowest, 524.19 ft below land surface, July 10, Oct. 7, 1992, Aug. 18, Oct. 1, 1993.

WATER LEVELS, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL
MAR 23	425.48
MAY 24	492.47



GROUND-WATER LEVELS

CROOK COUNTY

Station number, 443453104425602. Local number, 53-065-18bbd02. Local name, Park Service.

LOCATION.--44°34'53", long 104°42'56", in SE¹/₄ NW¹/₄ NW¹/₄ sec.18, T.53 N., R.65 W., Hydrologic Unit 10120201.

AQUIFER.--Madison Limestone. (Pahasapa Limestone).

WELL CHARACTERISTICS.--Depth of well, 1,340 ft below land surface.

DATUM.--Elevation of land surface is 3,865 ft above sea level, from topographic map. Measuring point: top of casing, 2.3 ft above land surface.

REMARKS.--After 1982 some water-level measurements were taken while well was being pumped or recently after the well was pumped.

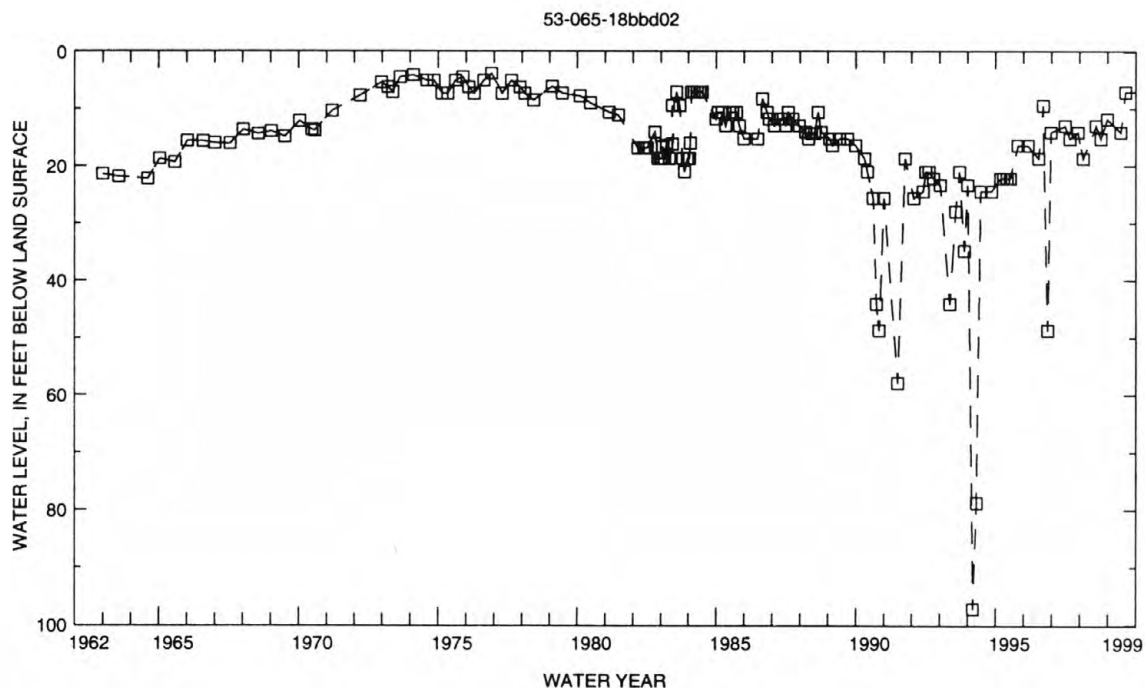
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.90 ft below land surface, Sept. 1, 1976; lowest, 97.24 ft below land surface (well being pumped), Dec. 8, 1993.

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

DATE	WATER LEVEL
MAR 24	14.08
MAY 26	7.15



CROOK COUNTY

Station number, 444854104534502. Local number, 56-067-28aab02. Local name, Cole #41 Minnelusa.

LOCATION.--Lat 44°48'54", long 104°53'45", in NW¹/₄ NE¹/₄ NE¹/₄ sec.28 T.56 N., R.67 W., Hydrologic Unit 10110201.

AQUIFER.--Madison Limestone.

WELL CHARACTERISTICS.--Depth of well, 2,240 ft below land surface.

DATUM.--Elevation of land surface is 4,500 ft above sea level, from topographic map. Measuring point: top of casing, 1.20 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

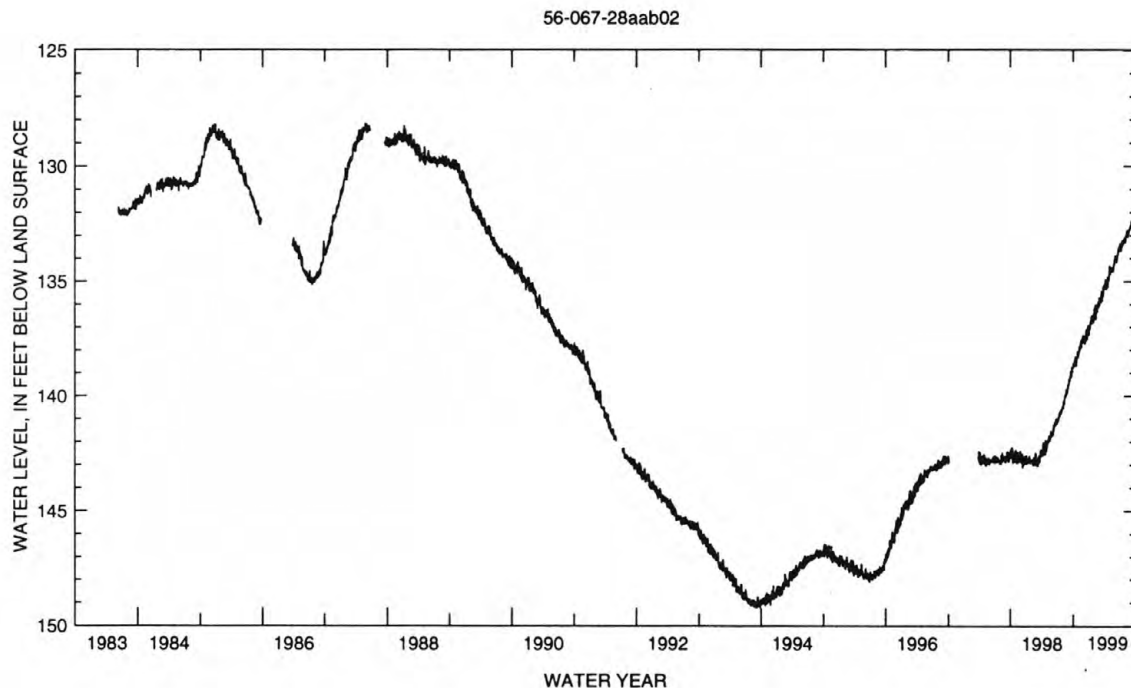
PERIOD OF RECORD.--1983 to current year.

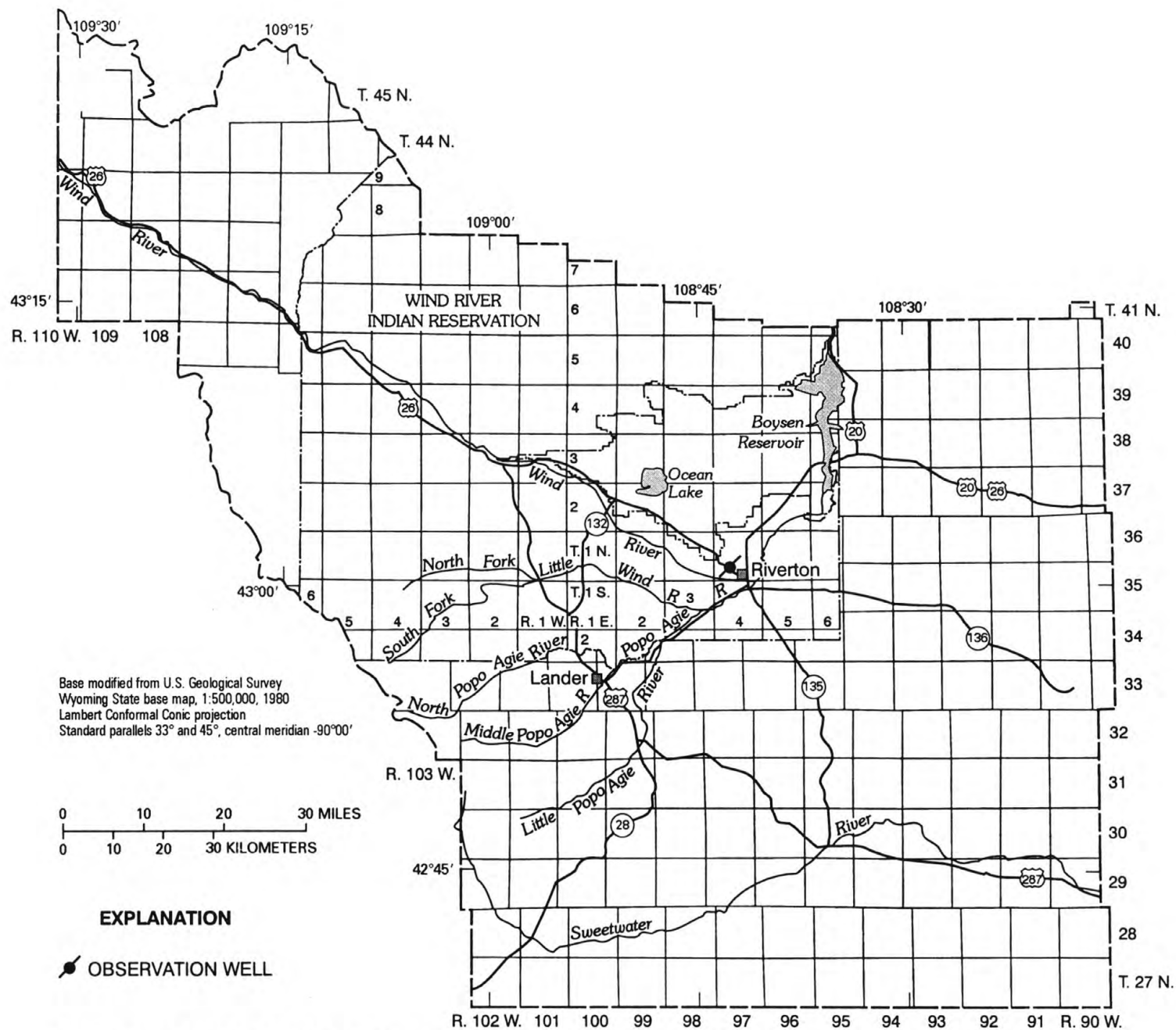
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 128.18 ft below land surface, May 5-25, 26, 27, 28, 31, 1987; lowest, 149.25 ft below land surface, Sept. 28, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	138.56	138.08	137.46	137.05	136.43	135.92	135.26	134.54	133.94	133.62	133.09	132.59
10	138.47	137.86	137.68	136.82	136.02	135.81	134.96	134.58	134.11	133.68	132.86	132.44
15	138.28	137.67	137.59	136.68	136.36	135.60	135.33	134.45	134.12	133.24	132.78	132.53
20	138.70	137.72	137.54	136.51	136.35	135.84	134.85	134.50	133.81	133.35	132.89	132.59
25	138.31	137.67	137.23	136.71	135.92	135.48	134.82	134.38	133.53	133.17	132.72	132.14
EOM	138.30	137.61	137.01	136.48	136.02	135.24	134.91	134.12	133.57	133.21	132.56	132.35

WTR YR 1999: HIGHEST 132.14 (SEPT 25); LOWEST 138.79 (OCT 1)





FREMONT COUNTY

Station number, 430205108243201. Local number, 1N-4E-28acc01. Local name, Brentwood.

LOCATION.--Lat 43°02'05", long 108°24'32", in SW¹/₄ SW¹/₄ NE¹/₄ sec.28, T.1 N., R.4 E., Hydrologic Unit 10080001.

AQUIFER.--Wind River formation.

WELL CHARACTERISTICS.--Depth of well, 440 ft below land surface.

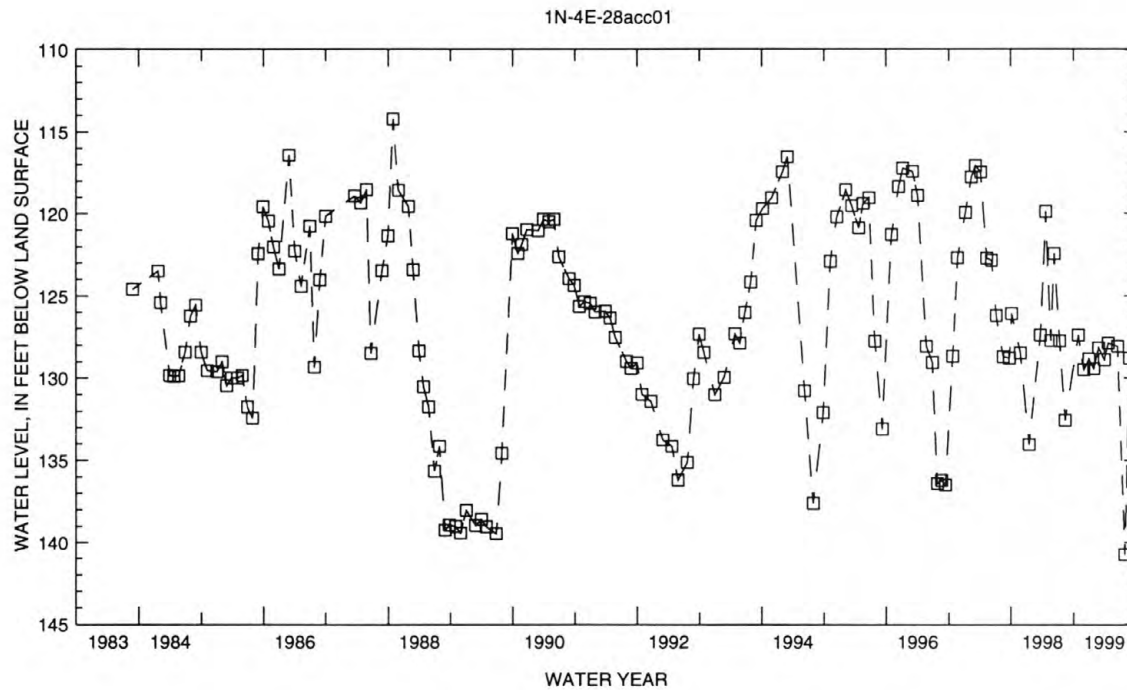
DATUM.--Elevation of land surface is 5,050 ft above sea level, from topographic map. Measuring point: top of casing, 1.0 ft above land surface.

PERIOD OF RECORD.--1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 114.22 ft below land surface, Oct. 30, 1987; lowest, 140.77 ft below land-surface, July 29, 1999.

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

DATE	WATER LEVEL
OCT 30	127.40
NOV 30	129.49
DEC 31	128.87
JAN 29	129.44
FEB 26	128.18
MAR 31	128.90
APR 23	127.89
JUN 16	128.07
JUL 29	140.77
AUG 26	128.80



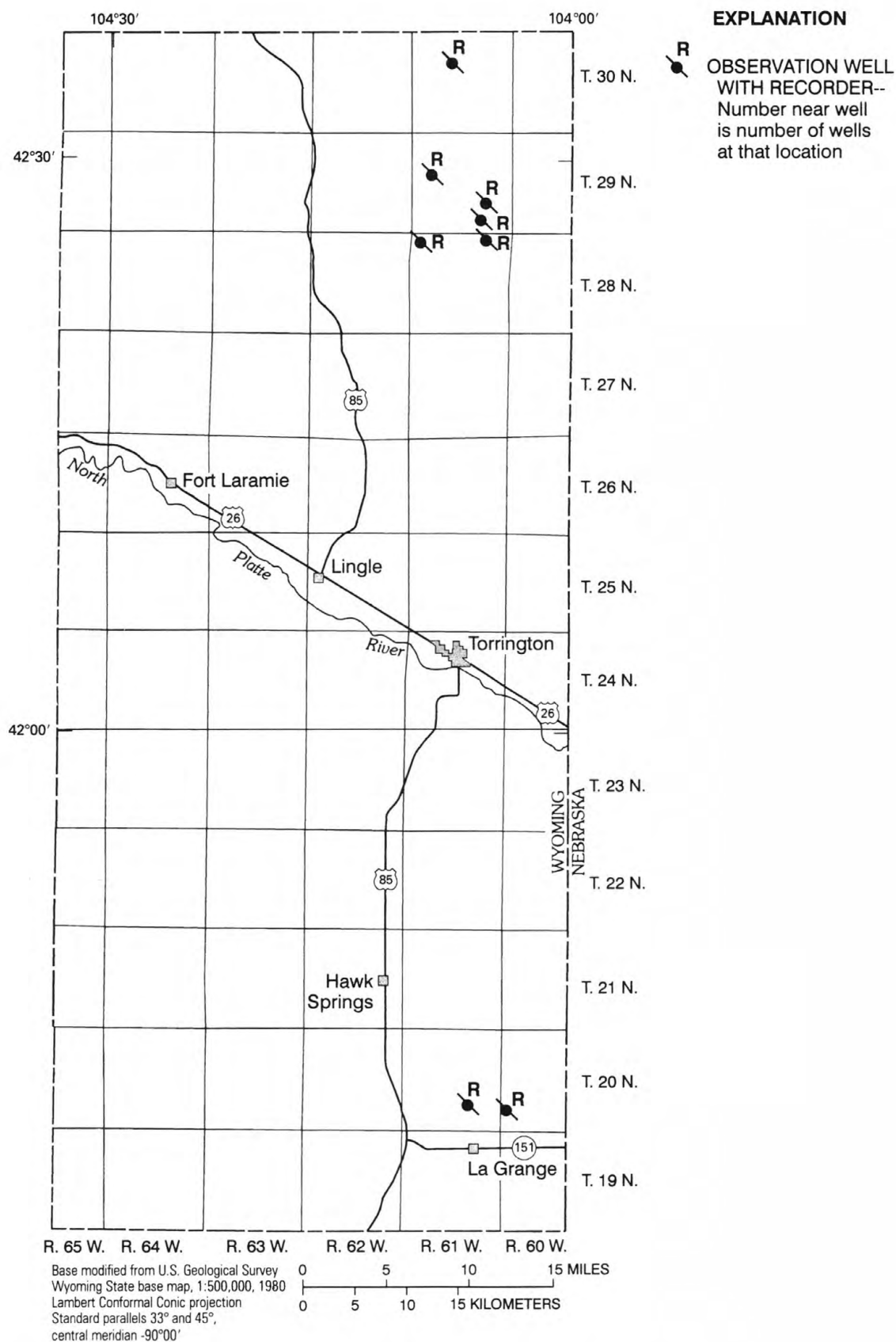


Figure 13. Location of observation wells in Goshen County, Wyoming.

GOSHEN COUNTY

Station number, 414049104074501. Local number, 20-060-30bbb01. Local name, LaGrange #2.

LOCATION.--Lat 41°40'49", long 104°07'45", in NW¹/₄ NW¹/₄ NW¹/₄ sec.30, T.20 N., R.60 W., Hydrologic Unit 10180012.

AQUIFER.--Brule Formation.

WELL CHARACTERISTICS.--Depth of well, 70 ft below land surface.

DATUM.--Elevation of land surface is 4,530 ft above sea level, from topographic map. Measuring point: top of casing, 1.00 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

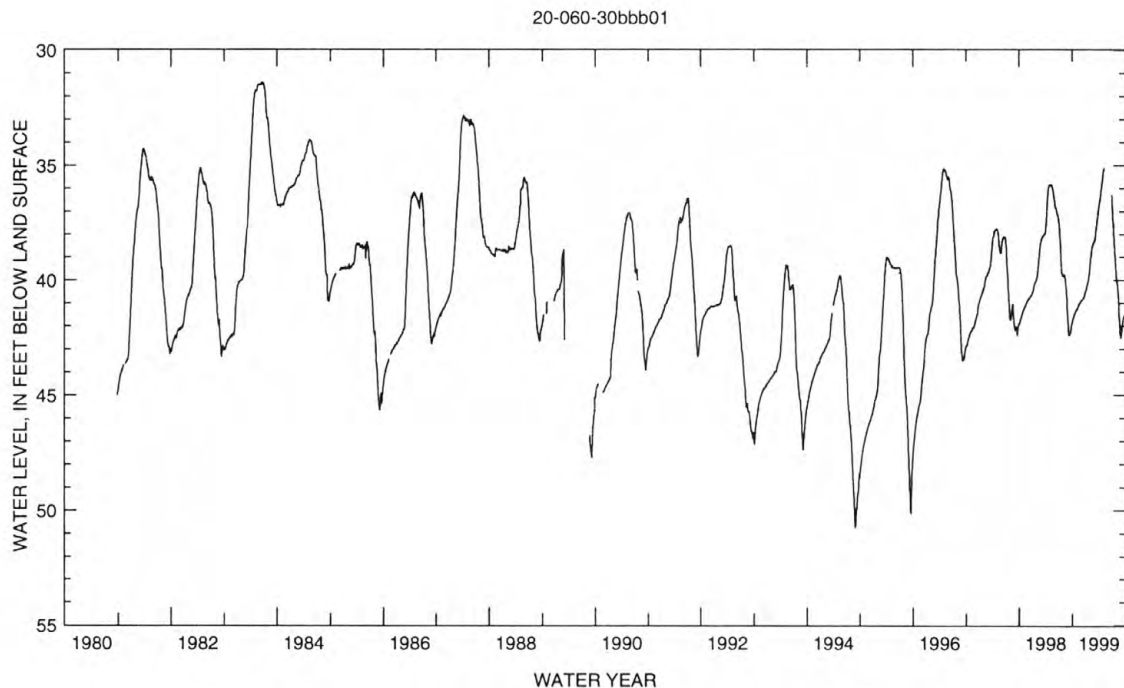
PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 31.40 ft below land surface, June 18-21, 1983; lowest, 50.70 ft below land surface, Sept. 1, 1994.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	41.75	41.24	40.88	40.42	39.15	38.31	36.79	35.30	---	36.73	40.06	42.33
10	41.62	41.18	40.86	40.27	38.80	38.15	36.57	35.16	---	37.43	40.25	42.03
15	41.50	41.09	40.81	40.15	38.61	37.80	36.35	---	---	38.01	40.68	41.81
20	41.48	41.05	40.77	40.04	38.53	37.55	36.05	---	---	38.61	41.48	41.66
25	41.37	40.98	40.66	39.84	38.36	37.29	35.80	---	---	39.09	42.08	41.58
EOM	41.32	40.93	40.51	39.45	38.35	36.95	35.52	---	---	39.82	42.49	41.49

WTR YR 1999: HIGHEST 35.12 (MAY 12); LOWEST 42.52 (SEPT 1)



GOSHEN COUNTY

Station number, 414051104100701. Local number, 20-061-23ccc01. Local name, Curt Meier.

LOCATION.--Lat 41°40'51", long 104°10'07", in SW¹/₄ SW¹/₄ SW¹/₄ sec. 23, T.20 N., R.61 W., Hydrologic Unit 10180012.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Depth of well, 82.0 ft below land surface.

DATUM.--Elevation of land surface is 4,506 ft above sea level, from topographic map. Measuring point: top of casing, 1.00 ft above land surface.

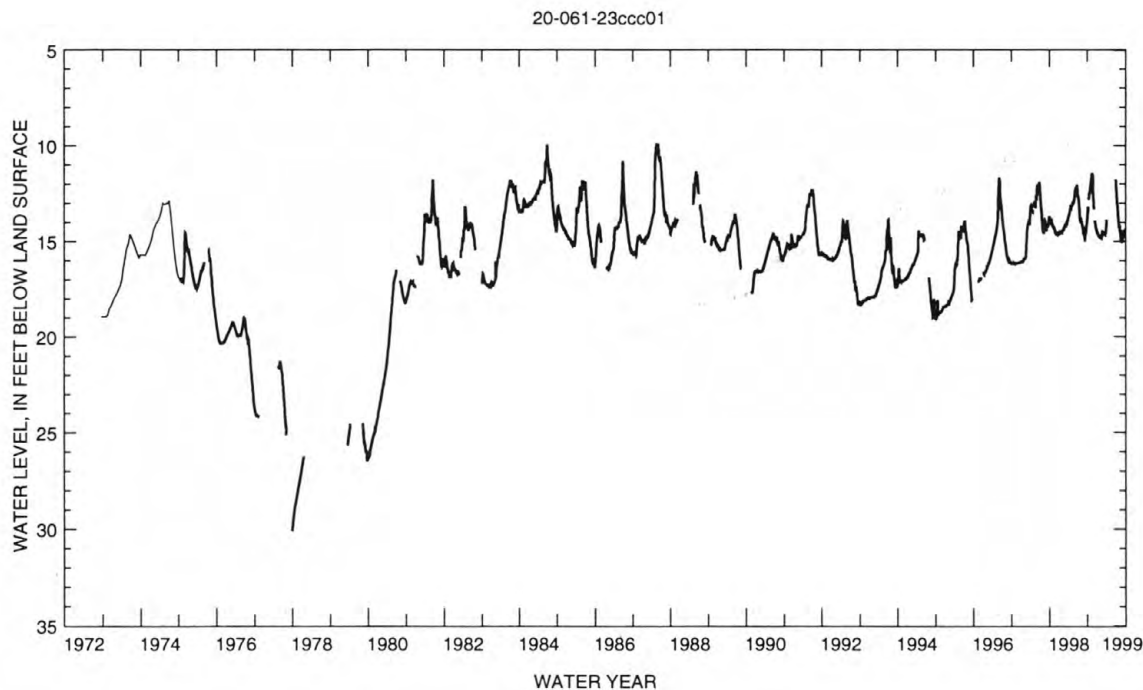
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.89 ft below land surface, May 19, 1987; lowest, 32.59 ft below land surface, from hand-measured data, Sept. 18, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.39	11.84	---	14.55	14.79	14.63	---	---	---	11.97	14.26	14.90
10	13.45	11.78	---	14.62	14.78	14.63	---	---	---	12.51	14.27	14.47
15	12.78	11.51	14.04	14.66	14.80	14.63	---	---	---	12.93	14.57	14.60
20	12.57	11.51	14.21	14.72	14.51	14.60	---	---	---	13.19	14.80	14.73
25	12.40	12.22	14.34	14.78	14.55	14.55	---	---	---	13.60	14.96	14.58
EOM	12.12	13.05	14.47	14.77	14.62	14.22	---	---	---	14.10	15.03	14.36
WTR YR 1999:	HIGHEST		11.50	(NOV 17, 18);		LOWEST	15.03	(AUG 28-31, SEPT 1, 2)				



GOSHEN COUNTY

Station number, 422519104095101. Local number, 28-061-02ccd01. Local name, Prairie Center #6.

LOCATION.--Lat 42°25'19", long 104°09'51", in SE¹/4 SW¹/4 SW¹/4 sec. 2, T.28 N., R.61 W., Hydrologic Unit 10180009.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 255 ft below land surface.

DATUM.--Elevation of land surface is 4,795 ft above sea level, from topographic map. Measuring point: top of casing, 1.70 ft above land surface.

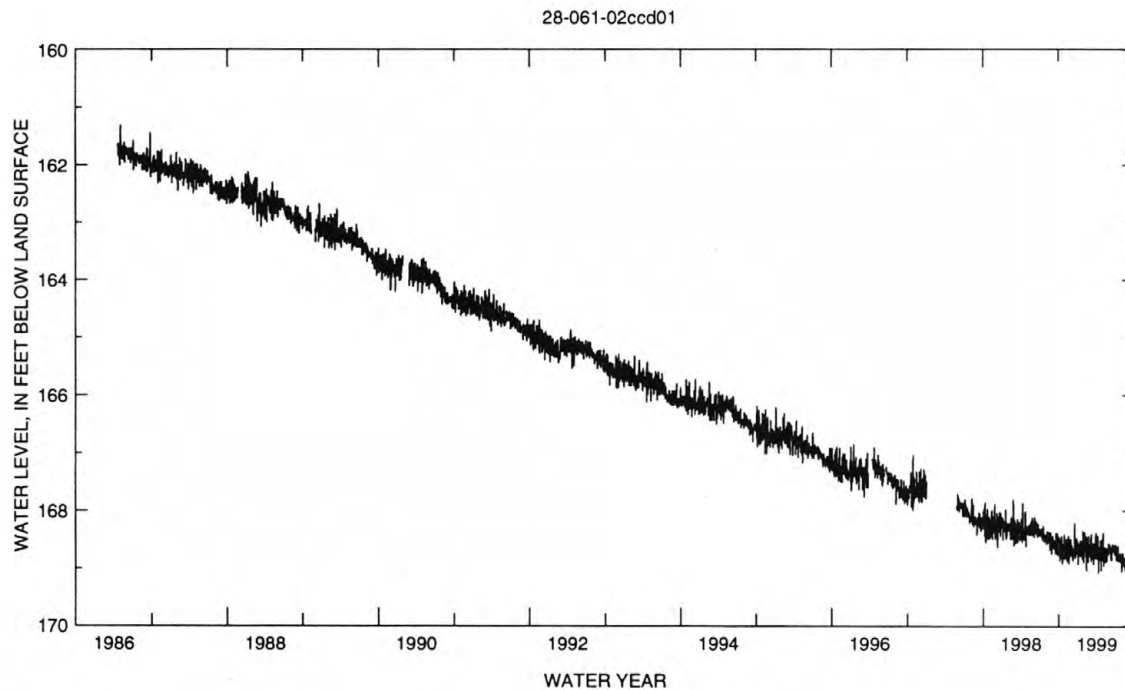
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 161.31 ft below land surface, May 4, 1986; lowest, 169.28 ft below land surface, Sept. 28, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	168.58	168.62	168.66	168.62	168.67	168.71	168.84	168.82	168.59	---	168.75	169.04
10	168.50	168.61	168.77	168.60	168.43	168.67	168.55	168.69	168.83	168.87	168.81	---
15	168.44	168.47	168.74	168.53	168.51	168.64	168.84	168.73	168.66	168.66	168.81	168.98
20	168.90	168.65	168.79	168.60	168.89	168.82	168.53	168.75	168.69	168.82	---	169.17
25	168.59	168.73	168.60	168.74	168.59	168.68	168.50	168.65	---	168.74	---	---
EOM	168.83	168.71	168.55	168.54	168.79	168.43	168.78	168.60	168.64	168.86	168.90	---
WTR YR 1999:	HIGHEST			168.22	(DEC 17, 18);			LOWEST	169.28	(SEPT 28)		



GROUND-WATER LEVELS

GOSHEN COUNTY

Station number, 422512104135501. Local number, 28-061-06aba01. Local name, Goshen County #2.

LOCATION.--Lat 42°25'12", long 104°13'55", in NE¹/₄ NW¹/₄ NE¹/₄ sec. 6, T.28 N., R.61 W., Hydrologic Unit 10180009.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 220 ft below land surface.

DATUM.--Elevation of land surface is 4,765 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land surface.

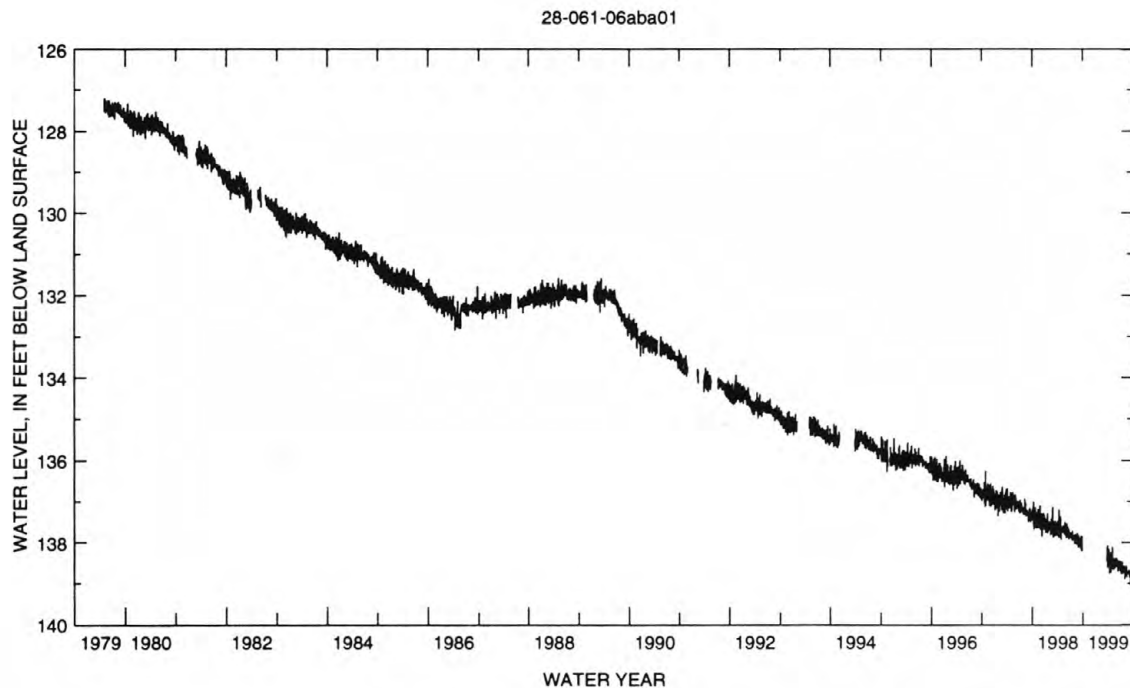
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 127.23 ft below land surface, May 4, 1979; lowest, 139.14 ft below land surface, Sept. 28, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	138.53	138.60	138.42	138.77	138.59	138.83
10	---	---	---	---	---	---	138.28	138.50	138.66	138.69	138.60	138.70
15	---	---	---	---	---	---	138.55	138.47	138.57	138.49	138.60	---
20	---	---	---	---	---	---	138.27	138.60	138.55	138.66	138.74	138.97
25	---	---	---	---	---	138.36	138.24	138.47	138.45	138.59	138.72	---
EOM	---	---	---	---	---	138.21	138.50	138.41	138.52	---	---	138.74
WTR YR 1999:	HIGHEST		138.07	(MAR 30);		LOWEST	139.14	(SEPT 28)				



GOSHEN COUNTY

Station number, 422928104121401. Local number, 29-061-17aad01. Local name, Prairie Center #4.

LOCATION.--Lat 42°29'28", long 104°12'14", in SE¹/₄ NE¹/₄ NE¹/₄ Sec. 17, T.29 N., R.61 W., Hydrologic Unit 10180009.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 220 ft below land surface.

DATUM.--Elevation of land surface is 4,790 ft above sea level, from topographic map. Measuring point: top of casing, 1.90 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

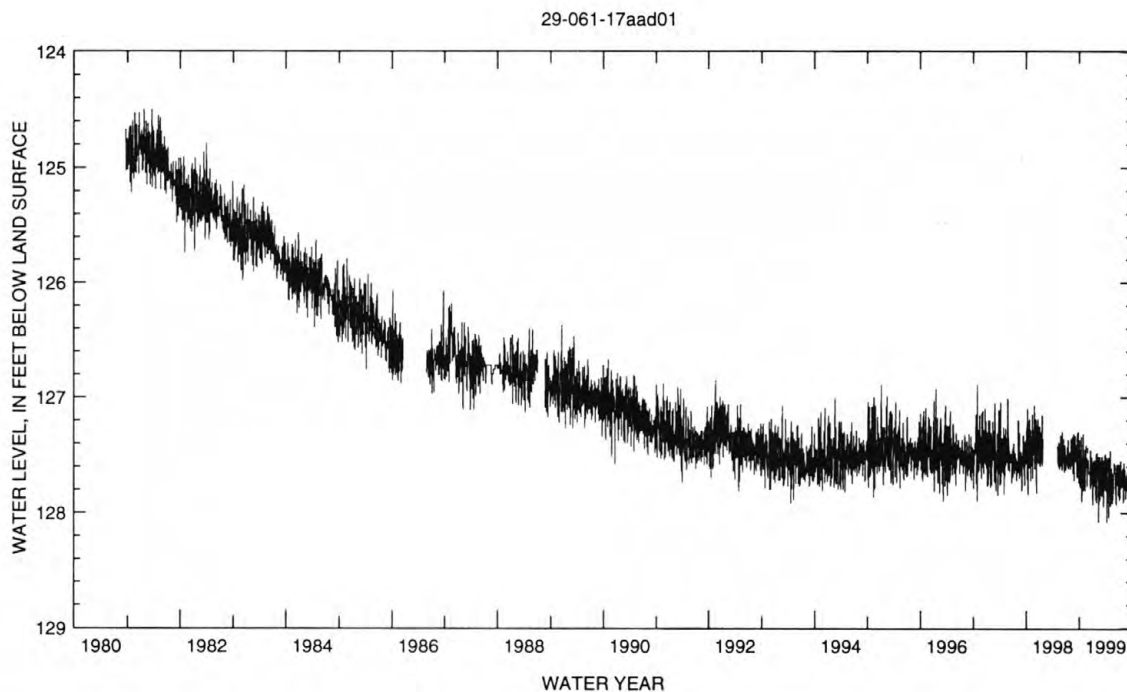
PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 124.50 ft below land surface, Jan. 24, Mar. 20, 1981; lowest, 128.08 ft below land surface, Feb. 2, Apr. 11, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	127.47	127.58	127.67	127.64	127.64	127.69	127.82	127.72	127.60	127.86	127.62	127.81
10	127.46	127.52	---	127.57	127.51	127.67	127.55	127.70	127.88	127.87	127.65	127.64
15	127.34	127.45	127.75	127.55	127.56	127.63	127.87	127.70	127.73	127.57	127.63	127.75
20	127.90	---	127.75	127.59	127.89	127.84	127.54	127.76	127.68	127.73	127.73	127.95
25	127.53	127.77	127.59	127.72	127.58	127.68	127.53	127.68	127.58	127.63	127.68	127.52
EOM	127.81	---	127.56	127.56	127.79	127.52	127.77	127.60	127.65	127.73	127.64	127.62

WTR YR 1999: HIGHEST 127.32 (OCT 28); LOWEST 128.08 (FEB 2, APR 11)



GOSHEN COUNTY

Station number, 422849104090801. Local number, 29-061-23abb01. Local name, Goshen County #1.

LOCATION.--Lat 42°28'49", long 104°09'08", in NW¹/₄ NW¹/₄ NE¹/₄ sec. 23, T.29 N., R.61 W., Hydrologic Unit 10180009.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 300 ft below land surface.

DATUM.--Elevation of land surface is 4,870 ft above sea level, from topographic map. Measuring point: top of casing, 1.00 ft above land surface.

REMARKS.--Well was slug tested by instantaneous recharge on June 12, 1987 to test well's connection with aquifer. Water level did not recover properly, so it was flushed in March 1991. Water levels from May 24 through Sept. 30 not available at time of publication.

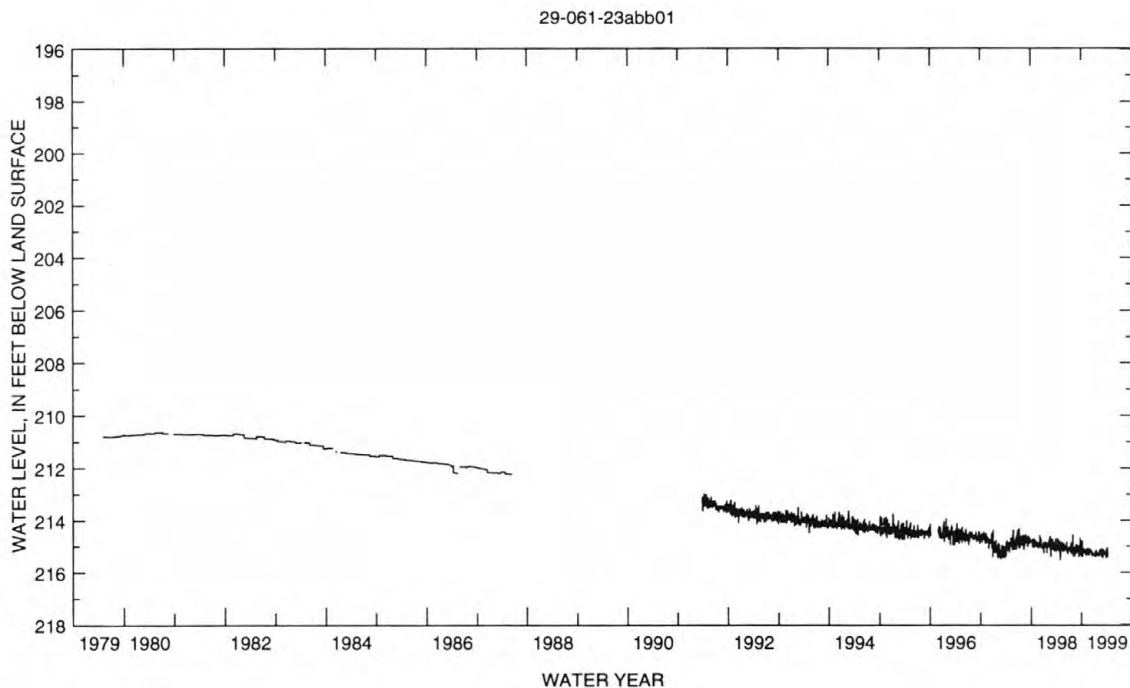
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 198.29 ft below land surface, affected by slug test; lowest, 215.80 ft below land surface, Feb. 12, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	215.23	215.32	215.32	215.29	215.25	215.31	215.42	215.27	--	--	--	--
10	215.23	215.20	215.57	215.21	215.01	215.28	215.09	215.35	--	--	--	--
15	215.09	215.15	215.44	215.14	215.20	215.23	215.53	215.33	--	--	--	--
20	215.75	215.38	215.39	215.19	215.49	215.50	215.05	215.40	--	--	--	--
25	215.28	215.45	215.26	215.43	215.19	215.30	215.11	--	--	--	--	--
EOM	215.54	215.37	215.18	215.20	215.41	215.02	215.41	--	--	--	--	--
WTR YR 1999:	HIGHEST		214.81	(MAY 3);		LOWEST	215.80	(FEB 12)				



GOSHEN COUNTY

Station number, 422730104094801. Local number, 29-061-26cbb01. Local name, Prairie Center #3.

LOCATION.--Lat 42°27'30", long 104°09'48", in NW¹/₄ NW¹/₄ SW¹/₄ sec. 26, T.29 N., R.61 W., Hydrologic Unit 10180009.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 200 ft below land surface.

DATUM.--Elevation of land surface is 4,770 ft above sea level, from topographic map. Measuring point: top of casing, 1.50 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

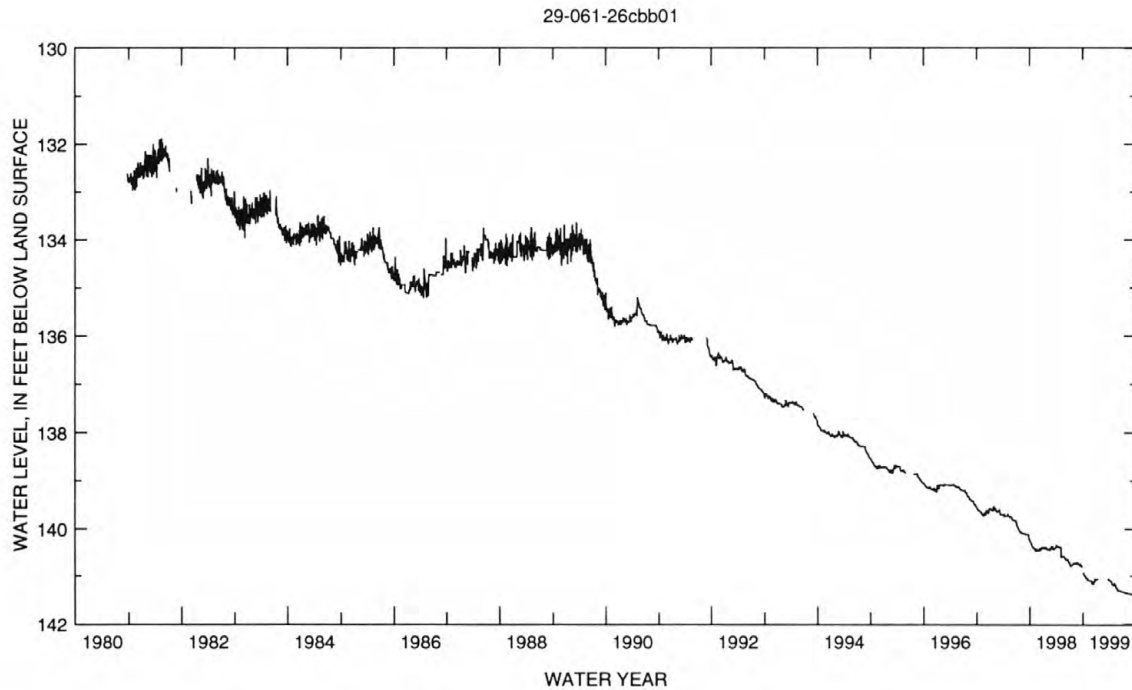
PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 131.89 ft below land surface, May 15, 16, 1981; lowest, 141.40 ft below land surface, Sept. 23, 30, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	140.94	141.09	141.16	141.08	---	---	141.10	141.20	141.30	141.33	141.36	141.38
10	140.98	141.09	141.17	141.07	---	---	141.11	141.17	141.31	141.33	141.36	141.38
15	141.00	141.09	141.12	141.07	---	---	141.11	141.20	141.31	141.34	141.36	141.39
20	141.02	141.10	141.12	---	---	---	141.17	141.24	141.32	141.34	141.36	141.39
25	141.05	141.10	141.07	---	---	141.07	141.18	141.27	141.32	141.35	141.37	141.40
EOM	141.05	141.11	141.08	---	---	141.09	141.19	141.30	141.32	141.35	141.37	141.40

WTR YR 1999: HIGHEST 140.94 (OCT 1-6); LOWEST 141.40 (SEPT 23-30)



GROUND-WATER LEVELS

GOSHEN COUNTY

Station number, 423549104120901. Local number, 30-061-09bbb01. Local name, Prairie Center #5.

LOCATION.--Lat 42°35'49", long 104°12'09", in NW¹/₄ NW¹/₄ NW¹/₄ sec. 9, T.30 N., R.61 W., Hydrologic Unit 10180009.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 220 ft below land surface.

DATUM.--Elevation of land surface is 4,850 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

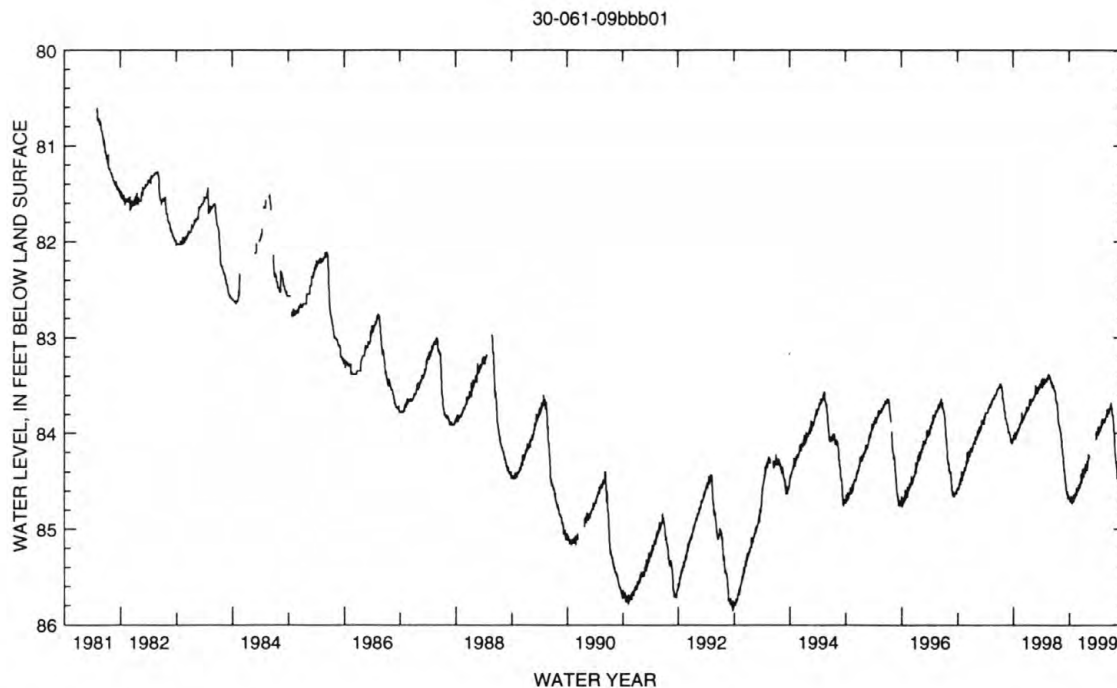
PERIOD OF RECORD.--1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 80.61 ft below land surface, May 1, 1981; lowest, 85.86 ft below land surface, Sept. 21, 1992.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	84.70	84.67	84.57	84.41	84.26	---	84.01	83.92	83.80	83.73	84.29	84.72
10	84.68	84.64	84.54	84.35	84.23	---	83.98	83.90	83.78	83.81	84.41	84.72
15	84.68	84.62	84.49	84.35	---	---	83.95	83.85	83.80	83.85	84.45	84.76
20	84.73	84.61	84.51	84.34	---	---	83.94	83.89	83.76	83.98	84.45	84.83
25	84.70	84.60	84.44	84.34	---	84.00	83.94	83.85	83.74	84.11	84.53	84.74
EOM	84.70	84.60	84.41	84.30	---	83.99	83.91	83.82	83.71	84.28	84.67	84.77

WTR YR 1999: HIGHEST 83.68 (JUL 1); LOWEST 84.86 (SEPT 26)



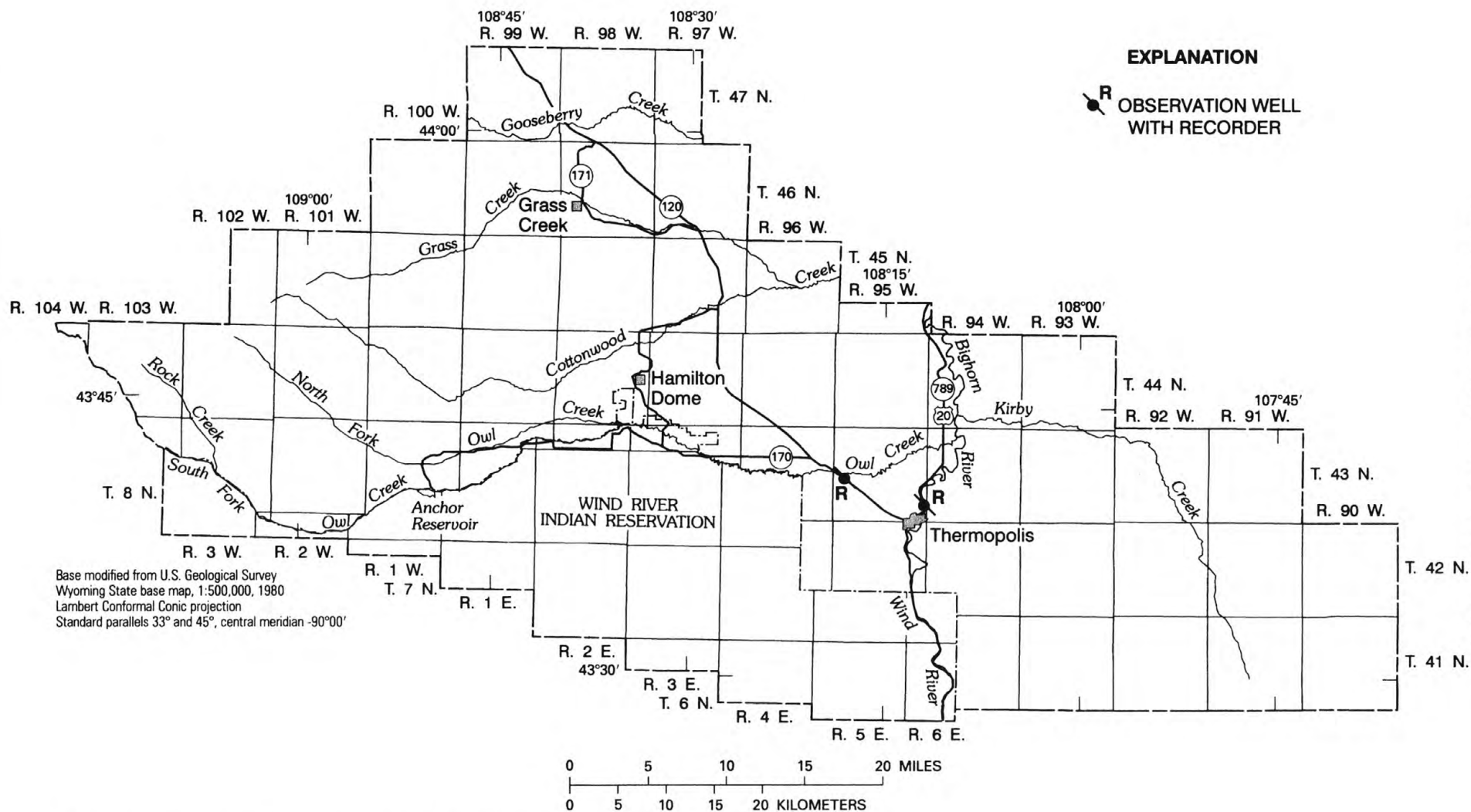


Figure 14. Location of observation wells in Hot Springs County, Wyoming.

GROUND-WATER LEVELS

HOT SPRINGS COUNTY

Station number, 434136108183301. Local number, 43-095-18cab01. Local name, Thermopolis GTW-1.

LOCATION.--Lat 43°41'36", long 108°18'33", in NW¹/₄ NE¹/₄ SW¹/₄ sec.18, T.43 N., R.95 W., Hydrologic Unit 10080007.

AQUIFER.--Tensleep Sandstone.

WELL CHARACTERISTICS.--Depth of well, 354 ft below land surface.

DATUM.--Elevation of land surface is 4,700 ft above sea level, from topographic map. Measuring point: top of casing, 1.40 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

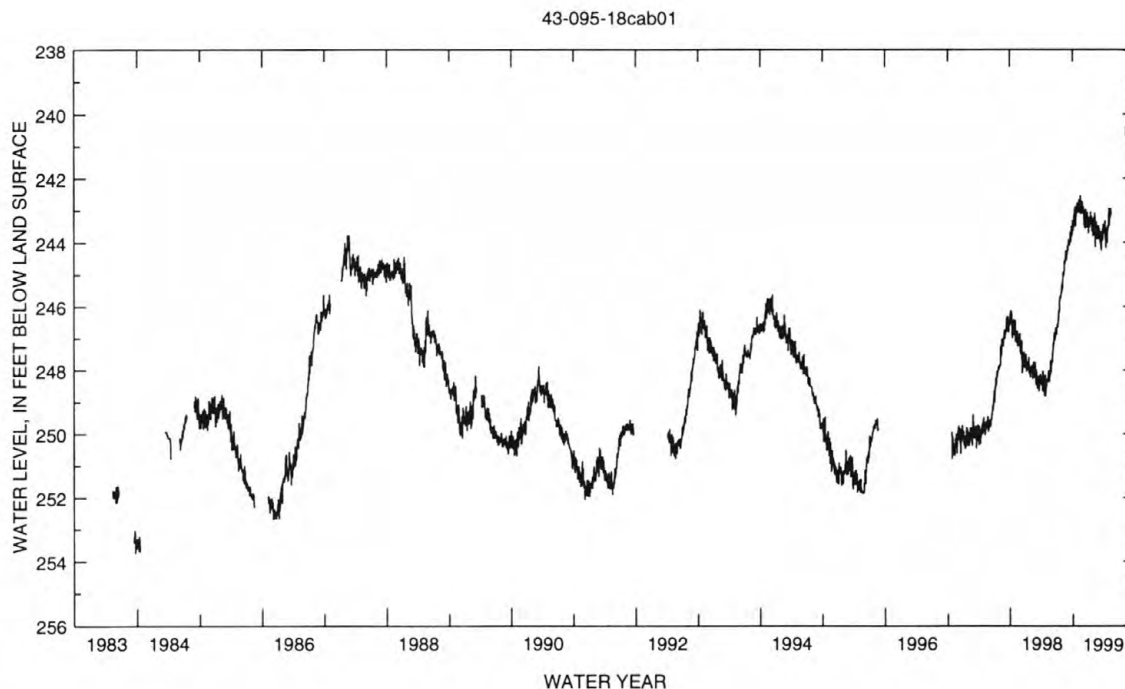
PERIOD OF RECORD.--1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 239.63 ft below land surface, Sept 24, 1999; lowest, 253.74 ft below land surface, Sept. 20, 1983.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	243.58	242.81	243.04	243.47	243.42	243.68	243.63	243.33	---	---	---	239.84
10	243.16	242.84	243.54	243.43	243.09	243.77	243.55	243.20	---	---	---	239.96
15	242.89	242.70	243.50	243.29	243.65	243.74	244.16	243.05	---	---	240.63	239.96
20	243.51	242.87	243.46	243.19	243.90	244.14	243.55	---	---	---	240.37	240.15
25	242.99	243.10	243.25	243.52	243.49	243.78	243.51	---	---	---	240.15	239.90
EOM	243.09	243.00	243.22	243.49	243.82	243.54	243.58	---	---	---	239.90	239.88

WTR YR 1999: HIGHEST 239.63 (SEPT 24); LOWEST 244.21 (MAR 19)



HOT SPRINGS COUNTY

Station number, 433933108121901. Local number, 43-095-25cdc01. Local name, Thermopolis GTW-3.

LOCATION.--Lat 43°39'33", long 108°12'19", in SW¹/₄ SE¹/₄ SW¹/₄ sec.25, T.43 N., R.95 W., Hydrologic Unit 10080007.

AQUIFER.--Phosphoria Formation (formerly labeled Park City Formation).

WELL CHARACTERISTICS.--Depth of well, 228 ft below land surface.

DATUM.--Elevation of land surface is 4,700 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land surface.

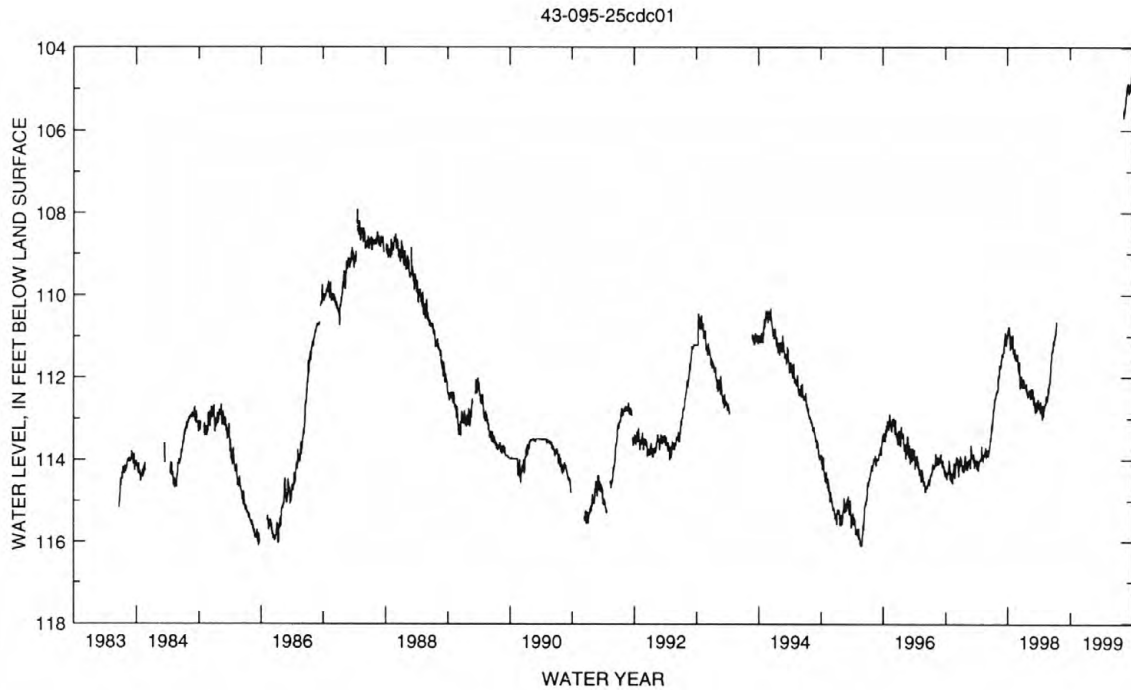
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 104.70 ft below land surface, Sept. 25, 1999; lowest, 116.11 ft below land surface, Sept. 15, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	---	104.97
10	---	---	---	---	---	---	---	---	---	---	---	104.90
15	---	---	---	---	---	---	---	---	---	---	105.51	104.99
20	---	---	---	---	---	---	---	---	---	---	105.45	105.04
25	---	---	---	---	---	---	---	---	---	---	105.21	104.70
EOM	---	---	---	---	---	---	---	---	---	---	104.96	104.89
WTR YR 1999:	HIGHEST		104.70	(SEPT 25);		LOWEST	105.70	(AUG 12)				



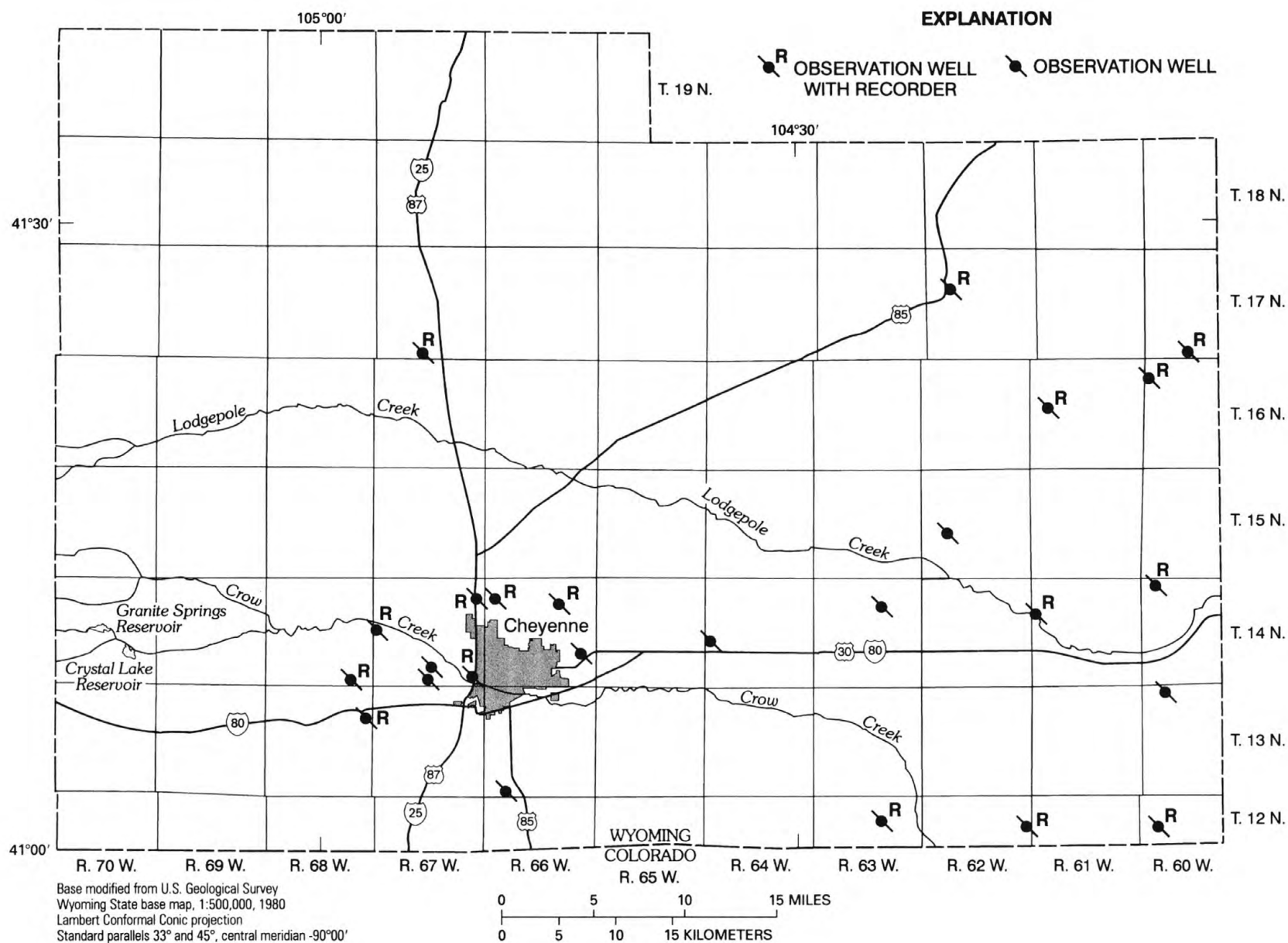


Figure 15. Location of observation wells in Laramie County, Wyoming.

LARAMIE COUNTY

Station number, 410059104072401. Local number, 12-060-07ddd01. Local name, Laramie County #1.

LOCATION.--Lat 41°00'59", long 104°07'24", in SE¹/₄ SE¹/₄ SE¹/₄ sec.7, T.12 N., R.60 W., Hydrologic Unit 10190015.

AQUIFER.--Brule Formation.

WELL CHARACTERISTICS.--Depth of well, 120 ft below land surface.

DATUM.--Elevation of land surface is 5,176 ft above sea level, from topographic map. Measuring point: top of casing, 1.70 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

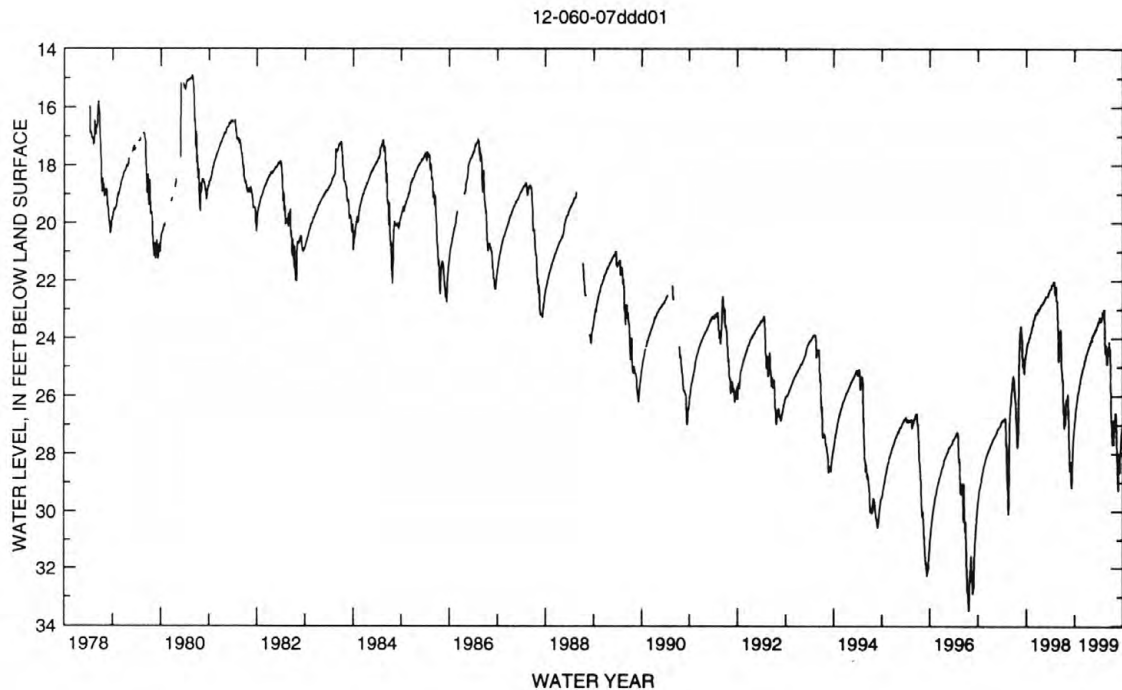
PERIOD OF RECORD.--1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.90 ft below land surface, May 24, 25, 1980; lowest, 33.49 ft below land surface, July 22, 1996.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	26.88	25.76	25.04	24.51	24.10	23.76	23.43	23.13	24.91	26.40	26.70	28.18
10	26.60	25.61	25.02	24.45	23.96	23.70	23.31	23.07	24.61	27.02	26.59	28.36
15	26.37	25.46	24.90	24.35	23.95	23.68	23.38	23.00	24.43	27.58	26.81	27.98
20	26.30	25.39	24.78	24.30	23.91	23.66	23.30	24.22	24.22	26.88	28.21	27.63
25	26.06	25.26	24.70	24.26	23.84	23.56	23.29	24.47	24.30	27.63	28.91	27.24
EOM	25.93	25.16	24.57	24.19	23.84	23.41	23.30	24.55	24.60	27.19	28.65	27.06

WTR YR 1999: HIGHEST 23.00 (MAY 13-15); LOWEST 29.29 (AUG 29)



GROUND-WATER LEVELS

LARAMIE COUNTY

Station number, 410100104160301. Local number, 12-062-13baa01. Local name, USGS southeast of Carpenter.

LOCATION.--Lat 41°01'00", long 104°16'03", in NE¹/₄ NE¹/₄ NW¹/₄ sec.13, T.12 N., R.62 W., Hydrologic Unit 10190009.
OWNER: Private.

AQUIFER.--Terrace Deposits.

WELL CHARACTERISTICS.--Depth of well, 198 ft below land surface datum.

DATUM.--Elevation of land surface is 5,315 ft above sea level, from topographic map. Measuring point: top of casing, 1.70 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

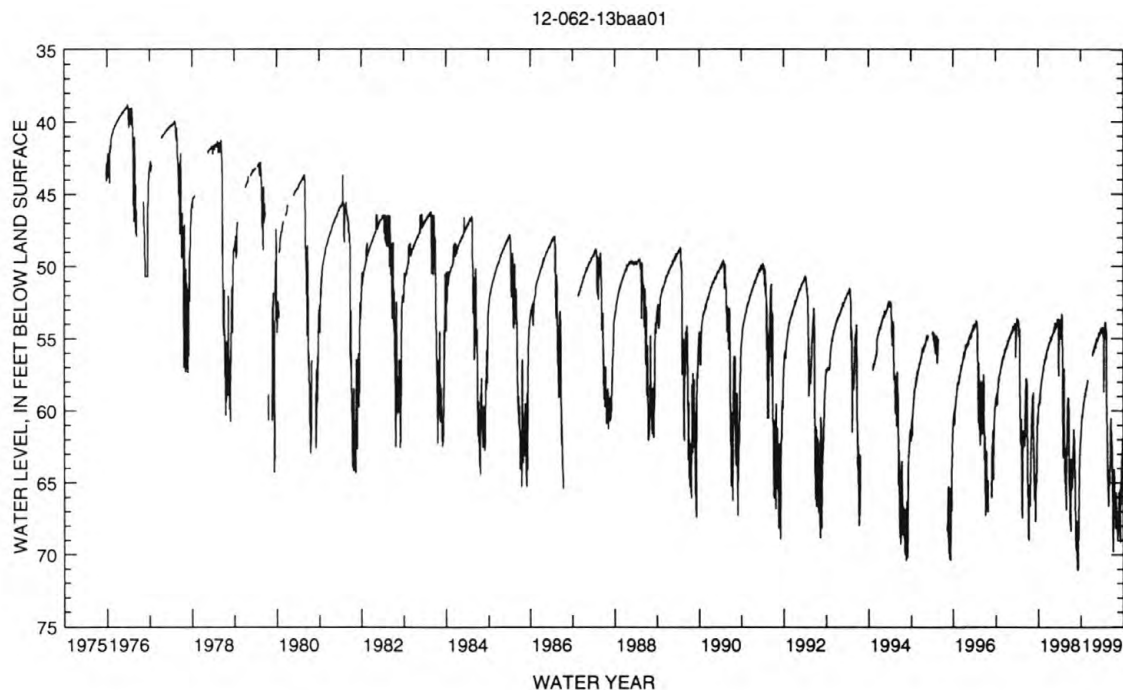
PERIOD OF RECORD.--1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 38.53 ft below land surface, from hand-measured data, May 19, 1975; lowest, 71.09 ft below land surface, Sept. 6, 1998.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	61.97	59.15	57.87	---	55.51	54.87	54.42	54.04	64.46	66.65	67.32	65.60
10	60.91	58.85	---	---	55.18	54.76	54.27	53.96	64.93	69.79	66.98	69.14
15	60.28	58.62	---	56.00	55.19	54.63	54.76	58.55	63.82	66.76	68.45	64.83
20	60.33	58.58	---	55.84	55.26	54.69	57.00	61.08	60.78	64.08	68.67	64.15
25	59.74	58.32	---	55.86	54.98	54.54	54.66	65.20	61.53	66.09	68.12	62.92
EOM	59.58	58.10	---	55.60	55.08	54.28	54.32	66.62	62.88	68.19	67.08	61.91

WTR YR 1999: HIGHEST 53.84 (MAY 3); LOWEST 69.79 (JUL 10)



LARAMIE COUNTY

Station number, 410111104223102. Local number, 12-063-15aaa02. Local name, USGS southwest of Carpenter.

LOCATION.--Lat 41°00'59', long 104°24'32", in NE¹/4 NE¹/4 NE¹/4 sec.15, T.12 N., R.63 W., Hydrologic Unit 10190009.

AQUIFER.--Brule Formation.

WELL CHARACTERISTICS.--Depth of well, 110 ft below land surface.

DATUM.--Elevation of land surface is 5,385 ft above sea level, from topographic map. Measuring point: top of casing, 1.50 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

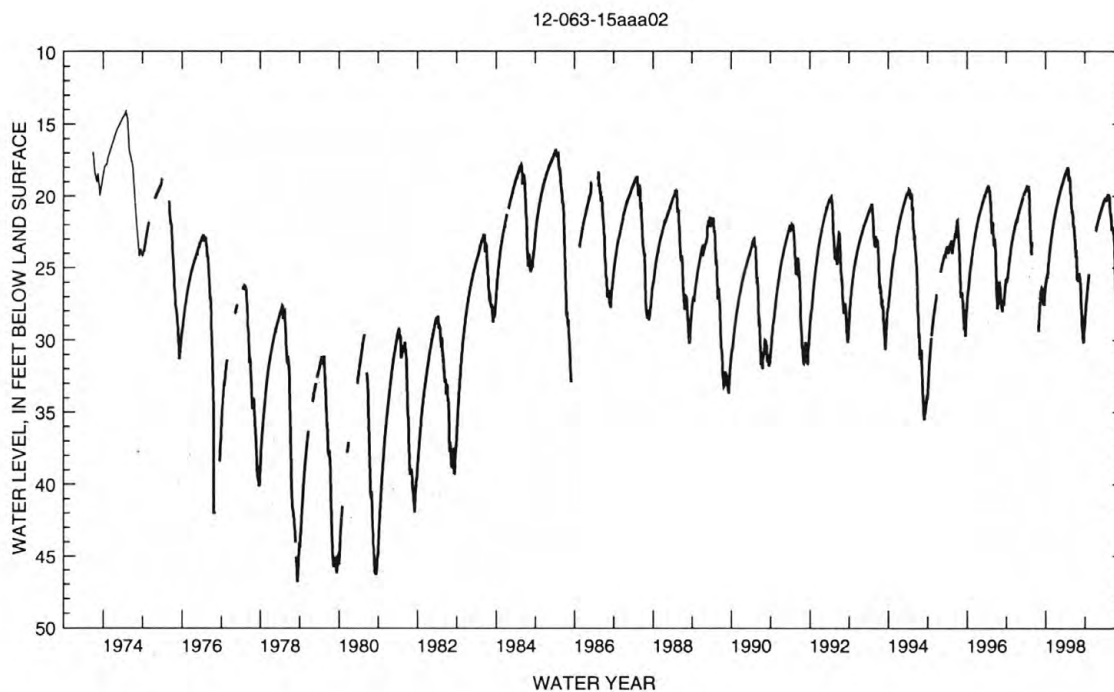
PERIOD OF RECORD.--1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.12 ft below land surface, May 1, 2, 1974; lowest, 46.86 ft below land surface, Sept. 10, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.36	25.71	---	---	21.66	20.91	20.22	19.91	21.72	23.77	26.79	28.88
10	27.78	---	---	---	21.51	20.79	20.19	19.99	22.42	25.35	26.55	29.07
15	27.34	---	---	22.33	21.39	20.66	20.20	20.00	22.16	26.50	27.65	28.81
20	26.99	---	---	22.14	21.27	20.57	20.16	20.12	22.16	25.97	28.29	28.38
25	26.53	---	---	22.01	21.10	20.46	20.12	20.95	22.45	26.59	29.58	27.54
EOM	26.07	---	---	21.82	21.03	20.31	20.03	21.26	22.98	27.39	29.26	26.86

WTR YR 1999: HIGHEST 19.87 (MAY 7); LOWEST 29.84 (AUG 27)



LARAMIE COUNTY

Station number, 410703104071201. Local number, 13-060-05ccb01. Local name, Elmer Glantz.

LOCATION.--Lat 41°07'03", long 104°07'12", in NW¹/₄ SW¹/₄ SW¹/₄ sec.5, T.13 N., R.60 W., Hydrologic Unit 10190015.

AQUIFER.--Brule Formation.

WELL CHARACTERISTICS.--Depth of well, 100 ft below land surface.

DATUM.--Elevation of land surface is 5,125 ft above sea level, from topographic map. Measuring point: top of casing, at land surface.

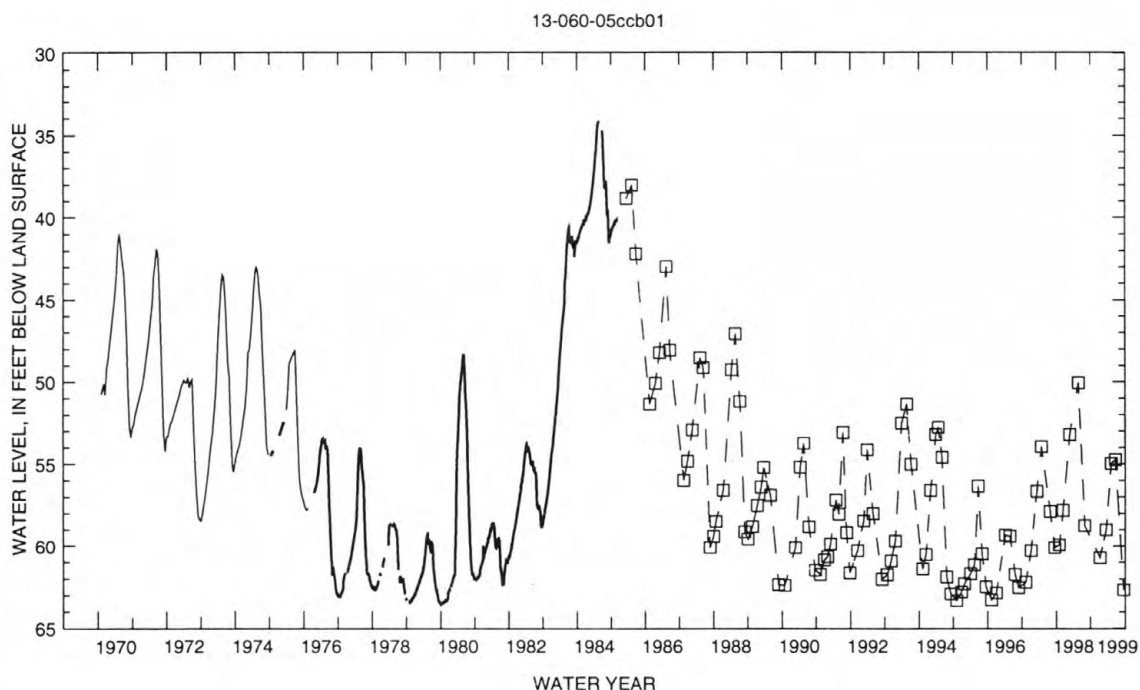
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 34.18 ft below land surface, May 20, 1984; lowest, 63.52 ft below land surface, Oct. 9, 12, 13, 1979.

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

DATE	WATER LEVEL
JAN 11	60.72
MAR 18	59.01
MAY 10	54.99
JUN 28	54.76
SEP 20	62.66



LARAMIE COUNTY

Station number, 410324104481701. Local number, 13-066-32bbd01. Local name, Laramie County #14.

LOCATION.--Lat 41°03'24", long 104°48'17", in SE¹/₄ NW¹/₄ NW¹/₄ sec.32, T.13 N., R.66 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 160 ft below land surface.

DATUM.--Elevation of land surface is 6,180 ft above sea level, from topographic map. Measuring point: top of casing, 1.3 ft above land surface.

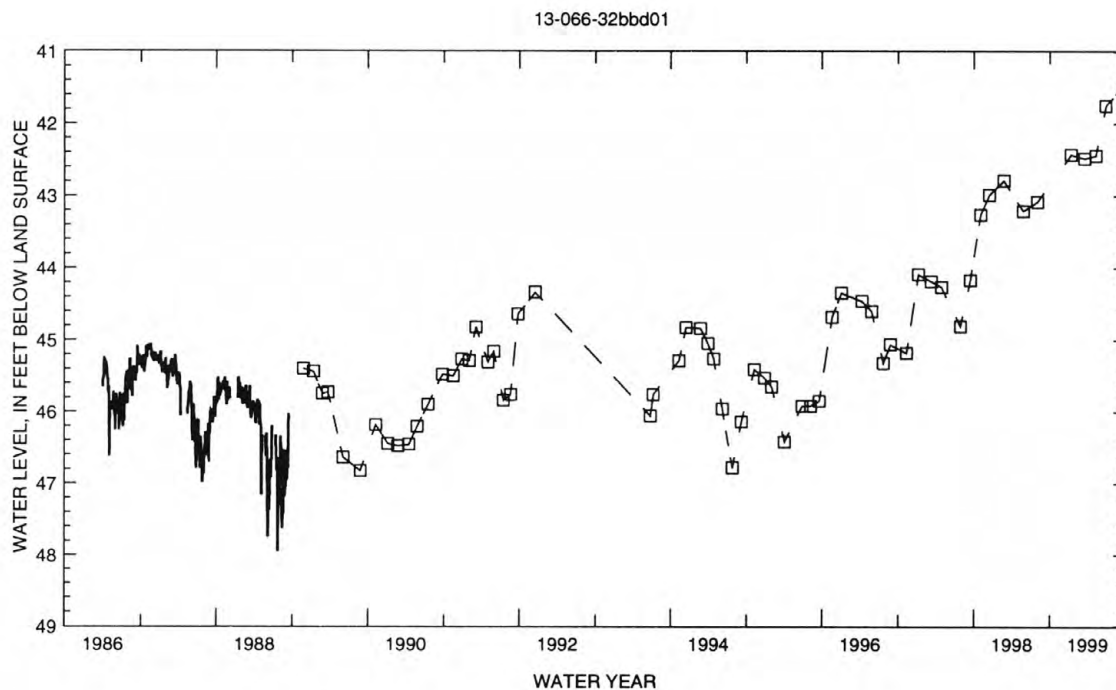
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 41.48 ft below land surface, from hand-measured data, Sept. 20, 1999; lowest, 47.95 ft below land surface, July 23, 1988.

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

DATE	WATER LEVEL
JAN 11	42.43
MAR 18	42.48
MAY 10	42.44
JUN 28	41.75
SEP 20	41.48



LARAMIE COUNTY

Station number, 410530104574001. Local number, 13-068-13ccc01. Local name, Borie.

LOCATION.--Lat 41°05'30", long 104°57'40", in SW¹/₄ SW¹/₄ SW¹/₄ sec.13, T.13 N., R.68 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, unknown.

DATUM.--Elevation of land surface is 6,528 ft above sea level, from topographic map. Measuring point: top of casing, 0.80 ft above land surface.

REMARKS.--Data collected by U.S. Geological Survey.

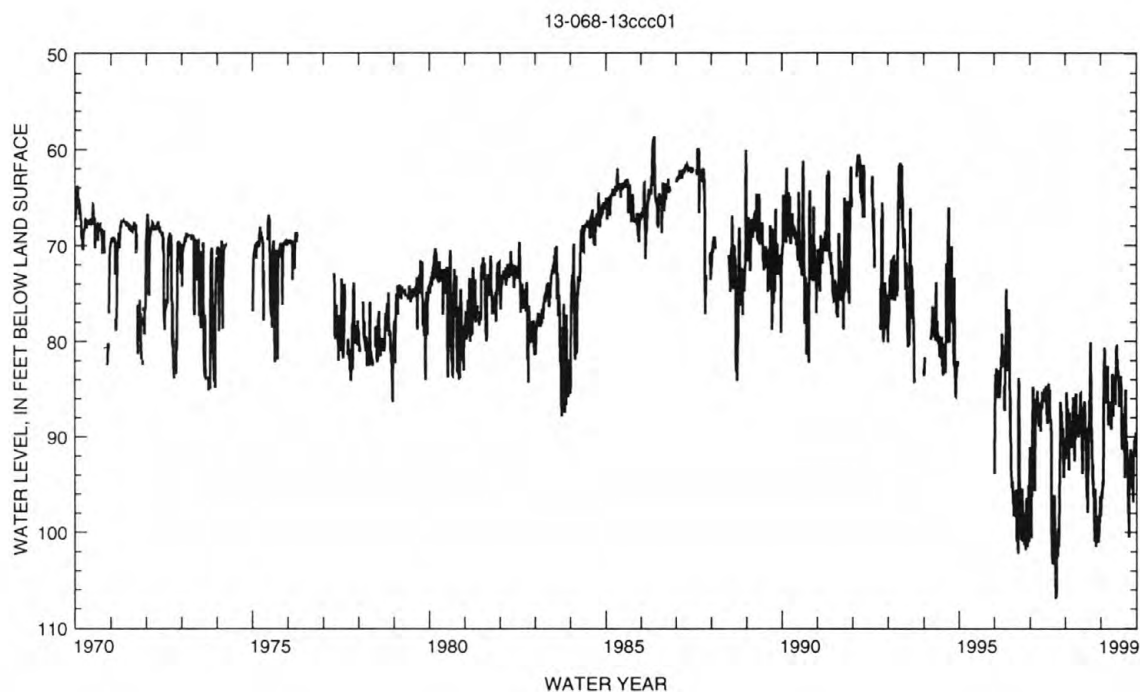
PERIOD OF RECORD.--1942 to 1950, 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 36.78 ft below land surface, from hand-measured data, Mar. 23, 1945; lowest, 106.91 ft below land surface, June 23, 1997.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	96.43	82.73	86.34	87.90	87.86	83.46	83.76	90.03	93.70	93.17	91.38	91.67
10	95.78	80.66	82.76	88.42	85.61	81.06	86.84	91.32	89.82	95.58	92.63	91.74
15	95.99	85.01	86.98	88.84	84.06	81.14	85.08	90.87	86.22	97.80	93.07	90.32
20	95.04	84.23	87.51	88.07	84.11	82.17	84.72	90.37	89.20	98.50	94.95	90.31
25	94.87	85.41	87.76	83.81	86.01	82.58	84.30	90.36	91.92	94.06	95.03	91.64
EOM	86.48	86.25	87.18	84.37	86.54	83.12	85.37	87.60	91.96	92.88	96.64	89.72

WTR YR 1999: HIGHEST 80.40 (MAR 17); LOWEST 100.50 (JUL 19)



LARAMIE COUNTY

Station number, 411238104070801. Local number, 14-060-05bcb01. Local name, C.C. Gross.

LOCATION.--Lat 41°12'38", long 104°07'08", in NW¹/₄ SW¹/₄ NW¹/₄ sec.5, T.14 N., R.60 W., Hydrologic Unit 10190015.

AQUIFER.--Brule Formation.

WELL CHARACTERISTICS.--Depth of well, 100 ft below land surface.

DATUM.--Elevation of land-surface is 5,082 ft above sea level, from topographic map. Measuring point: top of casing, at land surface.

REMARKS.--The hydrograph for the period November 1957 to August 1962 was plotted using intermittent hand measurements; the period from September 1962 to December 1973 was plotted using one measurement for every 15 days; and the period from January 1974 to September 30, 1998 was plotted using continuous data. Continuous data for the period from September 1962 to December 1973 is available in hard copy form.

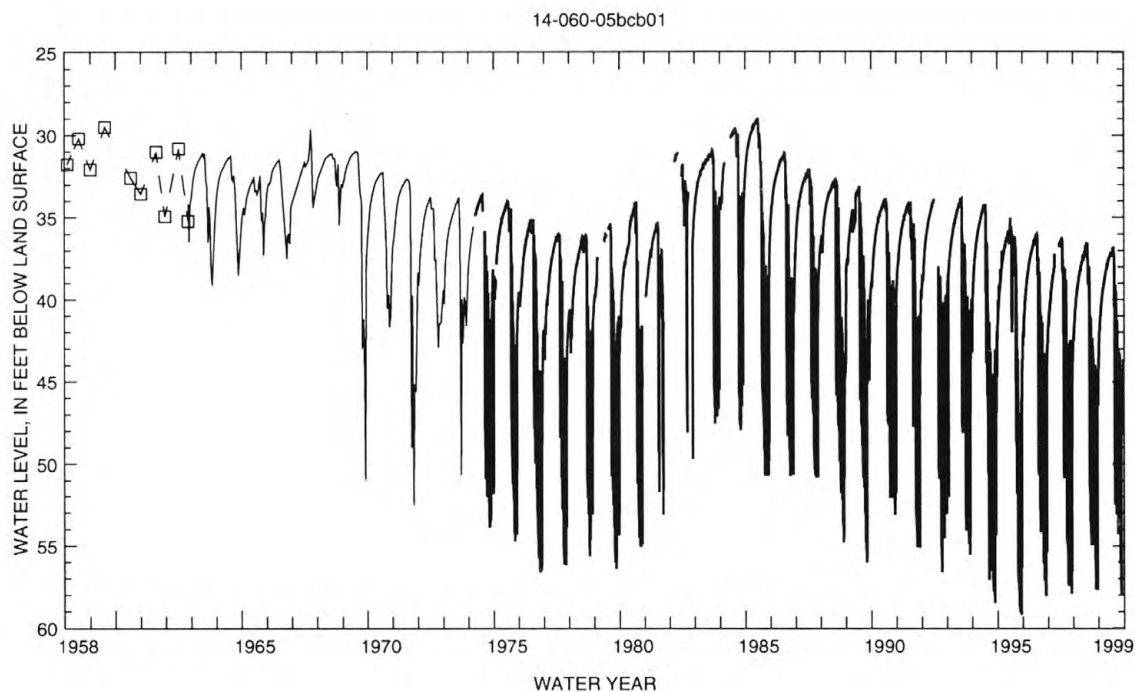
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 28.96 ft below land surface, Apr. 3, 4, 1985; lowest, 59.18 ft below land surface, Sept. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	43.31	40.61	39.38	38.57	37.95	37.49	37.18	36.89	41.43	41.89	43.47	45.46
10	42.57	40.37	39.28	38.43	37.77	37.42	37.14	36.85	40.82	44.98	48.10	46.15
15	42.00	40.10	39.12	38.32	37.78	37.32	37.28	37.14	40.36	54.29	50.08	45.23
20	41.65	39.91	38.97	38.22	37.74	37.29	37.09	38.26	40.84	43.85	45.58	45.73
25	41.24	39.75	38.84	38.14	37.58	37.21	37.01	37.97	42.34	43.37	50.45	44.16
EOM	40.88	39.57	38.65	38.02	37.55	37.23	36.97	40.54	41.32	46.31	48.44	43.64
WTR YR 1999:	HIGHEST 36.80 (MAY 9); LOWEST 58.03 (AUG 27)											



GROUND-WATER LEVELS

LARAMIE COUNTY

Station number, 411022104141201. Local number, 14-061-18ddd01. Local name, Laramie County #2.

LOCATION.--Lat 41°10'22", long 104°14'12", in SE¹/₄ SE¹/₄ SE¹/₄ sec.18, T.14 N., R.61 W., Hydrologic Unit 10190015.

AQUIFER.--Brule Formation.

WELL CHARACTERISTICS.--Depth of well, 90.0 ft below land surface.

DATUM.--Elevation of land surface is 5,264 ft above sea level, from topographic map. Measuring point: top of casing, 1.70 ft above land surface.

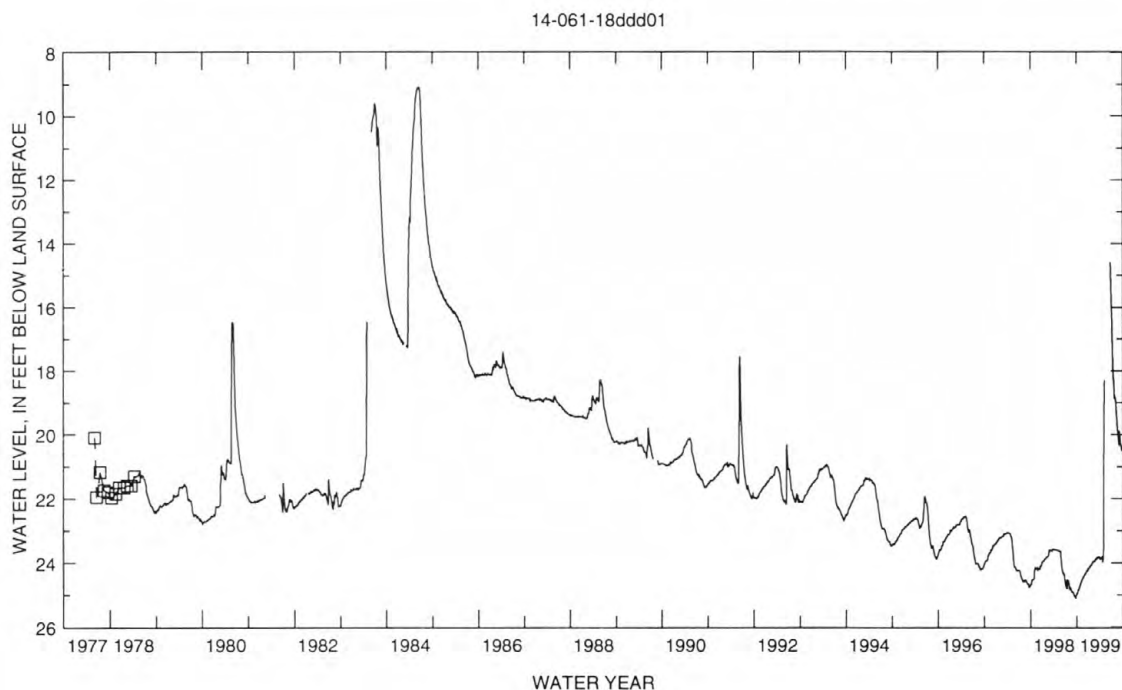
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.08 ft below land surface, June 18, 1984; lowest, 25.09 ft below land surface, Sept. 22, 1998.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.95	24.60	24.35	24.17	23.99	23.87	23.89	20.19	---	15.57	18.90	19.91
10	24.88	24.55	24.33	24.14	23.95	23.86	23.84	---	---	16.81	19.18	20.11
15	24.83	24.50	24.29	24.10	23.96	23.83	23.84	---	---	17.69	19.46	20.30
20	24.80	24.47	24.27	24.08	23.95	23.84	23.82	---	---	18.14	19.75	20.42
25	24.76	24.43	24.22	24.06	23.92	23.81	23.96	---	---	18.58	20.03	20.44
EOM	24.67	24.40	24.18	24.01	23.91	23.84	23.89	---	14.82	18.85	20.25	20.51
WTR YR 1999:	HIGHEST			14.59	(JUN 29);			LOWEST	24.98	(OCT 1)		



LARAMIE COUNTY

Station number, 411114104242501. Local number, 14-063-15aaa01. Local name, Laramie County #3.

LOCATION.--Lat 41°11'14", long 104°24'25", in NE¹/₄ NE¹/₄ NE¹/₄ sec.15, T.14 N., R.63 W., Hydrologic Unit 10190015.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 165 ft below land surface.

DATUM.--Elevation of land surface is 5,489 ft above sea level, from topographic map. Measuring point: top of casing, 1.3 ft above land surface.

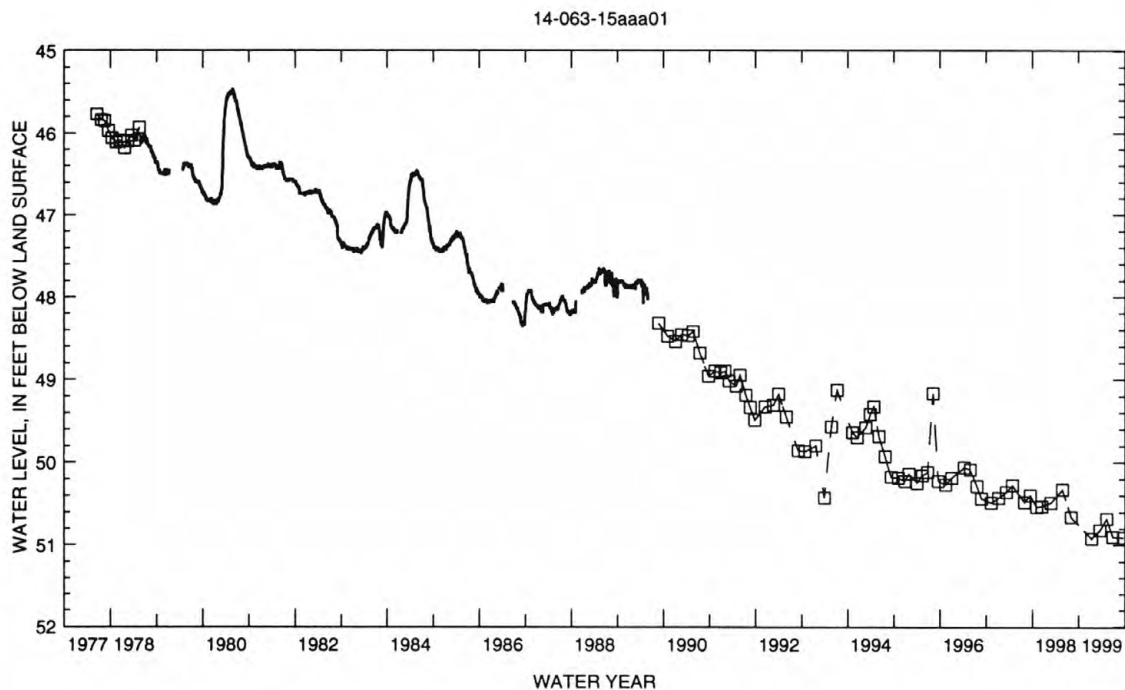
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 45.45 ft below land surface, May 24, 1980; lowest, 50.92 ft below land surface, from hand-measured data, Jan. 11, 1999.

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

DATE	WATER LEVEL
JAN 11	50.92
MAR 18	50.82
MAY 10	50.68
JUN 28	50.90
SEP 20	50.91



GROUND-WATER LEVELS

LARAMIE COUNTY

Station number, 411005104355001. Local number, 14-064-19bcc01. Local name, Laramie County #9.

LOCATION.--Lat 41°10'05", long 104°35'50", in SW¹/₄ SW¹/₄ NW¹/₄ sec.19, T.14 N., R.64 W., Hydrologic Unit 10190015.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 180 ft below land surface.

DATUM.--Elevation of land surface is 5,880 ft above sea level, from topographic map. Measuring point: top of casing, 1.5 ft above land surface.

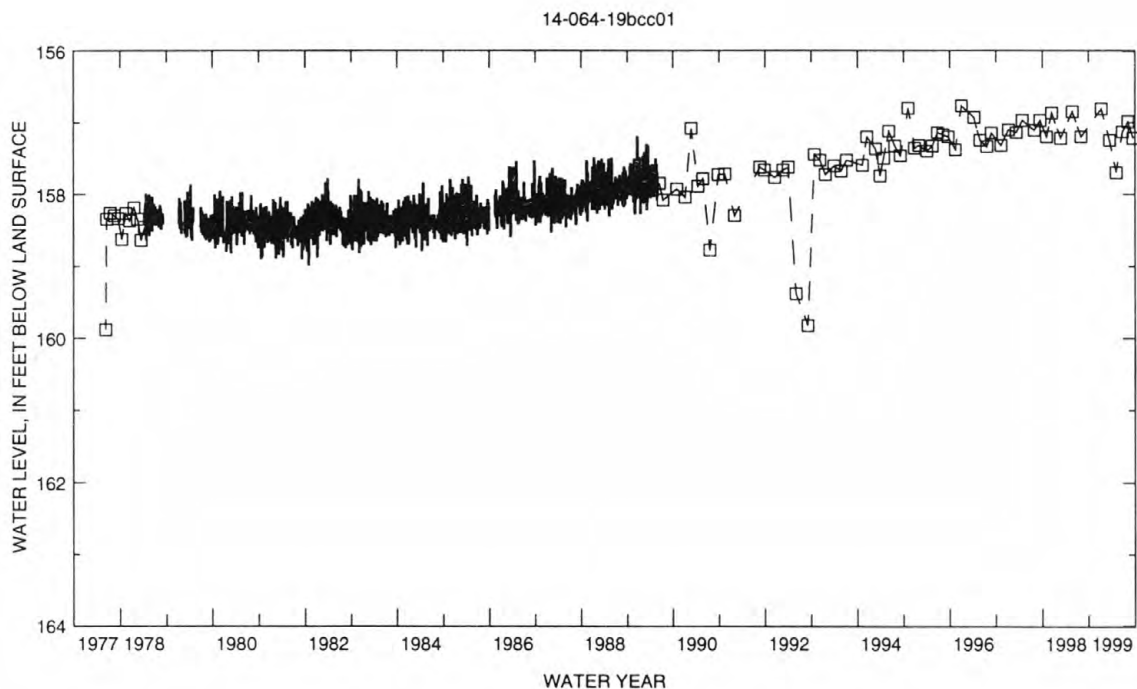
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 156.77 ft below land surface, from hand-measured data, Jan. 3, 1996; lowest, 159.88 ft below land surface, from hand-measured data, June 7, 1977.

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

DATE	WATER LEVEL
JAN 11	156.81
MAR 18	157.25
MAY 10	157.70
JUN 28	157.13
AUG 09	156.99
SEP 20	157.22



LARAMIE COUNTY

Station number, 411147104490501. Local number, 14-066-07add01. Local name, National Land #1.

LOCATION.--Lat 41°11'47", long 104°49'05", in SE¹/₄ SE¹/₄ NE¹/₄ sec.7, T.14 N., R.66 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 350 ft below land surface.

DATUM.--Elevation of land surface is 6,170 ft above sea level, from topographic map. Measuring point: top of casing, 1.70 ft above land surface.

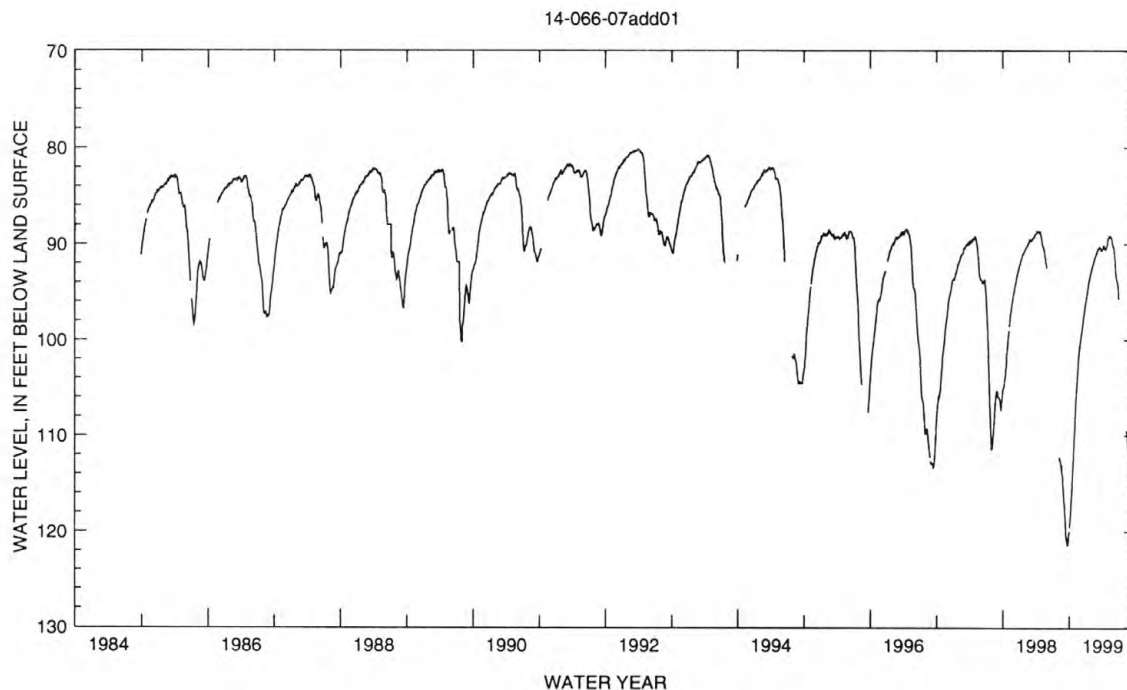
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 80.18 ft below land surface, Mar. 28, 1992; lowest, 121.47 ft below land surface, Sept. 21, 1998.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	118.88	107.13	99.67	95.45	92.46	90.74	90.44	89.36	90.74	---	---	114.30
10	117.11	105.32	99.07	94.83	91.96	90.49	90.13	89.17	92.03	---	109.61	---
15	115.56	103.71	98.38	94.22	91.79	90.37	90.53	89.17	93.26	---	109.84	---
20	113.82	102.38	97.43	93.65	91.48	90.42	90.48	89.33	93.83	---	111.41	---
25	111.54	101.20	97.02	93.29	91.11	90.63	90.25	89.69	94.27	---	112.89	112.65
EOM	109.14	100.37	96.01	92.80	91.08	90.54	89.83	90.27	95.71	---	114.26	111.77
WTR YR 1999:	HIGHEST		89.16	(MAY 9);	LOWEST		119.57	(OCT 2)				



LARAMIE COUNTY

Station number, 411210104452001. Local number, 14-066-10aba01. Local name, Laramie County #8.

LOCATION.--Lat 41°12'10", long 104°45'20", in NE¹/4 NW¹/4 NE¹/4 sec.10, T.14 N., R.66 W., Hydrologic Unit 10190015.

AQUIFER.--Ogalalla Formation.

WELL CHARACTERISTICS.--Depth of well, 190 ft below land surface.

DATUM.--Elevation of land surface is 6,090 ft above sea level, from topographic map. Measuring point: top of casing, 1.40 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

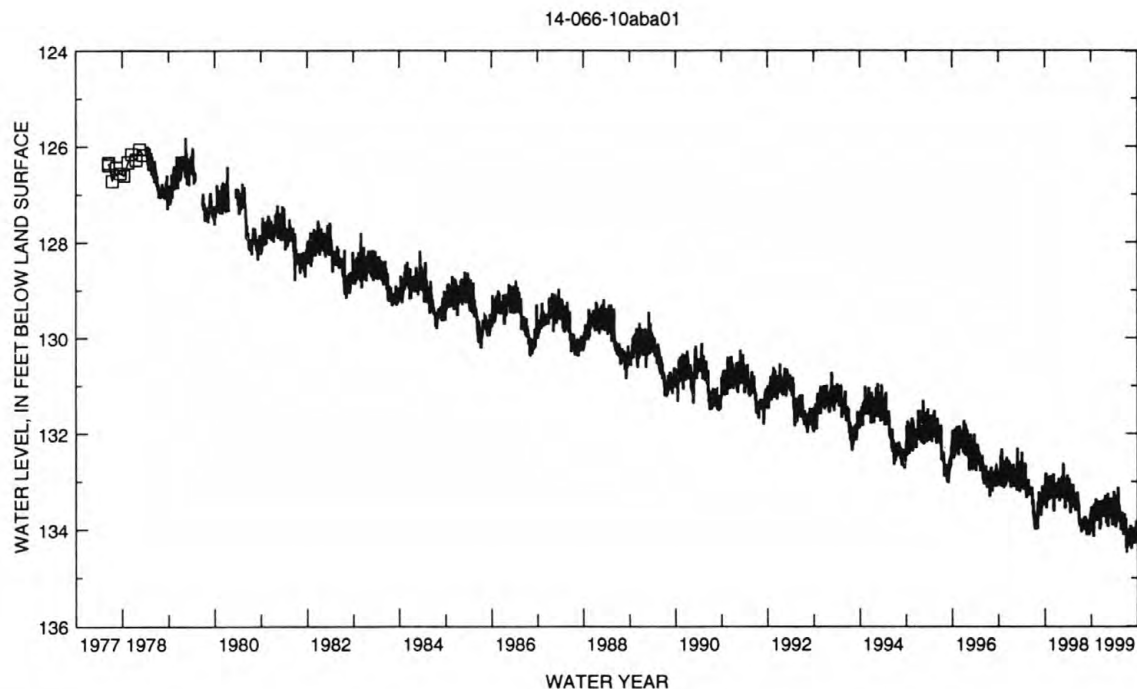
PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 125.82 ft below land surface, Feb. 14, 1979; lowest, 134.48 ft below land surface, July 10, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	133.64	133.64	133.46	133.60	133.48	133.49	133.49	133.31	133.65	134.13	134.06	134.14
10	133.70	133.40	134.00	133.64	133.25	133.50	133.30	133.52	133.90	134.48	133.96	134.06
15	133.55	133.60	133.90	133.51	133.61	133.59	133.96	133.63	133.99	133.98	133.96	134.17
20	134.08	133.74	133.56	133.39	133.68	133.91	133.58	133.73	133.88	134.21	134.28	134.22
25	133.81	133.71	133.67	133.67	133.54	133.69	133.52	133.89	133.77	134.10	134.16	133.82
EOM	133.83	133.58	133.43	133.62	133.70	133.21	133.32	133.67	133.83	134.08	134.05	134.05

WTR YR 1999: HIGHEST 133.12 (MAY 4); LOWEST 134.48 (JUL 10)



LARAMIE COUNTY

Station number, 410940104435701. Local number, 14-066-23ddd01. Local name, Laramie County #15.

LOCATION.--Lat 41°09'40", long 104°43'57", in SE¹/₄ SE¹/₄ SE¹/₄ sec.23, T.14 N., R.66 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 216 ft below land surface.

DATUM.--Elevation of land surface is 6,043 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land surface.

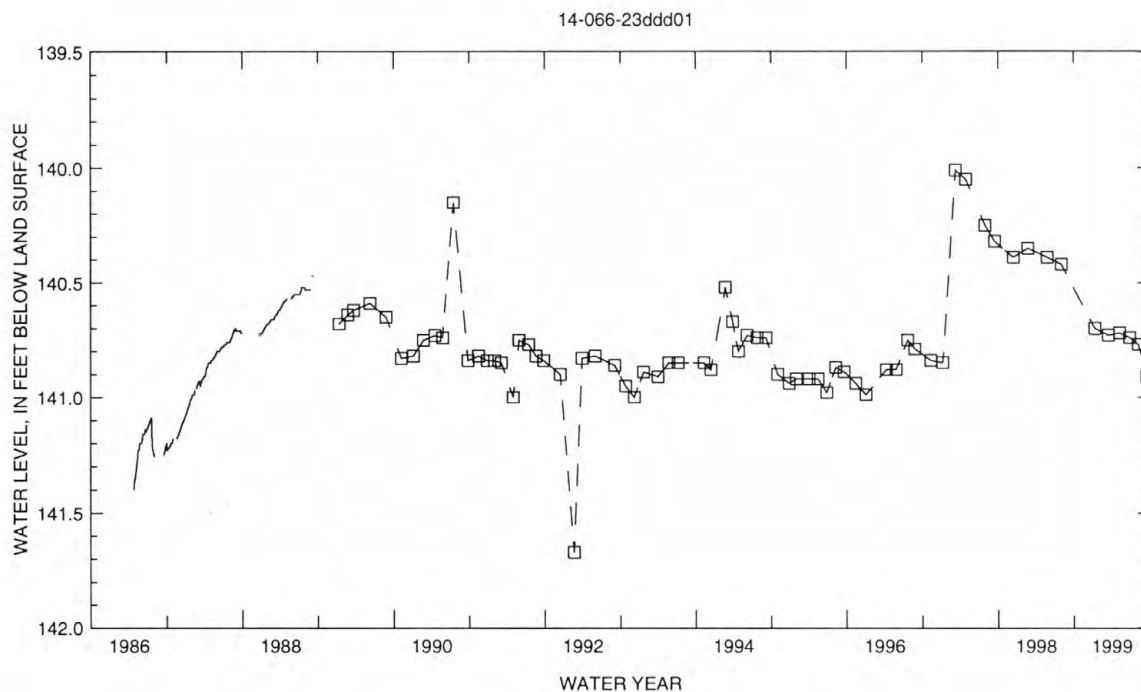
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 140.01 ft below land surface, Mar. 10, 1997; lowest, 141.67 ft below land surface, Feb. 20, 1992.

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

DATE	WATER LEVEL
JAN 11	140.70
MAR 18	140.73
MAY 10	140.72
JUN 28	140.74
AUG 09	140.77
SEP 20	140.91



LARAMIE COUNTY

Station number, 411213104501401. Local number, 14-067-12abb01. Local name, Laramie County #10.

LOCATION.--Lat 41°12'13", long 104°50'14", in NW¹/₄ NW¹/₄ NE¹/₄ sec.12, T.14 N., R.67 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 220 ft below land surface.

DATUM.--Elevation of land surface is 6,230 ft above sea level, from topographic map. Measuring point: top of casing, 1.25 ft above land surface.

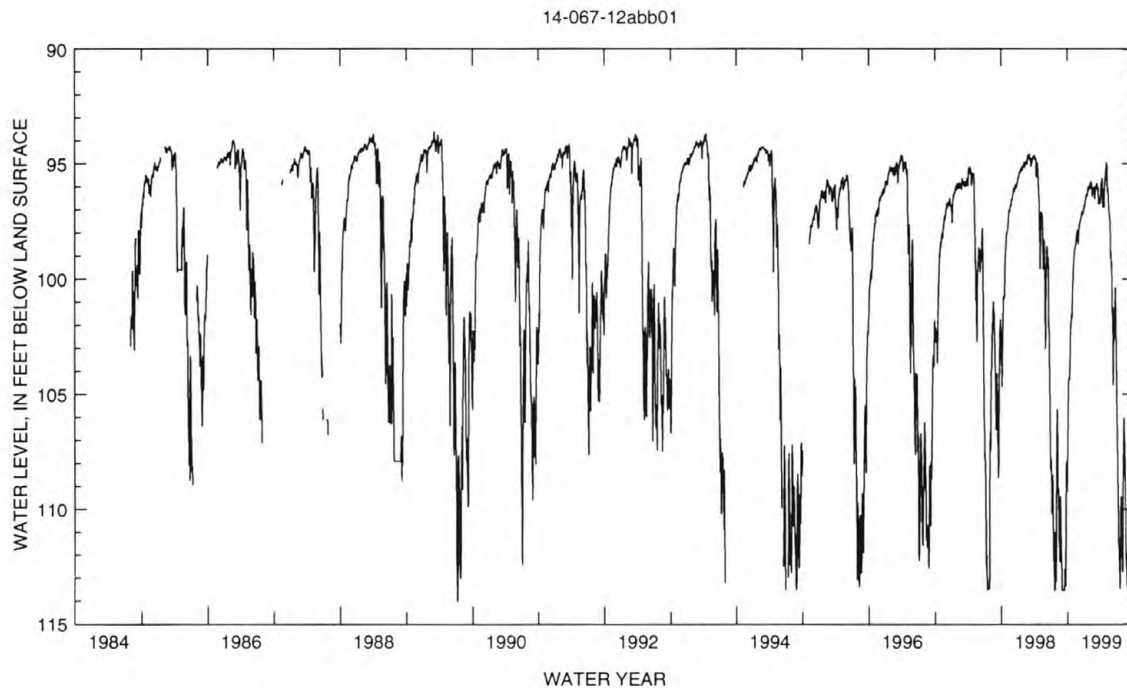
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 93.62 ft below land surface, Mar. 3, 1989; lowest, 114.04 ft below land surface, July 9, 1989.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	105.28	99.22	97.69	96.75	95.84	96.06	95.92	95.02	101.58	109.65	106.73	106.73
10	104.31	98.70	97.55	96.60	95.81	95.92	95.63	96.27	103.33	111.87	107.06	107.55
15	103.40	98.50	97.32	96.32	96.43	96.19	96.57	96.35	102.43	113.16	109.57	107.96
20	101.98	98.14	97.12	96.20	96.11	96.26	96.80	97.39	100.98	110.24	112.20	107.04
25	101.77	97.92	97.18	96.20	96.02	96.68	95.94	98.33	102.43	111.51	113.33	105.93
EOM	100.10	98.47	96.91	96.12	96.33	96.69	95.27	99.51	105.62	112.43	113.01	103.88
WTR YR 1999:	HIGHEST 94.96 (MAY 4); LOWEST 113.48 (JUL 14)											



LARAMIE COUNTY

Station number, 411034104554001. Local number, 14-067-18ddc01. Local name, Bell #14.

LOCATION.--Lat 41°10'34", long 104°55'40", in SW¹/₄ SE¹/₄ SE¹/₄ sec.18, T.14 N., R.67 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 229 ft below land surface.

DATUM.--Elevation of land surface is 6,248 ft above sea level, from topographic map. Measuring point: top of casing, 1.50 ft above land surface.

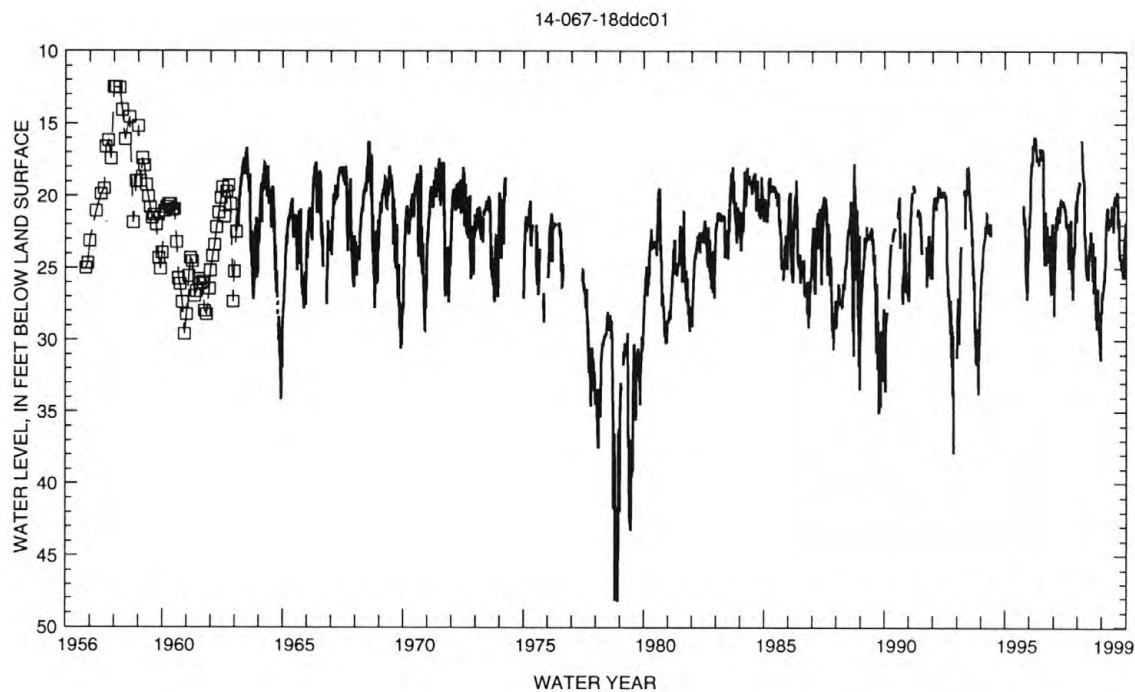
REMARKS.--Data collected by U.S. Geological Survey.

PERIOD OF RECORD.--1956 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.48 ft below land surface, from hand measured data, Sept. 26, Oct. 28, 1957; lowest, 48.25 ft below land surface, Aug. 31, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	27.57	26.14	22.66	20.98	21.77	20.87	21.74	20.28	21.98	24.31	24.75	23.67
10	26.83	25.97	21.99	22.15	21.60	20.85	20.37	20.20	22.01	24.33	24.83	23.16
15	26.94	25.74	21.53	22.23	21.74	20.62	20.28	19.91	22.05	24.34	24.96	23.10
20	26.91	25.11	21.15	21.93	21.90	21.82	19.99	19.93	21.80	24.36	25.47	23.16
25	26.58	24.94	21.06	22.01	21.55	21.96	20.35	19.82	23.29	24.72	25.28	22.33
EOM	26.45	23.96	20.81	21.90	20.95	22.25	20.46	19.91	24.18	25.12	25.68	21.80
WTR YR 1999:	HIGHEST	19.79	(MAY 21, 22);	LOWEST	28.12	(OCT 2)						



LARAMIE COUNTY

Station number, 410930104524701. Local number, 14-067-27bac01. Local name, Laramie County #13.

LOCATION.--Lat 41°09'30", long 104°52'47", in SW¹/₄ NE¹/₄ NW¹/₄ sec.27, T.14 N., R.67 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 140 ft below land surface.

DATUM.--Elevation of land surface is 6,180 ft above sea level, from topographic map. Measuring point: top of casing, 1.8 ft above land surface.

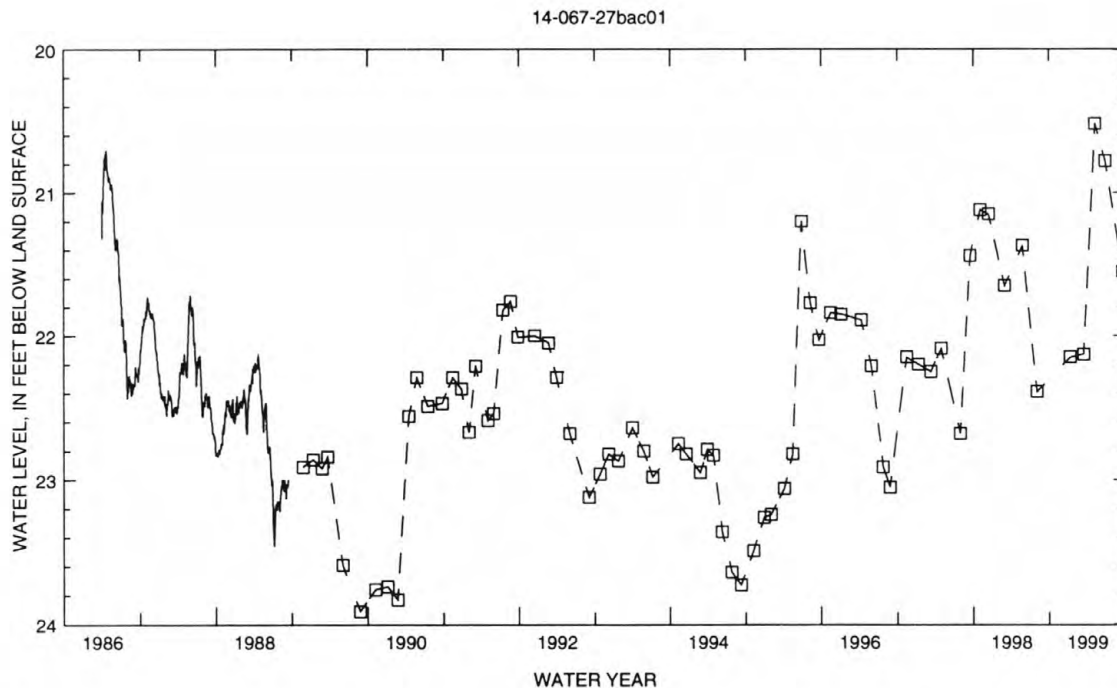
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.52 ft below land surface, from hand-measured data, May 11, 1999; lowest, 23.91 ft below land surface, Aug. 25, 1989.

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

DATE	WATER LEVEL
JAN 12	22.15
MAR 17	22.13
MAY 11	20.52
JUN 29	20.78
SEP 21	21.55



LARAMIE COUNTY

Station number, 410838104530401. Local number, 14-067-34bbc01. Local name, Laramie County #11.

LOCATION.--Lat 41°08'38", long 104°53'04", in SW¹/₄ NW¹/₄ NW¹/₄ sec.34, T.14 N., R.67 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 162 ft below land surface.

DATUM.--Elevation of land surface is 6,210 ft above sea level, from topographic map. Measuring point: top of casing, 1.50 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

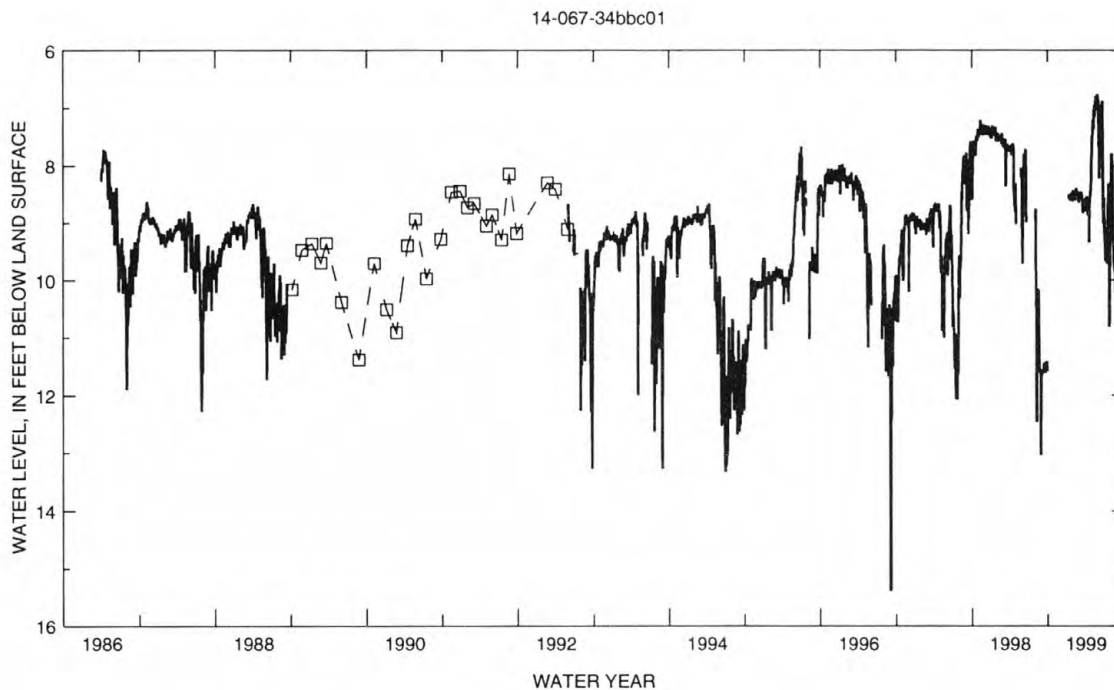
PERIOD OF RECORD.--1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.76 ft below land surface, May 29, 1999; lowest, 15.38 ft below land surface, Sept. 4, 1996.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	8.57	8.52	8.65	7.47	7.50	9.41	7.85	7.91
10	---	---	---	---	8.44	8.49	8.54	7.37	7.39	9.60	8.15	8.21
15	---	---	---	8.50	8.50	8.58	8.79	6.99	7.32	9.71	9.39	8.20
20	---	---	---	8.59	8.50	8.73	9.34	6.93	7.01	8.43	9.88	8.14
25	---	---	---	8.62	8.45	8.69	8.51	7.03	8.33	9.48	10.23	8.20
EOM	---	---	---	8.55	8.57	8.68	8.15	6.90	8.75	8.85	8.98	7.71

WTR YR 1999: HIGHEST 6.76 (MAY 29); LOWEST 11.57 (OCT 1-4)



GROUND-WATER LEVELS

LARAMIE COUNTY

Station number, 410827104501601. Local number, 14-067-36acb01. Local name, Pioneer Park.

LOCATION.--Lat 41°08'27", long 104°50'16", in NW¹/4 SW¹/4 NE¹/4 sec.36, T.14 N., R.67 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 24 ft below land surface.

DATUM.--Elevation of land surface is 6,099 ft above sea level, from topographic map. Measuring point: top of casing, 1.00 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

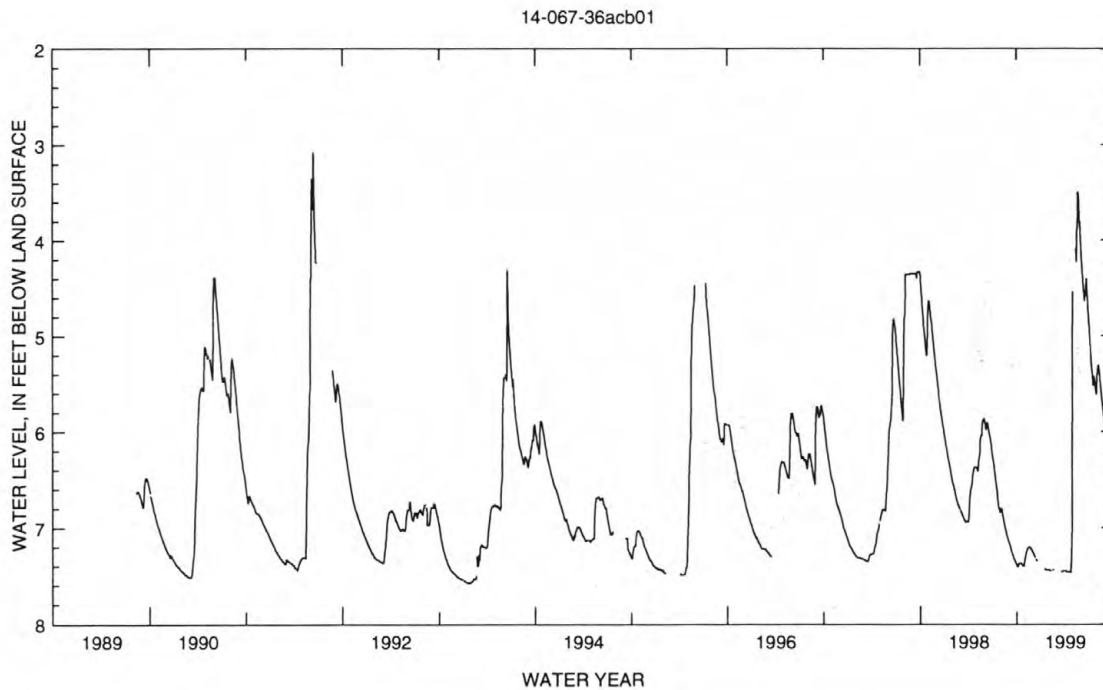
PERIOD OF RECORD.--1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.08 ft below land surface, June 13, 1991; lowest, 7.58 ft below land surface, Jan. 18-20, 23-26, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.41	7.27	7.28	---	7.45	---	7.45	---	4.25	5.03	5.33	5.67
10	7.38	7.22	7.31	---	7.45	---	7.46	---	4.49	5.24	5.37	5.65
15	7.37	7.21	7.34	7.43	7.44	---	7.46	4.19	4.64	5.41	5.51	5.76
20	7.38	7.20	---	7.44	---	7.46	7.46	3.74	4.50	5.46	5.67	5.87
25	7.40	7.22	---	7.44	---	7.45	7.40	3.60	4.58	5.50	5.79	5.92
EOM	7.35	7.25	---	7.44	---	7.45	5.23	3.99	4.81	5.60	5.93	6.00

WTR YR 1999: HIGHEST 3.50 (MAY 21, 22); LOWEST 7.47 (APR 23)



LARAMIE COUNTY

Station number, 410757104582302. Local number, 14-068-35ddc02. Local name, King #3.

LOCATION.--Lat 41°07'57", long 104°58'23", in SW¹/₄ SE¹/₄ SE¹/₄ sec.35, T.14 N., R.68 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 230 ft below land surface.

DATUM.--Elevation of land surface is 6,520 ft above sea level, from levels. Measuring point: top of casing, at land surface.

REMARKS.--Data collected by U.S. Geological Survey.

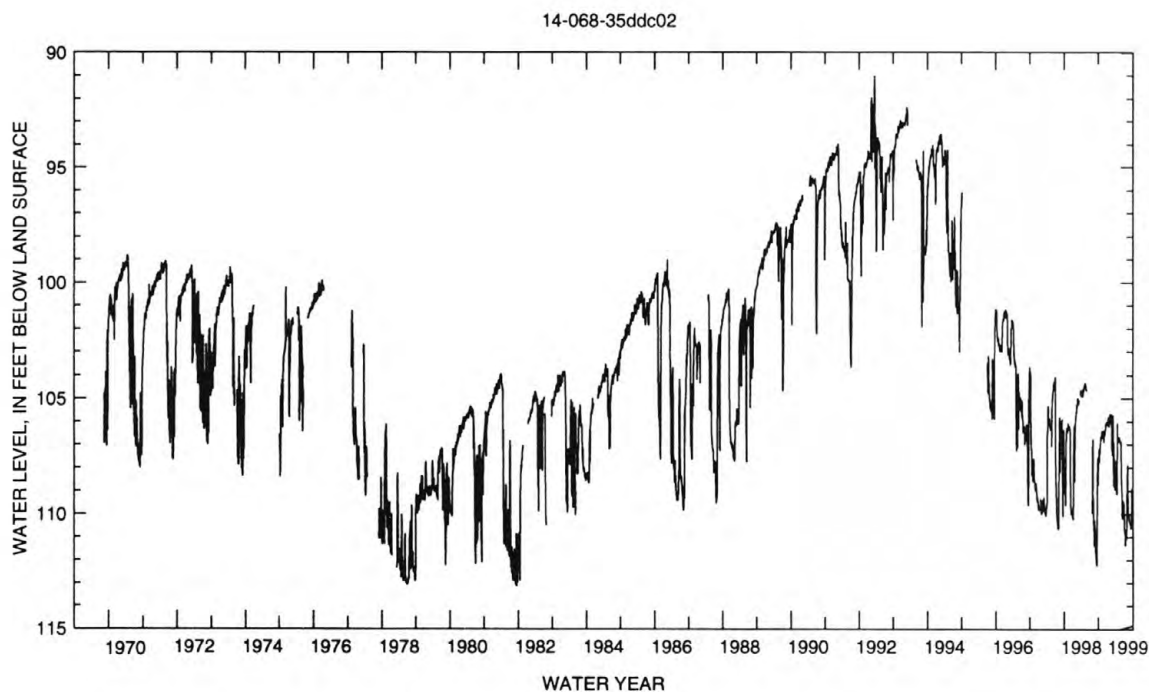
PERIOD OF RECORD.--1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 91.00 ft below land surface, Mar. 15, 1992; lowest, 113.15 ft below land surface, Sept. 13, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	107.52	106.66	106.44	106.14	105.73	106.32	108.93	---	108.42	110.23	108.92	110.42
10	107.18	106.42	106.55	106.05	105.68	105.93	107.72	---	109.10	110.77	107.99	110.47
15	107.76	106.61	106.49	105.95	105.89	108.80	108.96	106.68	110.19	110.70	109.38	110.58
20	107.33	106.49	106.10	105.86	105.86	107.71	109.08	106.80	109.73	111.19	110.09	110.49
25	106.94	106.39	106.19	106.16	107.31	108.84	106.56	106.90	109.47	110.90	110.07	109.43
EOM	106.70	106.76	106.10	106.00	107.40	108.85	---	106.87	109.56	111.03	110.35	110.41

WTR YR 1999: HIGHEST 105.68 (FEB 10, 11); LOWEST 111.36 (JUL 18)



LARAMIE COUNTY

Station number, 411531104194701. Local number, 15-062-20aaa01. Local name, Laramie County #4.

LOCATION.--Lat 41°15'31", long 104°19'47", in NE¹/₄ NE¹/₄ NE¹/₄ sec.20, T.15 N., R.62 W., Hydrologic Unit 10190015.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 165 ft below land surface.

DATUM.--Elevation of land surface is 5,510 ft above sea level, from topographic map. Measuring point: top of casing, 1.0 ft above land surface.

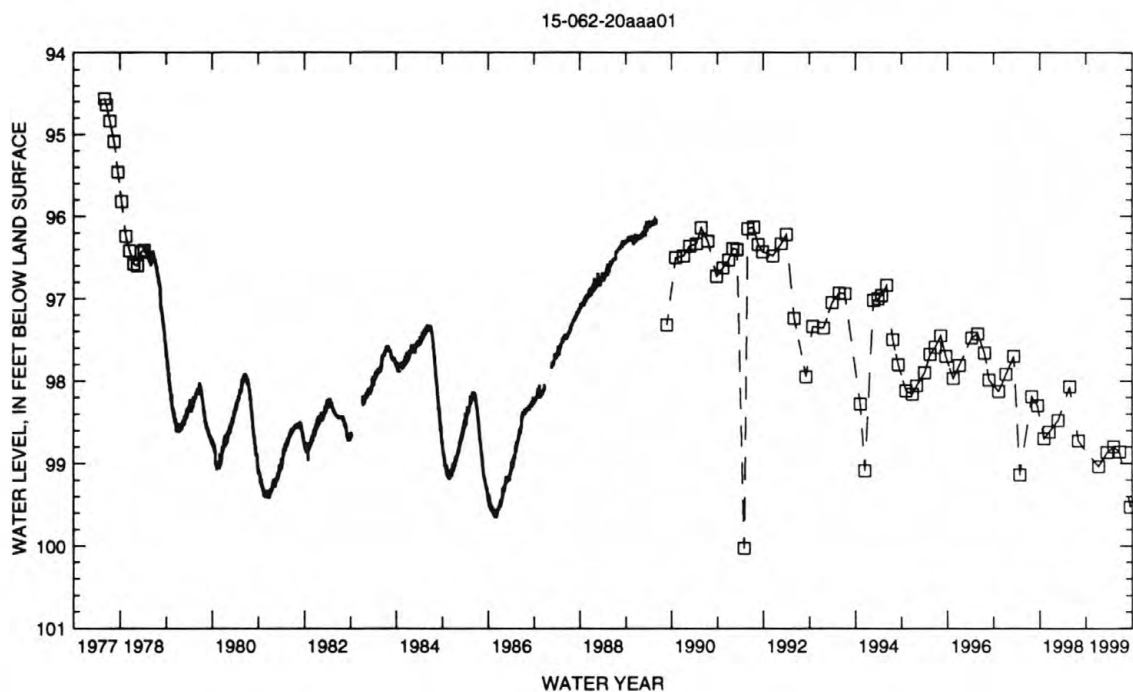
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 94.56 ft below land surface, from hand-measured data, June 1, 1977; lowest, 100.03 ft below land surface, from hand-measured data, May 1, 1991.

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

DATE	WATER LEVEL
JAN 11	99.04
MAR 18	98.87
MAY 10	98.80
JUN 28	98.86
SEP 20	99.53



LARAMIE COUNTY

Station number, 412227104081402. Local number, 16-060-07bbb02. Local name, USGS southwest of Albin.

LOCATION.--Lat 41°22'27", long 104°08'14", in NW¹/₄ NW¹/₄ NW¹/₄ sec.7, T.16 N., R.60 W., Hydrologic Unit 10190016.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 215 ft below land surface.

DATUM.--Elevation of land surface is 5,310 ft above sea level, from topographic map. Measuring point: top of casing, 1.10 ft above land surface.

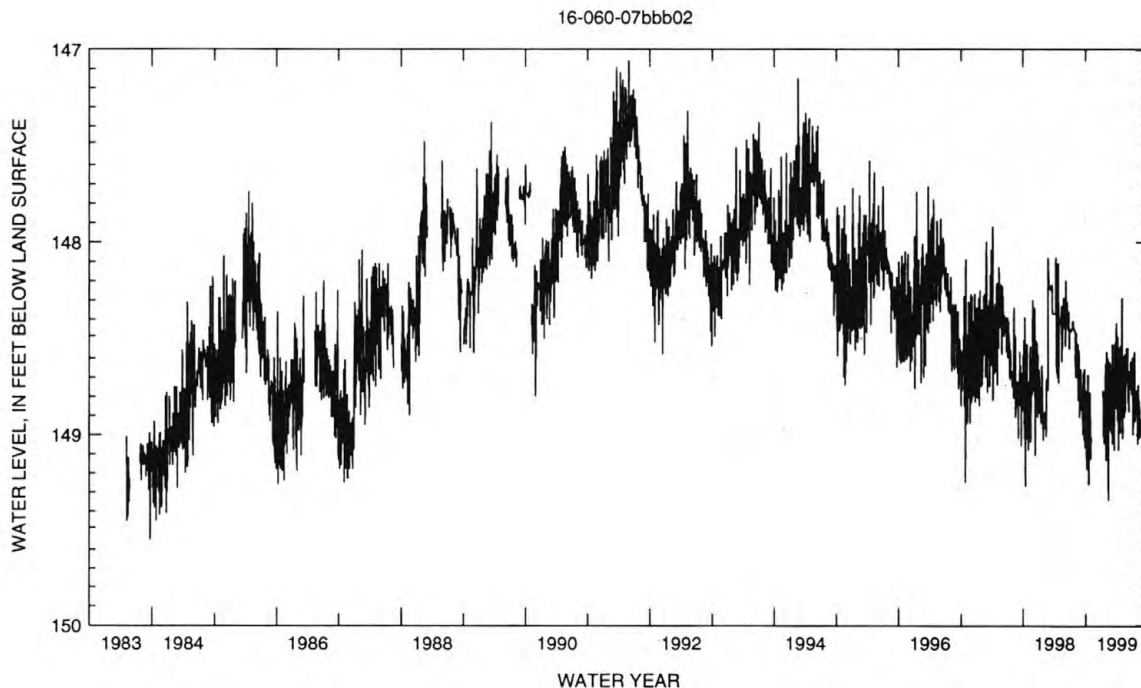
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 147.06 ft below land surface, May 30, 31, 1991; lowest, 149.55 ft below land surface, Sept. 20, 1983.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	148.80	149.04	---	---	148.92	148.69	148.80	148.66	148.55	148.81	148.78	149.07
10	148.83	---	---	---	148.60	148.79	148.57	148.63	148.83	148.94	148.84	148.94
15	148.69	---	---	148.80	148.70	148.73	148.97	148.65	148.76	148.57	148.86	149.01
20	149.26	---	---	148.85	148.97	148.93	148.56	148.58	148.67	148.89	148.96	148.18
25	148.94	---	---	149.02	148.78	148.83	148.60	148.73	148.67	148.77	148.92	148.69
EOM	149.13	---	---	148.78	148.99	148.42	148.91	148.62	148.64	148.77	148.92	148.83
WTR YR 1999:	HIGHEST 148.18 (SEPT 20); LOWEST 149.34 (FEB 12)											



LARAMIE COUNTY

Station number, 411136104125301. Local number, 16-061-17aaa01. Local name, Laramie County #5.

LOCATION.--Lat 41°11'36", long 104°12'53", in NE¹/₄ NE¹/₄ NE¹/₄ sec.17, T.16 N., R.61 W., Hydrologic Unit 10190016.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 285 ft below land surface.

DATUM.--Elevation of land surface is 5,451 ft above sea level, from topographic map. Measuring point: top of casing, 1.30 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

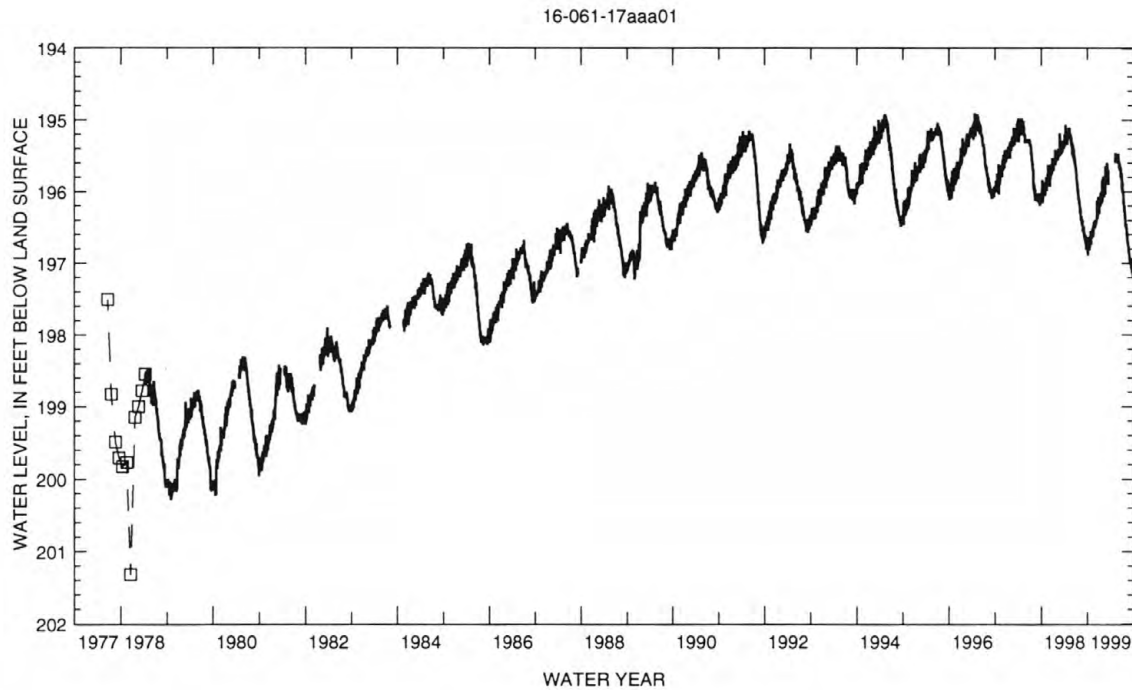
PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 194.91 ft below land surface, Apr. 24, 1996; lowest, 201.32 ft below land surface, from hand-measured data, Dec. 16, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	196.85	196.62	196.41	196.19	195.98	195.89	---	---	195.59	196.00	196.45	196.95
10	196.69	196.54	196.42	196.15	195.80	195.85	---	---	195.59	195.98	196.51	196.98
15	196.63	196.50	196.36	196.02	195.94	195.73	---	195.51	195.66	196.07	196.61	197.02
20	196.77	196.53	196.36	196.02	196.04	---	---	195.58	195.68	196.21	196.73	197.13
25	196.67	196.52	196.30	195.96	195.77	---	---	195.54	195.69	196.27	196.81	196.93
EOM	196.71	196.51	196.16	195.94	195.85	---	---	195.51	195.77	196.46	196.87	196.98

WTR YR 1999: HIGHEST 195.46 (MAY 13); LOWEST 197.18 (SEPT 28)



LARAMIE COUNTY

Station number, 412343104053101. Local number, 17-060-33cbb01. Local name, USGS south of Albin.

LOCATION.--Lat 41°23'43", long 104°05'31", in NW¹/₄ NW¹/₄ SW¹/₄ sec.33, T.17 N., R.60 W., Hydrologic Unit 10190016.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 275 ft below land surface.

DATUM.--Elevation of land surface is 5,280 ft above sea level, from topographic map. Measuring point: top of casing, 1.00 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

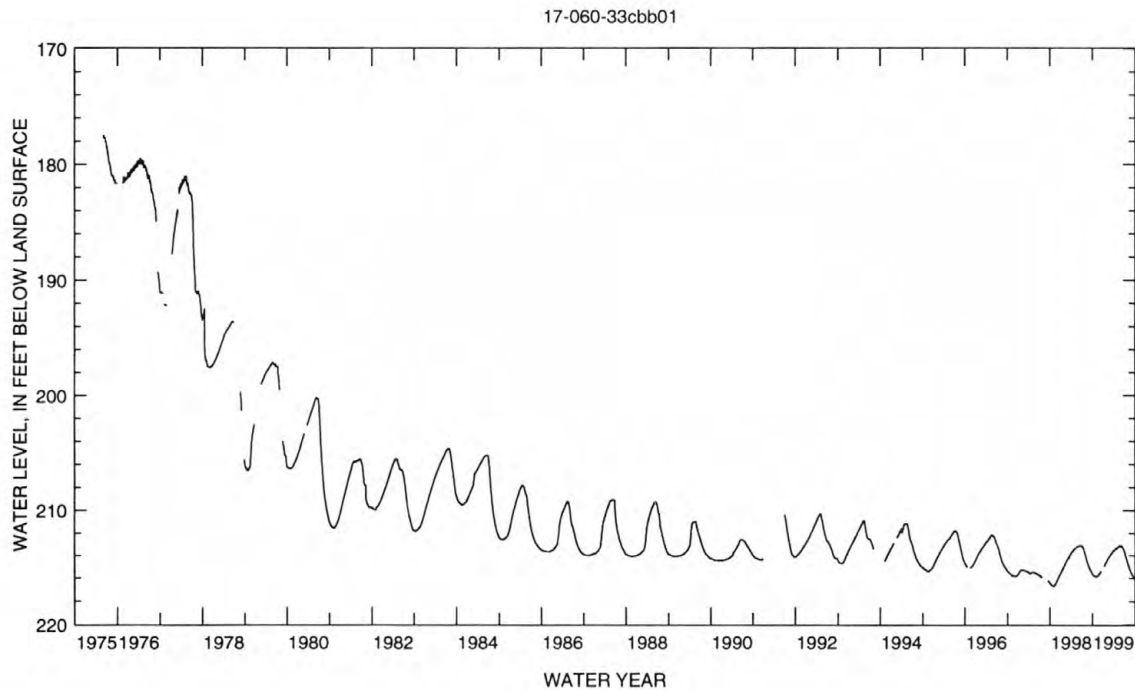
PERIOD OF RECORD.--1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 177.52 ft below land surface, May 30, 31, 1975; lowest, 216.70 ft below land surface, Nov. 3, 4, 1998.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	215.65	215.86	215.58	---	214.46	213.99	213.57	213.29	213.11	213.66	214.77	215.61
10	215.72	215.85	215.53	---	214.35	213.91	213.51	213.24	213.12	213.86	214.93	215.71
15	215.77	215.82	215.44	214.89	214.29	213.83	213.49	213.22	213.22	214.01	215.08	215.80
20	215.82	215.78	---	214.76	214.21	213.79	213.42	213.17	213.29	214.19	215.24	215.87
25	215.84	215.72	---	214.69	214.11	213.70	213.38	213.15	213.39	214.37	215.36	215.91
EOM	215.86	215.66	---	214.55	214.07	213.61	213.36	213.13	213.51	214.58	215.51	215.98

WTR YR 1999: HIGHEST 213.11 (JUN 2-8); LOWEST 215.98 (SEPT 29, 30)



GROUND-WATER LEVELS

LARAMIE COUNTY

Station number, 412605104203001. Local number, 17-062-17ccc01. Local name, Laramie County #6A.

LOCATION.--Lat 41°26'05", long 104°20'30", in SW¹/₄ SW¹/₄ SW¹/₄ sec.17, T.17 N., R.62 W., Hydrologic Unit 10190016.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 360 ft below land surface.

DATUM.--Elevation of land surface is 5,570 ft above sea level, from topographic map. Measuring point: top of casing, 1.80 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

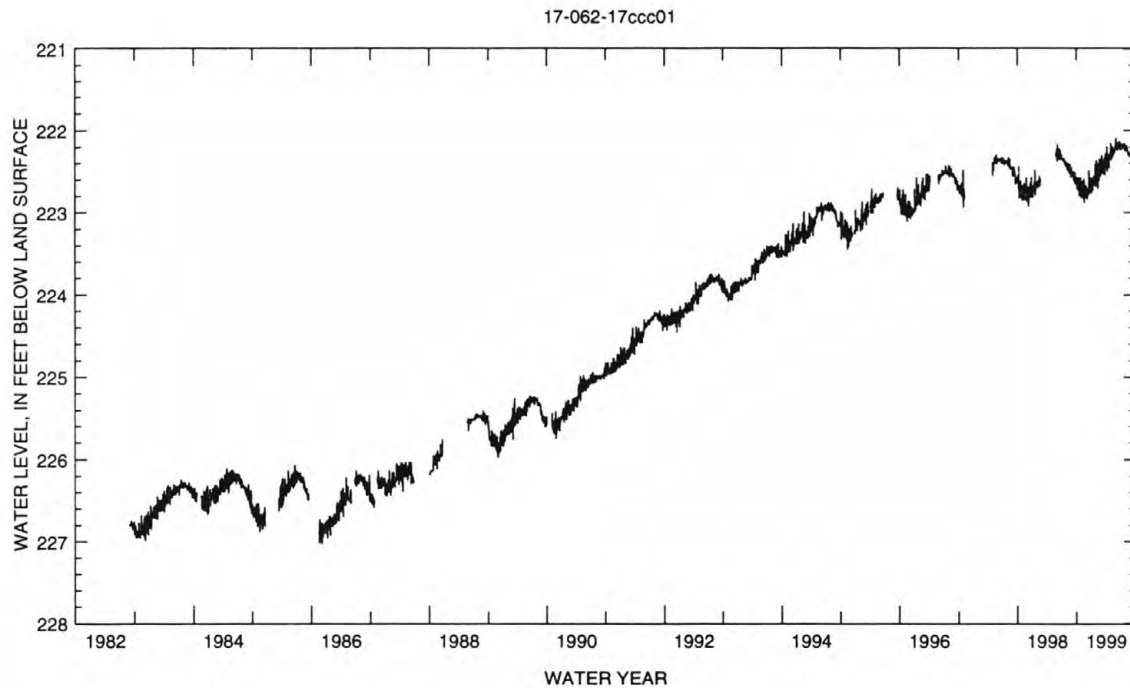
PERIOD OF RECORD.--1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 222.09 ft below land surface, June 4, 1999; lowest, 227.03 ft below land surface, Dec. 4, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	222.66	222.71	222.76	222.66	222.53	222.44	222.40	222.36	222.17	222.22	222.19	222.32
10	222.60	222.70	222.80	222.62	222.41	222.43	222.27	222.29	222.19	222.22	222.19	222.31
15	222.57	222.64	222.78	222.58	222.46	222.43	222.40	222.25	222.17	222.17	222.21	222.35
20	222.78	222.74	222.76	222.57	222.62	222.50	222.29	222.28	222.18	222.21	222.26	222.45
25	222.71	222.82	222.69	222.56	222.41	222.42	222.27	222.23	222.13	222.16	222.28	222.26
EOM	222.81	222.82	222.59	222.56	222.54	222.28	222.33	222.16	222.18	222.19	222.28	222.34

WTR YR 1999: HIGHEST 222.09 (JUN 4); LOWEST 222.88 (NOV 19)



LARAMIE COUNTY

Station number, 412400104533901. Local number, 17-067-33baa01. Local name, MX-North.

LOCATION.--Lat 41°24'00", long 104°53'39", in NE¹/₄ NE¹/₄ NW¹/₄ sec.33, T.17 N., R.67 W., Hydrologic Unit 10190009.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 200 ft below land surface.

DATUM.--Elevation of land surface is 6,425 ft above sea level, from topographic map. Measuring point: top of casing, 1.40 ft above land surface.

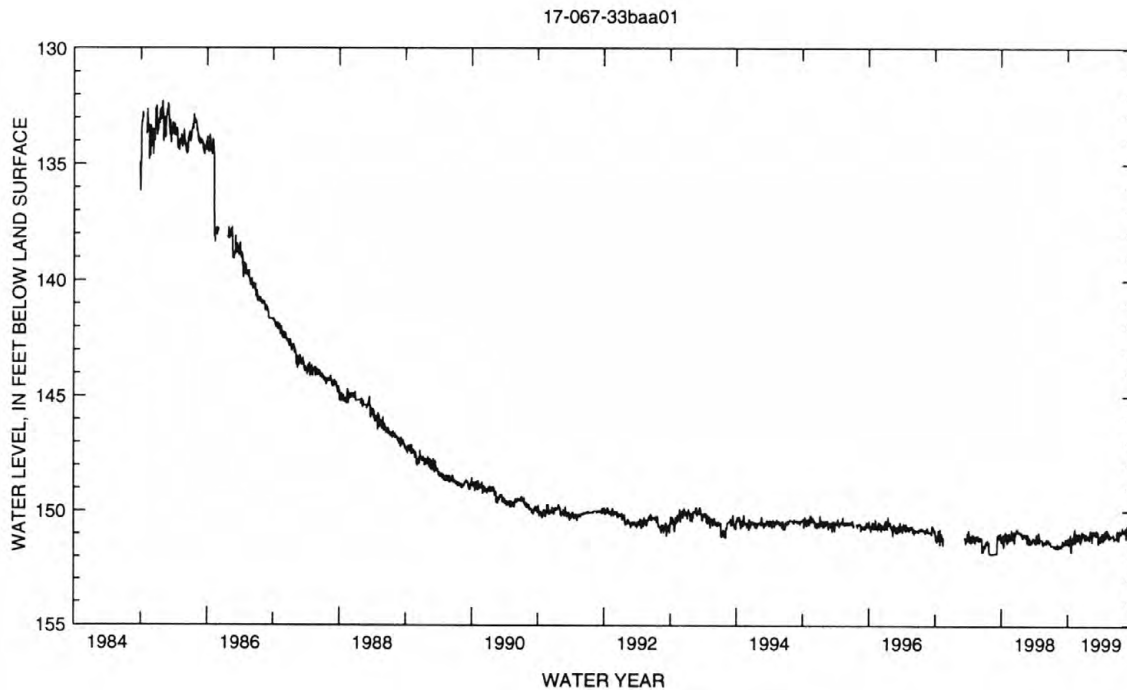
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1984 to current year.

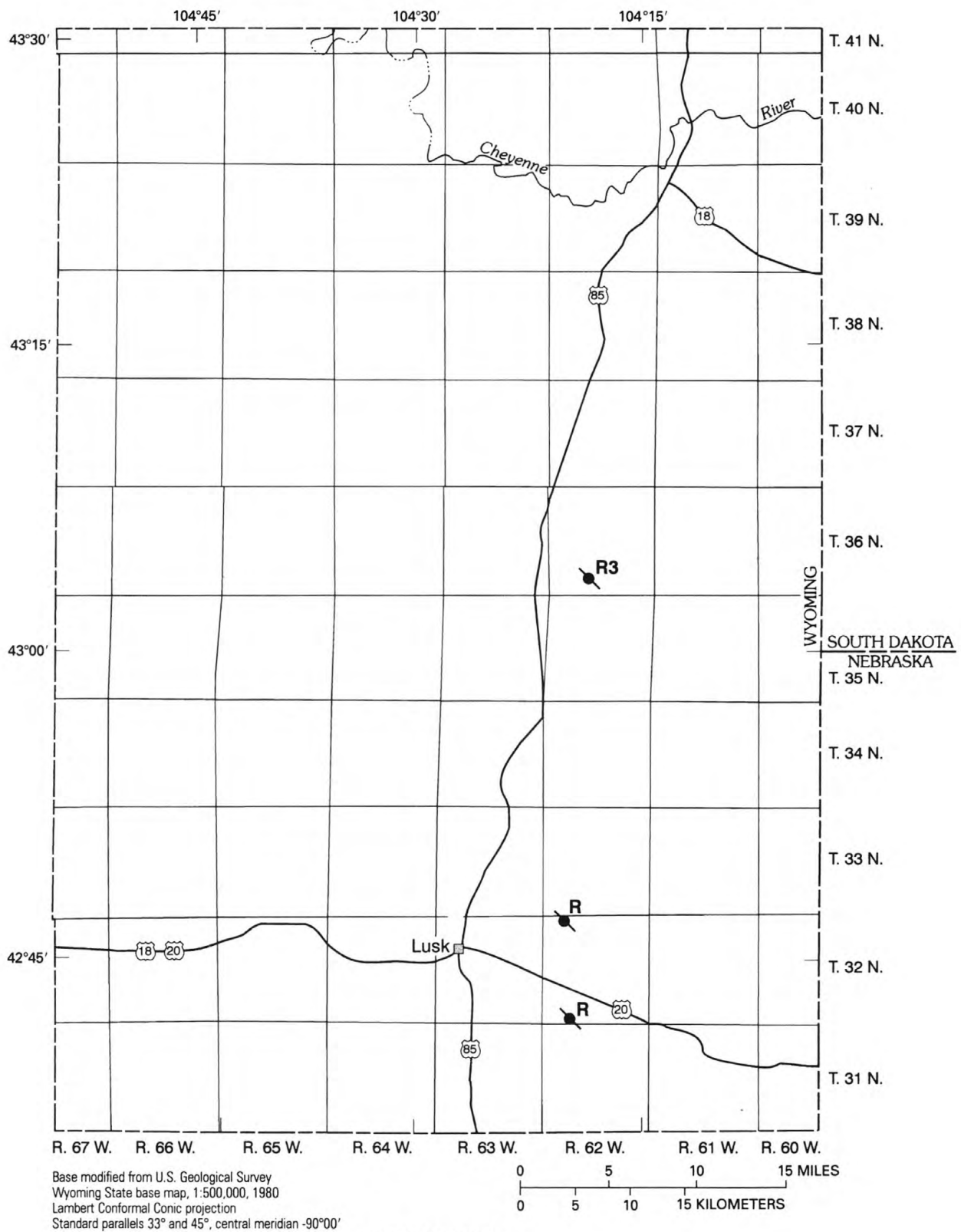
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 132.26 ft below land surface, Jan. 28, 1985; lowest, 151.87 ft below land surface, July 29, Aug 8, 11, 1997.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	151.18	151.00	151.01	151.11	151.00	150.89	151.23	150.82	151.08	151.07	150.94	150.75
10	151.25	150.83	151.40	151.14	150.85	150.90	150.94	150.94	151.11	151.14	150.94	150.72
15	151.01	151.09	151.27	151.09	150.94	150.89	151.29	150.97	151.16	150.87	150.74	150.76
20	151.76	151.29	151.06	151.19	151.05	151.40	150.91	151.06	151.18	150.99	150.99	150.81
25	151.32	151.21	151.05	151.20	150.92	151.22	150.87	151.06	151.18	150.88	150.67	---
EOM	151.42	151.07	150.98	151.01	151.01	151.06	151.13	151.08	150.87	150.78	150.62	---
WTR YR 1999:	HIGHEST 150.62 (AUG 30, 31, SEPT 1); LOWEST 151.76 (OCT 20)											



WATER RESOURCES DATA FOR WYOMING, 1999



EXPLANATION

- R3** OBSERVATION WELL WITH RECORDER--Number near well is number of wells at that location

Figure 16. Location of observation wells in Niobrara County, Wyoming.

NIOBRARA COUNTY

Station number, 424709104194101. Local number, 32-062-05baa01. Local name, Niobrara County #1.

LOCATION.--Lat 42°47'09", long 104°19'41", in NE¹/₄ NE¹/₄ NW¹/₄ sec.5, T.32 N., R.62 W., Hydrologic Unit 10150002.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 177 ft below land surface.

DATUM.--Elevation of land surface is 4,970 ft above sea level, from topographic map. Measuring point: top of casing, 1.20 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

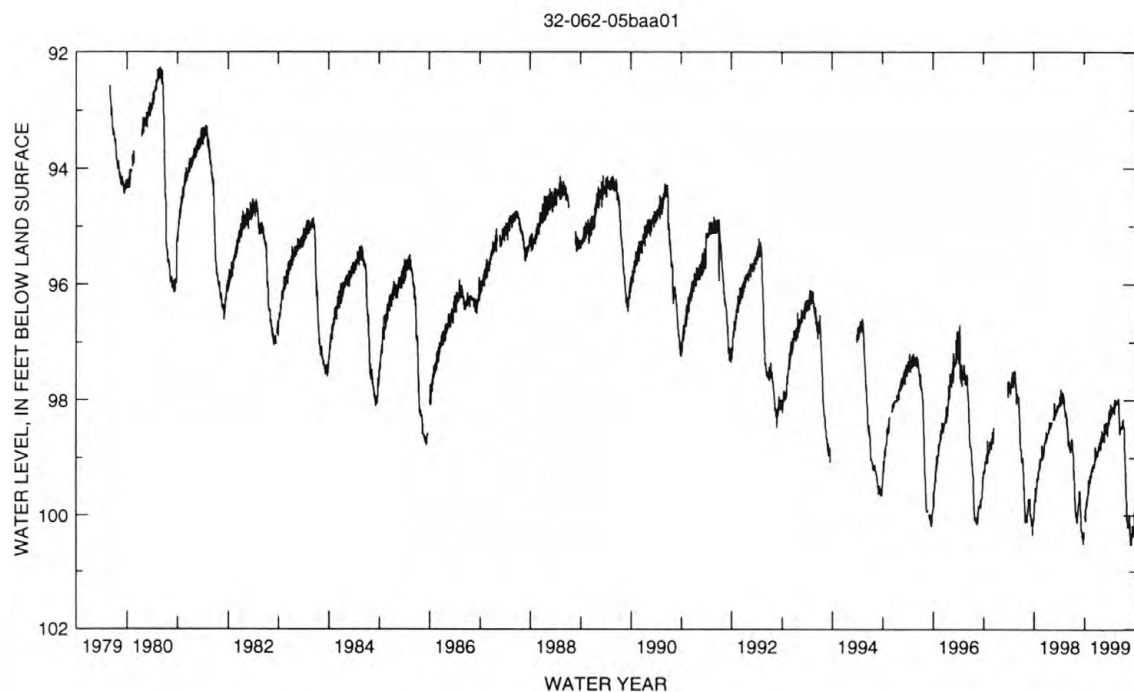
PERIOD OF RECORD.--1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 92.26 ft below land surface, June 1, 1980; lowest, 100.52 ft below land surface, Aug. 28-31, Sept. 1-4, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	100.03	99.43	99.16	98.92	98.64	98.55	98.31	98.24	98.06	98.37	100.13	100.43
10	99.88	99.38	99.12	98.80	---	98.49	98.12	98.02	98.51	98.45	100.21	100.19
15	99.74	99.28	99.01	98.75	98.58	98.51	98.20	98.01	98.53	98.58	100.14	100.31
20	99.75	99.27	99.02	98.75	98.73	98.46	98.13	98.02	98.47	99.04	100.02	100.33
25	99.67	99.23	98.97	98.73	98.54	98.27	98.11	98.01	98.47	99.36	100.34	99.94
EOM	99.54	99.24	98.91	98.72	98.58	98.17	98.14	97.97	98.42	99.87	100.52	99.81

WTR YR 1999: HIGHEST 97.97 (MAY 31, JUN 1); LOWEST 100.52 (AUG 28-31, SEPT 1-4)



GROUND-WATER LEVELS

NIOBRARA COUNTY

Station number, 424244104202001. Local number, 32-062-32bbb01. Local name, Node Well.

LOCATION.--Lat 42°42'44", long 104°20'20", in NW¹/₄ NW¹/₄ NW¹/₄ sec.32, T.32 N., R.62 W., Hydrologic Unit 10150002.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 485 ft below land surface.

DATUM.--Elevation of land surface is 4,898 ft above sea level, from topographic map. Measuring point: bottom of shelf, 3.00 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

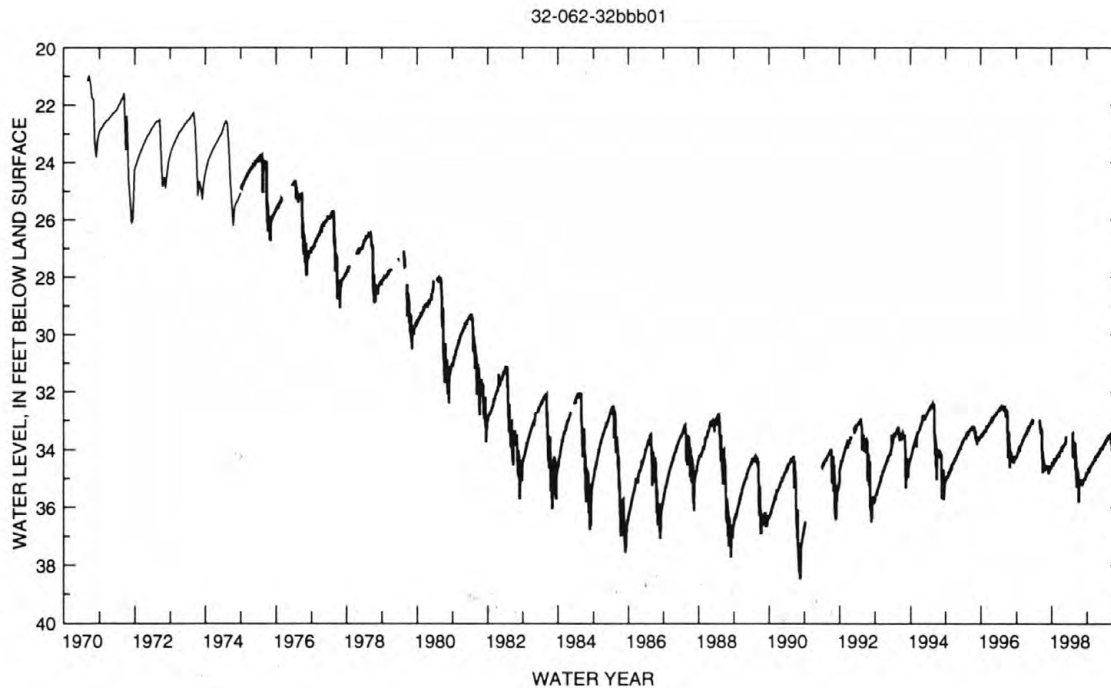
PERIOD OF RECORD.--1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.93 ft below land surface, June 23, 1970; lowest, 38.48 ft below land surface, Aug. 19, 1990.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	34.78	34.59	34.43	34.25	34.09	33.95	33.79	33.63	33.45	34.06	34.58	34.81
10	34.77	34.57	34.41	34.20	34.03	33.92	33.72	33.59	33.47	34.38	34.66	34.75
15	34.72	34.52	34.37	34.18	34.04	33.90	33.72	33.57	33.51	34.35	34.77	34.71
20	34.76	34.51	34.36	34.16	34.05	33.89	33.67	33.56	33.96	34.88	34.98	34.69
25	34.69	34.50	34.31	34.14	33.97	33.85	33.65	33.53	33.62	34.87	34.83	34.58
EOM	34.65	34.48	34.26	34.10	33.97	33.77	33.65	33.45	33.56	34.70	34.92	34.54

WTR YR 1999: HIGHEST 33.44 (JUN 2, 4, 8); LOWEST 35.27 (JUL 27)



GROUND-WATER LEVELS

81

NIOBRARA COUNTY

Station number, 430422104183201. Local number, 36-062-28ab01. Local name, ETSI T-2.

LOCATION.--Lat 43°04'22", long 104°18'32", in NW¹/₄ NE¹/₄ sec.28, T.36 N., R.62 W., Hydrologic Unit 10120104.

AQUIFER.--Madison Limestone.

WELL CHARACTERISTICS.--Depth of well, 3,120 ft below land surface.

DATUM.--Elevation of land surface is 4,244 ft above sea level, from topographic map. Measuring point: top of casing, at land surface.

REMARKS.--Data from 1974 through March 1980 are unavailable electronically. Data available in reports in the District office.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

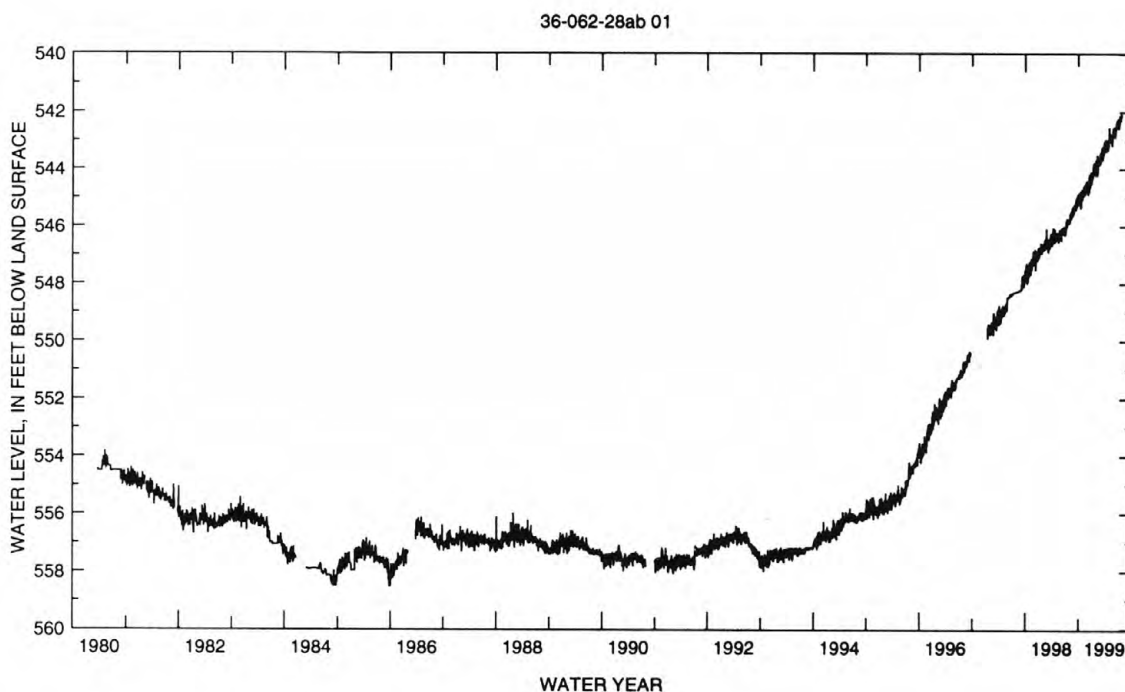
PERIOD OF RECORD.--1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 542.07 ft below land surface, July 28, 1999; lowest, 558.54 ft below land surface, Sept. 29, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	544.86	544.85	544.54	544.27	543.81	543.60	543.27	542.77	542.54	542.36	---	---
10	544.94	544.63	544.88	544.19	543.50	543.50	542.94	542.90	542.73	542.59	---	---
15	544.78	544.60	544.71	543.91	543.85	543.40	543.38	542.81	542.79	542.13	---	---
20	545.33	544.76	544.61	543.85	543.81	543.67	543.00	542.93	542.58	542.32	---	---
25	545.02	544.71	544.44	544.12	543.65	543.45	543.03	542.96	542.33	542.09	---	---
EOM	545.05	544.65	544.19	543.94	543.68	543.09	543.23	542.64	542.44	---	---	---

WTR YR 1999: HIGHEST 542.07 (JUL 28); LOWEST 545.33 (OCT 20)



GROUND-WATER LEVELS

NIOBRARA COUNTY

Station number, 430422104183202. Local number, 36-062-28ab02. Local name, ETSI O-2.

LOCATION.--Lat 43°04'22", long 104°18'32", in NW¹/4 NE¹/4 sec.28, T.36 N., R.62 W., Hydrologic Unit 10120104.

AQUIFER.--Lakota Formation.

WELL CHARACTERISTICS.--Depth of well, 505 ft below land surface.

DATUM.--Elevation of land surface is 4,247 ft above sea level, from topographic map. Measuring point: top of casing, at land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

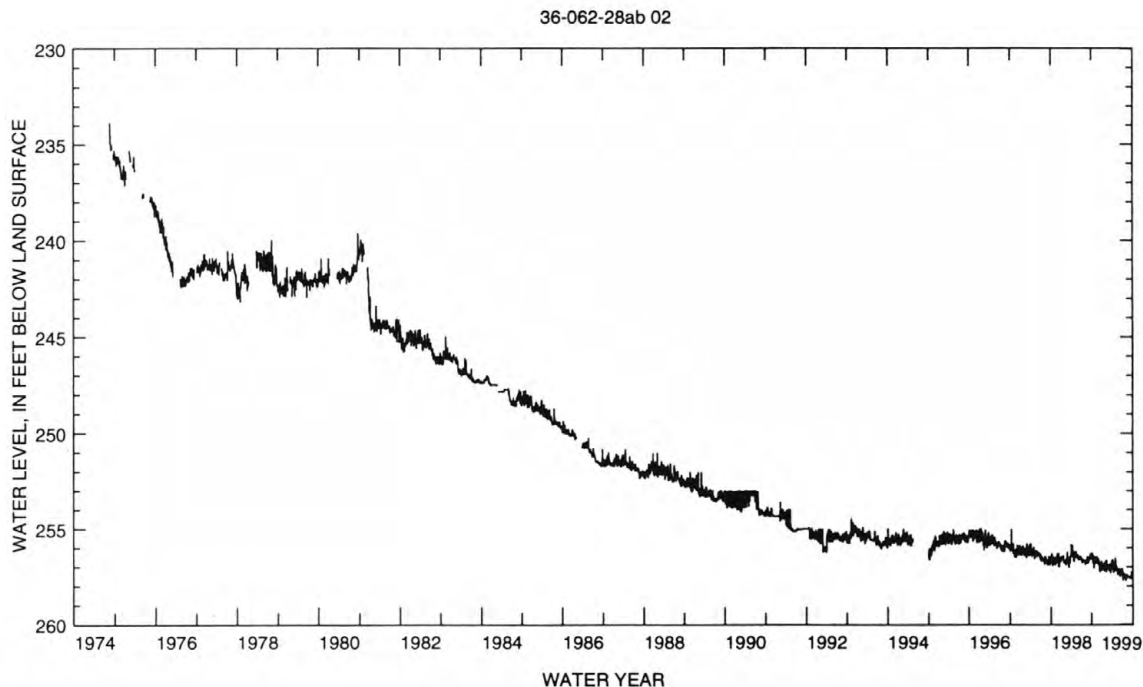
PERIOD OF RECORD.--1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 233.87 ft below land surface, Aug. 19, 1974; lowest, 257.71 ft below land surface, Aug. 3, 4, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	256.25	256.76	256.66	257.03	256.87	256.93	256.75	256.64	257.12	257.15	257.65	257.52
10	256.50	256.49	257.26	257.07	256.63	256.98	256.60	256.99	257.28	257.56	257.61	257.54
15	256.40	256.53	257.17	256.87	256.97	257.01	257.31	257.01	257.49	257.34	257.47	257.62
20	256.94	256.81	257.18	256.89	257.01	257.30	256.86	257.18	257.32	257.54	257.53	257.58
25	256.84	256.64	257.07	257.22	256.98	257.07	256.99	257.35	257.16	257.49	257.54	257.27
EOM	256.81	256.56	256.86	257.05	257.06	256.65	257.25	257.21	257.28	257.42	257.52	257.59

WTR YR 1999: HIGHEST 256.24 (OCT 4); LOWEST 257.71 (AUG 3, 4)



NIOBRARA COUNTY

Station number, 430421104200701. Local number, 36-062-28bbd01. Local name, ETSI T-1.

LOCATION.--Lat 43°04'21", long 104°20'07", in SE¹/₄ NW¹/₄ sec.28, T.36 N., R.62 W., Hydrologic Unit 10120104.

AQUIFER.--Minnelusa Formation.

WELL CHARACTERISTICS.--Depth of well, 1,510 ft below land surface.

DATUM.--Elevation of land surface is 5,200 ft above sea level, from topographic map. Measuring point: top of casing, 0.45 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

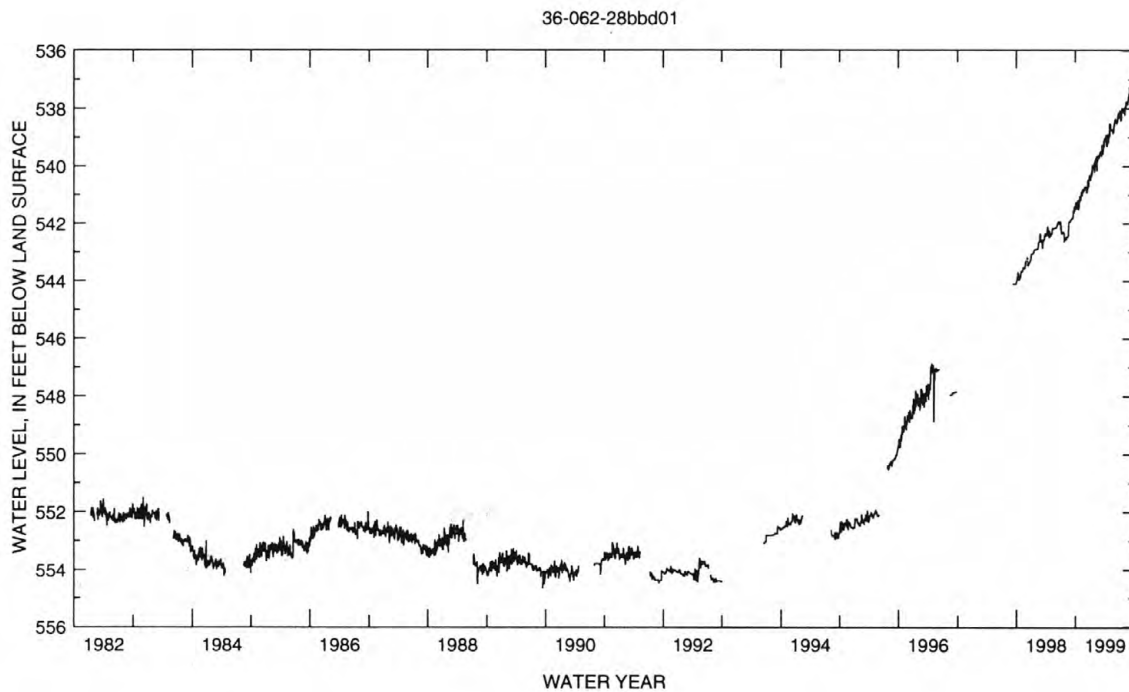
PERIOD OF RECORD.--1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 537.25 ft below land surface, Sept. 2, 1999; lowest, 554.67 ft below land surface, Sept. 12, 1989.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	541.27	541.15	540.71	540.43	539.84	539.53	539.08	538.54	538.39	538.11	538.06	---
10	541.28	540.91	540.86	540.33	539.64	539.51	538.90	538.74	538.45	538.36	537.85	---
15	541.24	540.85	540.84	540.08	539.81	539.46	539.31	538.73	538.50	538.05	537.78	---
20	541.48	540.92	540.73	540.00	539.74	539.58	538.93	538.73	538.42	538.13	537.85	---
25	541.40	540.81	540.62	540.04	539.68	539.36	538.93	538.77	538.16	538.08	537.61	---
EOM	541.20	540.72	540.36	540.03	539.67	539.03	539.00	538.50	538.25	538.03	537.49	---

WTR YR 1999: HIGHEST 537.25 (SEPT 2); LOWEST 541.54 (OCT 1)



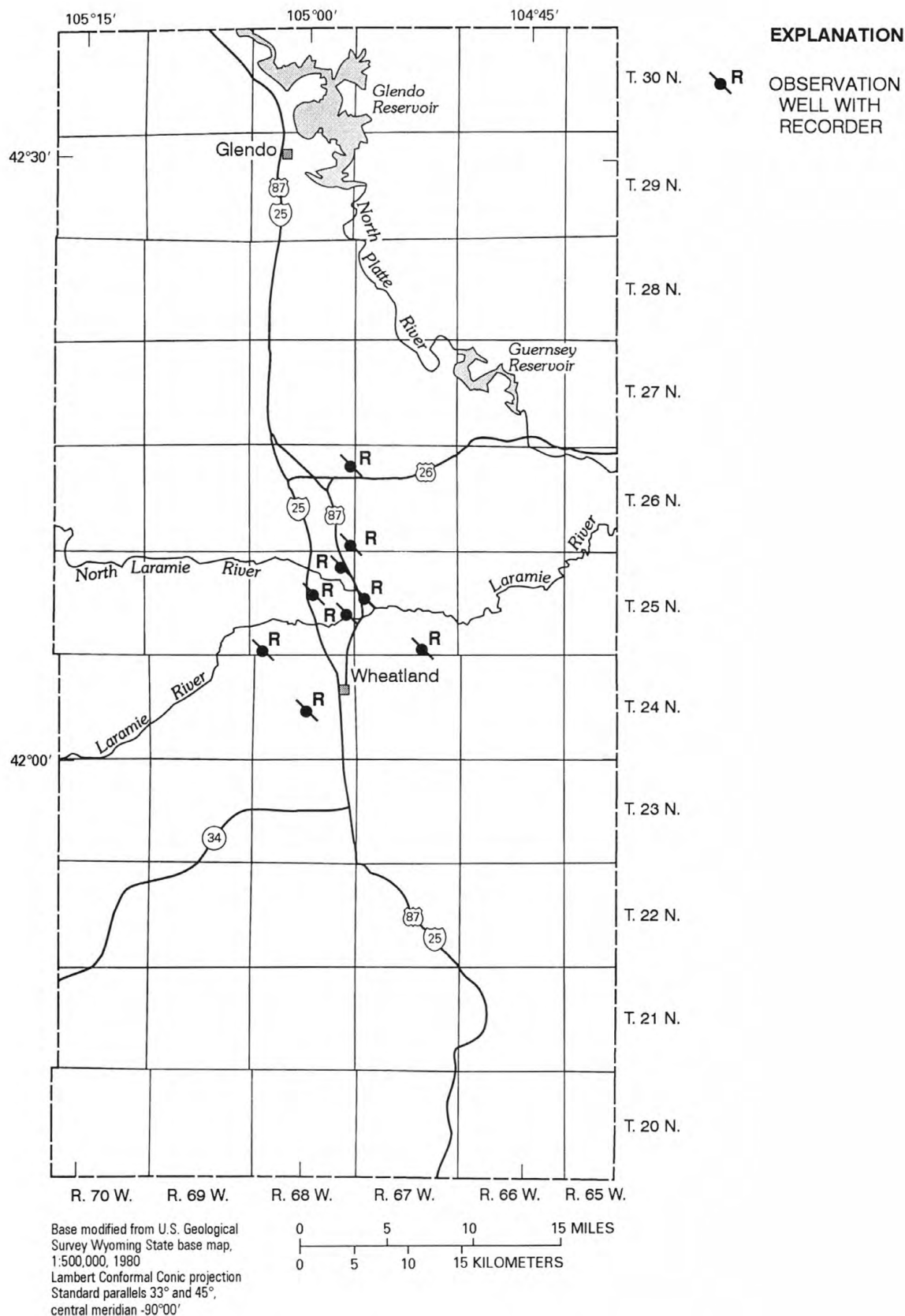


Figure 17. Location of observation wells in Platte County, Wyoming.

PLATTE COUNTY

Station number, 420246104590302. Local number, 24-068-22aab02. Local name, Platte County #1A.

LOCATION.--Lat 42°02'46", long 104°59'03", in NW¹/₄ NE¹/₄ NE¹/₄ sec.22, T.24 N., R.68 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 200 ft below land surface.

DATUM.--Elevation of land surface is 4,860 ft above sea level, from topographic map. Measuring point: top of casing, 1.35 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

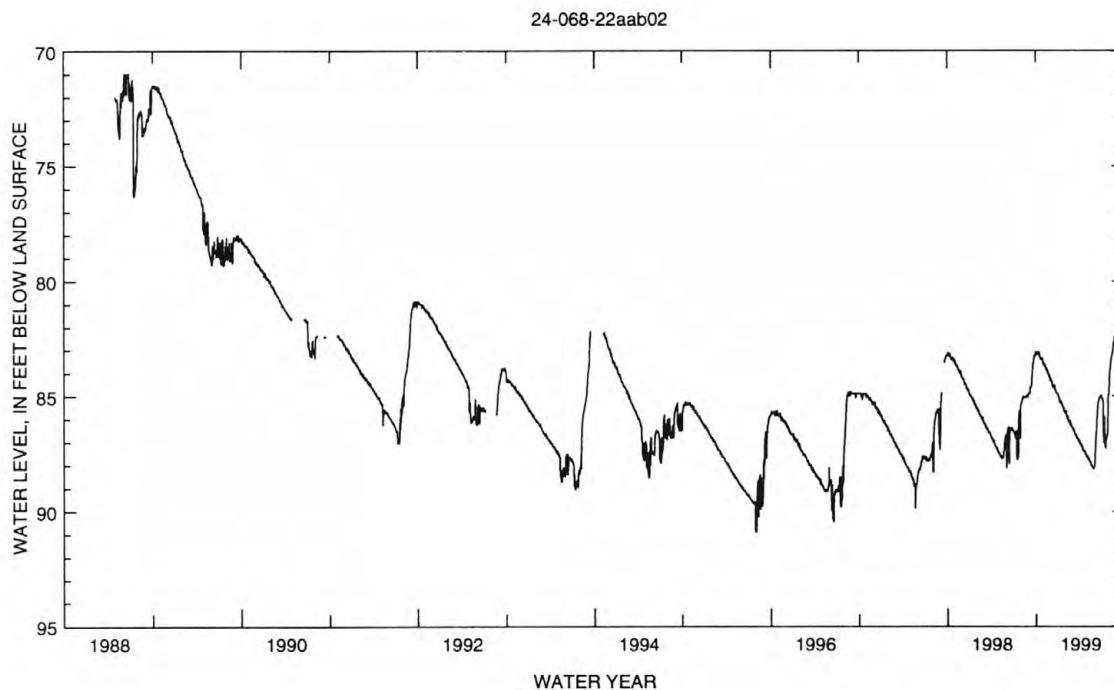
PERIOD OF RECORD.--1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 70.95 ft below land surface, June 5, 1988; lowest, 90.92 ft below land surface, Aug. 1995.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	83.16	83.64	84.37	85.12	85.89	86.51	87.17	87.76	86.87	85.25	83.80	---
10	83.11	83.75	84.63	85.21	85.90	86.62	87.21	87.84	86.02	86.05	83.34	---
15	83.13	83.82	84.63	85.27	86.11	86.70	87.34	87.90	85.32	87.20	83.14	---
20	83.38	84.00	84.76	85.43	86.30	86.83	87.39	88.05	85.11	86.85	82.68	---
25	83.40	84.12	84.89	85.59	86.28	86.89	87.51	88.13	85.01	86.64	82.37	79.87
EOM	83.58	84.31	84.93	85.73	86.37	86.98	87.64	87.93	85.04	84.92	---	80.05

WTR YR 1999: HIGHEST 79.87 (SEPT 25); LOWEST 88.14 (MAY 26)



PLATTE COUNTY

Station number, 420718104553901. Local number, 25-067-19dda01. Local name, Ed Wilhelm.

LOCATION.--Lat 42°07'18", long 104°55'39", in NE¹/₄ SE¹/₄ SE¹/₄ sec.19, T.25 N., R.67 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 760 ft below land surface.

DATUM.--Elevation of land surface is 4,540 ft above sea level, from topographic map. Measuring point: top of casing, 1.50 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

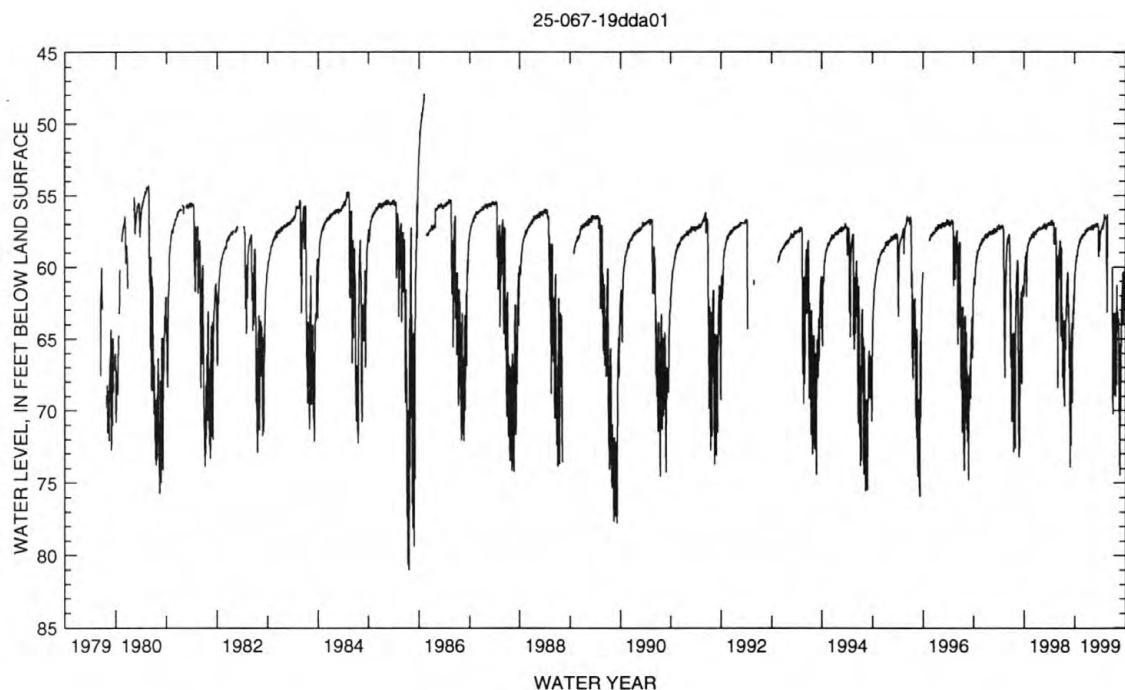
PERIOD OF RECORD.--1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 47.88 ft below land surface, Nov. 8, 1985; lowest, 81.04 ft below land surface, July 19, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	60.28	58.29	57.74	57.37	57.23	57.08	57.54	56.49	---	70.24	64.50	63.30
10	59.64	58.10	57.84	57.35	57.05	57.04	57.43	56.52	---	64.08	63.21	61.46
15	59.24	57.97	57.71	57.26	57.16	57.03	57.32	56.51	---	64.65	63.65	60.54
20	59.24	57.95	57.62	57.26	57.24	57.17	57.09	56.59	---	63.33	70.63	62.18
25	58.77	57.90	57.50	57.34	57.09	58.00	56.98	63.15	---	65.17	72.65	62.34
EOM	58.58	57.82	57.36	57.26	57.16	58.31	56.85	---	---	65.51	69.92	60.08

WTR YR 1999: HIGHEST 56.34 (MAY 28); LOWEST 74.50 (AUG 24)



PLATTE COUNTY

Station number, 420524104530201. Local number, 25-067-34ccd01. Local name, Platte County #2.

LOCATION.--Lat 42°05'24", long 104°53'02", in SE¹/₄ SW¹/₄ SW¹/₄ sec.34, T.25 N., R.67 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 380 ft below land surface.

DATUM.--Elevation of land surface is 4,620 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land surface.

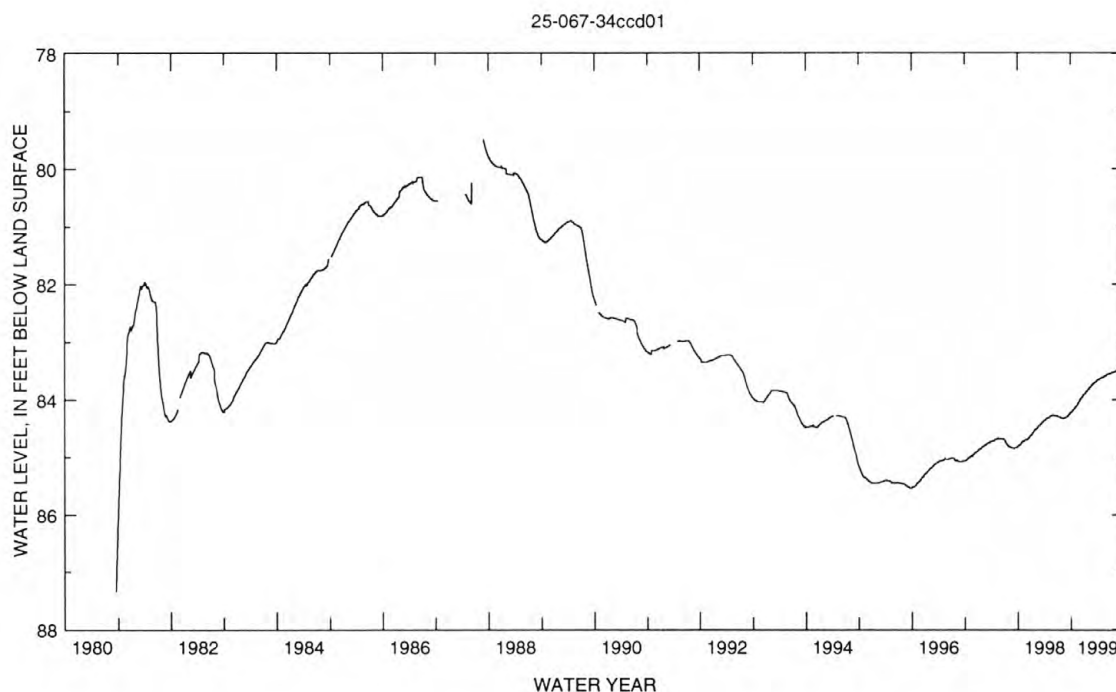
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 79.49 ft below land surface, Aug. 27, 28, 29, 1987; lowest, 87.35 ft below land surface, Sept. 16, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	84.22	84.13	84.00	83.90	83.81	83.73	83.66	83.63	83.57	83.54	83.52	83.47
10	84.20	84.11	83.99	83.89	83.79	83.72	83.65	83.62	83.56	83.54	83.51	83.44
15	84.19	84.10	83.97	83.87	83.78	83.70	83.65	83.61	83.56	83.53	83.49	83.43
20	84.18	84.08	83.96	83.85	83.77	83.70	83.64	83.60	83.56	83.53	83.48	83.42
25	84.16	84.06	83.93	83.84	83.75	83.69	83.63	83.60	83.55	83.53	83.48	83.40
EOM	84.14	84.03	83.91	83.82	83.74	83.67	83.63	83.59	83.54	83.52	83.47	83.39
WTR YR 1999:	HIGHEST		83.39	(SEPT 29, 30);		LOWEST	84.23	(OCT 1, 2)				



PLATTE COUNTY

Station number, 420859104565001. Local number, 25-068-12dda01. Local name, Platte County #4.

LOCATION.--Lat 42°08'59", long 104°56'50", in NE¹/₄ SE¹/₄ SE¹/₄ sec.12, T.25 N., R.68 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 100 ft below land surface.

DATUM.--Elevation of land surface is 4,510 ft above sea level, from topographic map. Measuring point: top of casing, 1.60 ft above land surface.

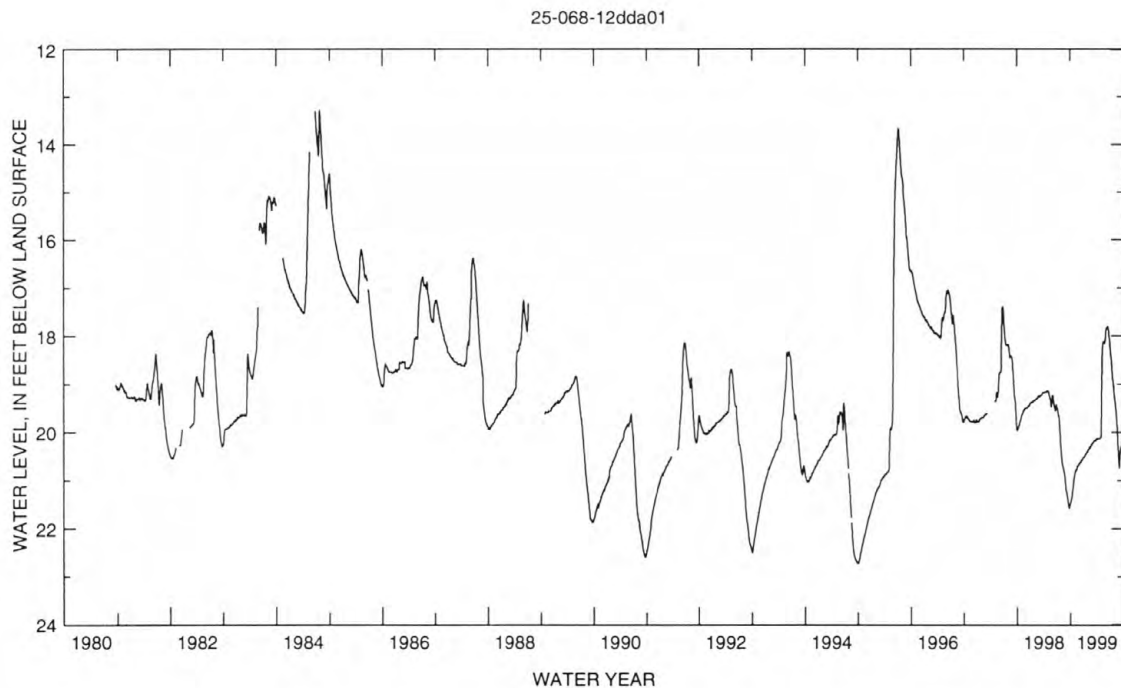
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 13.30 ft below land surface, June 25, July 25, 26, 1984; lowest, 22.73 ft below land surface, Oct. 3-5, 1994.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	21.46	20.83	20.64	20.52	20.37	20.23	20.13	19.39	17.89	18.23	19.30	20.70
10	21.39	20.79	20.63	20.49	20.33	20.20	20.14	18.44	17.84	18.40	19.42	20.49
15	21.28	20.76	20.61	20.46	20.32	20.18	20.14	18.16	17.83	18.59	19.60	20.38
20	21.17	20.74	20.58	20.44	20.30	20.17	20.12	18.12	17.81	18.82	19.82	20.31
25	21.02	20.69	20.56	20.42	20.26	20.17	20.13	18.14	17.89	18.95	20.10	20.18
EOM	20.90	20.67	20.52	20.39	20.24	20.15	20.10	18.08	18.06	19.15	20.50	20.17
WTR YR 1999:	HIGHEST	17.80	(JUN 17-19);	LOWEST	21.50	(OCT 1, 2)						



PLATTE COUNTY

Station number, 420840105000401. Local number, 25-068-15bbd01. Local name, Platte County #6.

LOCATION.--Lat 42°08'40", long 105°00'04", in SE¹/₄ NW¹/₄ NW¹/₄ sec.15, T.25 N., R.68 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 220 ft below land surface.

DATUM.--Elevation of land surface is 4,640 ft above sea level, from topographic map. Measuring point: top of casing, 1.30 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

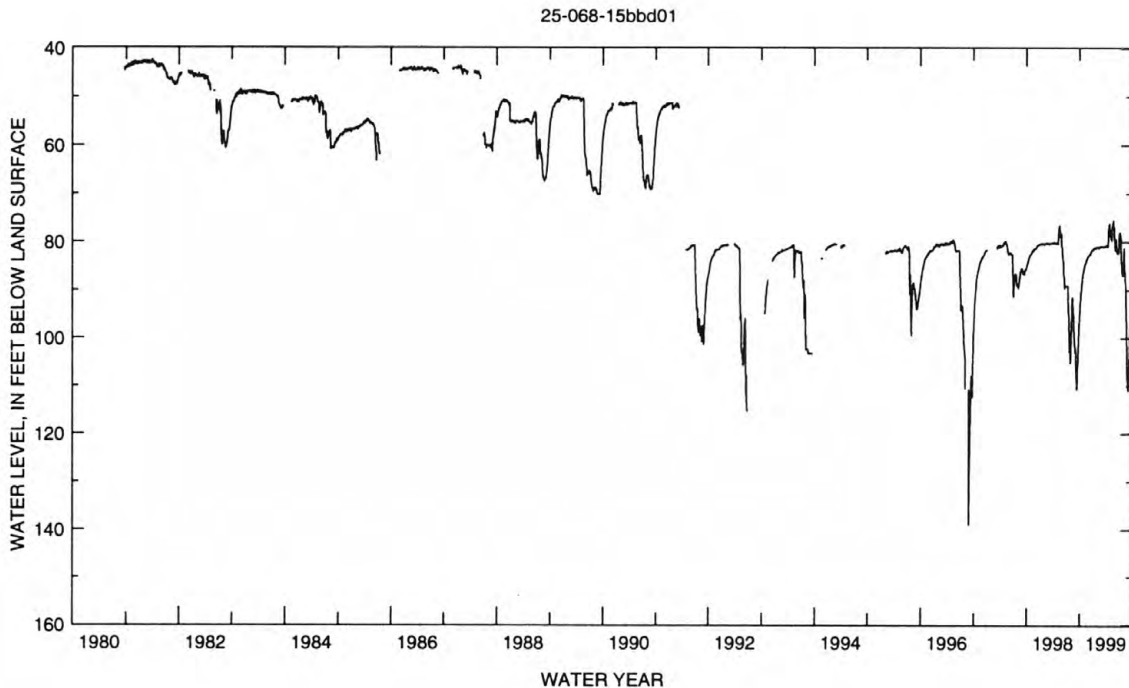
PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 42.50 ft below land surface, Feb. 9, Mar. 30, 1981; lowest, 139.04 ft below land surface, Aug. 29, 1996.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	94.16	85.25	82.78	81.49	81.08	80.92	80.78	78.80	81.38	78.40	81.62	110.15
10	91.76	84.67	82.74	81.35	80.94	80.88	80.74	79.32	79.63	78.47	84.56	105.17
15	89.87	84.13	82.55	81.24	81.04	80.90	80.97	77.29	81.42	81.86	88.52	100.23
20	88.54	83.74	82.17	81.20	81.03	81.01	78.00	77.10	82.34	85.46	93.38	96.38
25	87.12	83.40	81.81	81.23	80.96	80.94	76.27	75.82	82.16	86.86	102.86	97.07
EOM	85.98	83.10	81.55	81.17	80.98	80.71	77.81	79.34	80.99	85.39	109.57	94.76

WTR YR 1999: HIGHEST 75.74 (MAY 24); LOWEST 110.97 (SEPT 3)



PLATTE COUNTY

Station number, 420748104565001. Local number, 25-068-24aad01. Local name, Platte County #3.

LOCATION.--Lat 42°07'48", long 104°56'50", in SE¹/₄ NE¹/₄ NE¹/₄ sec.24, T.25 N., R.68 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 240 ft below land surface.

DATUM.--Elevation of land surface is 4,560 ft above sea level, from topographic map. Measuring point: top of casing, 0.55 ft above land surface.

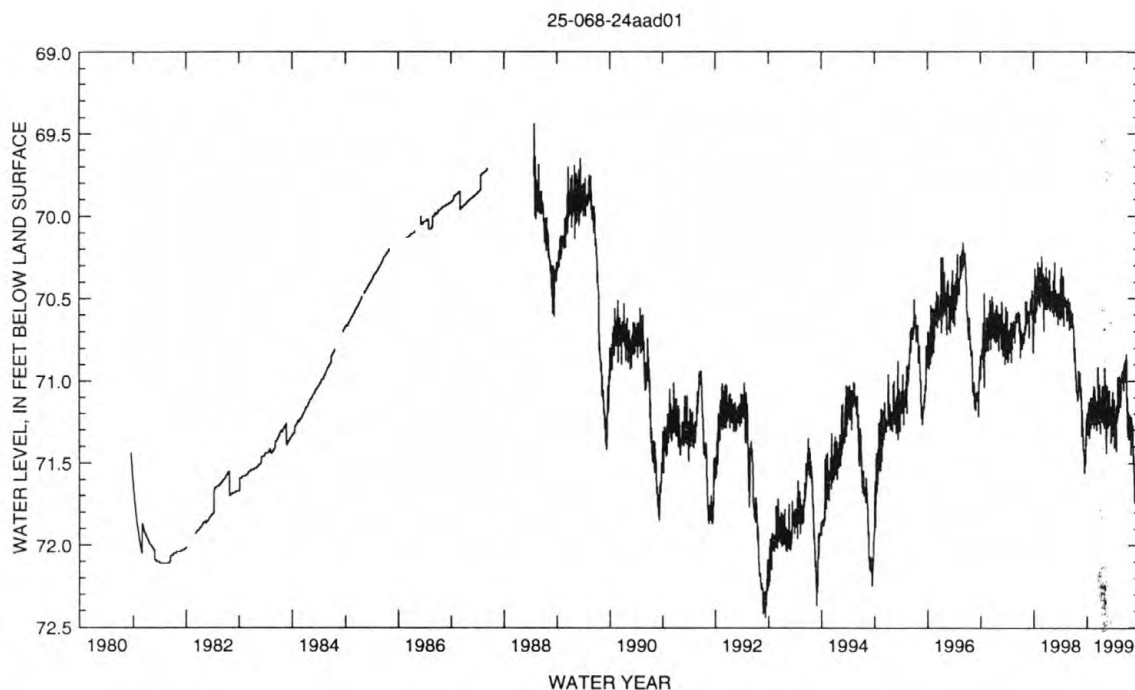
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 69.44 ft below land surface, Apr. 28, 29, 1988; lowest, 72.44 ft below land surface, Sept. 10, 1992.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	71.25	71.16	71.19	71.12	71.18	71.19	71.29	71.17	70.94	71.11	71.22	71.62
10	71.17	71.12	71.27	71.11	71.02	71.17	71.12	71.05	70.98	71.34	71.32	71.45
15	71.13	71.07	71.21	71.03	71.10	71.19	71.34	71.00	70.91	71.24	71.27	71.49
20	71.35	71.13	71.26	71.13	71.29	71.36	71.21	71.03	70.96	71.26	71.45	71.60
25	71.21	71.23	71.12	71.21	71.11	71.23	71.15	71.03	70.87	71.21	71.62	71.34
EOM	71.29	71.23	71.11	71.17	71.24	71.07	71.23	70.96	70.92	71.32	71.66	71.37
WTR YR 1999:	HIGHEST 70.84 (JUL 1, 2); LOWEST 71.74 (AUG 28, 29, SEPT 1)											



GROUND-WATER LEVELS

91

PLATTE COUNTY

Station number, 420613105024401. Local number, 25-068-31aaa01. Local name, Platte County #7.

LOCATION.--Lat 42°06'13", long 105°02'44", in NE¹/₄ NE¹/₄ NE¹/₄ sec.31, T.25 N., R.68 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 400 ft below land surface.

DATUM.--Elevation of land surface is 4,633 ft above sea level, from topographic map. Measuring point: top of casing, 1.50 ft above land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

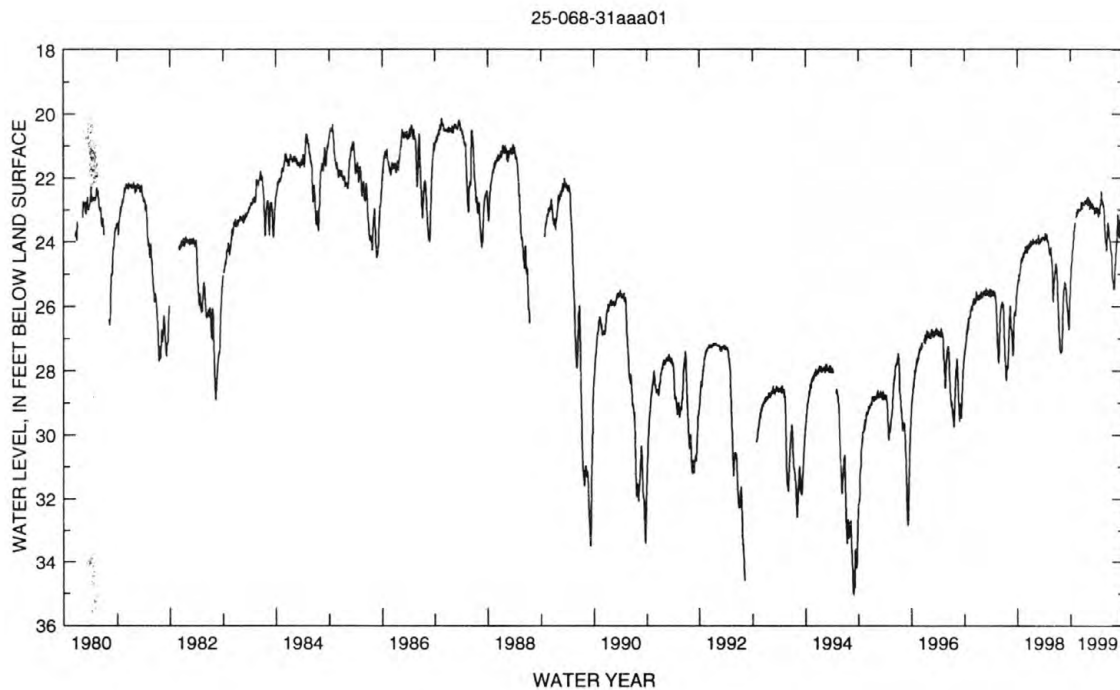
PERIOD OF RECORD.--1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.13 ft below land surface, Nov. 19, 1986; lowest, 35.04 ft below land surface, Aug. 30, 1994.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	25.08	---	---	22.83	22.75	22.89	23.02	22.62	24.08	24.04	24.82	23.87
10	24.62	23.23	23.03	22.72	22.66	22.87	22.97	22.75	24.25	24.34	24.60	23.34
15	24.33	23.19	22.91	22.70	22.82	22.94	23.18	22.78	23.67	24.58	24.07	23.18
20	24.24	22.98	22.96	22.74	22.94	23.08	23.04	22.94	23.49	25.19	23.63	23.23
25	23.94	23.12	22.82	22.77	22.80	23.03	22.88	23.31	23.61	25.29	23.17	23.27
EOM	23.62	23.06	22.78	22.76	22.88	22.99	22.74	23.96	23.95	25.46	23.52	23.29

WTR YR 1999: HIGHEST 22.46 (MAY 3); LOWEST 25.60 (OCT 1)



GROUND-WATER LEVELS

PLATTE COUNTY

Station number, 421443104574601. Local number, 26-068-12cbd01. Local name, E. Rutherford.

LOCATION.--Lat 42°14'43", long 104°57'46", in SE¹/₄ NW¹/₄ SW¹/₄ sec.12, T.26 N., R.68 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 320 ft below land surface.

DATUM.--Elevation of land surface is 4,860 ft above sea level, from topographic map. Measuring point: top of casing, at land surface.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

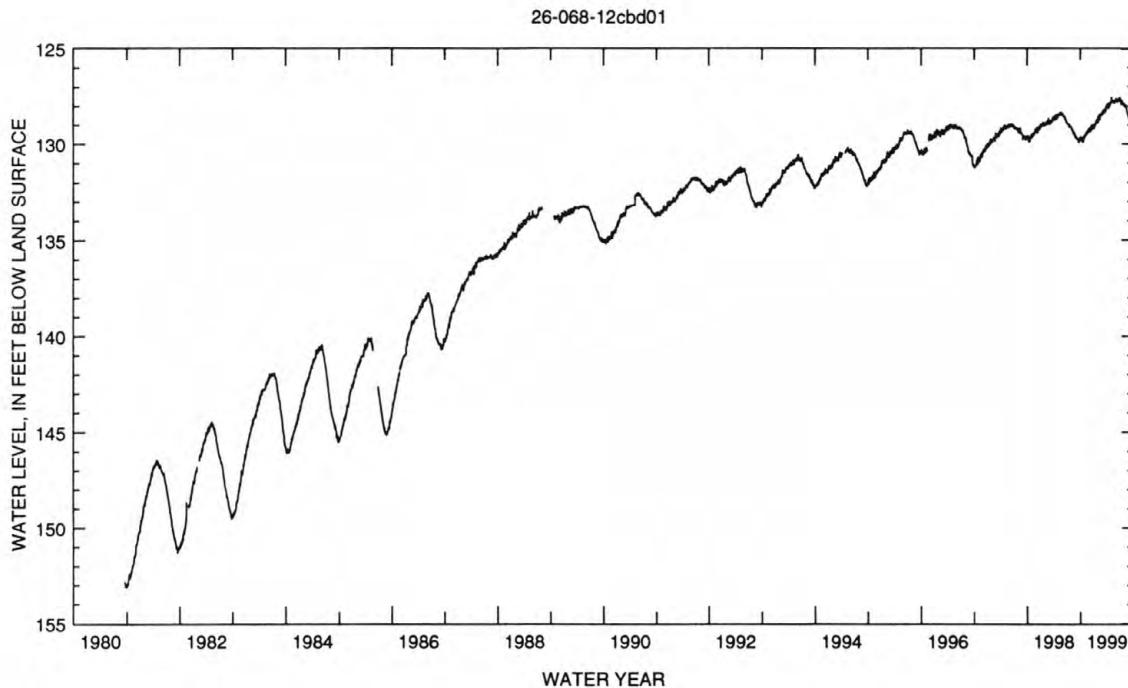
PERIOD OF RECORD.--1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 127.57 ft below land surface, May 3, 4, 1999; lowest, 153.11 ft below land-surface, Oct. 2, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	129.64	129.57	129.19	129.12	128.61	128.32	128.06	127.64	127.64	127.69	127.97	128.73
10	129.70	129.43	129.39	129.02	128.42	128.28	127.89	127.70	127.75	127.89	127.98	128.84
15	129.63	129.39	129.25	128.90	128.53	128.25	128.14	127.70	127.76	127.73	128.07	129.05
20	129.88	129.43	129.16	128.80	128.53	128.36	127.91	127.77	127.66	127.86	128.30	129.18
25	129.75	129.33	129.12	128.86	128.40	128.24	127.81	127.80	127.59	127.85	128.43	129.06
EOM	129.70	129.25	129.06	128.77	128.43	127.98	127.86	127.69	127.66	127.89	128.57	129.15

WTR YR 1999: HIGHEST 127.57 (MAY 3, 4); LOWEST 129.94 (OCT 21)



PLATTE COUNTY

Station number, 421128104575801. Local number, 26-068-36bbb01. Local name, Platte County #5.

LOCATION.--Lat 42°11'28", long 104°57'58", in NW¹/₄ NW¹/₄ NW¹/₄ sec.36, T.26 N., R.68 W., Hydrologic Unit 10180011.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 200 ft below land surface.

DATUM.--Elevation of land surface is 4,670 ft above sea level, from topographic map. Measuring point: top of casing, 1.40 ft above land surface.

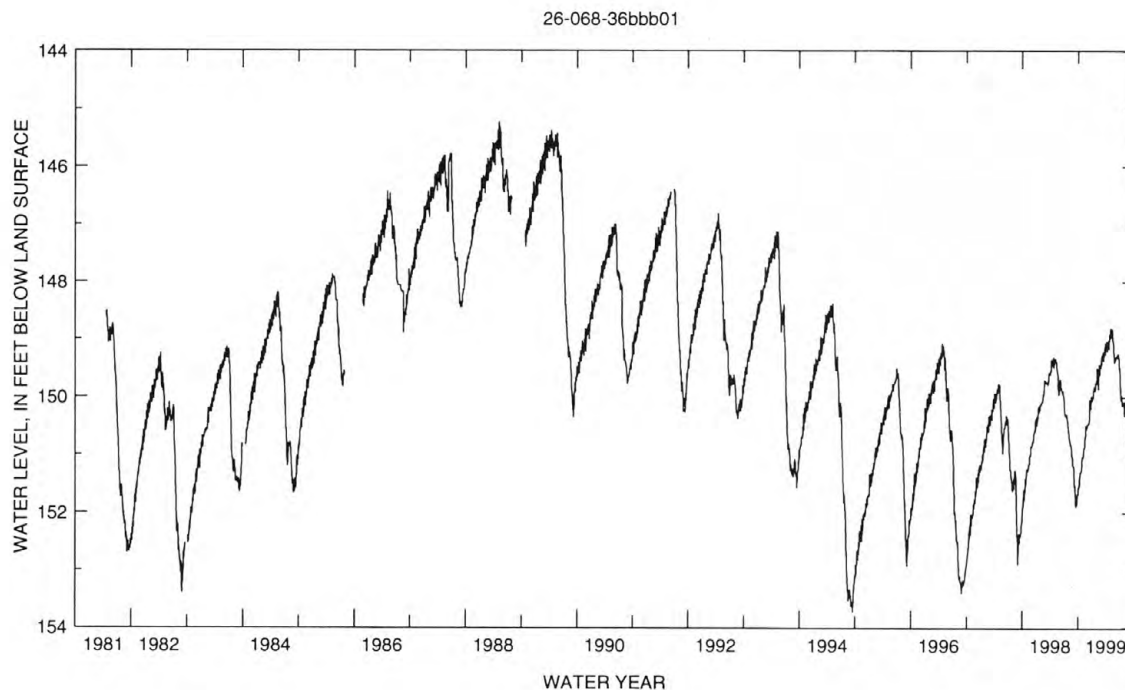
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 145.23 ft below land surface, May 7, 1988; lowest, 153.73 ft below land surface, Sept. 16, 1994.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	151.55	151.01	150.47	150.02	149.70	149.36	149.15	148.88	149.32	149.81	150.07	150.81
10	151.41	150.88	150.46	149.91	149.57	149.34	149.04	148.84	149.31	150.05	150.31	150.64
15	151.29	150.73	150.40	149.83	149.52	149.27	149.15	148.84	149.30	150.01	150.47	150.70
20	151.29	150.68	150.20	149.89	149.63	149.33	149.03	149.05	149.26	150.13	150.73	150.89
25	151.21	150.52	150.12	149.87	149.47	149.21	148.93	149.27	149.33	150.09	150.89	150.58
EOM	151.04	150.49	150.04	149.75	149.48	149.07	148.99	149.38	149.51	150.22	150.87	150.56
WTR YR 1999:	HIGHEST 148.81 (MAY 3, 4); LOWEST 151.65 (OCT 1)											



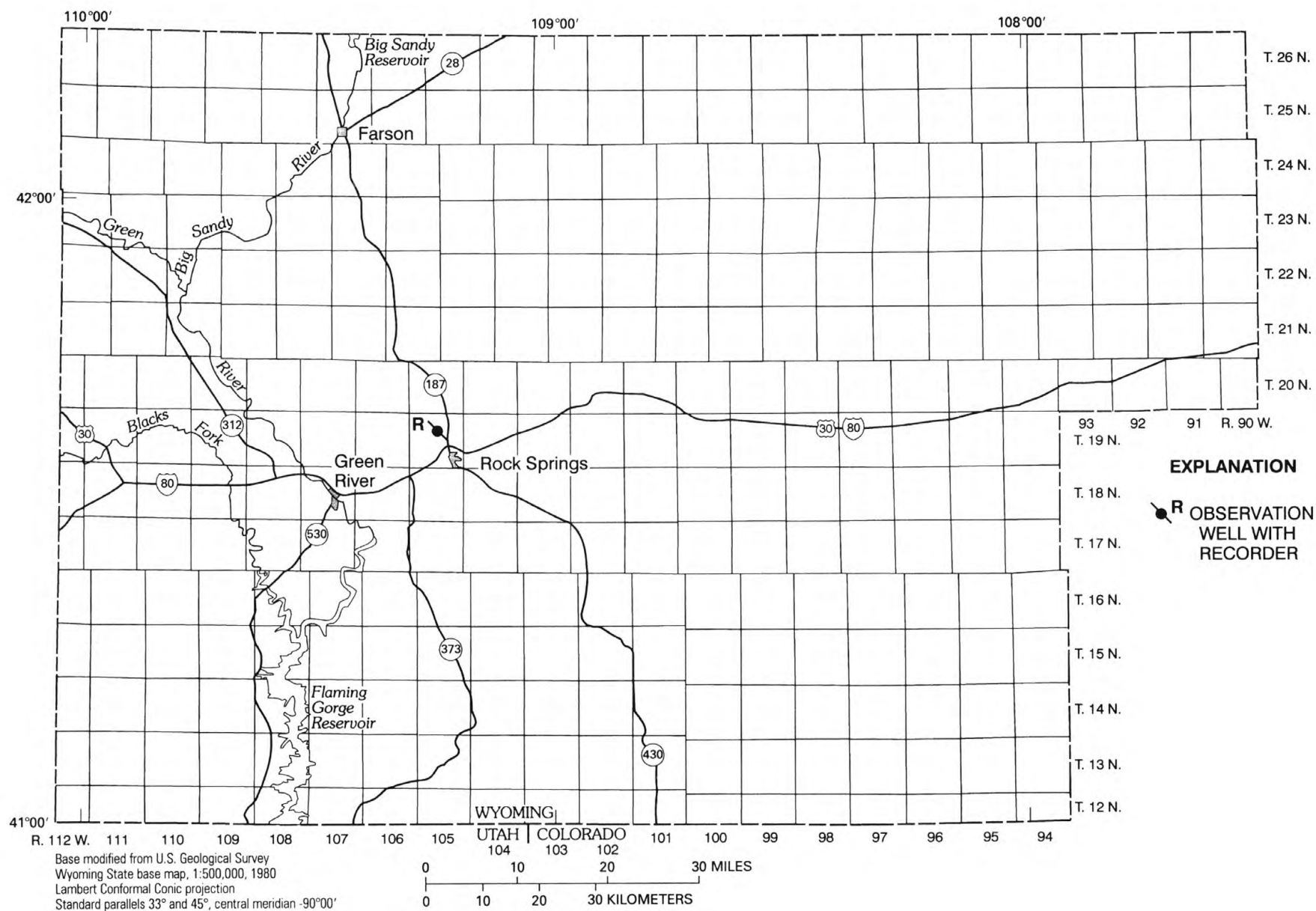


Figure 18. Location of observation well in Sweetwater County, Wyoming.

SWEETWATER COUNTY

Station number, 413850109150601. Local number, 19-105-10bbb01. Local name, Rock Springs Golf Course.

LOCATION.--Lat 41°38'50", long 109°15'06", in NW¹/₄ NW¹/₄ NW¹/₄ sec.10, T.19 N., R.105 W., Hydrologic Unit 14040105.

AQUIFER.--Fort Union Formation.

WELL CHARACTERISTICS.--Depth of well, 240 ft below land surface.

DATUM.--Elevation of land surface is 6,430 ft above sea level, from topographic map. Measuring point: top of casing, 0.60 ft above land surface.

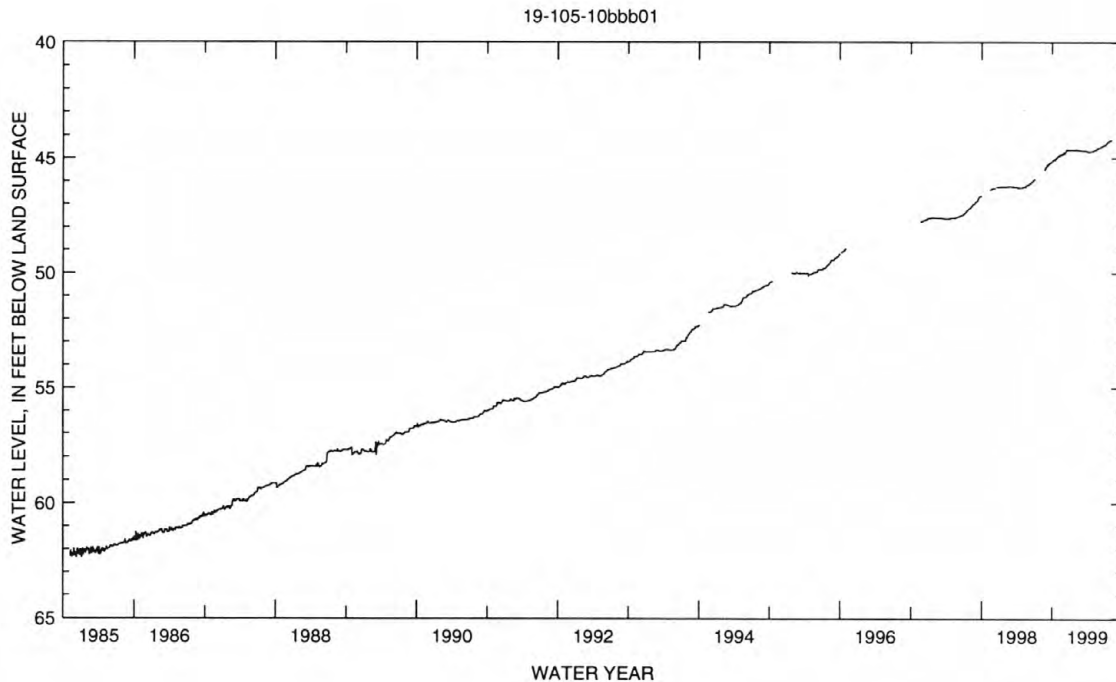
REMARKS.--Data collected by U.S. Geological Survey.

PERIOD OF RECORD.--1984-1995; 1997 to curent year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 44.20 ft below land surface, Aug. 3, 1999; lowest, 62.36 ft below land surface, Dec. 6, 1984, Jan. 3, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	45.10	44.87	44.77	44.63	44.61	44.66	44.70	44.66	44.53	44.38	---	---
10	45.06	44.88	44.71	44.62	44.64	44.66	44.72	44.63	44.51	44.32	---	---
15	45.04	44.83	44.62	44.62	44.64	44.67	44.71	44.61	44.48	44.29	---	---
20	45.01	44.82	44.63	44.63	44.65	44.67	44.69	44.60	44.45	44.25	---	---
25	44.95	44.80	44.62	44.64	44.66	44.67	44.68	44.56	44.45	44.24	---	---
EOM	44.90	44.79	44.63	44.62	44.65	44.69	44.68	44.54	44.42	44.21	---	---
WTR YR 1999:	HIGHEST	44.20	(AUG 3);	LOWEST	45.12	(OCT 2, 3)						



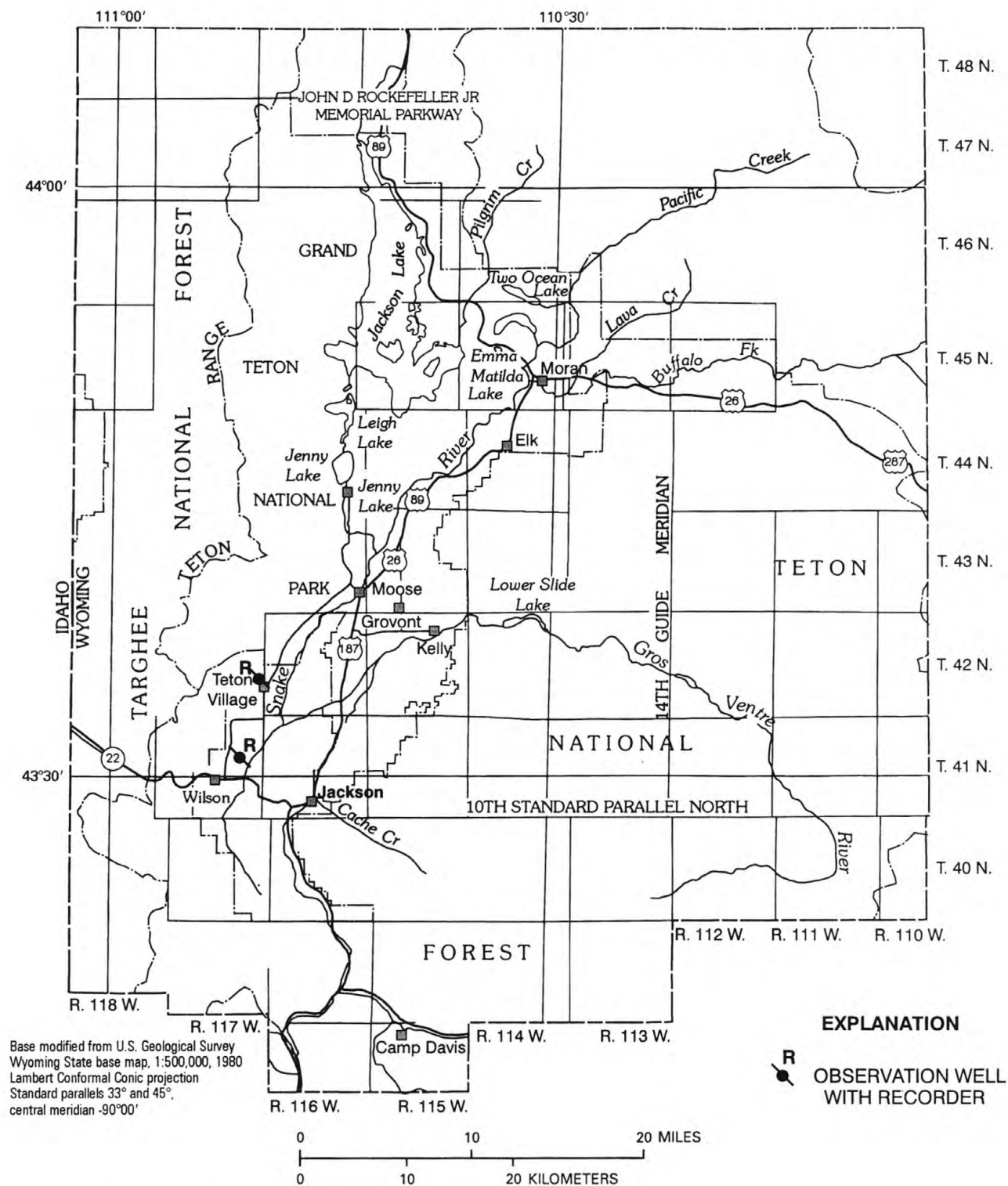


Figure 19. Location of observation wells in Teton County, Wyoming.

TETON COUNTY

Station number, 433059110511802. Local number, 41-117-14bdc02. Local name, Teton Pines.

LOCATION.--Lat 43°30'59", long 110°51'18", in SW¹/₄ SE¹/₄ NW¹/₄ sec.14, T.41 N., R.117 W., Hydrologic Unit 17040103.

AQUIFER.--Holocene alluvium.

WELL CHARACTERISTICS.--Depth of well, 20 ft below land surface.

DATUM.--Elevation of land surface is 6,180 ft above sea level, from topographic map. Measuring point: top of casing, 1.20 ft above land surface.

REMARKS.--Data collected by U.S. Geological Survey.

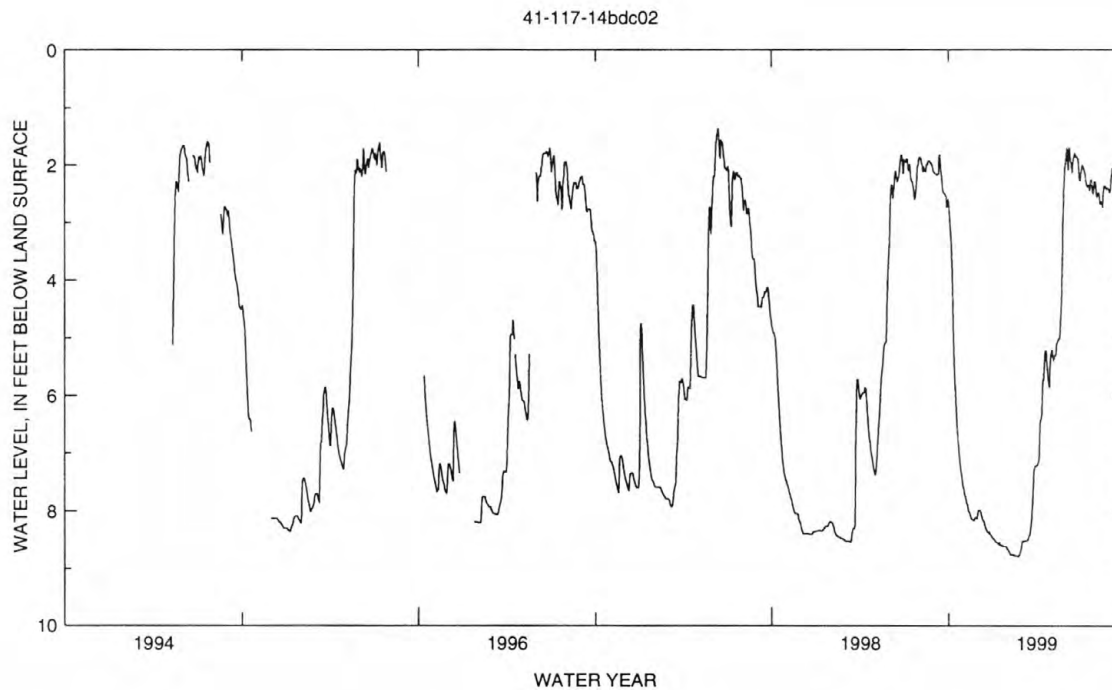
PERIOD OF RECORD.--April 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest recorded water level, 1.37 ft below land surface, June 12, 13, 1997; lowest recorded, 8.79 ft below land surface, Feb. 22, 23, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	3.07	7.75	7.99	8.52	8.73	8.53	7.17	5.32	1.93	1.99	2.53	2.05
10	4.13	7.92	8.15	8.56	8.76	8.52	6.43	5.31	1.86	2.12	2.65	2.39
15	5.82	8.08	8.25	8.59	8.78	8.48	5.73	5.07	2.02	2.38	2.65	2.57
20	6.67	8.15	8.36	8.60	8.78	8.32	5.23	4.96	1.80	2.45	2.37	2.64
25	7.18	8.12	8.39	8.62	8.75	7.70	5.69	3.59	1.89	2.40	2.40	2.50
EOM	7.59	8.08	8.46	8.67	8.68	7.23	5.41	1.98	2.27	2.29	2.46	2.51

WTR YR 1999: HIGHEST 1.71 (JUN 8); LOWEST 8.79 (FEB 22, 23)



TETON COUNTY

Station number, 433517110493001. Local number, 42-117-24dab01. Local name, Teton Village.

LOCATION.--Lat 43°35'17", long 110°49'30", in NW¹/₄ NE¹/₄ SE¹/₄ sec.24, T.42 N., R.117 W., Hydrologic Unit 17040103.

AQUIFER.--Holocene alluvium.

WELL CHARACTERISTICS.--Depth of well, 30 ft below land surface.

DATUM.--Elevation of land surface is 6307.92 above sea level, by survey. Measuring point: top of casing, 1.00 ft above land surface.

REMARKS.--Data collected by U.S. Geological Survey.

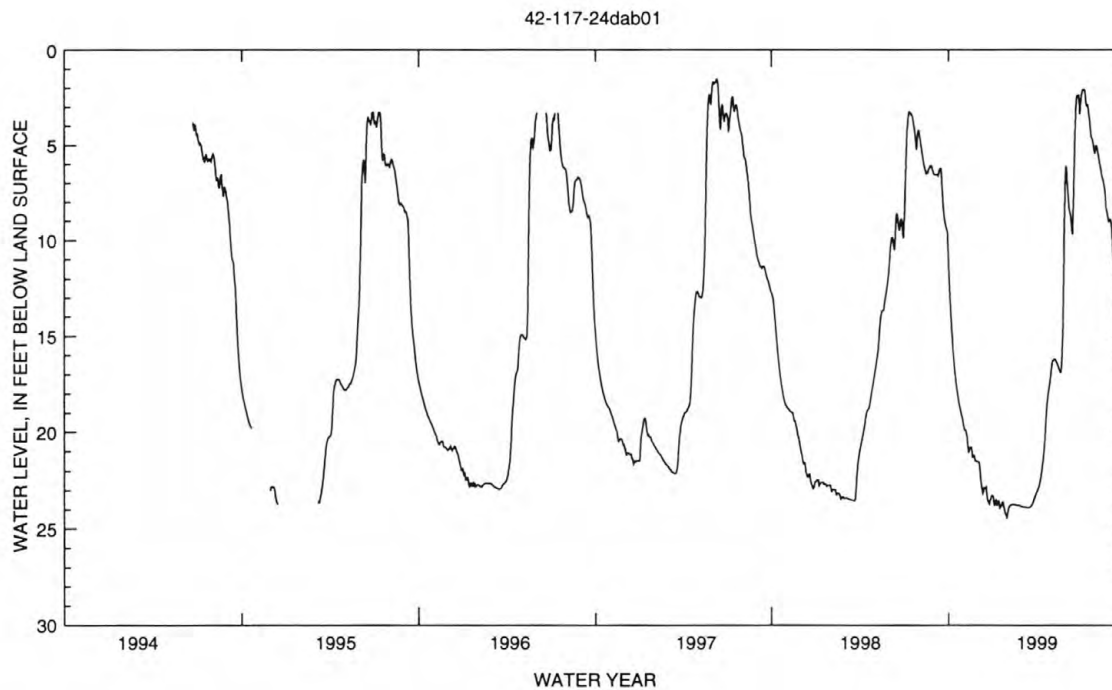
PERIOD OF RECORD.--June 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.53 ft below land surface, June 10, 1997; lowest observed, 24.52 ft below land surface, Jan. 20, 1995.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.39	19.92	21.81	23.67	23.82	23.87	22.87	16.27	7.64	2.08	5.36	10.24
10	15.50	20.54	23.01	23.78	23.74	23.89	22.26	16.24	8.73	2.26	6.08	12.58
15	16.95	20.81	22.92	24.00	23.76	23.92	21.26	16.54	8.91	2.90	6.77	14.06
20	17.99	21.30	23.36	23.66	23.79	23.85	19.50	16.88	3.71	3.92	7.55	15.14
25	18.73	21.43	23.73	24.09	23.81	23.64	17.98	14.73	2.42	4.70	8.62	15.34
EOM	19.36	21.52	23.26	24.28	23.84	23.17	17.05	6.15	3.22	5.16	8.93	16.08

WTR YR 1999: HIGHEST 2.06 (JUL 8); LOWEST 24.47 (JAN 30)



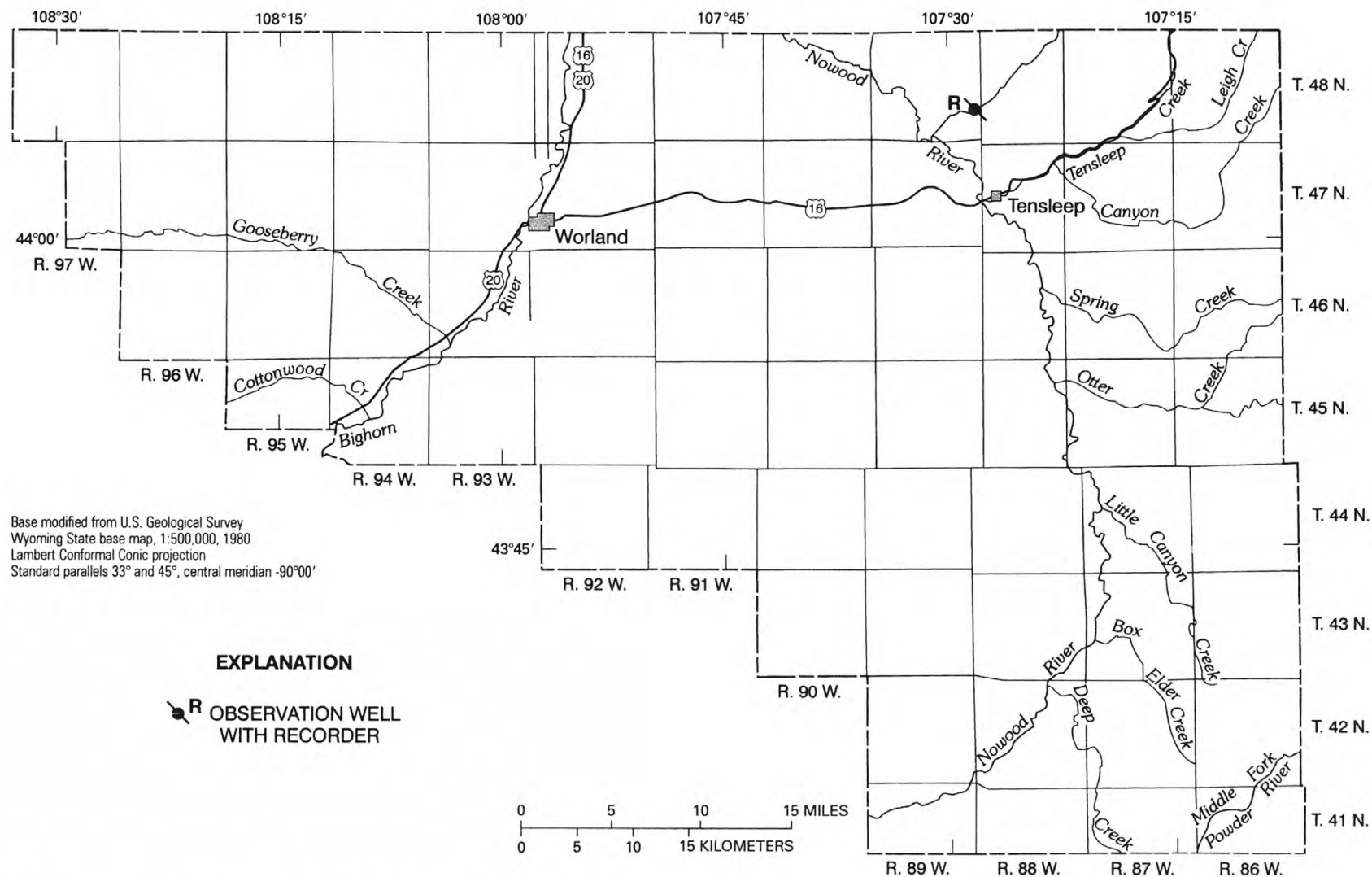


Figure 20. Location of observation well in Washakie County, Wyoming.

WASHAKIE COUNTY

Station number, 440621107273801. Local number, 48-089-25ada01. Local name, Mills.

LOCATION.--Lat 44°06'21", long 107°27'38", in NE¹/₄ SE¹/₄ NE¹/₄ sec.25, T.48 N., R.89 W., Hydrologic Unit 10080008.

AQUIFER.--Flathead Sandstone.

WELL CHARACTERISTICS.--Depth of well, 2,290 ft below land surface.

DATUM.--Elevation of land surface is 4,560 ft above sea level, from topographic map.

REMARKS.--Shut-in pressure was measured by pressure transducer and converted to hydraulic head above land surface for illustration purposes. Hydraulic head, in feet above land surface, was calculated by multiplying the shut-in pressure in pounds per square inch by 2.307. Hydraulic head data from May 13, 1992 to Mar. 24, 1995 were not plotted on the hydrograph because the monitoring equipment was out of calibration during this time. The data, and a more detailed explanation of the data, were published in Open-File report 96-648 "Ground-Water Levels in Wyoming, January 1986 through September 1995." Hydraulic head data from Mar. 24, 1995 to Apr. 25, 1996 were not collected. The accuracy of the hydraulic head measurements is ± 5.0 ft. Data collected by U.S. Geological Survey.

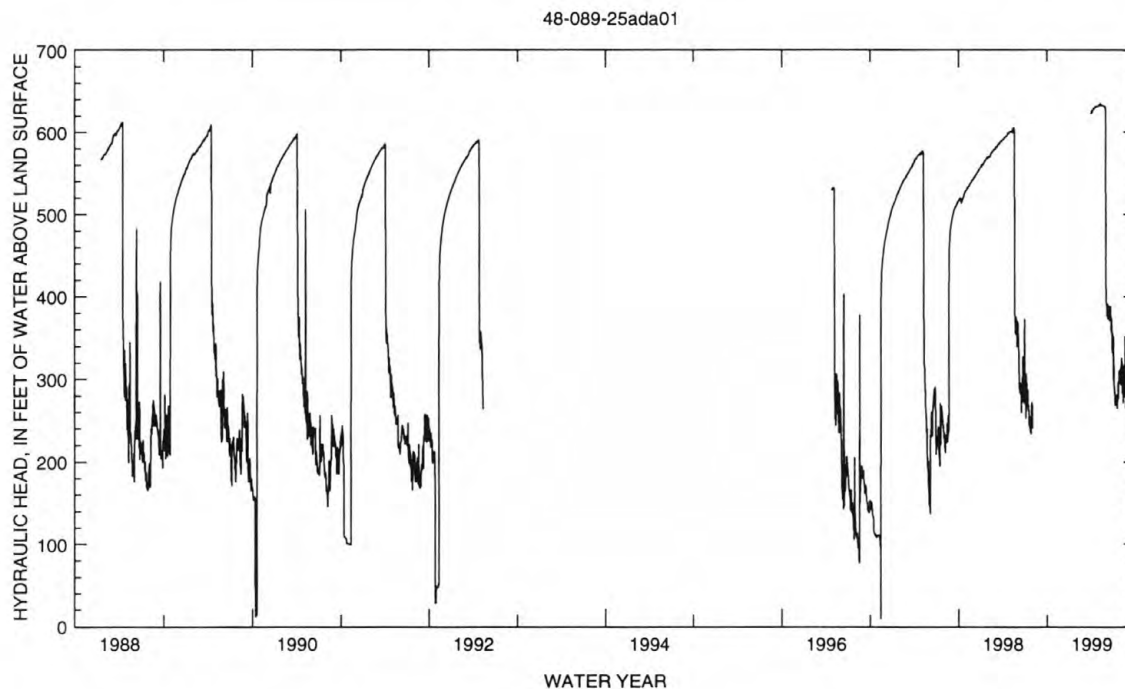
PERIOD OF RECORD.--1988 to current year.

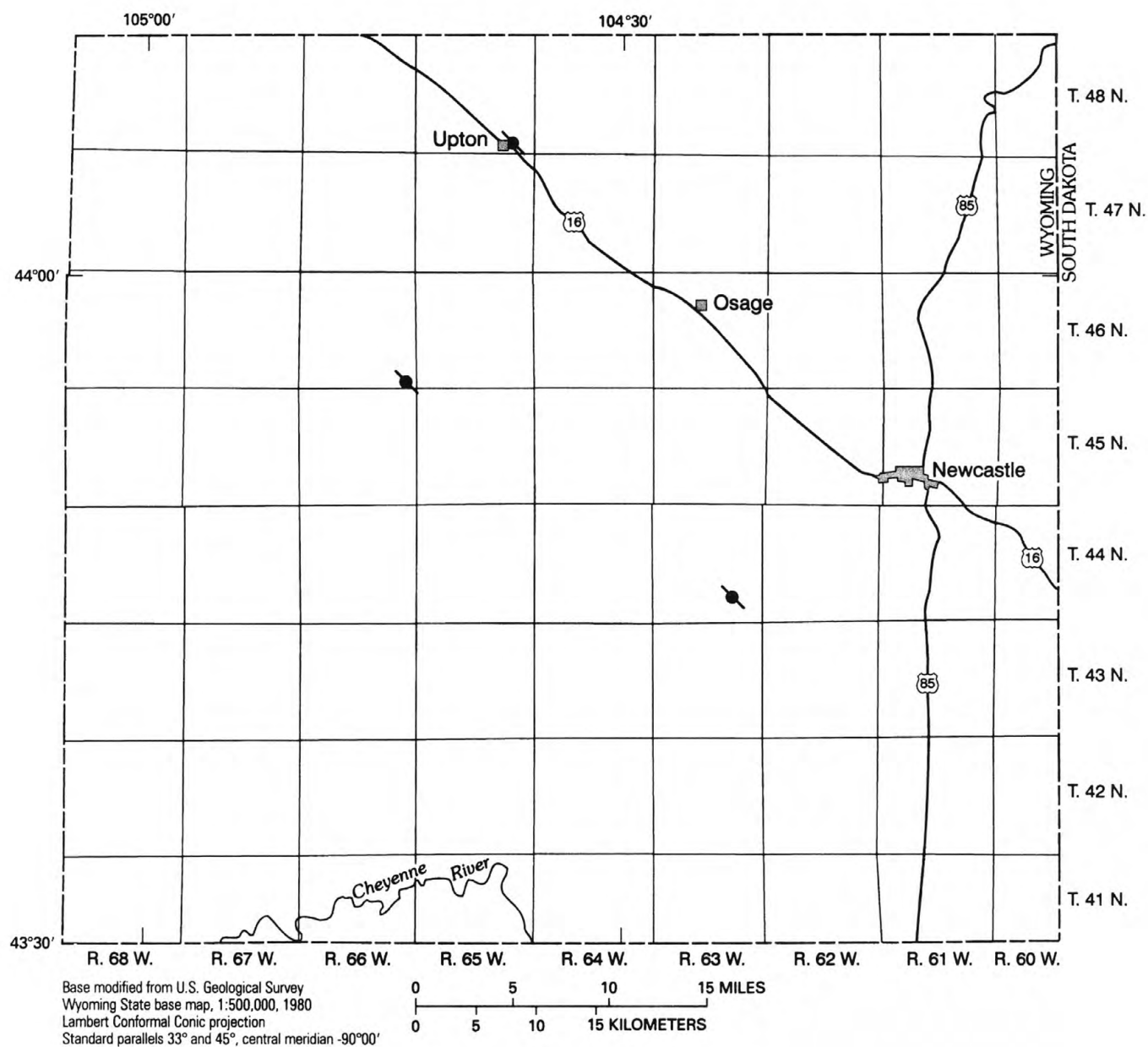
EXTREMES FOR PERIOD OF RECORD.--Highest hydraulic head, 633.67 ft above land surface, May 5, 6, 8, 11, 1999; lowest, 8.78 ft above land surface, Nov. 14, 1997.

HYDRAULIC HEAD, IN FEET ABOVE LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	624.49	633.67	389.05	290.28	326.03	275.12
10	---	---	---	---	---	---	628.61	632.72	389.63	276.66	314.69	275.12
15	---	---	---	---	---	---	629.88	632.17	386.51	271.93	286.19	278.61
20	---	---	---	---	---	---	631.38	632.65	387.73	280.50	351.38	258.34
25	---	---	---	---	---	---	631.45	632.33	371.90	309.89	286.79	253.25
EOM	---	---	---	---	---	621.95	632.00	629.88	351.06	305.78	287.43	224.81

WTR YR 1999: HIGHEST 633.67 (MAY 5, 6, 8, 11); LOWEST 224.81 (SEPT 30)





EXPLANATION

● OBSERVATION WELL

Figure 21. Location of observation wells in Weston County, Wyoming.

GROUND-WATER LEVELS

WESTON COUNTY

Station number, 434539104233401. Local number, 44-063-26cac01. Local name, Townsend Well.

LOCATION.--Lat 43°45'39", long 104°23'34", in SW¹/₄ NE¹/₄ SW¹/₄ sec.26, T.44 N., R.63 W., Hydrologic Unit 10120107.

AQUIFER.--Madison Limestone (Pahasapa Limestone).

WELL CHARACTERISTICS.--Depth of well, 6,880 ft below land surface.

DATUM.--Elevation of land surface is 3,990 ft above sea level, from topographic map. Measuring point: top of casing, 1.5 ft above land surface.

REMARKS.--Data reflects static and pumping water levels.

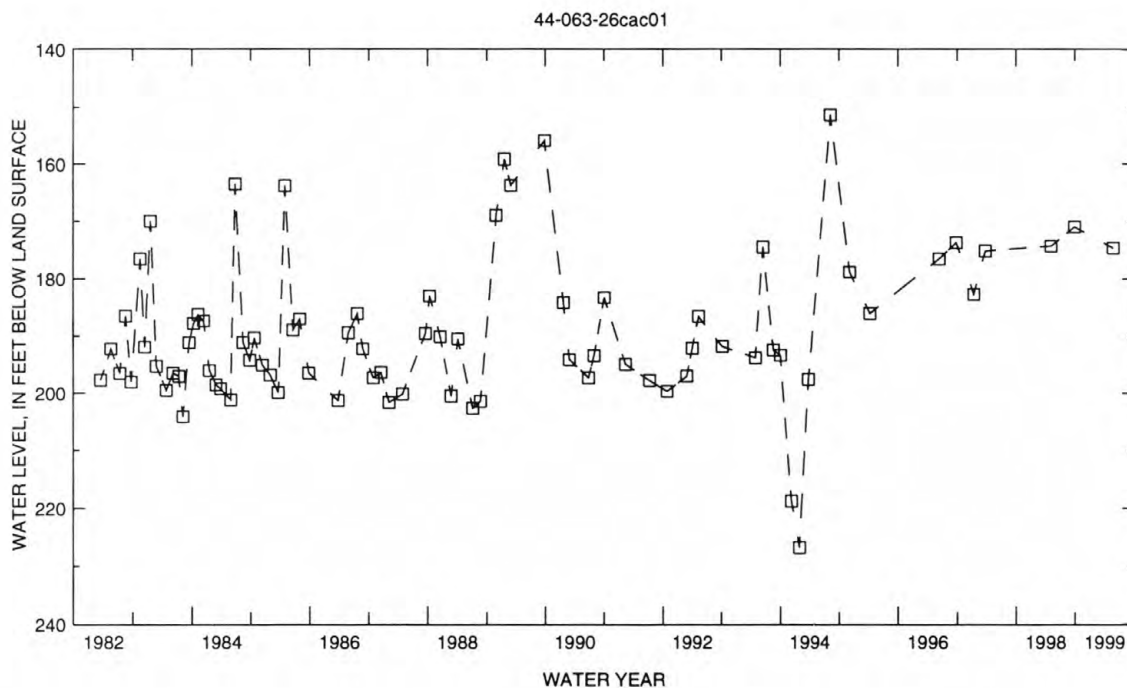
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 151.35 ft below land surface, from hand-measured data, Aug. 9, 1994; lowest, 226.80 ft below land surface, from hand-measured data, Jan. 27, 1994.

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

DATE WATER
LEVEL
MAY 25 174.62



WESTON COUNTY

Station number, 435610104433001. Local number, 46-066-25dbb01. Local name, Terra Resources.

LOCATION.--Lat 43°56'10", long 104°43'30", in NW¹/₄ NW¹/₄ SE¹/₄ sec.25, T.46 N., R.66 W., Hydrologic Unit 10120103.

AQUIFER.--Madison Limestone (Pahasapa Limestone).

WELL CHARACTERISTICS.--Depth of well, 8,780 ft below land surface.

DATUM.--Elevation of land surface is 4,200 ft above sea level, from topographic map. Measuring point: top of casing, at land surface.

REMARKS.--Data reflects static conditions and pumping of nearby oil field water flood system.

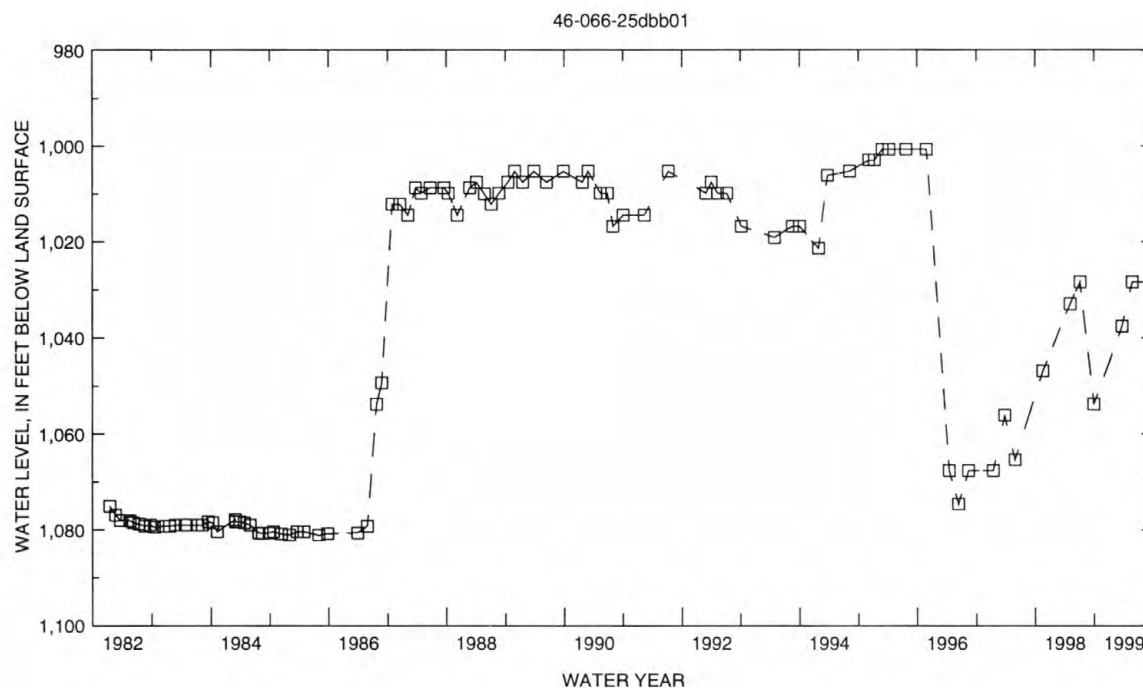
COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

PERIOD OF RECORD.--1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1,000.67 ft below land surface, from hand-measured data, Feb. 28, Apr. 11, July 25, and Nov. 28, 1995; lowest, 1,081.06 ft below land surface, from-hand measured data, July 30, 1985.

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

DATE	WATER LEVEL
MAR 23	1037.63
MAY 25	1028.39



WESTON COUNTY

Station number, 440530104381001. Local number, 48-065-35ccb01. Local name, Town of Upton #4.

LOCATION.--Lat 44°05'30", long 104°38'10", in NW¹/4 SW¹/4 sec.35, T.48 N., R.65 W., Hydrologic Unit 10120107.

AQUIFER.--Madison Limestone (Pahasapa Limestone).

WELL CHARACTERISTICS.--Depth of well, 3,190 ft below land surface.

DATUM.--Elevation of land surface is 4,220 ft above sea level, from topographic map. Measuring point: top of casing, 0.70 ft above land surface.

REMARKS.--Data reflects static and pumping water levels.

COOPERATION.--Data collected and records provided by the Wyoming State Engineer's Office and reviewed by U.S. Geological Survey.

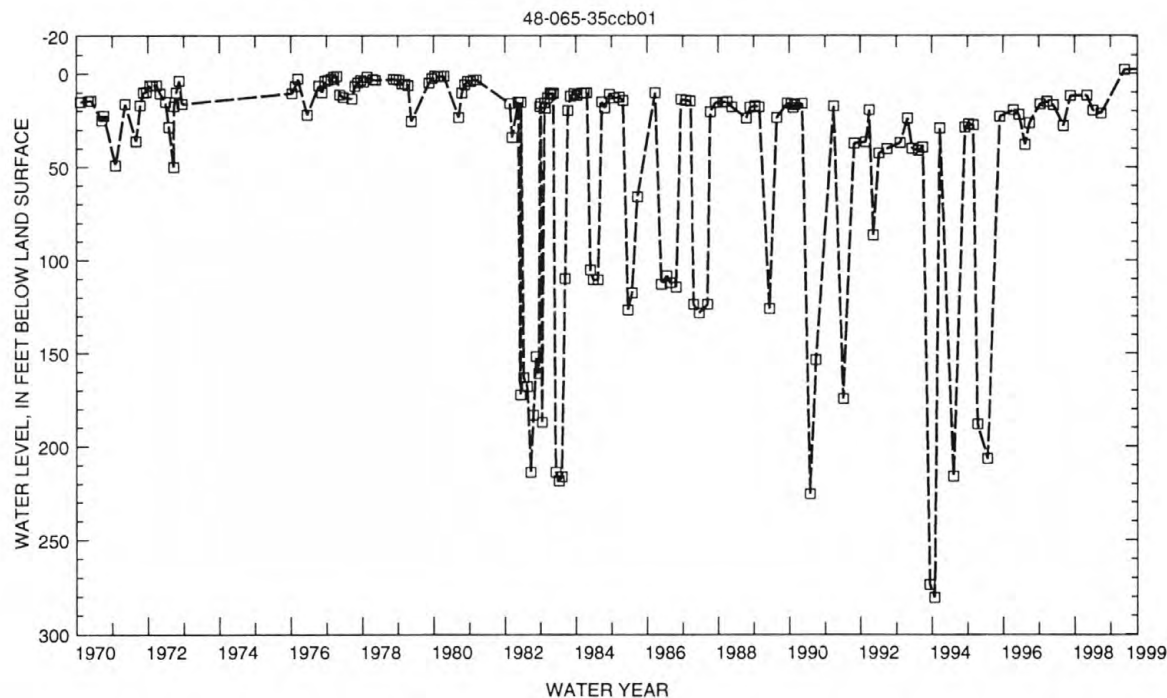
PERIOD OF RECORD.--1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.00 ft above land surface, from hand-measured data, May, 25 1999; lowest, 280.67 ft below land surface, from hand-measured data, Jan. 27, 1994.

WATER LEVEL, IN FEET ABOVE LAND SURFACE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL
MAY 25	+2.00*

* Water level, in feet above land surface.



GROUND-WATER LEVELS

105

HIGH PLAINS STUDY

GOSHEN COUNTY

STATION NUMBER	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	LOCAL WELL NUMBER	ALTITUDE OF LAND SURFACE (FEET)	WATER- LEVEL DATE	WATER LEVEL IN FEET BELOW LAND SURFACE
413716104203401	41 37 16	104 20 34	19-062-17bbb01	4940	05-06-99	22.54
413400104382701	41 34 00	104 38 27	19-065-34dcc01	5520	05-07-99	68.95
415539104033501	41 55 39	104 03 35	23-060-34abb01	4070	05-06-99	3.08
420845104122301	42 08 45	104 12 23	25-061-17aaa01	4310	05-05-99	53.66
421328104205401	42 13 28	104 20 54	26-062-18dbd01	4500	05-05-99	61.68
422347104212001	42 23 47	104 21 20	28-062-18cac01	4470	05-05-99	13.20
423056104212701	42 30 56	104 21 27	29-062-06cba01	4700	05-05-99	28.59
423057104212701	42 30 57	104 21 27	29-062-06cba02	4700	05-05-99	29.06

LARAMIE COUNTY

STATION NUMBER	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	LOCAL WELL NUMBER	ALTITUDE OF LAND SURFACE (FEET)	WATER- LEVEL DATE	WATER LEVEL IN FEET BELOW LAND SURFACE
412304104311001	41 23 04	104 31 10	16-064-02bcb01	5778	04-19-99	233.50
413116104264901	41 31 16	104 29 49	18-063-17dcd01	5320.	04-19-99	137.76
413326104291801	41 33 26	104 29 18	18-064-01caa01	5307	04-19-99	112.25

NIOBRARA COUNTY

STATION NUMBER	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	LOCAL WELL NUMBER	ALTITUDE OF LAND SURFACE (FEET)	WATER- LEVEL DATE	WATER LEVEL IN FEET BELOW LAND SURFACE
423940104031201	42 39 39	104 03 10	31-060-15dbc01	4730	05-05-99	35.31
424908104085901	42 49 08	104 08 59	33-061-23dcb01	5155	05-06-99	263.21
424724104293801	42 47 24	104 29 38	33-064-36cbc01	5200	05-05-99	57.68

PLATTE COUNTY

STATION NUMBER	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	LOCAL WELL NUMBER	ALTITUDE OF LAND SURFACE (FEET)	WATER- LEVEL DATE	WATER LEVEL IN FEET BELOW LAND SURFACE
414206104500101	41 42 06	104 50 01	20-067-13dbd01	5490	05-06-99	40.31
420452104413801	42 04 52	104 41 38	24-065-06daa02	5070	05-04-99	267.11
422355105023401	42 23 55	105 02 38	28-068-17cbc01	4918	05-04-99	57.43

QUALITY OF GROUND WATER
Coalbed Methane Project - Wells

STATION NUMBER	GEOLOGIC UNIT	LOCAL WELL NUMBER	DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)
433408105270101	125TGRV	42-072-36db 01	06-29-99	1150	406 ¹	765	4998	688
434252105264301	125TGRV	43-072-12da 01	06-30-99	1420	272 ¹	650	4861	684
434941105412001	125TGRV	45-074-36da 01	06-22-99	1300	241.70 ²	1220	4883	1450
435411105294001	125TGRV	45-072-03db 01	06-30-99	1320	320 ¹	703	4876	990
435915105242201	125TGRV	46-071-05dd 01	06-30-99	1230	155 ¹	340	4625	1070
440139105253301	125TGRV	47-071-30aa 01	06-30-99	1135	338 ¹	399	4709	1060
440253105385701	125TGRV	47-073-16cb 01	06-15-99	1540	410.90 ²	1219	4850	2360
440253105385702	124WSTC	47-073-16cb 02	06-16-99	1000	365.90 ²	910	4850	438
440358105331401	125TGRV	48-073-27cd 01	06-30-99	1040	671 ¹	1147	4750	1150
440542105351802	124WSTC	48-073-36bc 02	06-17-99	1121	260.25 ²	700	4740	914
440542105351801	125TGRV	48-073-36bc 01	06-16-99	1503	307.60 ²	905	4740	1350
440623105364101	125TGRV	48-073-27da 01	06-30-99	0955	360 ¹	1057	4836	1210
440724105291301	124WSTC	48-072-22ad 01	06-24-99	1720	94.62 ²	410	4574	870
440724105291302	124WSTC	48-072-22ad 02	06-25-99	0935	36 ²	185	4570	4110
440724105291303	124WSTC	48-072-22ad 03	06-25-99	1035	17.50 ²	80	4570	4330
440756105293301	125TGRV	48-072-15dc 01	06-25-99	0905	203 ¹	565	4613	665
440808106070601	125TGRV	48-077-16ac 01	06-24-99	1330	--	1224	4093	4180
441017105352201	125TGRV	48-073-02aa 01	06-30-99	0915	703 ¹	842	4718	1520
441019105414501	125TGRV	49-074-36dd 01	06-23-99	1440	481.40 ²	1234	4915	1500
441019105414502	124WSTC	49-074-36dd 02	06-23-99	1024	755 ²	1100	4915	1850
441047105535401	125TGRV	49-075-32ad 01	06-24-99	1110	133.16 ²	1841	4439	1060
441451105375501	125TGRV	49-073-03cc 01	06-18-99	1005	328.90 ²	905	4775	1700
441451105375502	124WSTC	49-073-03cc 02	06-17-99	1640	291.34 ²	750	4775	770
443241105360801	125TGRV	53-073-26db 01	06-29-99	1535	21 ¹	201	4045	2490
443241105360802	125TGRV	53-073-26db 02	06-29-99	1600	32.80 ³	297	4044	1790

¹ Water-level measurement was obtained from Wyoming State Engineer's Office well permit.

² Water level was measured immediately before well was purged and ground-water sample was collected.

³ Water-level measurement was obtained from Bureau of Land Management (BLM).

GEOLOGIC UNIT (Aquifer):

111ALVM HOLOCENE ALLUVIUM
111TRRC TERRANCE DEPOSITS
121OGLL OGALLALA FORMATION

124WDRV WILLWOOD FORMATION
124WSTC WASATCH FORMATION
125TGRV TONGUE RIVER MEMBER
OF THE FORT UNION
FORMATION

217MWRY MOWRY SHALE

Coalbed Methane Project - Wells--Continued.

STATION NUMBER	DATE	PH	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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	
		WATER WHOLE FIELD (STAND- ARD UNITS) (00400)		AS (00900)		AS (00925)	AS (00930)	AD- SORP- TION RATIO (00931)			
433408105270101	06-29-99	7.2	19.5	80	17	8.7	130	6	76	5.7	
434252105264301	06-30-99	7.1	19.0	77	17	8.4	130	6	77	4.9	
434941105412001	06-22-99	11	17.0	2	.80	.06	280	81	92	42	
435411105294001	06-30-99	7.2	17.0	120	23	15	190	7	76	8.7	
435915105242201	06-30-99	7.2	17.0	140	32	14	210	8	76	8.3	
440139105253301	06-30-99	7.1	17.0	150	37	15	200	7	72	8.9	
440253105385701	06-15-99	12	18.0	5	1.8	.01	220	46	84	71	
440253105385702	06-16-99	8.6	20.0	22	6.2	1.5	97	9	90	2.2	
440358105331401	06-30-99	7.2	20.0	190	40	22	210	6	68	13	
440542105351802	06-17-99	8.2	20.5	57	12	6.7	180	10	86	6.9	
440542105351801	06-16-99	12	19.5	13	5.3	.01	140	17	86	29	
440623105364101	06-30-99	7.4	20.0	180	36	23	210	7	70	15	
440724105291301	06-24-99	8.1	17.5	75	19	6.4	180	9	83	4.6	
440724105291302	06-25-99	7.6	14.5	1500	450	93	480	5	41	12	
440724105291303	06-25-99	7.2	14.5	2500	550	280	270	2	19	14	
440756105293301	06-25-99	7.4	20.0	74	15	8.7	120	6	77	6.3	
440808106070601	06-24-99	6.9	26.0	290	51	39	1000	26	86	48	
441017105352201	06-30-99	7.0	18.5	230	49	27	270	8	70	13	
441019105414501	06-23-99	9.6	18.5	50	5.6	8.7	290	18	86	38	
441019105414502	06-23-99	7.6	18.5	120	7.7	24	330	13	84	13	
441047105535401	06-24-99	7.3	27.0	120	25	14	190	8	75	13	
441451105375501	06-18-99	--	17.0	260	54	29	340	9	73	13	
441451105375502	06-17-99	8.9	19.0	38	11	2.7	160	11	89	3.7	
443241105360801	06-29-99	7.3	16.0	550	65	94	280	5	51	18	
443241105360802	06-29-99	7.8	14.0	290	62	33	330	8	70	12	
STATION NUMBER	DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	TRITIUM 2 SIGMA WATER, WHOLE, TOTAL (PCI/L) (75985)	H-2 / H-1 STABLE ISOTOPE RATIO PER MIL (82082)	O-18 / O-16 STABLE ISOTOPE RATIO PER MIL (82085)	
433408105270101	06-29-99	6.9	360	<.1	1.9	11	--	<1	1	-138	-17.84
434252105264301	06-30-99	9.3	355	1.8	1.2	10	396	<1	1	-142	-18.31
434941105412001	06-22-99	72	394	140	.9	4.4	775	2	1	-146	-18.67
435411105294001	06-30-99	24	504	<.1	1.5	10	--	1	1	-144	-18.54
435915105242201	06-30-99	15	584	<.1	1.4	9.1	--	<1	1	-138	-17.92
440139105253301	06-30-99	12	573	<.1	1.1	9.7	--	<1	1	-141	-18.25
440253105385701	06-15-99	11	482	81	1	14	692	8	1	-123	-15.29
440253105385702	06-16-99	8.1	206	13	.8	11	263	<1	1	-139	-18.03
440358105331401	06-30-99	8.5	632	<.1	1.2	11	--	1	1	-144	-18.79
440542105351802	06-17-99	17	378	100	.9	10	562	9	1	-124	-15.57
440542105351801	06-16-99	47	268	25	1.1	14	424	5	1	-129	-16.31
440623105364101	06-30-99	9.1	647	.9	1.3	11	697	2	1	-143	-18.51
440724105291301	06-24-99	6.4	455	23	1.0	9.9	527	2	1	-141	-18.40
440724105291302	06-25-99	5.0	129	2400	<.1	9.2	3490	<1	1	-149	-19.02
440724105291303	06-25-99	18	267	2700	.3	17	4020	6	1	-148	-19.03
440756105293301	06-25-99	8.9	346	<.1	1.6	9.9	--	<1	1	-137	-18.56
440808106070601	06-24-99	21	2570	<.3	1.2	7.4	--	1	1	-133	-17.80
441017105352201	06-30-99	7.7	853	<.1	.8	10	--	<1	1	-141	-18.40
441019105414501	06-23-99	130	579	99	1.6	1.3	919	7	1	-128	-16.83
441019105414502	06-23-99	<.3	1020	10	1.5	10	--	2	1	-131	-18.14
441047105535401	06-24-99	7.0	580	1.2	1.1	20	624	<1	1	-151	-19.99
441451105375501	06-18-99	8.3	956	1.0	.9	10	1030	<1	1	-135	-18.66
441451105375502	06-17-99	11	--	160	.9	8.0	--	1	1	-146	-18.95
443241105360801	06-29-99	14	723	740	.5	15	1660	<1	1	-139	-18.46
443241105360802	06-29-99	11	962	.7	.6	11	1040	1	1	-144	-18.78

QUALITY OF GROUND WATER

Coalbed Methane Project - Springs

STATION NUMBER	LOCAL WELL NUMBER	DATE	TIME	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
433652105075501	42-069-15dbb01	06-14-99	1545	4930	303	7.8	12.0	130
442232105264101	51-071-30bac01	06-21-99	1530	4275	1610	7.5	10.5	790

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (904100)
06-14-99	35	9.9	8.1	.3	11	6.9	2.5	116
06-21-99	210	65	46	.7	11	25	12	160

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	TRITIUM TOTAL (PCI/L) (07000)	TRITIUM WHOLE, TOTAL (PCI/L) (75985)	H-2 / H-1 STABLE ISOTOPE RATIO PER MIL (82082)	O-18 / O-16 STABLE ISOTOPE RATIO PER MIL (82085)
06-14-99	28	.5	26	187	76	4	-138	-18.04
06-21-99	720	.8	30	1200	52	3	-143	-18.41

GROUND-WATER LEVELS

GROUND-WATER QUALITY NEAR WASTEWATER-TREATMENT FACILITIES, GRAND TETON NATIONAL PARK

STATION NUMBER	GEOLOGIC UNIT	LOCAL WELL NUMBER	DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (US/CM (00095)
433932110430801	111ALVM	43-116-25cca01	09-13-99	1715	10.77	49.0	93
433939110424001	111ALVM	43-116-25dbd01	09-13-99	1845	15.23	48.6	157
433939110425601	111ALVM	43-116-25caa01	09-13-99	1500	14.57	42.8	135
434904110364701	111ALVM	45-115-36cac01	09-16-99	0900	116.30	118.6	213
434920110365601	111ALVM	45-115-36bcd01	09-16-99	1445	115.72	119.0	182
434920110370801	111ALVM	45-115-36bcc01	09-16-99	1315	92.03	118.0	320
434927110370801	111ALVM	45-115-36bcb01	09-16-99	1115	90.02	120.0	598
435355110372401	111ALVM	45-115-02aac01	09-15-99	0910	5.36	32.8	64
435357110374102	111ALVM	45-115-02abc02	09-15-99	1900	1.81	--	580
435357110374104	111ALVM	45-115-02abc04	09-15-99	1320	4.17	--	509
435357110374105	111ALVM	45-115-02abc05	09-15-99	1700	1.26	--	540
435358110374201	111ALVM	45-115-02abc06	09-15-99	1110	2.02	--	454
435403110372001	111ALVM	45-115-02aab01	09-14-99	1910	10.31	32.5	88
435407110374001	111ALVM	45-115-02abb01	09-14-99	1750	10.55	36.3	61
440640110401001	111ALVM	48-115-21bca01	09-14-99	1110	28.86	47.3	310
440643110400101	111ALVM	48-115-21bdb01	09-14-99	0935	33.29	48.0	241
440645110401101	111ALVM	48-115-21bc 02	09-14-99	1245	26.74	--	275
440645110402001	111ALVM	48-115-21bc 01	09-14-99	1445	24.80	37.3	514

QUALITY OF GROUND WATER

GROUND-WATER QUALITY NEAR WASTEWATER-TREATMENT FACILITIES, GRAND TETON NATIONAL PARK--Continued

STATION NUMBER	DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
433932110430801	09-13-99	93	8.7	9.5	608	6.4	70	<1	<1
433939110424001	09-13-99	157	8.3	10.0	609	3.0	33	<1	<1
433939110425601	09-13-99	135	7.6	10.5	610	5.4	61	<1	<1
434904110364701	09-16-99	213	8.0	7.0	600	8.1	85	<1	<1
434920110365601	09-16-99	182	8.0	11.0	--	--	--	<1	<1
434920110370801	09-16-99	320	7.9	8.0	600	9.8	105	<1	<1
434927110370801	09-16-99	598	7.1	13.0	600	5.7	69	<1	<1
435355110372401	09-15-99	64	6.7	7.5	600	4.8	51	<1	<1
435357110374102	09-15-99	580	7.1	10.5	600	.50	6	<1	<1
435357110374104	09-15-99	509	9.9	8.0	600	.50	5	<1	<1
435357110374105	09-15-99	540	7.0	11.0	601	.50	6	K2	<1
435358110374201	09-15-99	454	6.8	9.0	600	.50	6	<1	K9
435403110372001	09-14-99	88	6.9	8.5	600	3.6	39	<1	<1
435407110374001	09-14-99	61	6.4	6.0	600	5.0	51	<1	<1
440640110401001	09-14-99	310	7.8	7.0	601	8.1	85	<1	<1
440643110400101	09-14-99	241	8.1	6.5	601	9.2	95	<1	<1
440645110401101	09-14-99	275	8.1	6.5	601	4.2	43	<1	<1
440645110402001	09-14-99	514	7.6	10.0	600	5	6	<1	<1

K-Results based on colony count outside the acceptable range (non-ideal colony count).

QUALITY OF GROUND WATER

GROUND-WATER QUALITY NEAR WASTEWATER-TREATMENT FACILITIES, GRAND TETON NATIONAL PARK--Continued

STATION NUMBER	DATE	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
433932110430801	09-13-99	8.7	9.5	608	6.4	70	<1	<1
433939110424001	09-13-99	8.3	10.0	609	3.0	33	<1	<1
433939110425601	09-13-99	7.6	10.5	610	5.4	61	<1	<1
434904110364701	09-16-99	8.0	7.0	600	8.1	85	<1	<1
434920110365601	09-16-99	8.0	11.0	--	--	--	<1	<1
434920110370801	09-16-99	7.9	8.0	600	9.8	105	<1	<1
434927110370801	09-16-99	7.1	13.0	600	5.7	69	<1	<1
435355110372401	09-15-99	6.7	7.5	600	4.8	51	<1	<1
435357110374102	09-15-99	7.1	10.5	600	.5	6	<1	<1
435357110374104	09-15-99	9.9	8.0	600	.5	5	<1	<1
435357110374105	09-15-99	7.0	11.0	601	.5	6	K2	<1
435358110374201	09-15-99	6.8	9.0	600	.5	6	<1	K9
435403110372001	09-14-99	6.9	8.5	600	3.6	39	<1	<1
435407110374001	09-14-99	6.4	6.0	600	5.0	51	<1	<1
440640110401001	09-14-99	7.8	7.0	601	8.1	85	<1	<1
440643110400101	09-14-99	8.1	6.5	601	9.2	95	<1	<1
440645110401101	09-14-99	8.1	6.5	601	4.2	43	<1	<1
440645110402001	09-14-99	7.6	10.0	600	.5	6	<1	<1

QUALITY OF GROUND WATER

GROUND-WATER QUALITY NEAR WASTEWATER-TREATMENT FACILITIES, GRAND TETON NATIONAL PARK--Continued

STATION NUMBER	DATE	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
433932110430801	09-13-99	0.0	48	41	<.01	.23	<.02	E.09	<.01
433939110424001	09-13-99	0.0	89	73	<.01	.05	<.02	<.1	<.01
433939110425601	09-13-99	0.0	74	61	<.01	.09	<.02	<.1	<.01
434904110364701	09-16-99	0.0	117	96	<.01	2.1	<.02	E.05	.05
434920110365601	09-16-99	0.0	112	<92	<.01	.32	<.02	<.1	.07
434920110370801	09-16-99	0.0	166	136	<.01	2.0	<.02	.1	.04
434927110370801	09-16-99	0.0	249	204	<.01	3.9	<.02	.3	1.1
435355110372401	09-15-99	0.0	35	29	<.01	.09	<.02	.1	.02
435357110374102	09-15-99	0.0	227	186	<.01	<.05	5.6	5.8	.95
435357110374104	09-15-99	55	122	192	<.01	<.05	3.3	4.3	.48
435357110374105	09-15-99	0.0	210	172	<.01	<.05	4.3	5.1	.73
435358110374201	09-15-99	0.0	151	124	<.01	<.05	1.7	2.0	.20
435403110372001	09-14-99	0.0	46	38	<.01	.20	<.02	E.09	.01
435407110374001	09-14-99	0.0	32	26	<.01	.12	<.02	E.08	.02
440640110401001	09-14-99	0.0	183	150	<.01	.94	<.02	<.1	<.01
440643110400101	09-14-99	0.0	127	104	<.01	.17	<.02	<.1	.01
440645110401101	09-14-99	0.0	154	126	<.01	.35	<.02	<.1	<.01
440645110402001	09-14-99	0.0	242	198	.01	3.6	<.02	.5	.14

E-Estimate.

K-Results based on colony count outside the acceptable range (non-ideal colony count).

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹
(Water levels are at depth below land surface, in feet)

BIG HORN COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

WELL NUMBER	STATION NUMBER	GEOLOGIC UNIT	LOCAL WELL NUMBER	DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
B10	441239107554101	111ALVM	49-092-21bbb01	08-03-99	1515	5.12	30	3928	3090	7.3
B9	441612108000101	111ALVM	50-093-26cdd01	08-02-99	1430	6.30	22	3940	1610	7.2
B7	442405108162501	111ALVM	51-095-09ddc01	08-03-99	0900	9.01	22	4156	2420	7.2
B6	442650108251501	111TRRC	52-096-29dcb01	08-03-99	1200	3.60	23	4410	770	7.2
B5	442912108240601	111TRRC	52-096-16abb01	08-02-99	1200	5.60	27	4465	1570	7.2
B4	442931108030601	111ALVM	52-093-08dad01	08-02-99	1200	7.85	13	3810	1560	7.5
B1	444914108214101	111TRRC	56-096-24bda01	08-03-99	0950	7.02	22	3878	1180	7.9
B2	445022108233701	111ALVM	56-096-15abb01	08-02-99	1710	11.2	16	3830	2680	7.2
B11	445135108145201	111TRRC	56-095-02dad01	08-02-99	1445	8.71	34	3740	2210	7.0
B12	445324108310601	111TRRC	57-097-26dad01	08-03-99	1240	3.94	7	4030	2030	6.9
B3	445914108371001	111ALVM	58-097-30bbb01	08-03-99	1520	--	16	4240	4010	7.2

STATION NUMBER	DATE	TEMPER-	NITRO- GEN, NITRITE	NITRO- GEN, NO2+NO3	NITRO- GEN, AMMONIA	PHOS- PHORUS ORTHO,	2,4-DB	ALA-	ALDI-	
		ATURE	DIS-	DIS-	DIS-	DIS-	2,4-D,	FLTRD,	CHLOR,	CARB,
		WATER	SOLVED	SOLVED	SOLVED	SOLVED	DIS-	GF 0.7U	WATER,	FLTRD,
		(DEG C)	(MG/L AS N)	(MG/L AS N)	(MG/L AS N)	(MG/L AS P)	SOLVED (UG/L)	REC (UG/L)	DISS, (UG/L)	GF 0.7U (UG/L)
		(00010)	(00613)	(00631)	(00608)	(00671)	(39732)	(38746)	(46342)	(49312)
EPA DRINKING WATER STANDARD		--	1	10	--	--	70	--	2	35
441239107554101	08-03-99	12.0	0.02	3.2	ND(.02)	0.02	ND(.11)	ND(.1)	ND(.002)	ND(.21)
441612108000101	08-02-99	11.5	ND(.01)	5.7	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
442102108022601	08-02-99	13.0	ND(.01)	1.5	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
442405108162501	08-03-99	10.5	ND(.01)	3.0	ND(.02)	ND(.01)	ND(.11)	ND(.1)	ND(.002)	ND(.21)
442650108251501	08-03-99	15.0	ND(.01)	2.9	ND(.02)	.05	ND(.11)	ND(.1)	ND(.002)	ND(.21)
442912108240601	08-02-99	12.0	0.06	4.6	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
442931108030601	08-02-99	15.5	0.02	.90	.94	.03	ND(.15)	ND(.24)	ND(.002)	ND(.55)
444914108214101	08-03-99	15.0	ND(.01)	12	ND(.02)	.05	ND(.11)	ND(.1)	ND(.002)	ND(.21)
445022108233701	08-02-99	15.5	0.01	6.2	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
445135108145201	08-02-99	17.0	ND(.01)	1.2	.03	.03	ND(.11)	ND(.1)	ND(.002)	ND(.21)
445324108310601	08-03-99	18.0	ND(.01)	1.8	ND(.02)	.01	ND(.11)	ND(.1)	ND(.002)	ND(.21)
445914108371001	08-03-99	16.0	ND(.01)	3.4	ND(.02)	ND(.01)	ND(.11)	ND(.1)	ND(.002)	ND(.21)

¹Additional pesticides also were analyzed (listed on page 123), but not detected.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹--Continued
(Water levels are at depth below land surface, in feet)

BIG HORN COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

STATION NUMBER	DATE	ALDI- CARB SULFONE WAT, FLT GF 0.7U REC (UG/L) (49313)	ALDICA- RB SUL- FOXIDE, WAT, FLT GF 0.7U REC (UG/L) (49314)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DI- AZINON, DIS- SOLVED (UG/L) (39572)
		35	35	3	--	90	--	1	16	--
EPA DRINKING WATER STANDARD		35	35	3	--	90	--	1	16	--
441239107554101	08-03-99	ND(.1)	ND(.021)	E0.0035	E0.0015	ND(.06)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
441612108000101	08-02-99	ND(.18)	ND(.021)	ND(.001)	E.0027	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
442102108022601	08-02-99	ND(.1)	ND(.021)	ND(.001)	E.0013	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
442405108162501	08-03-99	ND(.1)	ND(.021)	.013	E.0093	ND(.06)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
442650108251501	08-03-99	ND(.20)	ND(.021)	E.0035	E.0032	ND(.06)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
442912108240601	08-02-99	ND(.1)	ND(.23)	.011	E.0037	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
442931108030601	08-02-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444914108214101	08-03-99	ND(.1)	ND(.021)	E.0039	E.0034	ND(.06)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
445022108233701	08-02-99	ND(.1)	ND(.021)	.011	E.0047	ND(.27)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
445135108145201	08-02-99	ND(.1)	ND(.021)	.0060	E.0021	ND(.06)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
445324108310601	08-03-99	ND(.1)	ND(.16)	.016	E.013	ND(.06)	ND(.58)	ND(.004)	ND(.002)	ND(.002)
445914108371001	08-03-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.06)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
STATION NUMBER	DATE	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34704)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34699)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)
		200	10	10	70	100	500	--	4	500
EPA DRINKING WATER STANDARD		200	10	10	70	100	500	--	4	500
441239107554101	08-03-99	ND(.043)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
441612108000101	08-02-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
442102108022601	08-02-99	ND(.035)	ND(1)	ND(1)	.0081	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
442405108162501	08-03-99	ND(.043)	ND(1)	ND(1)	ND(.004)	ND(.004)	ND(.22)	ND(.018)	ND(.005)	ND(.010)
442650108251501	08-03-99	ND(.043)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.022	ND(.005)	ND(.010)
442912108240601	08-02-99	ND(.035)	ND(1)	ND(1)	ND(.002)	.0062	ND(.05)	ND(.018)	ND(.005)	ND(.010)
442931108030601	08-02-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.024	ND(.005)	ND(.010)
444914108214101	08-03-99	ND(.043)	ND(1)	ND(1)	.0042	ND(.004)	ND(.05)	E.0034	ND(.005)	ND(.010)
445022108233701	08-02-99	ND(.35)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.13	ND(.005)	ND(.010)
445135108145201	08-02-99	ND(.043)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.26)	ND(.018)	ND(.005)	ND(.010)
445324108310601	08-03-99	ND(.043)	ND(1)	ND(1)	E.0016	ND(.004)	ND(.05)	E.012	ND(.005)	ND(.010)
445914108371001	08-03-99	ND(.043)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

E-Estimate.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹
(Water levels are at depth below land surface, in feet)

FREMONT COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

WELL NUMBER	STATION NUMBER	GEOLOGIC UNIT	LOCAL IDENTIFIER	DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
F4	424627108463201	111ALVM	32-100-03bcd01	04-09-99	1430	7.50	30	5830	260	7.6
F9	424726108460801	111ALVM	33-100-35aca01	04-10-99	1100	4.14	35	5640	514	7.3
F6	424922108460801	217MWRY	33-100-23aba01	04-08-99	1715	19.3	80	5500	702	7.1
F5	425037108431801	111ALVM	33-099-08cbd01	04-09-99	1600	3.80	15	5300	563	7.4
F10	425152108431301	111ALVM	33-099-05bbd01	04-08-99	1450	5.94	32	5300	1380	7.2
F3	425242108465301	111ALVM	34-100-35bca01	04-10-99	0920	7.66	40	5490	763	7.4
F19	430119108225701	111ALVM	1N-4E-34ada01	04-05-99	0950	25.8	60	4945	2390	7.2
F7	430155108230001	124WDRV	1N-4E-27daa02	04-05-99	1400	13.0	38	4965	873	7.8
F13	430225108310101	111ALVM	1N-3E-27bbb02	04-08-99	0915	5.32	38	5080	973	7.5
F16	430641108323301	124WDRV	2N-3E-32aac01	04-08-99	1110	19.5	55	5350	845	7.7
F8	430648108200301	124WDRV	2N-5E-31bab01	04-06-99	0935	7.70	60	4960	809	7.5
F17	430928108395401	124WDRV	2N-2E-08dcc01	04-07-99	1150	14.3	55	5320	2720	7.6
F11	431016108311201	124WDRV	2N-3E-09aaa01	04-06-99	1620	6.68	60	5320	2760	7.6
F12	431202108254401	124WDRV	3N-4E-33bba01	04-06-99	1210	7.86	50	5080	790	7.0
F18	431300108341501	111ALVM	3N-3E-19cdd01	04-06-99	1415	7.16	45	5280	986	7.5
F15	431415108403501	124WDRV	3N-2E-17bcb01	04-07-99	1010	8.28	55	5400	1140	7.3
F20	431442108403901	124WDRV	3N-2E-07ddd02	04-10-99	1015	13.4	57	5430	1250	7.3
F21	431824108312801	124WDRV	4N-3E-21dbd01	04-07-99	1515	2.78	50	5217	2600	7.2
F14	431851109134101	111TRRC	4N-4W-22bbb02	04-09-99	1240	23.5	45	6220	425	7.8
F1	433401109440401	111TRRC	42-107-30ddd01	04-09-99	1015	23.5	59	7200	527	7.2

STATION NUMBER	DATE	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) (00608)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) (00671)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	ALA- CHLOR, WATER, DISS, REC (UG/L) (46342)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)
EPA DRINKING WATER STANDARD	--	--	1	10	--	--	70	--	2	35
424627108463201	04-09-99	7.0	ND(.01)	0.57 ND(.02)		0.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
424726108460801	04-10-99	6.5	ND(.01)	.09 ND(.02)		.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
424922108460801	04-08-99	11.0	ND(.01)	.06 .18		.06	ND(.15)	ND(.24)	ND(.002)	ND(.55)
425037108431801	04-09-99	5.5	ND(.01)	.4 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
425152108431301	04-08-99	9.0	ND(.01)	.34 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
425242108465301	04-10-99	8.5	ND(.01)	.39 ND(.02)		.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430119108225701	04-05-99	12.0	ND(.01)	1.1 ND(.02)		.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430155108230001	04-05-99	11.5	ND(.01)	2.8 ND(.02)		.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430225108310101	04-08-99	10.5	.02	2.6 ND(.02)		.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430641108323301	04-08-99	10.0	ND(.01)	.6 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430648108200301	04-06-99	10.5	ND(.01)	1.8 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430928108395401	04-07-99	9.5	ND(.01)	2.0 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
431016108311201	04-06-99	11.0	ND(.01)	ND(.05) .06		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
431202108254401	04-06-99	8.0	ND(.01)	2.2 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
431300108341501	04-06-99	10.5	ND(.01)	.12 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
431415108403501	04-07-99	8.5	ND(.01)	.7 ND(.02)		.06	ND(.15)	ND(.24)	ND(.002)	ND(.55)
431442108403901	04-10-99	10.0	ND(.01)	.82 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
431824108312801	04-07-99	9.5	ND(.01)	3.7 .05		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
431851109134101	04-09-99	10.0	ND(.01)	.30 ND(.02)		.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
433401109440401	04-09-99	9.0	ND(.01)	.08 ND(.02)		ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

QUALITY OF GROUND WATER

 PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹--Continued
 (Water levels are at depth below land surface, in feet)

FREMONT COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

STATION NUMBER	DATE	ALDI- CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DI- AZINON, DIS- SOLVED (UG/L) (39572)
		35	35	3	--	90	--	1	16	--
		EPA DRINKING WATER STANDARD								
424627108463201	04-09-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
424726108460801	04-10-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
424922108460801	04-08-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
425037108431801	04-09-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
425152108431301	04-08-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
425242108465301	04-10-99	ND(.1)	ND(.021)	.0079	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430119108225701	04-05-99	ND(.1)	ND(.021)	.011	E.0070	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430155108230001	04-05-99	ND(.1)	ND(.021)	.033	E.023	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430225108310101	04-08-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430641108323301	04-08-99	ND(.1)	ND(.021)	.0069	E.0031	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430648108200301	04-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430928108395401	04-07-99	ND(.1)	ND(.021)	.0083	E.0050	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
431016108311201	04-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
431202108254401	04-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
431300108341501	04-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
431415108403501	04-07-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
431442108403901	04-10-99	ND(.1)	ND(.021)	.0067	E.0043	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
431824108312801	04-07-99	ND(.1)	ND(.021)	.0043	E.0052	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
431851109134101	04-09-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
433401109440401	04-09-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
STATION NUMBER	DATE	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34704)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34699)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)
		200	10	10	70	100	500	--	4	500
		EPA DRINKING WATER STANDARD								
424627108463201	04-09-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
424726108460801	04-10-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.039	ND(.005)	ND(.010)
424922108460801	04-08-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	1.3	ND(.018)	ND(.005)	ND(.010)
425037108431801	04-09-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	E.013	ND(.005)	.016
425152108431301	04-08-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
425242108465301	04-10-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	.012
430119108225701	04-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.11	ND(.005)	.085
430155108230001	04-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.060	ND(.005)	.064
430225108310101	04-08-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
430641108323301	04-08-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	.0118	ND(.010)
430648108200301	04-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
430928108395401	04-07-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	E.01	E.0065	ND(.005)	ND(.010)
431016108311201	04-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
431202108254401	04-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
431300108341501	04-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
431415108403501	04-07-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
431442108403901	04-10-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
431824108312801	04-07-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
431851109134101	04-09-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
433401109440401	04-09-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

E-Estimate.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹
(Water levels are at depth below land surface, in feet)

LARAMIE COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

WELL NUMBER	STATION NUMBER	GEOLOGIC UNIT	LOCAL WELL NUMBER	DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
R4	410108104223501	121OGLL	12-062-12dca01	03-27-99	1335	23.8	80	5372	733	7.7
R1	410156104242901	121OGLL	12-063-02ccc01	03-27-99	1145	30.1	100	5401	378	7.9
R5	410218104184301	121OGLL	12-062-03bcb01	03-27-99	1015	59.0	110	5378	423	7.9
R3	410244104220501	121OGLL	13-062-31ccb01	03-26-99	1530	54.9	100	5437	756	7.6
R2	410327104232301	121OGLL	13-063-26ddd01	03-29-99	1230	B60	100	5465	417	7.8
R6	410509104071801	121OGLL	13-060-18ddd01	03-25-99	1430	60.0	100	5140	664	7.7
R13	410724104503301	111ALVM	13-067-01cab01	03-24-99	1600	8.60	14	6100	3800	7.0
R10	410735104401201	111ALVM	13-065-04bdb01	03-29-99	1400	E10	125	5835	785	7.7
R16	410748104473901	121OGLL	13-066-05aac01	03-24-99	1400	9.95	22	6035	995	7.2
				09-21-99 ²	1155	8.23	22	6035	1040	7.1
R11	410834104491601	121OGLL	14-066-31bac01	03-23-99	1600	6.34	20	6093	1020	7.2
R1	410906104515101	111ALVM	410906104515101	04-28-99	1450	11.0	20	6165	880	7.3
R17	410944104492801	121OGLL	14-066-19cca01	04-21-99	1410	21.9	32.5	6155	480	7.9
R7	411019104051301	121OGLL	14-060-16dcd01	03-26-99	1315	27.6	110	5062	696	7.6
R14	411111104040501	121OGLL	14-060-10dcd01	03-26-99	1100	31.70	40	5035	436	7.5
R15	411331104071601	121OGLL	15-060-31dca01	03-25-99	1230	66.0	130	5108	319	8.1
R9	411839104133601	121OGLL	16-061-32bdd01	03-25-99	1000	83.9	110	5340	260	7.8

STATION NUMBER	DATE	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)
EPA DRINKING WATER STANDARD		--	1	10	--	--	70	--	2	35
410108104223501	03-27-99	10.5	0.03	6.5	0 .03	0.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410156104242901	03-27-99	11.5	ND(.01)	4.1	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410218104184301	03-27-99	11.5	ND(.01)	8.1	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410244104220501	03-26-99	11.0	ND(.01)	2.2	ND(.02)	.03	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410327104232301	03-29-99	11.0	ND(.01)	1.2	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410509104071801	03-25-99	11.0	ND(.01)	2.4	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410724104503301	03-24-99	12.5	.01	2.0	.04	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410735104401201	03-29-99	11.0	ND(.01)	5.3	ND(.02)	.03	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410748104473901	03-24-99	11.5	ND(.01)	13	ND(.02)	.05	ND(.15)	ND(.24)	ND(.002)	ND(.55)
	09-21-99	15.0	ND(.01)	12	ND(.02)	.06	--	--	ND(.002)	--
410834104491601	03-23-99	11.5	ND(.01)	5.2	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(1.9)
410906104515101	04-28-99	10.0	.22	ND(.05)	ND(.02)	.03	ND(.15)	ND(.24)	ND(.002)	ND(.55)
410944104492801	04-21-99	12.0	ND(.01)	.38	.03	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
411019104051301	03-26-99	11.0	ND(.01)	5.4	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
411111104040501	03-26-99	13.5	ND(.01)	1.6	ND(.02)	.18	ND(.15)	ND(.24)	E.0039	ND(.55)
411331104071601	03-25-99	11.5	ND(.01)	3.1	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
411839104133601	03-25-99	12.5	ND(.01)	4.3	ND(.02)	.05	ND(.15)	ND(.24)	ND(.002)	ND(.55)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

²Sample taken as part of NAWQA program. For a complete set of analytical results for this sample, please see the Annual Data Report 2000 or contact the Wyoming District USGS at 307/778-2931.

E-Estimate.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹--continued
(Water levels are at depth below land surface, in feet)

LARAMIE COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

STATION NUMBER	DATE	ALDI- CARB ULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	DEETHYL ATRA ZINE, WATER, DISS, REC (UG/L) (04040)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DI- AZINON, DIS- SOLVED (UG/L) (39572)
		35	35	3	--	90	--	1	16	--
EPA DRINKING WATER STANDARD		35	35	3	--	90	--	1	16	--
410108104223501	03-27-99	ND(.1)	ND(.021)	0.048	E0.073	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410156104242901	03-27-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410218104184301	03-27-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410244104220501	03-26-99	ND(.1)	ND(.021)	.047	E.015	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410327104232301	03-29-99	ND(.1)	ND(.021)	E.0012	E.0038	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410509104071801	03-25-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410724104503301	03-24-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.26)	ND(.004)	ND(.002)	ND(.002)
410735104401201	03-29-99	ND(.1)	ND(.021)	.0062	E.0042	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410748104473901	03-24-99	ND(.21)	ND(.021)	.41	E.19	.05	ND(.23)	ND(.004)	ND(.002)	ND(.002)
	09-21-99 ¹	--	--	.20	E.13	--	--	ND(.004)	ND(.002)	ND(.002)
410834104491601	03-23-99	ND(.1)	ND(.021)	ND(.001)	E.0025	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410906104515101	04-28-99	ND(.1)	ND(.021)	.0059	E.0053	ND(.26)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
410944104492801	04-21-99	ND(.1)	ND(.021)	.0050	E.0052	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
411019104051301	03-26-99	ND(.1)	ND(.021)	ND(.001)	E.0041	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
411111104040501	03-26-99	ND(.1)	ND(.021)	.067	E.0412	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
411331104071601	03-25-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
411839104133601	03-25-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
STATION NUMBER	DATE	DICAMBA WATER, 1,3-DI- FLTRD, CHLORO- GF 0.7U REC (UG/L) (38442)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34704)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34699)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)
		200	10	10	70	100	500	--	4	500
EPA DRINKING WATER STANDARD		200	10	10	70	100	500	--	4	500
410108104223501	03-27-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	0.06	ND(.018)	ND(.005)	ND(.010)
410156104242901	03-27-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
410218104184301	03-27-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
410244104220501	03-26-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	.07	ND(.018)	.0066	ND(.010)
410327104232301	03-29-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
410509104071801	03-25-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
410724104503301	03-24-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
410735104401201	03-29-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	2.3	ND(.018)	ND(.005)	ND(.010)
410748104473901	03-24-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.089	ND(.005)	.026
	09-21-99	--	ND(.09)	ND(.09)	ND(.002)	ND(.004)	--	.045	ND(.005)	.036
410834104491601	03-23-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	E.0022	ND(.005)	ND(.010)
410906104515101	04-28-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.0710	ND(.005)	ND(.010)
410944104492801	04-21-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
411019104051301	03-26-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
411111104040501	03-26-99	ND(.035)	ND(1)	ND(1)	.056	.0096	ND(.05)	.080	.11	.046
411331104071601	03-25-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
411839104133601	03-25-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.²Sample taken as part of NAWQA program. For a complete set of analytical results for this sample, please see the Annual Data Report 2000 or contact the Wyoming District USGS at 307/778-2931.

E-Estimate.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹
(Water levels are at depth below land surface, in feet)

LINCOLN COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

WELL NUMBER	STATION NUMBER	GEOLOGIC UNIT	LOCAL WELL NUMBER	DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
L21	414708110135301	111ALVM	21-113-21add01	04-05-99	1100	11.7	65	6580	5250	7.2
L11	415941110561401	111ALVM	23-119-09baa01	04-06-99	0900	21.9	55	6200	1850	7.1
L13	420503110564801	111ALVM	24-119-05dda01	04-05-99	1815	25.0	60	6200	564	7.4
L12	421115111012701	111ALVM	25-119-06bca01	04-05-99	1645	--	60	6130	1240	7.4
L20	421441111023001	111ALVM	26-120-13acb01	04-05-99	1500	113	120	6180	1120	7.8
L2	424133110574301	111ALVM	31-119-11abb01	04-06-99	1230	90.9	107	6200	389	7.7
L1	424215110585201	111ALVM	31-119-03abc01	04-07-99	1200	37.9	60	6180	517	7.5
L5	424423110570901	111ALVM	32-119-23dad01	04-06-99	1400	42.9	75	6140	397	8.0
L3	424516110595001	111ALVM	32-119-16dbd02	04-07-99	1100	27.6	80	6085	486	7.5
L4	424843110573101	111ALVM	33-118-30dba02	05-25-99	1430	21.8	80	6040	556	7.4
L6	425638111002201	111ALVM	34-119-11cac01	04-07-99	1630	14.4	60	5880	397	7.7
L7	425857111021801	111ALVM	35-119-33aba01	04-08-99	0930	21.1	60	5775	512	7.6
L8	430136111004001	111ALVM	35-119-11ccb01	04-07-99	1500	80.7	100	5820	467	7.6
L9	430331111013301	111ALVM	36-119-34cbd01	04-08-99	1130	21.7	85	5715	352	7.8

STATION NUMBER	DATE	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	ALA- CHLOR, WATER, DISS, REC (UG/L) (46342)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)
EPA DRINKING WATER STANDARD	--	--	1	10	--	--	70	--	2	35
414708110135301	04-05-99	9.0	ND(.01)	0.09	0.04	0.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
415941110561401	04-06-99	9.0	.03	.19	.02	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
420503110564801	04-05-99	10.0	ND(.01)	.58	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
421115111012701	04-05-99	7.0	ND(.01)	8.9	ND(.02)	.03	ND(.15)	ND(.24)	ND(.002)	ND(.55)
421441111023001	04-05-99	10.0	ND(.01)	59	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
424133110574301	04-06-99	9.0	ND(.01)	.75	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
424215110585201	04-07-99	10.0	ND(.01)	1.6	ND(.02)	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
424423110570901	04-06-99	6.0	ND(.01)	.25	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
424516110595001	04-07-99	10.0	ND(.01)	5.3	ND(.02)	.05	ND(.15)	ND(.24)	ND(.002)	ND(.55)
424843110573101	05-25-99	9.0	ND(.01)	1.7	.02	.02	ND(.15)	ND(.24)	ND(.002)	ND(.55)
425638111002201	04-07-99	8.0	ND(.01)	1.0	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
425857111021801	04-08-99	8.5	ND(.01)	.75	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430136111004001	04-07-99	9.0	ND(.01)	2.6	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
430331111013301	04-08-99	7.0	ND(.01)	1.2	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

QUALITY OF GROUND WATER

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹--Continued
(Water levels are at depth below land surface, in feet)

LINCOLN COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

STATION NUMBER	DATE	ALDI- CARB SULFONE WAT,FLT GF 0.7U REC (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (49314)	ATRA- ZINE, WATER, DISS, REC (39632)	DEETHYL ATRA- ZINE, WATER, DISS, REC (04040)	BRO- MACIL, WATER, DISS, REC (04029)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (49305)	CYANA- ZINE, WATER, DISS, REC (04041)	DCPA WATER FLTRD 0.7 U GF, REC (82682)	DI- AZINON, DIS- SOLVED (39572)
		(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
EPA DRINKING WATER STANDARD		35	35	3	--	90	--	1	16	--
414708110135301	04-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
415941110561401	04-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
420503110564801	04-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
42111511012701	04-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
42144111023001	04-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
424133110574301	04-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
424215110585201	04-07-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
424423110570901	04-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
424516110595001	04-07-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
424843110573101	05-25-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
425638111002201	04-07-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
425857111021801	04-08-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430136111004001	04-07-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
430331111013301	04-08-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
STATION NUMBER	DATE	DICAMBA WATER, FLTRD, GF 0.7U REC (38442)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (34704)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (34699)	METO- LACHLOR WATER DISSOLV (39415)	METRI- BUZIN SENCOR WATER DISSOLV (82630)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (49291)	PRO- METON, WATER, DISS, REC (04037)	SI- MAZINE, WATER, DISS, REC (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (82670)
		(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
EPA DRINKING WATER STANDARD		200	10	10	70	100	500	--	4	500
414708110135301	04-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
415941110561401	04-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
420503110564801	04-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
42111511012701	04-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
42144111023001	04-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
424133110574301	04-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	E.0047	ND(.005)	ND(.010)
424215110585201	04-07-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
424423110570901	04-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
424516110595001	04-07-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
424843110573101	05-25-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
425638111002201	04-07-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
425857111021801	04-08-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
430136111004001	04-07-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
430331111013301	04-08-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

E-Estimate

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹
(Water levels are at depth below land surface, in feet)

SHERIDAN COUNTY

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

WELL NUMBER	STATION NUMBER	GEOLOGIC UNIT	LOCAL WELL NUMBER	DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
S10	443428106300901	111ALVM	53-080-09bac01	08-05-99	1350	29.8	60	4040	991	8.5
S8	443438106530601	111ALVM	53-083-08ca 01	08-05-99	0900	24.7	56	5010	282	7.8
S14	443940107014001	111TRRC	54-084-18bba01	08-04-99	1715	24.2	60	4370	1100	7.2
S12	444116106503501	111ALVM	54-083-03cab01	08-04-99	1610	11.7	48	4110	1120	7.4
S2	444218106592201	111ALVM	55-084-28ccd01	08-05-99	1145	4.49	8	4068	1140	7.2
S3	444338106161001	111ALVM	55-078-20dba01	08-05-99	1540	9.58	30	3722	1460	7.8
S7	444349106593601	111ALVM	55-084-21bcb01	08-05-99	1345	16.7	42	4065	968	7.0
S6	444618106562501	111ALVM	55-084-02acc01	08-04-99	1430	10.7	30	3818	1810	7.1
S5	444645106574001	111ALVM	56-084-34dcc01	08-04-99	1230	15.3	24	3881	833	7.3
S11	444738106581601	111ALVM	56-084-27ccb01	08-06-99	0915	7.99	18	3760	758	7.3
S4	444910106584701	111ALVM	56-084-21aba01	08-04-99	1030	16.1	22	3770	1180	7.1
S9	444918107120101	111ALVM	56-086-15ddd01	08-05-99	1030	12.8	25	4105	763	7.4
S15	445014106490701	111ALVM	56-083-11dcb01	08-06-99	0920	15.2	50	3682	4000	7.2
S13	445300107101201	111ALVM	57-085-30bbd01	08-05-99	1900	10.0	13	3832	1770	7.3
S1	445312107134801	111ALVM	57-086-27bdc01	08-05-99	1630	8.16	20	3860	483	7.5

STATION NUMBER	DATE	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)
-------------------	------	---	--	--	--	--	---	---	--	---

EPA DRINKING
WATER STANDARD

--	1	10	--	--	70	--	2	35
11.0	ND(.01)	ND(.05)	2.0	0.13	ND(.15)	ND(.24)	ND(.002)	ND(.55)
9.0	ND(.01)	.08	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
12.5	ND(.01)	ND(.05)	1.2	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
12.0	ND(.01)	1.4	.49	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
8.0	.06	2.5	ND(.02)	.49	ND(.15)	ND(.24)	ND(.002)	ND(.55)
12.0	ND(.01)	ND(.05)	.98	.03	ND(.15)	ND(.24)	ND(.002)	ND(.55)
12.5	ND(.01)	3.1	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
11.5	ND(.01)	.27	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
13.5	ND(.01)	4.4	ND(.02)	.01	ND(.11)	ND(.10)	ND(.002)	ND(.21)
11.0	ND(.01)	ND(.05)	.26	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
12.0	ND(.01)	.45	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
11.0	ND(.01)	.17	ND(.02)	ND(.01)	ND(.15)	ND(.24)	ND(.002)	ND(.55)
11.0	ND(.01)	ND(.05)	.38	.03	ND(.15)	ND(.24)	ND(.002)	ND(.55)
12.5	ND(.01)	.65	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)
11.5	ND(.01)	.08	ND(.02)	.01	ND(.15)	ND(.24)	ND(.002)	ND(.55)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

PESTICIDE AND NUTRIENT SAMPLING PROGRAM¹--Continued
(Water levels are at depth below land surface, in feet)

SHERIDAN COUNTY

WATER QUALITY DATA, WATER YEAR 1999 (OCTOBER 1998 TO SEPTEMBER 1999)

STATION NUMBER	DATE	ALDI- CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U DISS, REC (UG/L) (49305)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DI- AZINON, DIS- SOLVED (UG/L) (39572)
EPA DRINKING WATER STANDARD		35	35	3	--	90	--	1	16	--
443428106300901	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
443438106530601	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
443940107014001	08-04-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444116106503501	08-04-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444218106592201	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444338106161001	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444349106593601	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444618106562501	08-04-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444645106574001	08-04-99	ND(.1)	ND(.021)	.0050	E.0043	ND(.06)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444738106581601	08-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444910106584701	08-04-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
444918107120101	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
445014106490701	08-06-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
445300107101201	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
445312107134801	08-05-99	ND(.1)	ND(.021)	ND(.001)	ND(.002)	ND(.035)	ND(.23)	ND(.004)	ND(.002)	ND(.002)
STATION NUMBER	DATE	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34704)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34699)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)
EPA DRINKING WATER STANDARD		200	10	10	70	100	500	--	4	500
443428106300901	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
443438106530601	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	E.0079	ND(.005)	ND(.010)
443940107014001	08-04-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
444116106503501	08-04-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
444218106592201	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
444338106161001	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	.38	E.0048	ND(.005)	ND(.010)
444349106593601	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
444618106562501	08-04-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
444645106574001	08-04-99	ND(.043)	ND(1)	ND(1)	ND(.002)	ND(.004)	8.3	.034	ND(.005)	ND(.010)
444738106581601	08-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	E.0153	ND(.005)	ND(.010)
444910106584701	08-04-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	.037	ND(.005)	ND(.010)
444918107120101	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
445014106490701	08-06-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
445300107101201	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)
445312107134801	08-05-99	ND(.035)	ND(1)	ND(1)	ND(.002)	ND(.004)	ND(.05)	ND(.018)	ND(.005)	ND(.010)

¹Additional pesticides were also analyzed (listed on page 123), but not detected.

E-Estimated.

ND() - Indicates compound not detected. Value in parenthesis is method reporting limit.

SUPPLEMENTARY DATA FOR PESTICIDE AND NUTRIENT SAMPLING PROGRAM

These pesticides are not pesticides of focus for the Pesticide and Nutrient Sampling Program (tabled on pages 113-122), but are included in the analytical methods employed by the program. No detections of these pesticides were found in the counties sampled in Water Year 1999.

PARAMETER LIST

PARAMETER CODE	COMPOUND NAME	MINIMUM REPORTING LEVELS ¹
49260	ACETOCHLOR	0.002
49315	ACIFLUORFEN	0.09
82673	BENFLURALIN	0.002
38711	BENTAZON	0.04
34253	ALPHA BHC	0.002
49311	BROMOXYNIL	0.04
04028	BUTYLATE	0.002
49310	CARBARYL	0.07
49309	CARBOFURAN	0.3
49307	CHLORAMBEN	0.1
49306	CHLOROTHALONIL	0.5
38933	CHLORPYRIFOS DISSOLVED	0.004
49304	DACTHAL, MONO-ACID	0.04
34653	P,P' DDE DISSOLVED	0.006
49303	DICHOLOBENIL	0.07
49302	DICHLORPROP	0.03
39381	DIELDRIN, DISSOLVED	0.001
82660	2,6-DIETHYLANILINE	0.003
49301	DINOSEB	0.06
82677	DISULFOTON	0.02
49300	DIURON	0.06
49299	DNOC	0.4
82668	EPTC	0.002
82663	ETHALFLURALIN	0.004
82672	ETHOPROP	0.003
49297	FENURON	0.07
38811	FLUOMETURON	0.06
04095	FONOFOS	0.003
49308	3-HYDROXYCARBOFURAN	0.1
39341	LINDANE, DISSOLVED	0.004
38478	LINURON	0.09
39532	MALATHION, DISSOLVED	0.005
38482	MCPA	0.2
38487	MCPB	0.1
38501	METHIOCARB	0.03
49296	METHOMYL	0.02
82686	METHYL AZINPHOS	0.001
82667	METHYL PARATHION	0.006
82671	MOLINATE	0.004
82684	NAPROPAMIDE	0.003
49294	NEBURON	0.07
49293	NORFLURAZON	0.04
49292	ORYZALIN	0.3
38866	OXAMYL	0.02
39542	PARATHION, DISSOLVED	0.004
82669	PEBULATE	0.004
82683	PENDIMETHALIN	0.004
82687	PERMETHRIN, CIS	0.005
82664	PHORATE	0.002
82676	PRONAMIDE	0.003
04024	PROPACHLOR	0.007
82679	PROPANIL	0.004
82685	PROPARGITE	0.01
49236	PROPHAM	0.04
38538	PROPOXUR	0.08
39762	SILVEX, DISSOLVED	0.04
39742	2,4,5-T, DISSOLVED	0.04
82665	TERBACIL	0.007
82675	TERBUFOS	0.01
82681	THIOBENCARB	0.002
82678	TRIALATE	0.001
49235	TRICLOPYR	0.3
82661	TRIFLURALIN	0.002

¹The minimum reporting level (MRL) is the lowest concentration for which a chemical can be quantified by the analytical method. In practice, the MRL is affected by many variables associated with the sample, sampling, preservation, shipping, and laboratory conditions. Actual MRL values can and do vary from sample to sample.

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-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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