

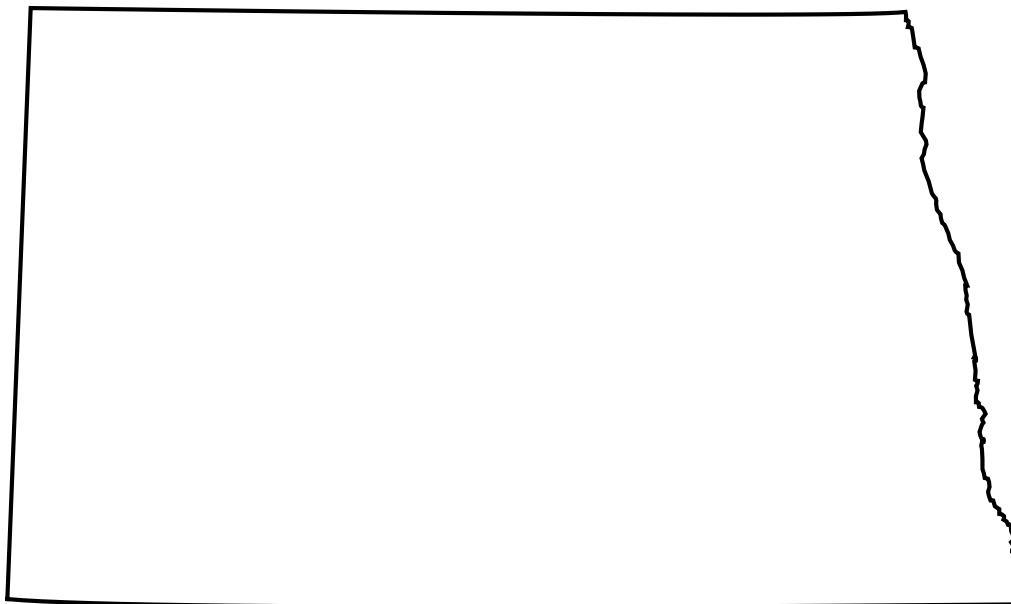
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data North Dakota Water Year 2002

Volume 2. Ground Water

By R.E. Harkness and J.D. Wald

Water-Data Report ND-02-2



Prepared in cooperation with the State of North Dakota
and with other agencies



UNITED STATES DEPARTMENT OF THE INTERIOR

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2003

PREFACE

This edition of the annual hydrologic data report of North Dakota is one of a series of annual reports that document hydrologic data collected from the U.S. Geological Survey's collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by Federal, State, local agencies, and the private sector for developing and managing land and water resources in North Dakota. The 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 dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had the primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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13. ABSTRACT <i>(Maximum 200 words)</i> Water-resources data for the 2002 water year for North Dakota consists of records of discharge, stage, and water quality for streams; contents, stage, and water quality for lakes and reservoirs; and water levels and water quality for ground-water wells. Volume 2 contains water-level records for 117 ground-water wells and water-quality records for 65 monitoring wells. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and local agencies in North Dakota.				
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GROUND-WATER LEVELS

ADAMS COUNTY

461614102515202	Local number, 132-097-07CAB2	Ludlow-Hell Creek aquifer	11
461614102515203	Local number, 132-097-07CAB3	Ludlow aquifer	12

BENSON COUNTY

475224098443202	Local number, 151-063-29AAC2	Warwick aquifer	13
475601099264701	Local number, 151-069-01BBB	Maddock aquifer	15
475515099292101	Local number, 151-069-03CCC	Maddock aquifer	17
480958099154801	Local number, 154-067-15BBB	Spiritwood aquifer	19
481041099442701	Local number, 154-071-11AAD1	Fox Hills aquifer	20
482212099475801	Local number, 156-071-04BBA	Pleasant Lake aquifer	22

BOTTINEAU COUNTY

483333101135402	Local number, 159-082-35BBB2	Glenburn aquifer	24
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BOWMAN COUNTY

461039103282801	Local number, 131-102-07DDD1	Hell Creek-Fox Hills aquifer	25
461039103282803	Local number, 131-102-07DDD3	Tongue River-Ludlow aquifer	26

BURKE COUNTY

485618102455401	Local number, 163-093-17DDD	Columbus aquifer	27
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BURLEIGH COUNTY

464540100222101	Local number, 138-077-22AAD	McKenzie aquifer	28
470556100142501	Local number, 142-075-19CCB	Wing Channel aquifer	30

CASS COUNTY

465312096543301	Local number, 139-049-06ADB	West Fargo aquifer	31
470818097294104	Local number, 142-054-03DDD4	Page aquifer	33
471326097332902	Local number, 143-054-08BBB2	Page aquifer	34

CAVALIER COUNTY

484534098254401	Local number, 161-060-21BBB	Pierre Shale aquifer	35
484444098504301	Local number, 161-063-29BBB	Munich aquifer	36

DICKEY COUNTY

460830098224701	Local number, 131-062-24DDD1	Nortonville aquifer	37
460830098224702	Local number, 131-062-24DDD2	Ellendale aquifer	38

DIVIDE COUNTY

484746104015901	Local number, 161-103-02CCB	Skjermo Lake aquifer	39
485439103155701	Local number, 163-097-27CCC	Yellowstone aquifer	40

DUNN COUNTY

471323102290101	Local number, 143-093-09BCB	Sentinel Butte aquifer	42
472144102453402	Local number, 145-095-22DAD2	Killdeer aquifer	43
472144102453403	Local number, 145-095-22DAD3	Killdeer aquifer	45
472537102144801	Local number, 146-091-35BBC	Goodman Creek aquifer	47

EDDY COUNTY

473934099032301	Local number, 148-066-03DDC	New Rockford aquifer	49
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EMMONS COUNTY

462539100061101	Local number, 134-075-15BBB	Fox Hills aquifer	51
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FOSTER COUNTY

473051099093601	Local number, 147-067-35AAA	Carrington aquifer	52
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GOLDEN VALLEY COUNTY

465421103590706	Local number, 140-105-30CCC6	Hell Creek-Fox Hills aquifer	53
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GRAND FORKS COUNTY

475646097372201	Local number, 152-054-31BBB	Elk Valley aquifer	54
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GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

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GROUND-WATER LEVELS--Continued

GRANT COUNTY

463000101575101	Local number, 135-090-23BBB1	Fox Hills aquifer	56
463000101575102	Local number, 135-090-23BBB2	Tongue River aquifer.....	57

GRIGGS COUNTY

472412098261201	Local number, 145-061-04DAD1	Spiritwood aquifer	58
472624098013101	Local number, 146-058-26BBDB	McVile aquifer	60
472555098013501	Local number, 146-058-26CBC	McVile aquifer	61
473425098232901	Local number, 147-061-01CCC	Spiritwood aquifer	63

HETTINGER COUNTY

463153102521001	Local number, 135-097-04DCA	Fox Hills aquifer	65
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KIDDER COUNTY

470638099324301	Local number, 142-070-16DDD	Long Lake aquifer.....	67
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LaMOURE COUNTY

461958098132901	Local number, 133-060-16DAA	LaMoure aquifer	69
462447098432602	Local number, 134-064-22BBB2	Edgeley aquifer	71

LOGAN COUNTY

463417099271002	Local number, 136-070-26BBB2	Streeter aquifer.....	73
463240099483801	Local number, 136-073-35DDD1	Napoleon aquifer.....	74
463240099483802	Local number, 136-073-35DDD2	Napoleon aquifer.....	75

McHENRY COUNTY

480302100515201	Local number, 153-079-30AAA1	Fox Hills aquifer	76
480302100515202	Local number, 153-079-30AAA2	Hell Creek aquifer.....	77
480913100372501	Local number, 154-077-18CCC	New Rockford aquifer.....	78
480725100373303	Local number, 154-078-36AAA3	Fox Hills aquifer	80
480725100373304	Local number, 154-078-36AAA4	Hell Creek aquifer.....	81
481948100305901	Local number, 156-077-13CCB1	Denbigh aquifer	82
481948100305902	Local number, 156-077-13CCB2	Denbigh aquifer	84

McINTOSH COUNTY

455807099450701	Local number, 129-072-30BBB	Zeeland aquifer	86
460411099200701	Local number, 130-069-21BBB1	Spring Creek aquifer.....	87
460411099200702	Local number, 130-069-21BBB2	Spring Creek aquifer.....	88
461446099312801	Local number, 132-071-14DDD1	Wishek aquifer	89
461446099312802	Local number, 132-071-14DDD2	Wishek aquifer	90

McKENZIE COUNTY

474814103104702	Local number, 150-098-23AAB2	Cherry Creek aquifer.....	91
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McLEAN COUNTY

474026100583201	Local number, 148-081-03AAB	Horseshoe Valley aquifer	92
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MERCER COUNTY

472641102105901	Local number, 146-090-20CCC	Fox Hills aquifer	94
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MORTON COUNTY

464734100543501	Local number, 138-081-09ABB1	Fox Hills aquifer	95
464734100543502	Local number, 138-081-09ABB2	Hell Creek aquifer.....	96
464734100543504	Local number, 138-081-09ABB4	Cannonball-Ludlow aquifer	97
464847101303801	Local number, 139-086-35BCC	Sims aquifer	98
464846101464502	Local number, 139-088-34BCC2	Hell Creek aquifer.....	99
464846101464503	Local number, 139-088-34BCC3	Tongue River aquifer.....	100

MOUNTRAIL COUNTY

480120101571901	Local number, 152-088-04BBBD1	Sentinel Butte aquifer	101
480120101571902	Local number, 152-088-04BBBD2	Sentinel Butte aquifer	102

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

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GROUND-WATER LEVELS--Continued

<u>NELSON COUNTY</u>		
474806098133401	Local number, 150-059-20AAA	McVile aquifer 103
480138098074101	Local number, 153-058-32DBB	Pierre Shale aquifer 105
<u>OLIVER COUNTY</u>		
470642101162701	Local number, 142-084-24BBA	Fox Hills aquifer 106
<u>PEMBINA COUNTY</u>		
485425097550502	Local number, 163-056-29CDD2	Pembina River aquifer 107
<u>PIERCE COUNTY</u>		
475139099484801	Local number, 151-072-36AAA1	New Rockford aquifer..... 109
482033099594901	Local number, 156-073-12CCC	Fox Hills aquifer 111
483054100071901	Local number, 158-073-17BBB	Lake Souris aquifer 112
<u>RAMSEY COUNTY</u>		
480449099002402	Local number, 153-065-09DDD2	Spiritwood aquifer 113
480817099013201	Local number, 154-065-21CCC	Spiritwood aquifer 114
481929098392601	Local number, 156-062-20BBB	Pierre Shale aquifer 115
<u>RANSOM COUNTY</u>		
461838097553402	Local number, 133-058-25BBA2	Englevale aquifer 117
462400097552502	Local number, 134-058-24CDC2	Englevale aquifer 118
<u>RENVILLE COUNTY</u>		
484500101294901	Local number, 161-084-24DDD	Fox Hills aquifer 120
<u>RICHLAND COUNTY</u>		
460358096581401	Local number, 130-050-17DDD	Milnor Channel aquifer..... 121
462425096441202	Local number, 134-048-20ADD2	Colfax aquifer 123
462633097163402	Local number, 134-052-06CCD2	Sheyenne Delta aquifer 124
463422097115602	Local number, 136-052-22DDD2	Sheyenne Delta aquifer 126
<u>ROLETTE COUNTY</u>		
484731099504104	Local number, 161-071-03CDD4	Shell Valley aquifer 128
484310099572401	Local number, 161-072-35CDC	Shell Valley aquifer 129
485707100053701	Local number, 163-073-11CCC1	Fox Hills aquifer 130
485707100053702	Local number, 163-073-11CCC2	Hell Creek aquifer..... 131
<u>SARGENT COUNTY</u>		
460120097591803	Local number, 129-058-06AAA3	Oakes aquifer 132
461003097191501	Local number, 131-053-10CCC	Milnor Channel aquifer..... 133
<u>SHERIDAN COUNTY</u>		
474817100063801	Local number, 150-074-14CCC	Martin aquifer 135
<u>SIOUX COUNTY</u>		
460244101272701	Local number, 130-086-28CCC1	Fox Hills aquifer 136
460244101272702	Local number, 130-086-28CCC2	Hell Creek aquifer..... 137
462239100375601	Local number, 134-079-32ADD	Strasburg aquifer 138
<u>STARK COUNTY</u>		
465755102410701	Local number, 140-095-08AAA	Sentinel Butte aquifer 139
<u>STEELE COUNTY</u>		
472024097315201	Local number, 145-054-27CDC	Dakota aquifer..... 141
<u>STUTSMAN COUNTY</u>		
463846098274101	Local number, 137-062-26DDD	Spiritwood aquifer 142
465243098284801	Local number, 139-062-02CCC	Spiritwood aquifer 143
465757098274401	Local number, 140-062-02DDD	Spiritwood aquifer 145

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TOWNER COUNTY

482908099134601	Local number, 158-066-30BBB	Spiritwood aquifer	146
484209099174101	Local number, 160-067-10BBB1	Spiritwood aquifer	147
484209099174102	Local number, 160-067-10BBB2	Spiritwood aquifer	148
485659099222801	Local number, 163-067-18AAA1	Spiritwood aquifer	149
485659099222802	Local number, 163-067-18AAA2	Spiritwood aquifer	150

WALSH COUNTY

481234097234604	Local number, 155-053-25CDD4	Glacial Clay aquifer	151
481234097234605	Local number, 155-053-25CDD5	Glacial Clay aquifer	152
481841097490301	Local number, 156-056-22DDD	Fordville aquifer.....	153
482408097443201	Local number, 157-055-21DBC	Dakota aquifer.....	155
482449098095801	Local number, 157-058-18DDD	Pierre Shale aquifer.....	156

WARD COUNTY

481058101120403	Local number, 154-082-03CDC3	Sundre Buried Channel aquifer.....	157
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WELLS COUNTY

472329099194401	Local number, 145-068-10BCC	Pipestem Creek aquifer	159
474419099371201	Local number, 149-070-09DAA1	New Rockford aquifer.....	161

WILLIAMS COUNTY

481056103024201	Local number, 154-096-08AAA	Hofflund aquifer	163
483016103242801	Local number, 158-099-13DDD	Ray aquifer.....	165
483127103373102	Local number, 158-100-08DAA2	Little Muddy aquifer.....	166
483700103191501	Local number, 159-098-10AAD	West Wildrose aquifer.....	168

GROUND-WATER QUALITY, NETWORK SITES

BENSON COUNTY

475601099264701	Local number, 151-069-01BBB	Maddock aquifer	169
475515099292101	Local number, 151-069-03CCC	Maddock aquifer	169
480958099154801	Local number, 154-067-15BBB	Spiritwood aquifer	169

BOTTINEAU COUNTY

483333101135402	Local number, 159-082-35BBB2	Glenburn aquifer	169
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CAVALIER COUNTY

484444098504301	Local number, 161-063-29BBB	Munich aquifer.....	169
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DICKEY COUNTY

460830098224701	Local number, 131-062-24DDD1	Nortonville aquifer	169
460830098224702	Local number, 131-062-24DDD2	Ellendale aquifer	169

DUNN COUNTY

472144102453402	Local number, 145-095-22DAD2	Killdeer aquifer	169
472144102453403	Local number, 145-095-22DAD3	Killdeer aquifer	169

EDDY COUNTY

473934099032301	Local number, 148-066-03DDC	New Rockford aquifer.....	169
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McHENRY COUNTY

480725100373303	Local number, 154-078-36AAA3	Fox Hills aquifer	169
480725100373304	Local number, 154-078-36AAA4	Hell Creek aquifer.....	169
481948100305901	Local number, 156-077-13CCB1	Denbigh aquifer	169
481948100305902	Local number, 156-077-13CCB2	Denbigh aquifer	169

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McINTOSH COUNTY

455807099450701	Local number, 129-072-30BBB	Zeeland aquifer	169
460411099200701	Local number, 130-069-21BBB1	Spring Creek aquifer	169
460411099200702	Local number, 130-069-21BBB2	Spring Creek aquifer	169
461446099312802	Local number, 132-071-14DDD2	Wishek aquifer	169

McKENZIE COUNTY

474814103104702	Local number, 150-098-23AAB2	Cherry Creek aquifer.....	169
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PEMBINA COUNTY

485425097550502	Local number, 163-056-29CDD2	Pembina River aquifer	169
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PIERCE COUNTY

482033099594901	Local number, 156-073-12CCC	Fox Hills aquifer	169
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RAMSEY COUNTY

480449099002402	Local number, 153-065-09DDD2	Spiritwood aquifer	169
480817099013201	Local number, 154-065-21CCC	Spiritwood aquifer	169

RENVILLE COUNTY

484500101294901	Local number, 161-084-24DDD	Fox Hills aquifer	169
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SHERIDAN COUNTY

474817100063801	Local number, 150-074-14CCC	Martin aquifer	169
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STARK COUNTY

465755102410701	Local number, 140-095-08AAA	Sentinel Butte aquifer	169
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TOWNER COUNTY

484209099174101	Local number, 160-067-10BBB1	Spiritwood aquifer	169
484209099174102	Local number, 160-067-10BBB2	Spiritwood aquifer	169
485659099222801	Local number, 163-067-18AAA1	Spiritwood aquifer	160

WALSH COUNTY

482449098095801	Local number, 157-058-18DDD	Pierre Shale aquifer.....	169
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WELLS COUNTY

472329099194401	Local number, 145-068-10BCC	Pipestem Creek aquifer	169
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GROUND-WATER QUALITY, SHEYENNE DELTA SITES

RANSOM COUNTY

461934097173001	Local number, 133-053-13DCC1	Sheyenne Delta aquifer	173
462628097180701	Local number, 134-053-11AAA1	Sheyenne Delta aquifer	173
462356097215001	Local number, 134-053-21CCC1	Sheyenne Delta aquifer	173
462214097215101	Local number, 134-053-32DDD1	Sheyenne Delta aquifer	173
462248097185004	Local number, 134-053-35BDAB4	Sheyenne Delta aquifer	173
462651097243901	Local number, 134-054-01DACB	Sheyenne Delta aquifer	173
462627097281001	Local number, 134-054-04AAA1	Sheyenne Delta aquifer	173
462540097265501	Local number, 134-054-14BBB1	Sheyenne Delta aquifer	173
462355097280701	Local number, 134-054-27BBB1	Sheyenne Delta aquifer	173
462908097215101	Local number, 135-053-28BBB1	Sheyenne Delta aquifer	173
462828097242301	Local number, 135-053-30CCBB2	Sheyenne Delta aquifer	173
462748097203501	Local number, 135-053-34CBB1	Sheyenne Delta aquifer	173
463147097253701	Local number, 135-054-01CCC1	Sheyenne Delta aquifer	173
463419097185001	Local number, 136-053-26BAB1	Sheyenne Delta aquifer	173

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RICHLAND COUNTY

462211097103401	Local number, 133-052-01BBB1	Sheyenne Delta aquifer	173
462117097130401	Local number, 133-052-03CCC1	Sheyenne Delta aquifer	173
462447097142101	Local number, 134-052-17DDD1	Sheyenne Delta aquifer	173
462259097124001	Local number, 134-052-34BABA	Sheyenne Delta aquifer	173
463124097121101	Local number, 135-052-10ACDA1	Sheyenne Delta aquifer	173
462907097142201	Local number, 135-052-20DDD1	Sheyenne Delta aquifer	173

GROUND-WATER QUALITY, SPIRIT LAKE RESERVATION SITES

BENSON COUNTY

475329098351401	Local number, 151-062-15CCC	Warwick aquifer	181
475258098375001	Local number, 151-062-19ADD1	Warwick aquifer	181
475236098314503	Local number, 151-062-24DDC3	Warwick aquifer	181
475236098455901	Local number, 151-063-19DDCC	Warwick aquifer	181
475308098424801	Local number, 151-063-22CBBB	Warwick aquifer	181
475212098430701	Local number, 151-063-29ADDB	Warwick aquifer	181
475510098515502	Local number, 151-064-04CCC2	Warwick aquifer	181
475509098542502	Local number, 151-064-06CCC2	Warwick aquifer	181
475827099061501	Local number, 152-066-21AAD1	Spiritwood aquifer	181

EDDY COUNTY

474911098375601	Local number, 150-062-07DDA	Warwick aquifer	181
474839098352401	Local number, 150-062-16ADD	Warwick aquifer	181
474943098402001	Local number, 150-063-12BBC	Warwick aquifer	181
474817098304001	Local number, 150-063-16DDA	Warwick aquifer	181

NELSON COUNTY

474714098290201	Local number, 150-061-29AAA	Warwick aquifer	181
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INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with many other agencies, obtains a large amount of data pertaining to the water resources of North Dakota each water year. These data, accumulated during 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 will be published annually in this report series entitled "Water Resources Data - North Dakota."

This report includes records on ground water in North Dakota. Specifically, it contains water-level records for 117 wells and water-quality records for 65 wells. Locations of the ground-water wells are shown in figure 1. Additional ground-water information for North Dakota is contained in the files, data bases, and other published reports of the U.S. Geological Survey.

This series of annual reports for North Dakota began with the 1961 water year report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. For the 1975-95 water years, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels. Beginning with the 1996 water year, ground-water levels and ground-water quality data will be published in a separate volume for North Dakota.

Prior to introduction of this series and for several water years concurrent with it, water resources data for North Dakota were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 5 and 6." For the 1961-70 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941-70 water years were published annually under the title "Quality of Surface Waters of the United States," and ground-water levels for the 1935-74 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers are in libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Branch of Information Services, Box 25286, Denver, CO 80225-0286.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official U.S. Geological Survey reports have 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 ND-02-2." For archiving and general distribution, the reports for the 1971-74 water years

also are identified as water-data reports. These water-data reports are for sale in paper copy or may be purchased on microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including the current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephoning (701) 250-7406.

COOPERATION

Organizations that assisted in the collection of ground-water data in this report through joint funding agreements with the U.S. Geological Survey are:

North Dakota State Water Commission

SUMMARY OF HYDROLOGIC CONDITIONS

The geography and geology of North Dakota are sufficiently complex that a summary of ground-water conditions over the entire State is difficult. Descriptions of conditions in specific aquifers apply only to that geographic area and cannot be considered to be the same for other geographic areas.

Ground-water levels fluctuate in response to a variety of stresses and changes in stress. Short- and long-term climatic conditions can lead to changes in natural recharge and discharge. Superimposed on the natural fluctuations in water levels are changes caused by increasing or decreasing ground-water withdrawals and, in some areas, changes caused by recharge from surface irrigation. A persistent climatologic pattern that has caused above-average precipitation generally has prevailed in North Dakota since the winter of 1992-93.

EXPLANATION OF THE RECORDS

The ground-water records published in this report are for the 2002 water year that began October 1, 2001, and ended September 30, 2002. A calendar of the water year is provided on the inside of the front cover. The records contain ground-water level and ground-water quality data. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Well Identification Numbers

Each well in this report is assigned a unique identification number. This number applies specifically to a given well and to no other. The number usually is assigned when a well is first established and is retained for that well indefinitely. The system used by the U.S. Geological Survey to assign identification numbers for ground-water well sites is based on geographic location.

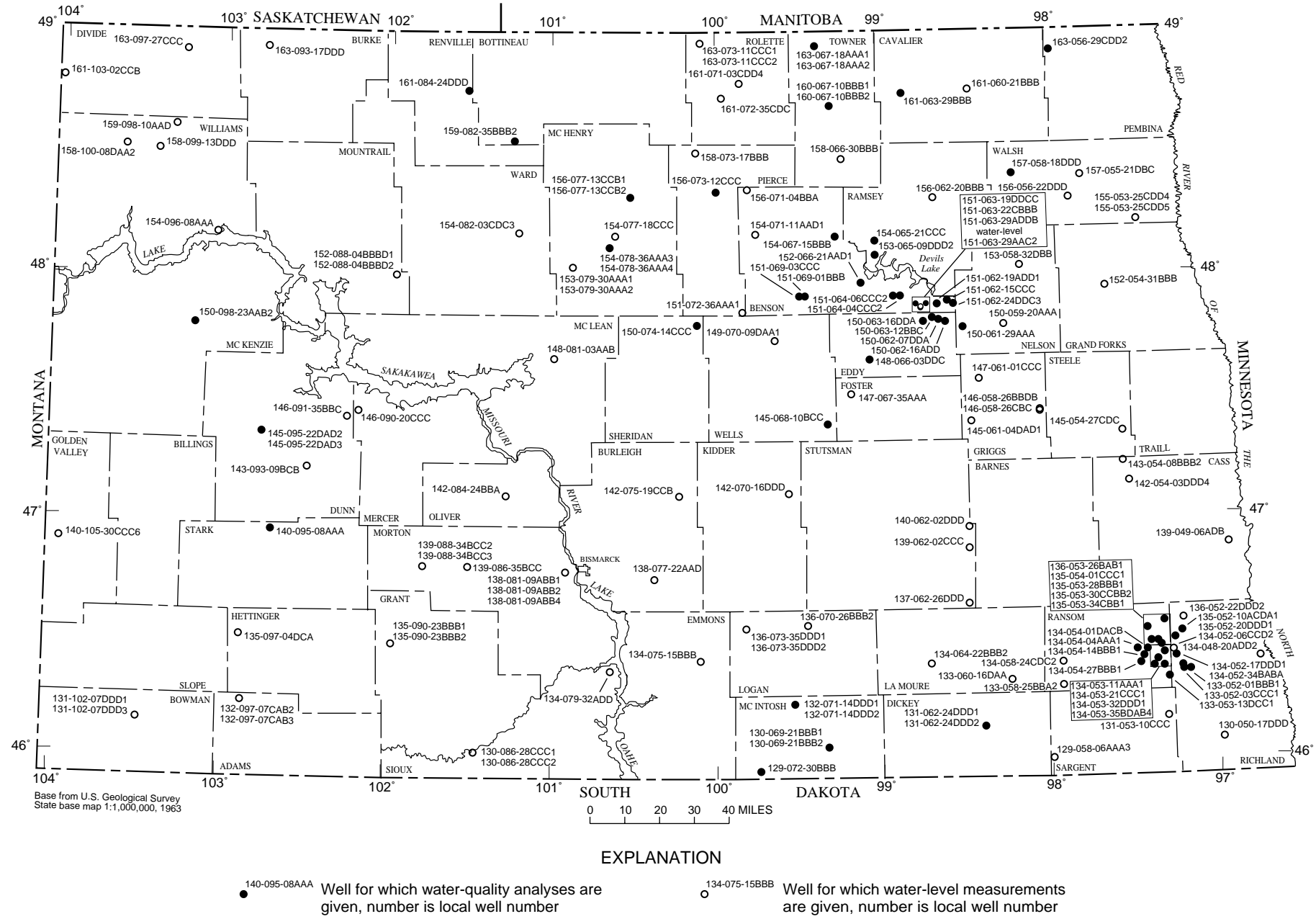


Figure 1. Location of ground-water observation wells.

Latitude-Longitude System

The identification numbers for wells are assigned according to the grid system of latitude and longitude (fig. 2). The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are 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.

Local Well Numbers

In order to compare data for wells in other publications in North Dakota, such as the county ground-water studies, the wells in this report also are numbered according to a system based on the location in the public-land classification of the U.S. Bureau of Land Management. The system is illustrated in figure 3. The first number denotes the township north of a base line, the second number denotes the range west of the fifth principal meridian, and the third numeral denotes the section in which the well is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre tract). For example, well 139-049-15ADC is in the SW¹/₄SE¹/₄NE¹/₄ sec.15, T.139 N., R.049 W. Consecutive terminal numbers are added if more than one well is recorded within a 10-acre tract.

Records of Ground-Water Levels

Water-level data from a network of observation wells are given in this report. These data are intended to provide a representation of the sampling and historical record of water-level changes in some of the important aquifers. Locations of the observation wells in this network in North Dakota are shown in figure 1.

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 reliability.

Water-level records are obtained from direct measurements with a steel tape or from the shaft encoder of a water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum. Land-surface datum is a datum plane that is approximately at land surface at each well. The elevation of the land-surface datum is given in the well description. The height of the

measuring point above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Data Presentation

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.

Records of water-level data are published in the section "Ground-Water Levels". Data for ground-water levels are listed alphabetically by county in each section. The prime identification number for a given well is the 15-digit number derived from the latitude-longitude location. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well.

Availability of Data

All water-level measurements and recorder data are stored in computer files as well as office files and are available in a tabular listing similar to those published in this report. Data in this report are for the 12-month water year ending September 30. Information about reports and other data on ground-water levels in North Dakota may be obtained from the District office at the address given on the back of the title page.

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that, for most sampling sites, they consist of only one set of measurements for the water year. Changes in quality of ground water ordinarily occur slowly; therefore, for general purposes, one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement 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 the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, specific conductance, and pH need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ

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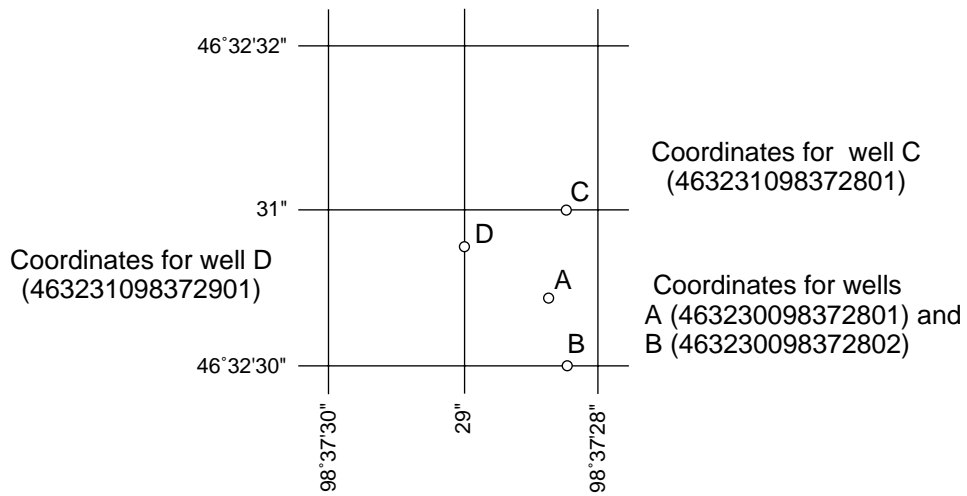


Figure 2. System for numbering wells (latitude and longitude).

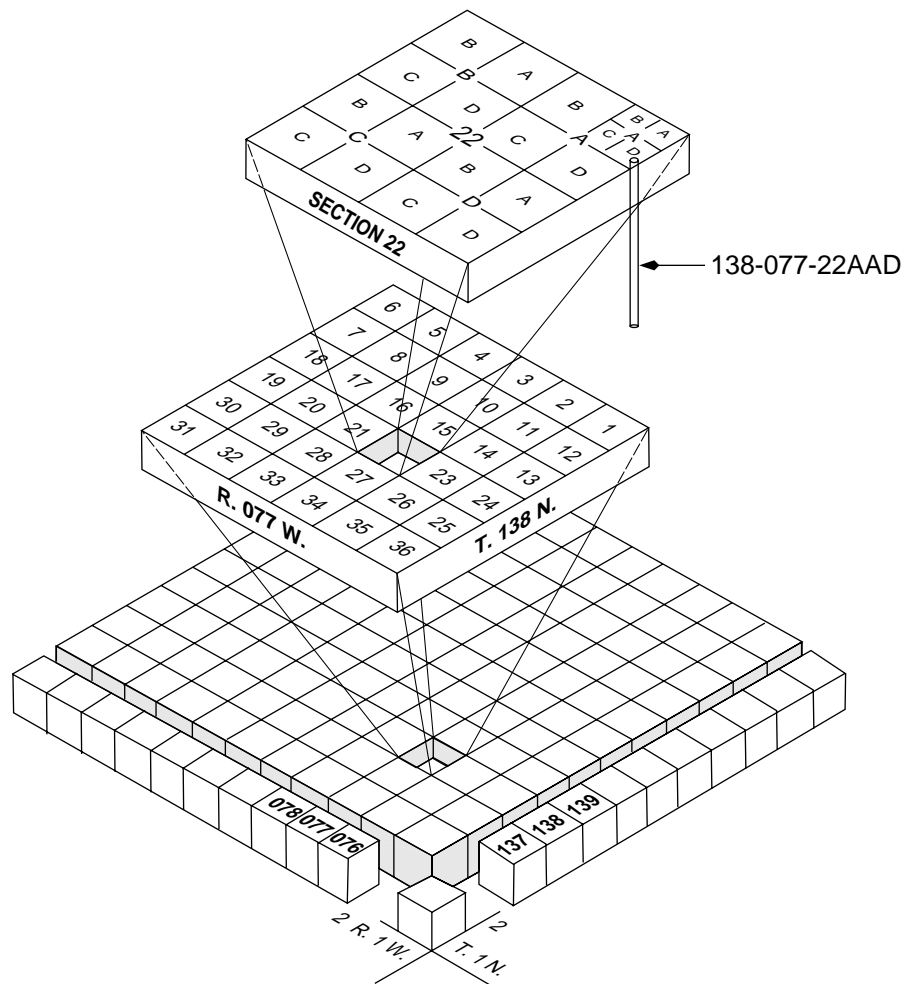


Figure 3. System for numbering wells (township and range).

water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are detailed in the TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These references are listed in the "Publications on Techniques of Water-Resources Investigations" section of this report. These methods are consistent with ASTM standards and generally follow ISO standards.

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

Data Collection and Computation

Ground-water quality data published in this report were obtained by analysis of samples collected when routine maintenance was performed on wells in specific areas. Routine well maintenance is scheduled for about one third of the well network each year and a smaller subset of wells is sampled. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. Ground-water quality data for special projects also may be included in this report. 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.

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey TWRI publications referred to in the "Onsite Measurements and Sample Collection" section in this data report. In addition, the TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casing.

Data Presentation

Records of ground-water quality are published in the section "Ground-Water Quality". Data for ground-water quality are listed alphabetically by county. The prime identification number for a given well is the 15-digit number derived from the latitude-longitude location. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well. No descriptive statements are given for ground-water-quality records; however, the well number, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water.

Availability of Data

All ground-water quality data are stored in computer files as well as office files and are available in a tabular listing similar to those published in this report. Data in this report are for the 12-month water year ending September 30. Information about reports and other data on ground-water quality in North Dakota may be obtained from the District office at the address given on the back of the title page.

Remark Codes

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

PRINT OUTPUT	REMARK
E	Estimated value.
<	Actual value is known to be less than the value shown.
M	Presence verified, not quantified

ACCESS TO USGS WATER DATA

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

<http://water.usgs.gov>

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. 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 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.

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.

Dissolved refers to that material in a representative water sample which passes through a 0.45 micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determination of "dissolved" constituents are made on subsamples of the filtrate.

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 the 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 0.493 to reflect the change.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

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

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

Microsiemens per centimeter at 25 degrees Celsius (US/CM, $\mu\text{S/cm}$) is a unit for reporting specific electrical conductance.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute 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.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

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.

Parameter Code is a 5-digit number used in the U.S. Geological Survey's data system, National Water Information System (NWIS), to uniquely identify a specific constituent. The codes used in NWIS are the same as those used in the U.S. Environmental Protection Agency's data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

pH indicates the degree of acidity or alkalinity of water and is expressed in pH units. The pH value of a solution is the negative logarithm of the concentration of hydrogen ions, in moles per liter. A pH of 7.0 indicates that the water is neither acid nor alkaline. pH readings progressively less than 7.0 denote increasing acidity and those progressively greater than 7.0 denote increasingly alkalinity. The pH of most natural surface waters ranges between 6 and 8.

Sea level refers to the National Geodetic Vertical Datum 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.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 degrees Celsius. 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 about 65 percent of the specific conductance (in microsiemens). This relation is not constant from well to well, 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 water-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 water-suspended sediment mixture and that the analytical method determined all of the constituent in the sample.)

Water year in Geological Survey reports dealing with surface- ground-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called "water year 2002."

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

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.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the USGS, 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.

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 A. Surface-Water Techniques

- 3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS–TWRI book 3, chap. A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS–TWRI book 3, chap. A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI book 3, chap. A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 pages.
- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 pages.

- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI book 3, chap. A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI book 3, chap. A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI book 3, chap. A16. 1985. 52 pages.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI book 3, chap. A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI book 3, chap. A18. 1989. 52 pages.
- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A19. 1990. 31 pages.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 pages.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI book 3, chap. A21. 1995. 56 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.
- 3-B8. *System and boundary conceptualization in ground-water flow simulation*, by T.E. Reilly: USGS–TWRI book 3, chap. B8. 2001. 29 pages.

Section C. Sedimentation and Erosion Techniques

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI book 3, chap. C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 pages.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

- 4-A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 pages.
- 4-A3. *Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at <http://water.usgs.gov/pubs/twri/twri4a3/>. (Accessed August 30, 2002.)

Section B. Surface Water

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.
- 4-B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI book 4, chap. B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI book 4, chap. B2. 1973. 20 pages.

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

Section D. Interrelated Phases of the Hydrologic Cycle

- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, 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. Greeson, 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.

Section C. Sediment Analysis

- 5-C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 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: USGS–TWRI book 6, chap. A5, 1996. 125 pages.

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

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

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

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

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

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

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

Section B. Instruments for Measurement of Discharge

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

Book 9. Handbooks for Water-Resources Investigations**Section A. National Field Manual for the Collection of Water-Quality Data**

- 9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.
- 9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
- 9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.
- 9-A4. *National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.
- 9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999. 149 p.
- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 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.

ADAMS COUNTY

461614102515202. Local number, 132-097-07CAB2.

LOCATION.--Lat 46°16'14", long 102°51'52", Hydrologic Unit 10130205. Owner: North Dakota State Water Commission.

AQUIFER.--Ludlow-Hell Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 590 ft, cased with 578 ft of 2-in diameter steel pipe.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,665 ft. Measuring point: Top of casing 3.60 ft above land-surface datum.

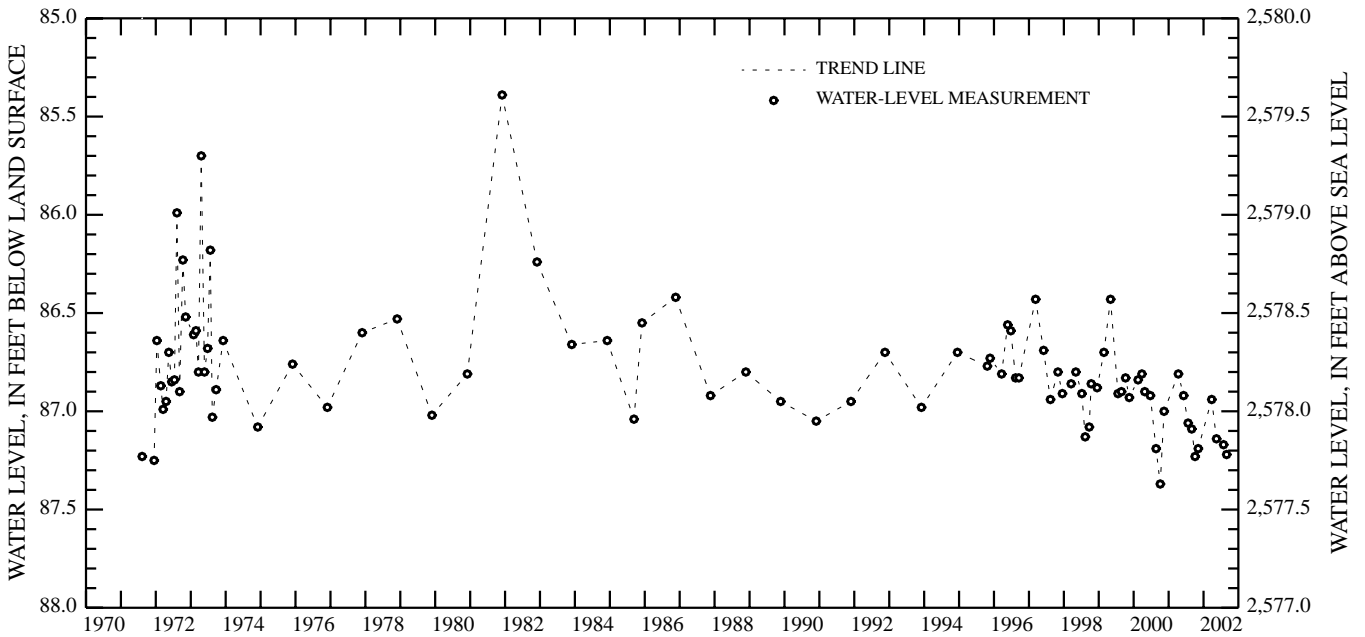
PERIOD OF RECORD.--August 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 85.39 ft below land-surface datum, December 1, 1981; lowest water level, 87.37 ft below land-surface datum, October 5, 2000.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	87.23	NOV 06	87.19	MAR 27	86.94	MAY 16	87.14	JUL 29	87.17	AUG 30	87.22
WATER YEAR 2002		HIGHEST	86.94	MAR 27, 2002		LOWEST	87.23	OCT 04, 2001			

132-097-07CAB2



GROUND-WATER LEVELS

ADAMS COUNTY--Continued

461614102515203. Local number, 132-097-07CAB3.

LOCATION.--Lat 46°16'14", long 102°51'52", Hydrologic Unit 10130205. Owner: North Dakota State Water Commission.

AQUIFER.--Ludlow.

WELL CHARACTERISTICS.--Drilled observation well, depth 229 ft, cased with 217 ft of 1.25-in diameter plastic pipe.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,665 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

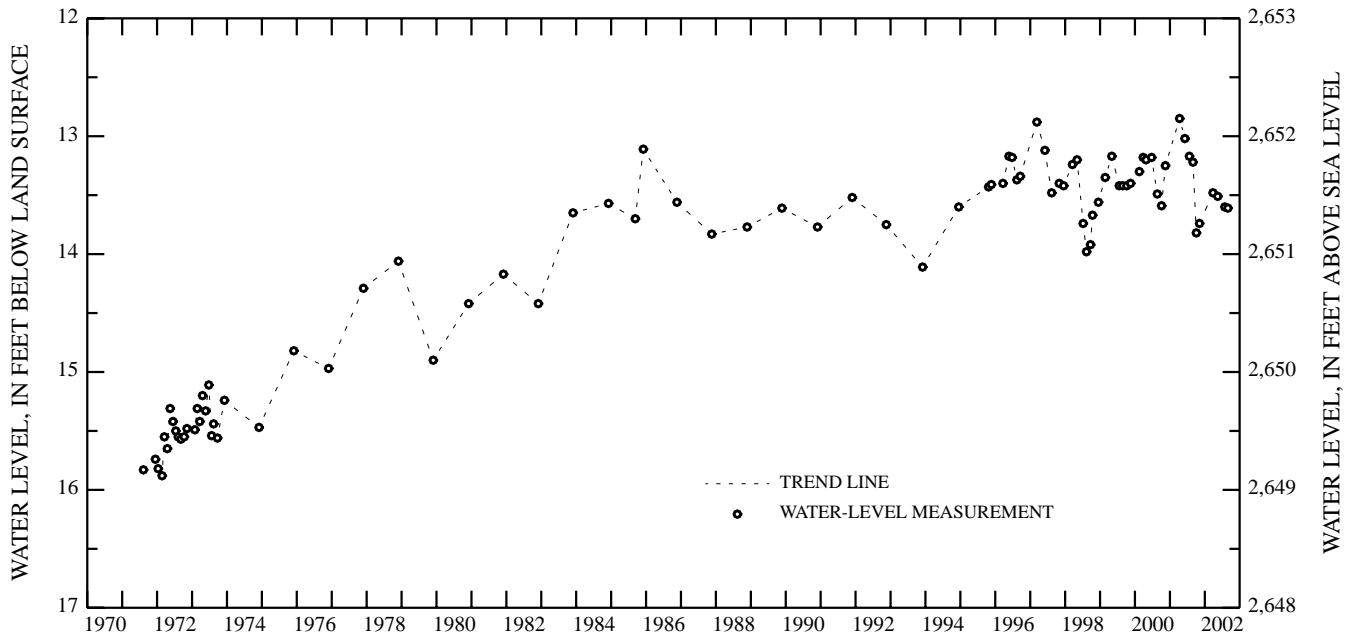
PERIOD OF RECORD.--August 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.85 ft below land-surface datum, April 12, 2001; lowest water level, 16.00 ft below land-surface datum, August 1, 1971.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	13.82	NOV 06	13.74	MAR 27	13.48	MAY 16	13.51	JUL 29	13.60	AUG 30	13.61
WATER YEAR 2002		HIGHEST	13.48	MAR 27, 2002		LOWEST	13.82	OCT 04, 2001			

132-097-07CAB3



BENSON COUNTY

475224098443202. Local number, 151-063-29AAC2.

LOCATION.--Lat 47°52'24", long 98°44'32", Hydrologic Unit 09020201. Owner: U.S. Geological Survey.

AQUIFER.--Warwick.

WELL CHARACTERISTICS.--Drilled observation well, depth 67 ft, cased with 67 ft of 6-in diameter steel pipe, slotted 57 to 67 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder August 1951 to current year. Only intermittent low and EOM water levels obtained from strip chart recorders are available from the District office for August 1951 to June 1974. From June 1974 to current year, daily maximum and minimum recorded water levels also are available.

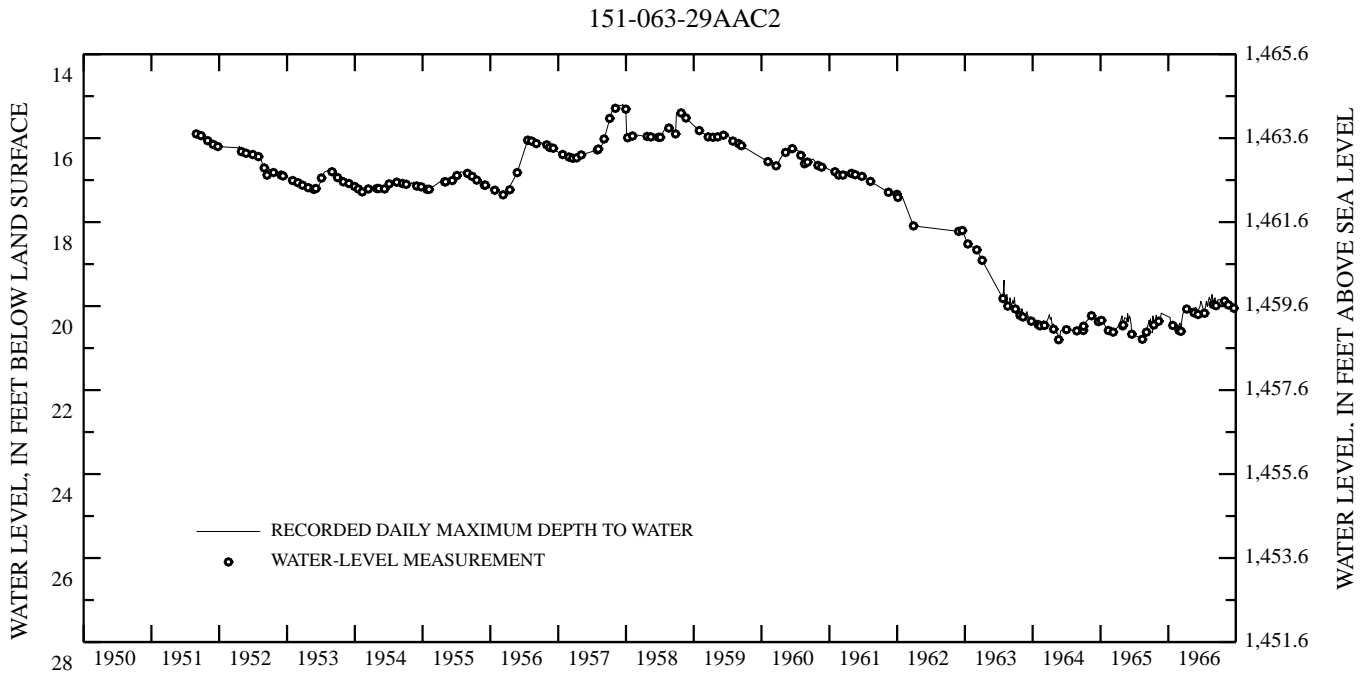
DATUM.--Altitude of land-surface datum is 1,479.6 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

PERIOD OF RECORD.--August 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.29 ft below land-surface datum, November 5, 1957; lowest water level, 27.03 ft below land-surface datum, November 11, 1991.

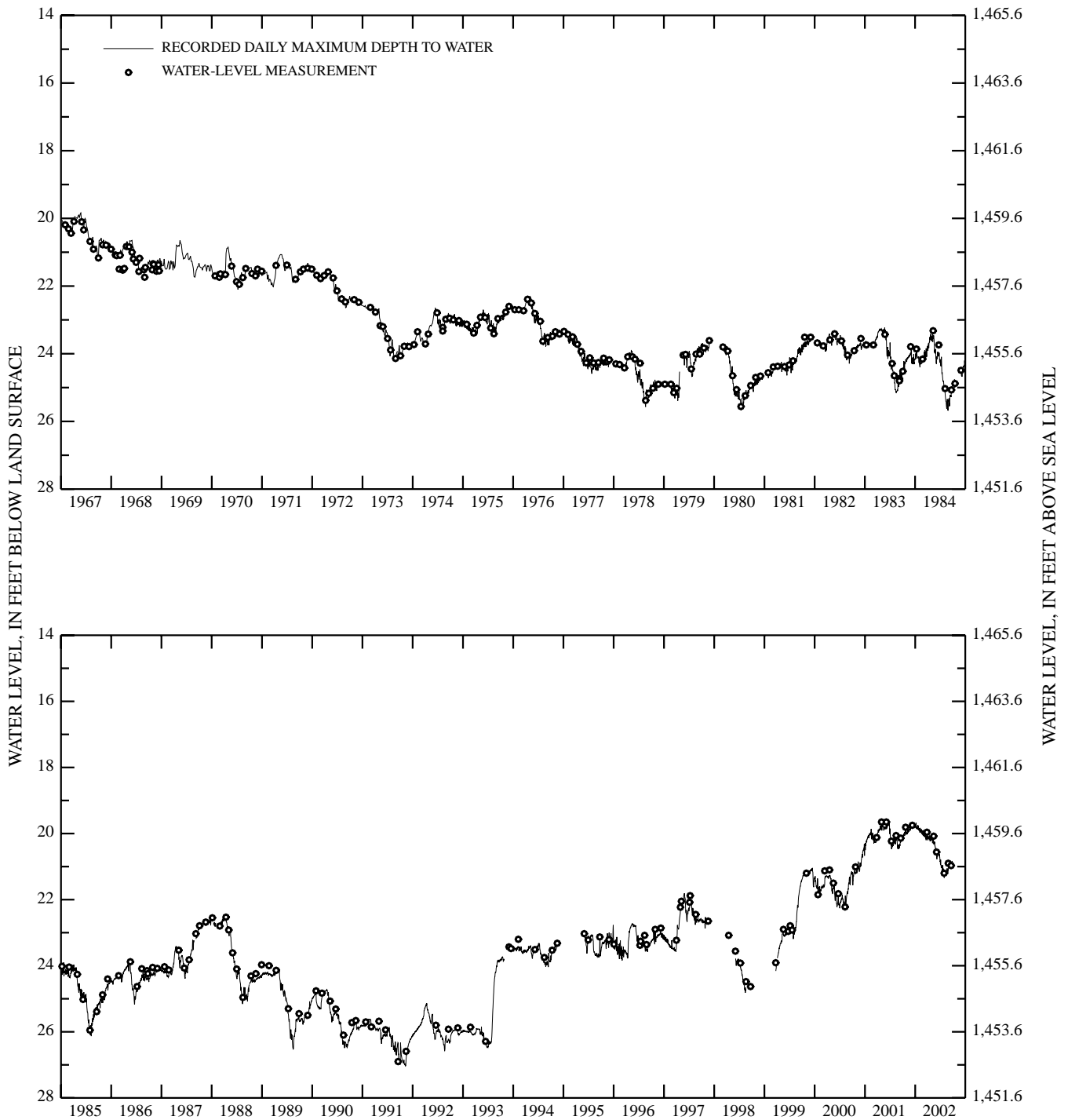
DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.19	19.89	19.78	19.80	19.88	19.99	20.11	20.16	20.62	20.79	21.21	20.97
10	20.08	19.92	19.76	19.85	19.94	20.09	20.17	20.18	20.64	21.03	21.21	20.89
15	19.98	19.95	19.74	19.86	19.87	20.10	20.09	20.26	20.57	21.04	21.16	20.93
20	19.92	19.86	19.74	19.74	20.02	20.09	20.17	20.30	20.58	21.00	21.06	20.87
25	20.01	19.84	19.76	19.80	20.04	20.18	20.22	20.37	20.63	21.09	21.17	20.87
EOM	19.96	19.84	19.73	19.90	20.06	20.09	20.16	20.52	20.82	21.34	20.99	20.87
MAX	20.19	20.02	19.83	19.93	20.06	20.20	20.23	20.52	20.82	21.34	21.23	21.04
MIN	19.89	19.81	19.68	19.68	19.84	19.96	20.04	20.14	20.49	20.79	20.99	20.83
CAL YR 2001 HIGH 19.66 JUN 23 LOW 20.50 JAN 3												
WTR YR 2002 HIGH 19.68 DEC 21 LOW 21.34 JUL 31												



GROUND-WATER LEVELS
BENSON COUNTY--Continued

151-063-29AAC2--Continued



BENSON COUNTY--Continued

475601099264701. Local number, 151-069-01BBB.

LOCATION.--Lat 47°56'01", long 99°26'47", Hydrologic Unit 09020202. Owner: North Dakota State Water Commission.

AQUIFER.--Maddock.

WELL CHARACTERISTICS.--Drilled observation well, depth 180 ft, cased with 97 ft of 1.25-in diameter plastic pipe, screen set 97 to 103 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

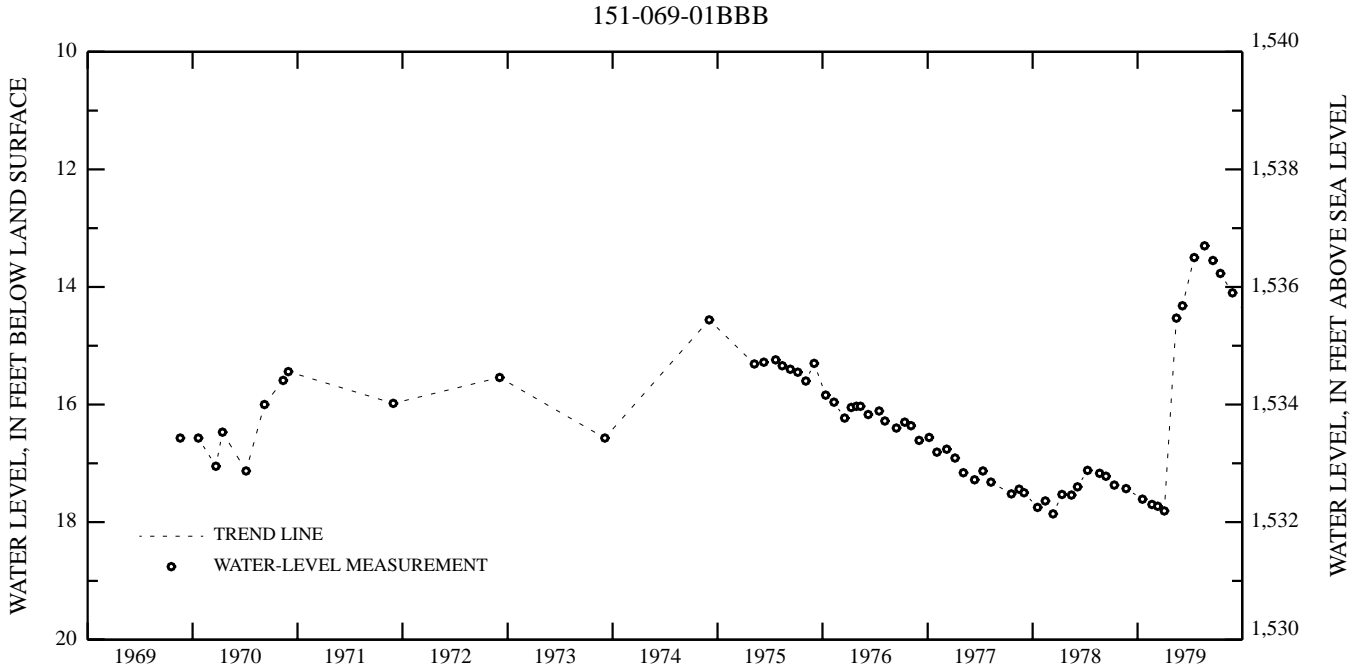
DATUM.--Altitude of land-surface datum is 1,550 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.31 ft below land-surface datum, July 12, 2001; lowest water level, 18.60 ft below land-surface datum, November 15, 1991.

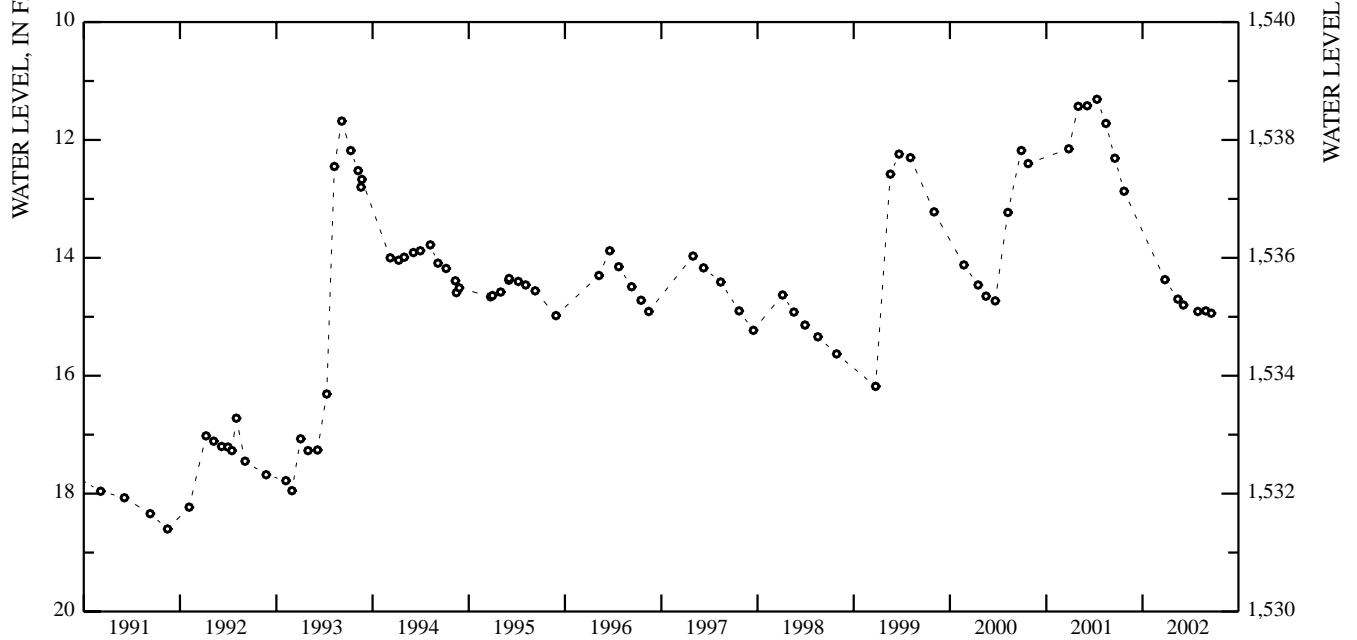
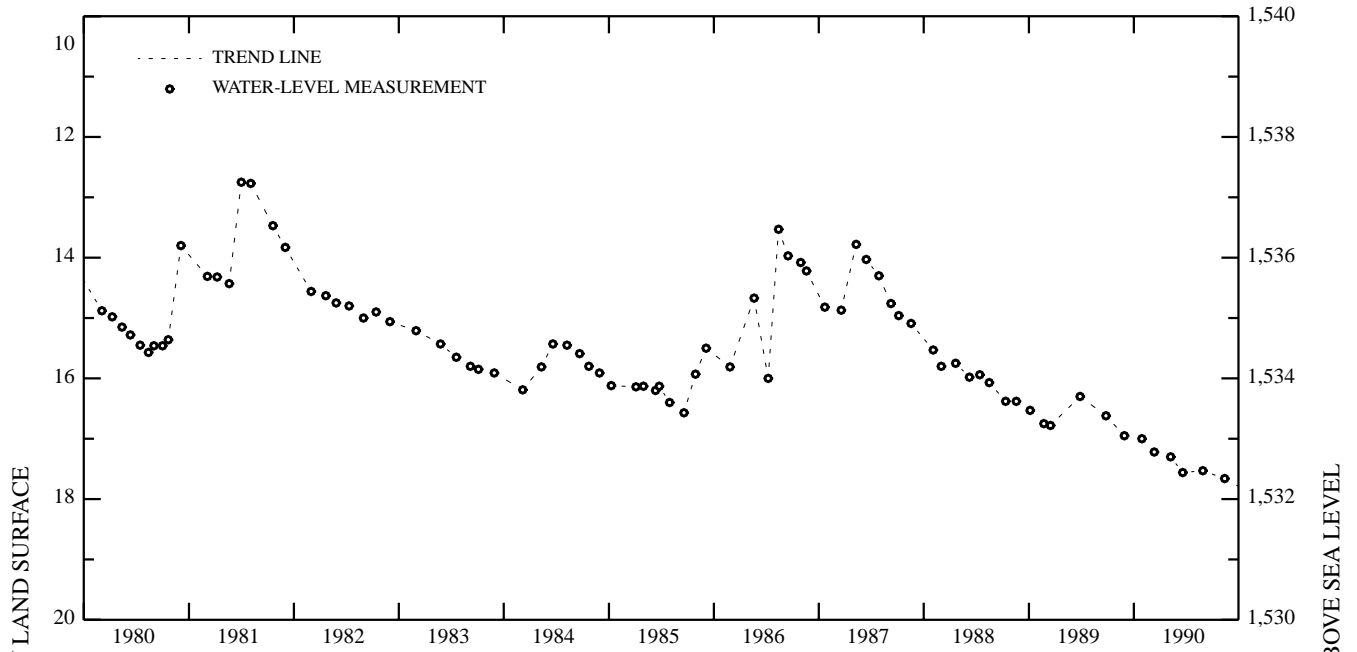
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	12.87	MAY 15	14.70	JUN 05	14.80	JUL 30	14.91	AUG 29	14.90	SEP 19	14.94
MAR 27	14.37										
WATER YEAR 2002		HIGHEST	12.87	OCT 23, 2001		LOWEST	14.94	SEP 19, 2002			



GROUND-WATER LEVELS
BENSON COUNTY--Continued

151-069-01BBB--Continued



BENSON COUNTY--Continued

475515099292101. Local number, 151-069-03CCC.

LOCATION.--Lat 47°55'15", long 99°29'21", Hydrologic Unit 09020202. Owner: North Dakota State Water Commission.

AQUIFER.--Maddock.

WELL CHARACTERISTICS.--Drilled observation well, depth 180 ft, cased with 137 ft of 1.25-in diameter plastic pipe, screen set 137 to 143 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,560 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

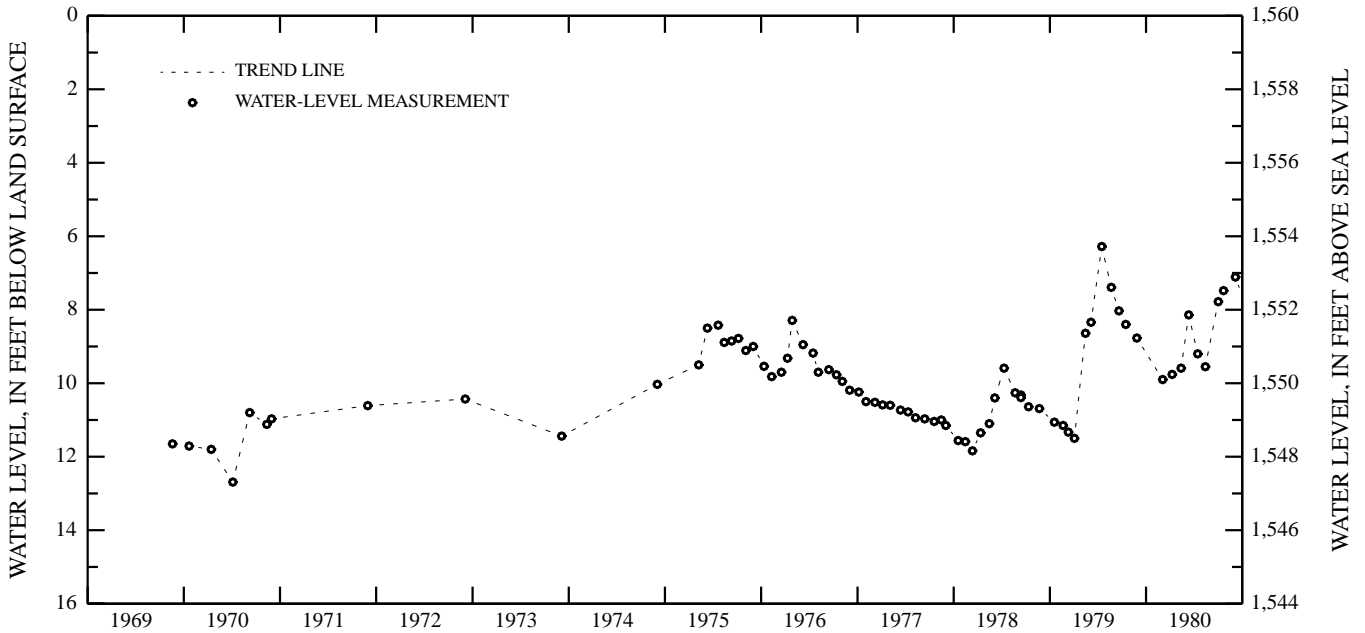
PERIOD OF RECORD.--November 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.52 ft below land-surface datum, May 2, 2001; lowest water level, 13.16 ft below land-surface datum, March 1, 1993.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

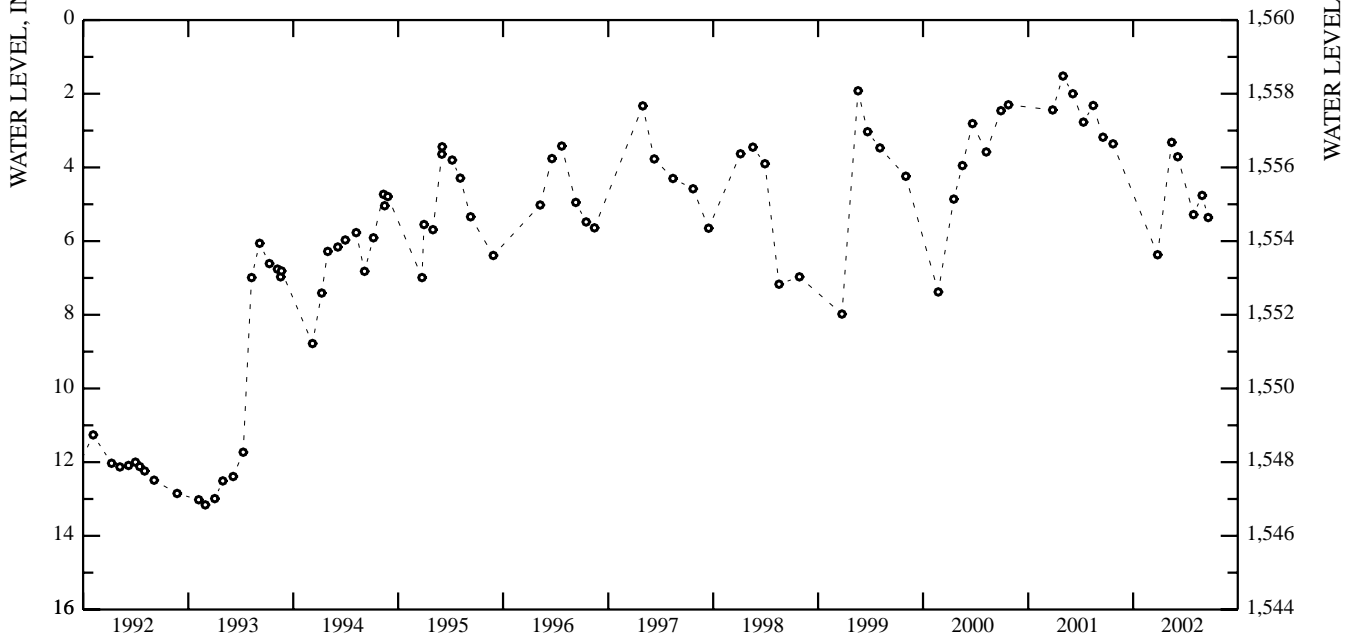
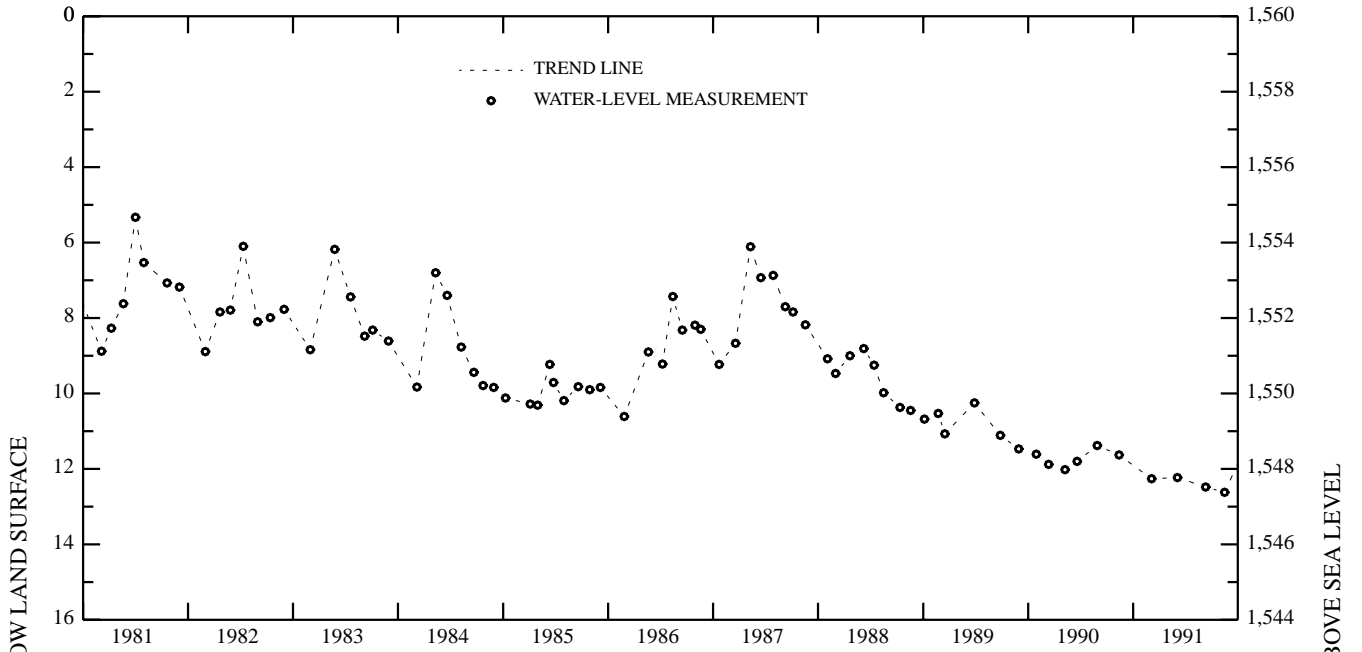
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	3.36	MAY 15	3.32	JUN 05	3.71	JUL 30	5.28	AUG 29	4.76	SEP 19	5.36
MAR 27	6.37										
WATER YEAR 2002		HIGHEST	3.32	MAY 15, 2002	LOWEST	6.37	MAR 27, 2002				

151-069-03CCC



GROUND-WATER LEVELS
BENSON COUNTY--Continued

151-069-03CCC--Continued



BENSON COUNTY--Continued

480958099154801. Local number, 154-067-15BBB.

LOCATION.--Lat 48°09'58", long 99°15'48", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 180 ft, cased with 147 ft of 1.25-in diameter plastic pipe, screen set 147 to 153 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,475 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

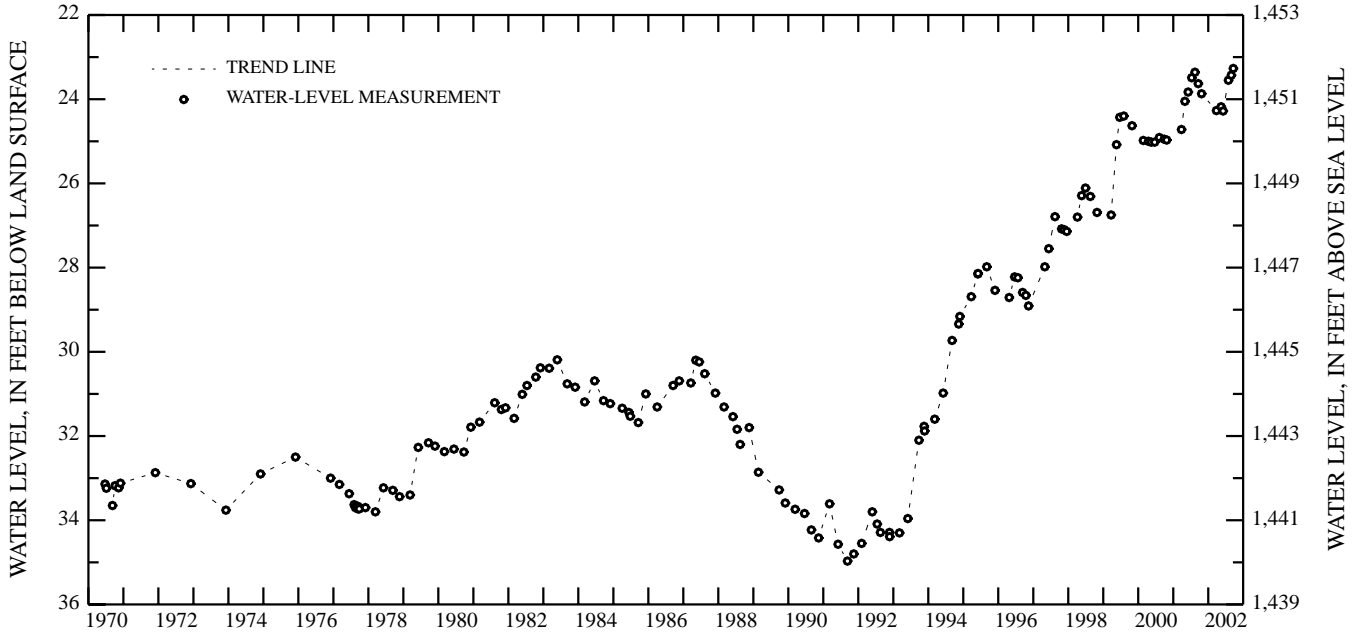
PERIOD OF RECORD.--June 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.27 ft below land-surface datum, September 19, 2002; lowest water level, 34.97 ft below land-surface datum, September 10, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	23.87	MAY 15	24.18	JUN 05	24.28	JUL 30	23.55	AUG 29	23.43	SEP 19	23.27
MAR 27	24.27										
WATER YEAR 2002		HIGHEST	23.27	SEP 19, 2002	LOWEST	24.28	JUN 5, 2002				

154-067-15BBB



GROUND-WATER LEVELS

BENSON COUNTY--Continued

481041099442701. Local number, 154-071-11AAD1.

LOCATION.--Lat 48°10'41", long 99°44'27", Hydrologic Unit 09020202. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 100 ft, cased with 42 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 42 to 45 ft below land-surface datum.

INSTRUMENTATION.--Measured quarterly using a steel tape.

DATUM.--Altitude of land-surface datum is 1,590 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

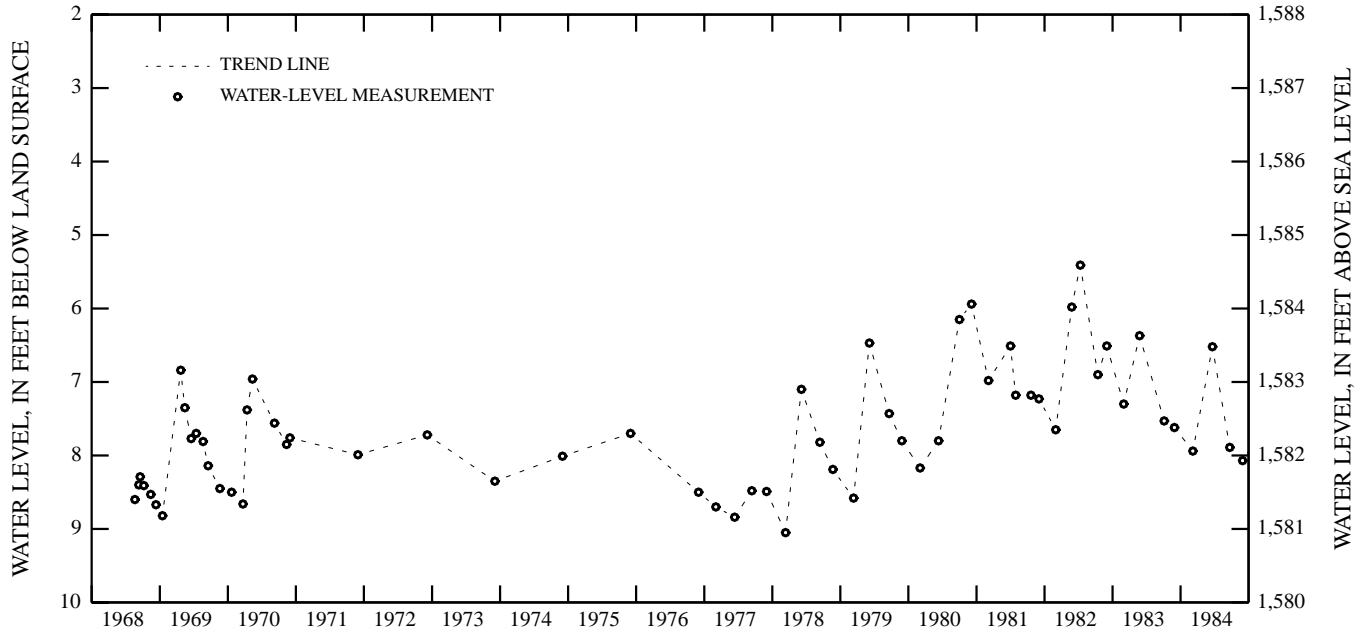
PERIOD OF RECORD.--August 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.25 ft below land-surface datum, May 20, 1999; lowest water level, 9.27 ft below land-surface datum, June 8, 1988.

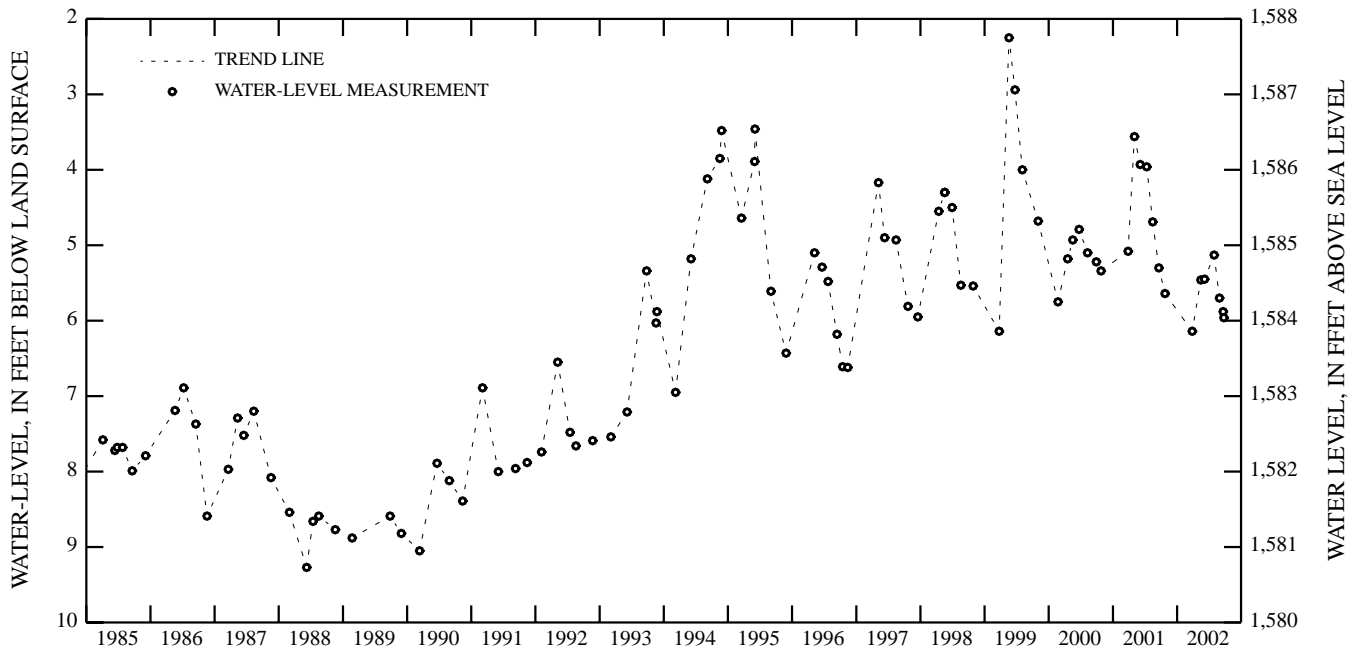
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	5.64	MAY 16	5.46	JUL 31	5.13	AUG 30	5.70	SEP 20	5.88	SEP 24	5.96
MAR 28	6.14	JUN 06	5.45								
WATER YEAR 2002		HIGHEST	5.13	JUL 31, 2002		LOWEST	6.14	MAR 28, 2002			

154-071-11AAD1



154-071-11AAD1--Continued



GROUND-WATER LEVELS

BENSON COUNTY--Continued

482212099475801. Local number, 156-071-04BBA.

LOCATION.--Lat 48°22'12", long 99°47'58", Hydrologic Unit 09010004. Owner: North Dakota State Water Commission.

AQUIFER.--Pleasant Lake.

WELL CHARACTERISTICS.--Drilled observation well, depth 140 ft, cased with 58 ft of 4-in diameter plastic pipe, slotted 18 to 58 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder September 1968 to current year. Only intermittent low and EOM water levels obtained from strip chart recorders are available from the District office for September 1968 to January 1975. From January 1975 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,604 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

PERIOD OF RECORD.--September 1968 to current year.

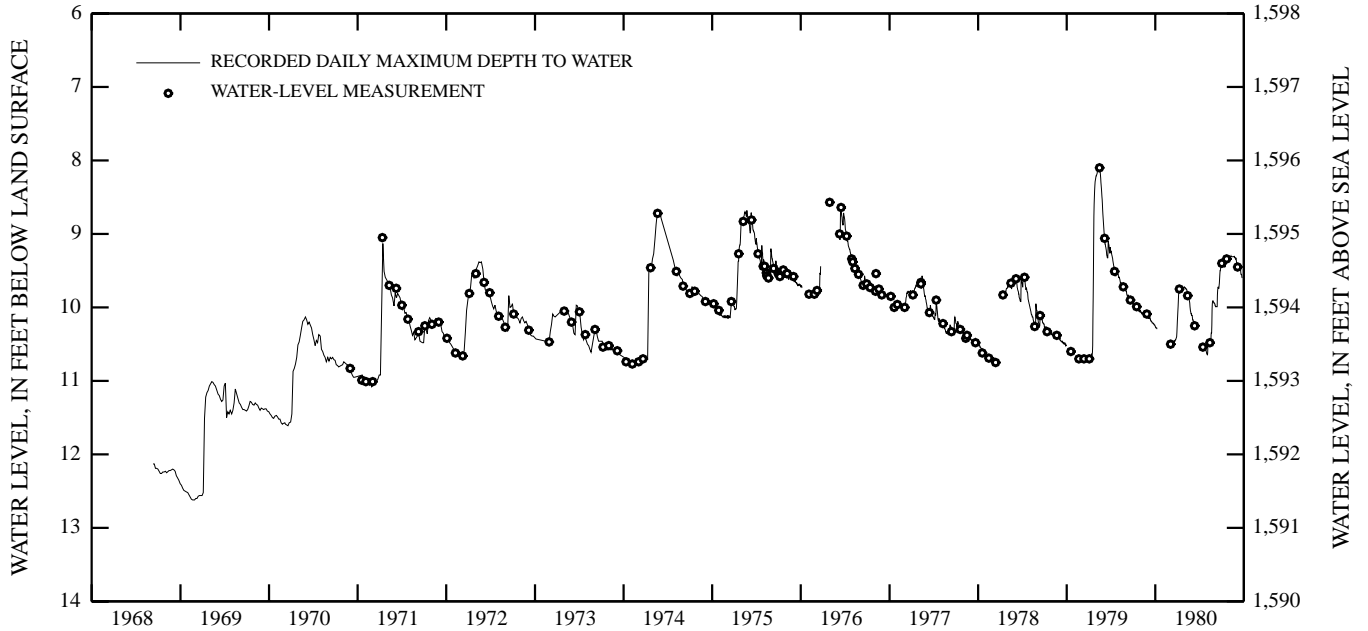
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.84 ft below land-surface datum, May 19, 1999; lowest water level, 13.39 ft below land-surface datum, March 9, 1993.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

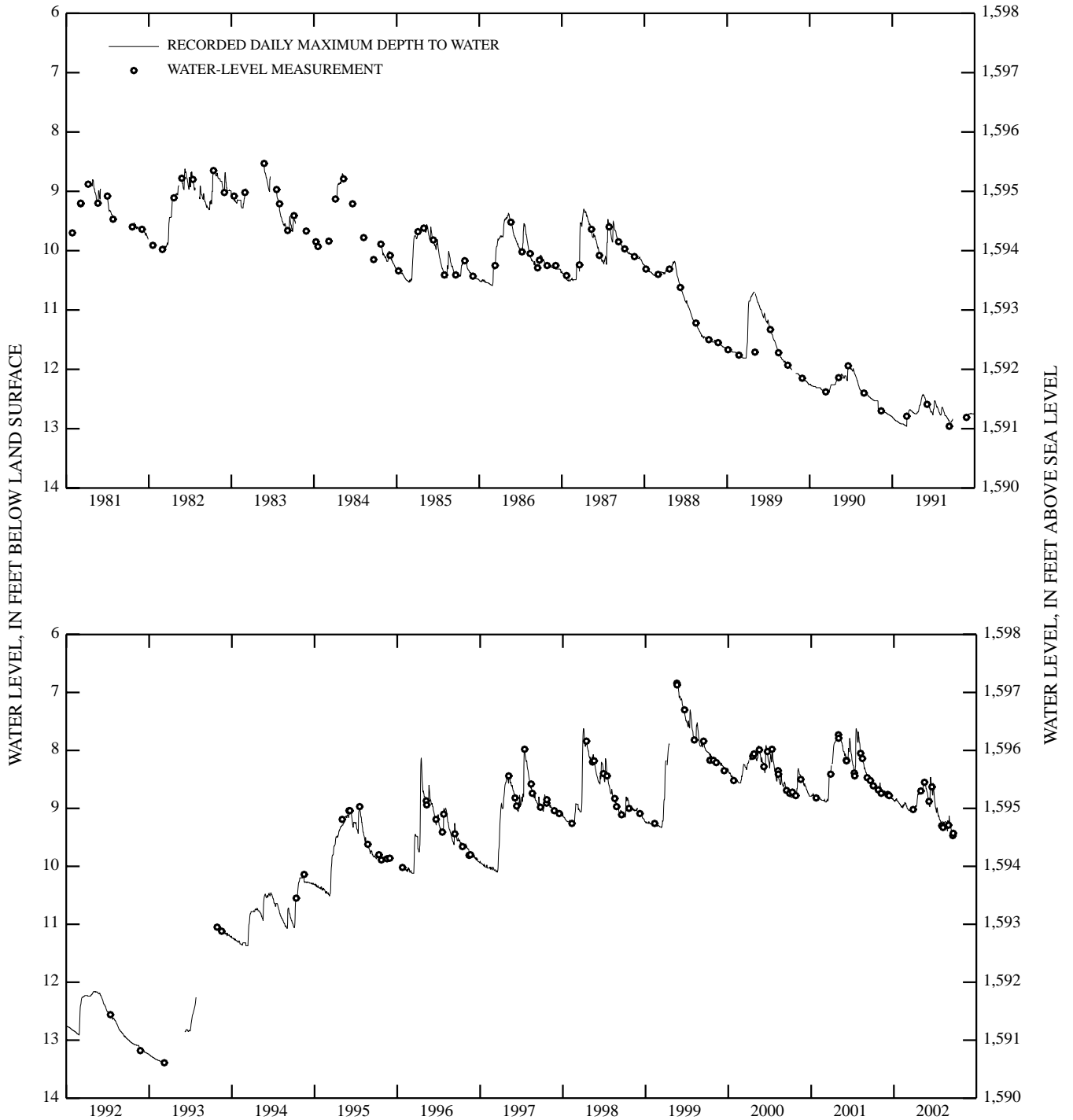
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.66	8.64	8.78	8.87	8.98	9.02	9.01	8.72	8.89	9.01	9.31	9.25
10	8.66	8.69	8.79	8.86	8.99	9.04	8.97	8.63	8.71	8.99	9.23	9.35
15	8.69	8.71	8.79	8.87	8.93	9.04	8.82	8.54	8.57	9.10	9.35	9.41
20	8.69	8.73	8.83	8.88	8.90	9.04	8.76	8.61	8.75	9.15	9.31	9.44
25	8.71	8.75	8.84	8.91	8.96	9.05	8.72	8.67	8.64	9.21	9.39	9.44
EOM	8.59	8.75	8.86	8.95	8.99	9.00	8.71	8.79	8.87	9.30	9.26	9.45
MAX	8.72	8.77	8.86	8.95	8.99	9.05	9.01	8.79	8.97	9.30	9.39	9.46
MIN	8.59	8.56	8.76	8.83	8.90	9.00	8.71	8.53	8.46	8.90	9.21	9.13

CAL YR 2001 HIGH 7.62 JUL 19 LOW 8.89 MAR 4
WTR YR 2002 HIGH 8.46 JUN 12 LOW 9.46 SEP 21

156-071-04BBA



156-071-04BBA--Continued



GROUND-WATER LEVELS

BOTTINEAU COUNTY

483333101135402. Local number, 159-082-35BBB2.

LOCATION.--Lat 48°33'33", long 101°13'54", Hydrologic Unit 09010005. Owner: North Dakota State Water Commission.

AQUIFER.--Glenburn.

WELL CHARACTERISTICS.--Drilled observation well, depth 181 ft, cased with 178 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 178 to 181 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,560 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

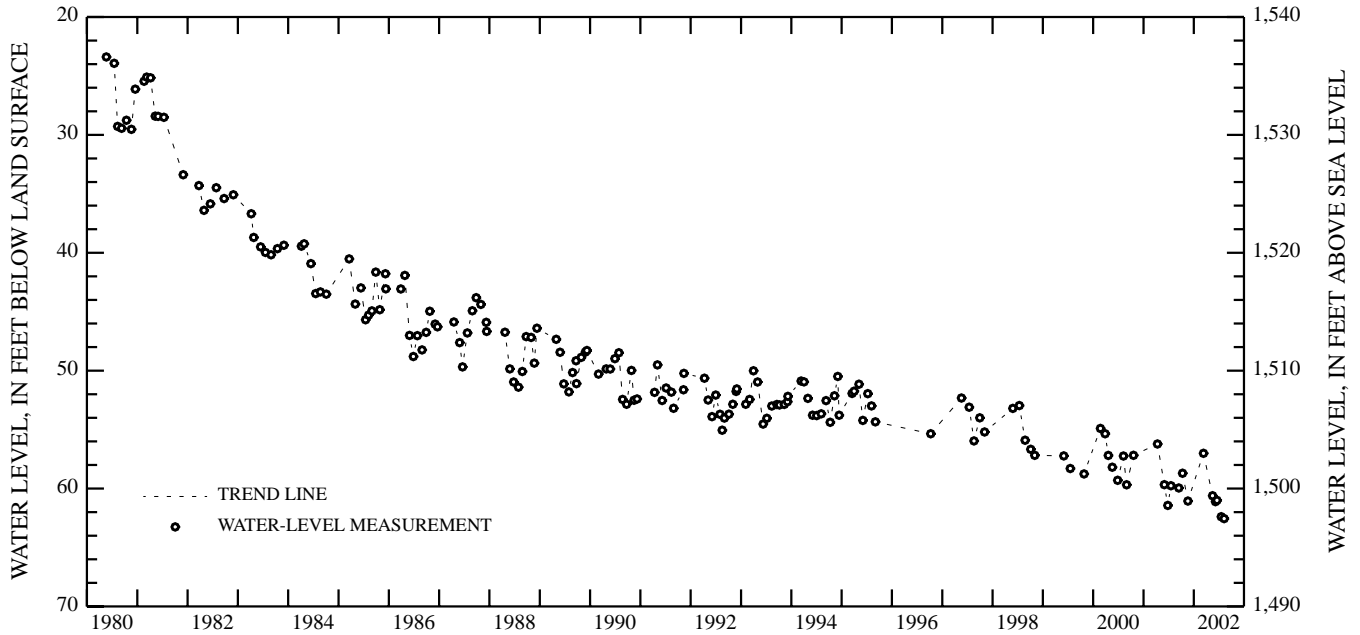
PERIOD OF RECORD.--May 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.39 ft below land-surface datum, May 21, 1980; lowest water level, 62.55 ft below land-surface datum, August 9, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	58.70	MAR 12	57.01	JUN 07	61.11	JUN 18	61.00	JUL 19	62.39	AUG 09	62.55
NOV 19	61.06	MAY 17	60.61								
WATER YEAR 2002		HIGHEST	57.01	MAR 12, 2002	LOWEST	62.55	AUG 09, 2002				

159-082-35BBB2



BOWMAN COUNTY

461039103282801. Local number, 131-102-07DDD1.

LOCATION.--Lat 46°10'39", long 103°28'28", Hydrologic Unit 10130301. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek-Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 963 ft, cased with 951 ft of 2-in diameter steel pipe.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,945 ft. Measuring point: Top of casing 3.20 ft above land-surface datum.

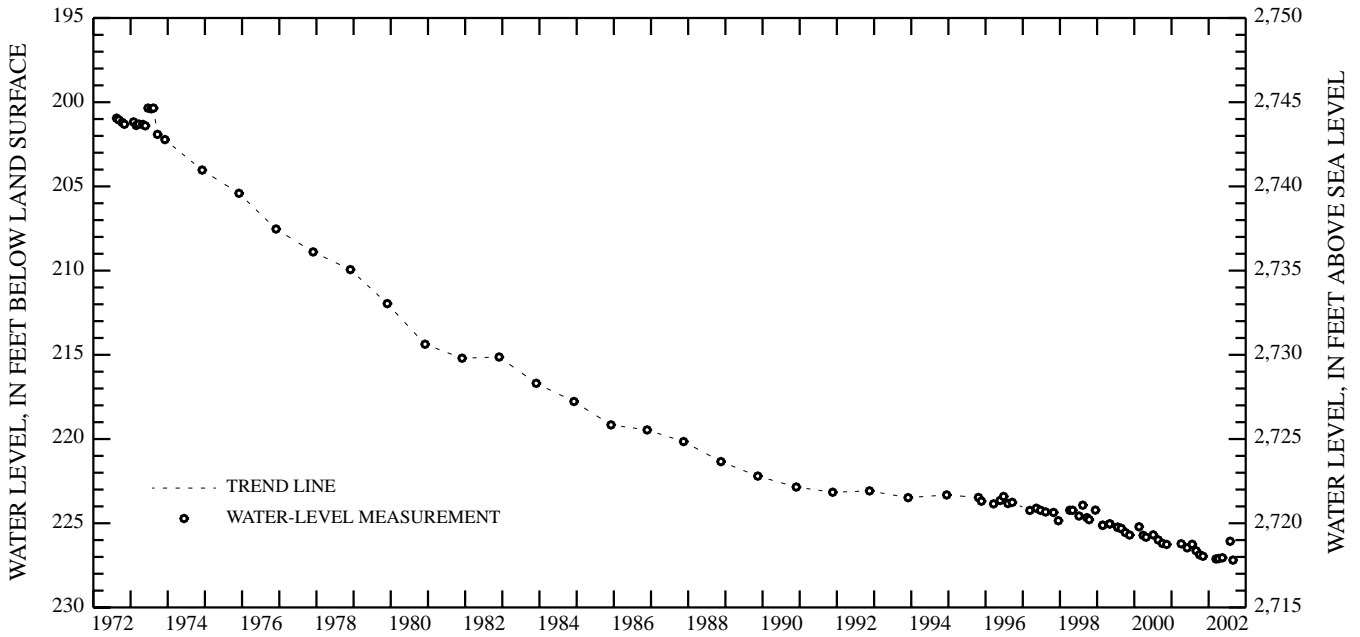
PERIOD OF RECORD.--August 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 200.35 ft below land-surface datum, June 21, 1973, and August 13, 1973; lowest water level, 227.19 ft below land-surface datum, August 28, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	226.87	MAR 14	227.12	APR 09	227.10	MAY 16	227.05	JUL 31	226.07	AUG 28	227.19
NOV 06	226.96										
WATER YEAR 2002		HIGHEST 226.07 JUL 31, 2002		LOWEST 227.19		AUG 28, 2002					

131-102-07DDD1



GROUND-WATER LEVELS

BOWMAN COUNTY--Continued

461039103282803. Local number, 131-102-07DDD3.

LOCATION.--Lat 46°10'39", long 103°28'28", Hydrologic Unit 10130301. Owner: North Dakota State Water Commission.

AQUIFER.--Tongue River-Ludlow.

WELL CHARACTERISTICS.--Drilled observation well, depth 138 ft, cased with 132 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 132 to 138 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,945 ft. Measuring point: Top of casing 2.50 ft above land-surface datum.

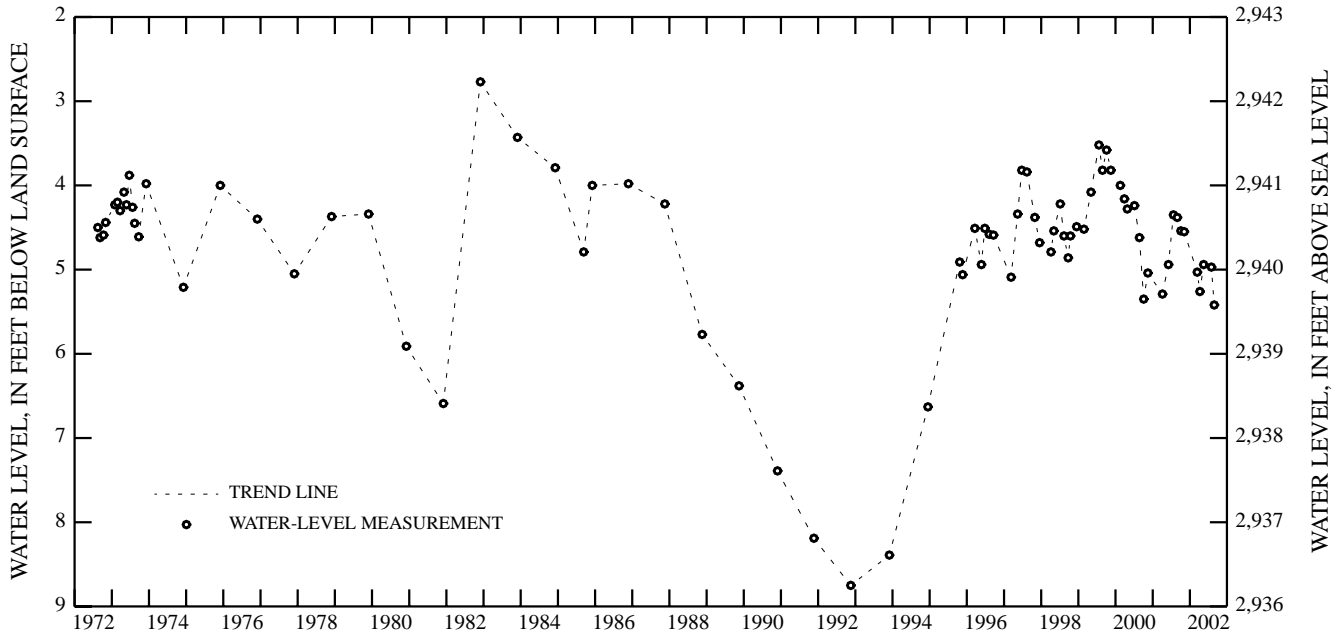
PERIOD OF RECORD.--August 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.77 ft below land-surface datum, December 1, 1982; lowest water level, 8.75 ft below land-surface datum, November 17, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	4.54	MAR 14	5.03	APR 09	5.26	MAY 16	4.94	JUL 31	4.97	AUG 28	5.42
NOV 06	4.55										
WATER YEAR 2002		HIGHEST	4.54	OCT 04, 2001	LOWEST	5.42	AUG 28, 2002				

131-102-07DDD3



BURKE COUNTY

485618102455401. Local number, 163-093-17DDD.

LOCATION.--Lat 48°56'18", long 102°45'54", Hydrologic Unit 09010001. Owner: North Dakota State Water Commission.

AQUIFER.--Columbus.

WELL CHARACTERISTICS.--Drilled observation well, depth 80 ft, cased with 76 ft of 1.25-in diameter plastic pipe, slotted 56 to 76 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

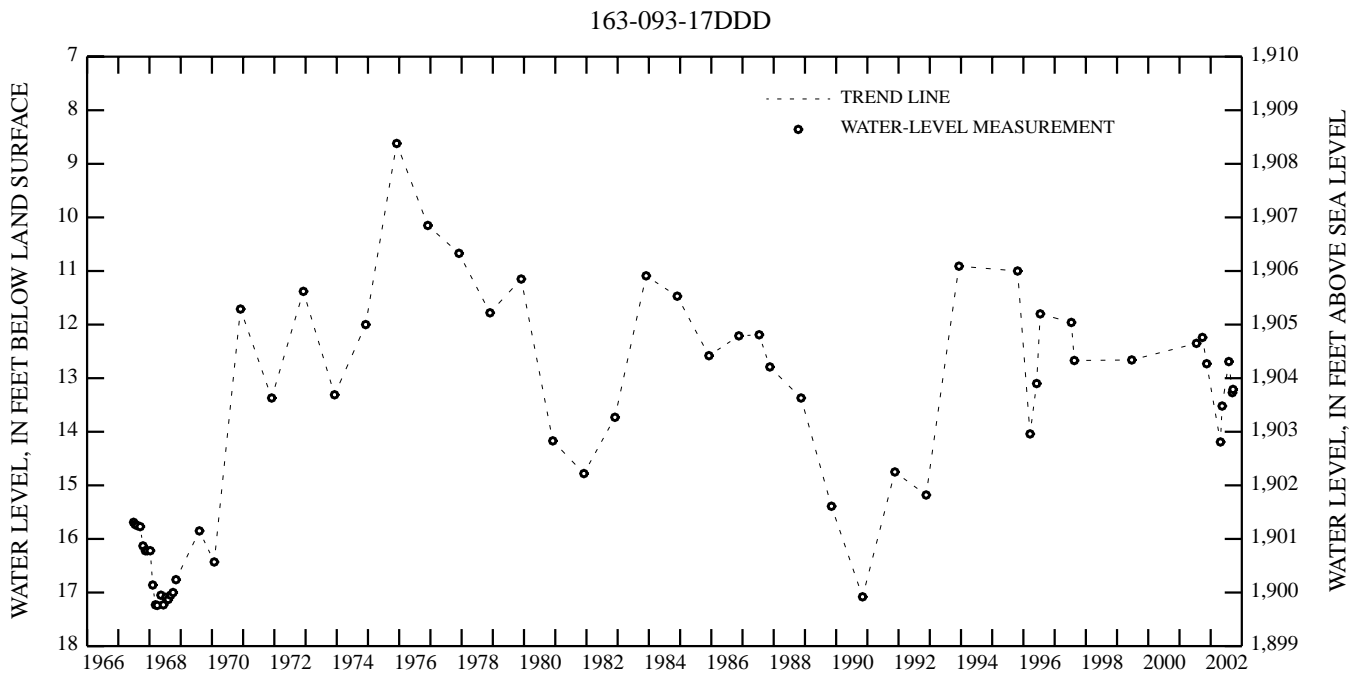
DATUM.--Altitude of land-surface datum is 1,917 ft. Measuring point: Top of casing 1.80 ft above land-surface datum.

PERIOD OF RECORD.--June 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.62 ft below land-surface datum, December 3, 1975; lowest water level, 17.24 ft below land-surface datum, April 1, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 15	12.73	APR 25	14.19	MAY 15	13.52	AUG 01	12.69	SEP 11	13.27	SEP 19	13.21
WATER YEAR 2002		HIGHEST	12.69	AUG 01, 2002	LOWEST	14.19	APR 25, 2002				



GROUND-WATER LEVELS

BURLEIGH COUNTY

464540100222101. Local number, 138-077-22AAD.

LOCATION.--Lat 46°45'40", long 100°22'21", Hydrologic Unit 10130103. Owner: North Dakota State Water Commission.

AQUIFER.--McKenzie.

WELL CHARACTERISTICS.--Drilled observation well, depth 126 ft, cased with 116 ft of 4.5-in diameter steel pipe, slotted 86 to 116 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder September 1961 to current year. Only intermittent low and EOM water levels obtained from strip chart recorders are available from the District office for September 1961 to October 1973. From October 1973 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,720 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

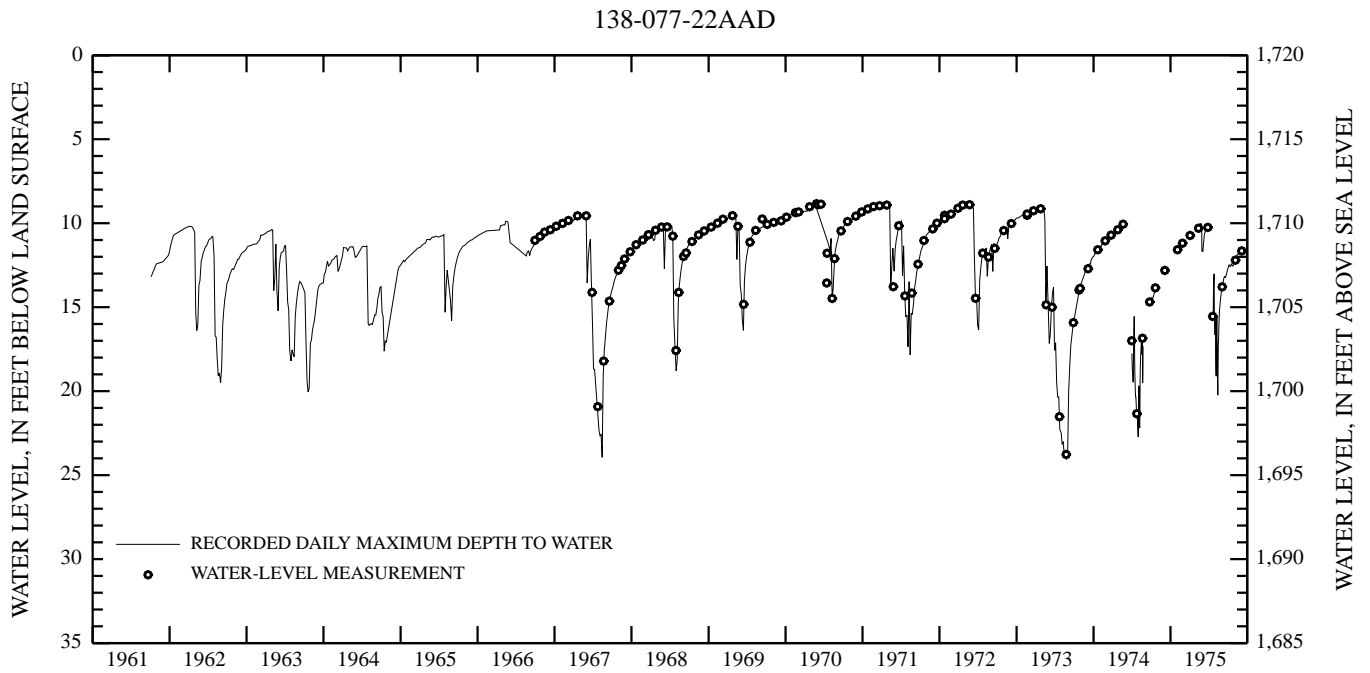
PERIOD OF RECORD.--October 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.87 ft below land-surface datum, June 15, 16, 18, and 19, 2001; lowest water level, 32.88 ft below land-surface datum, August 22-23, 1977.

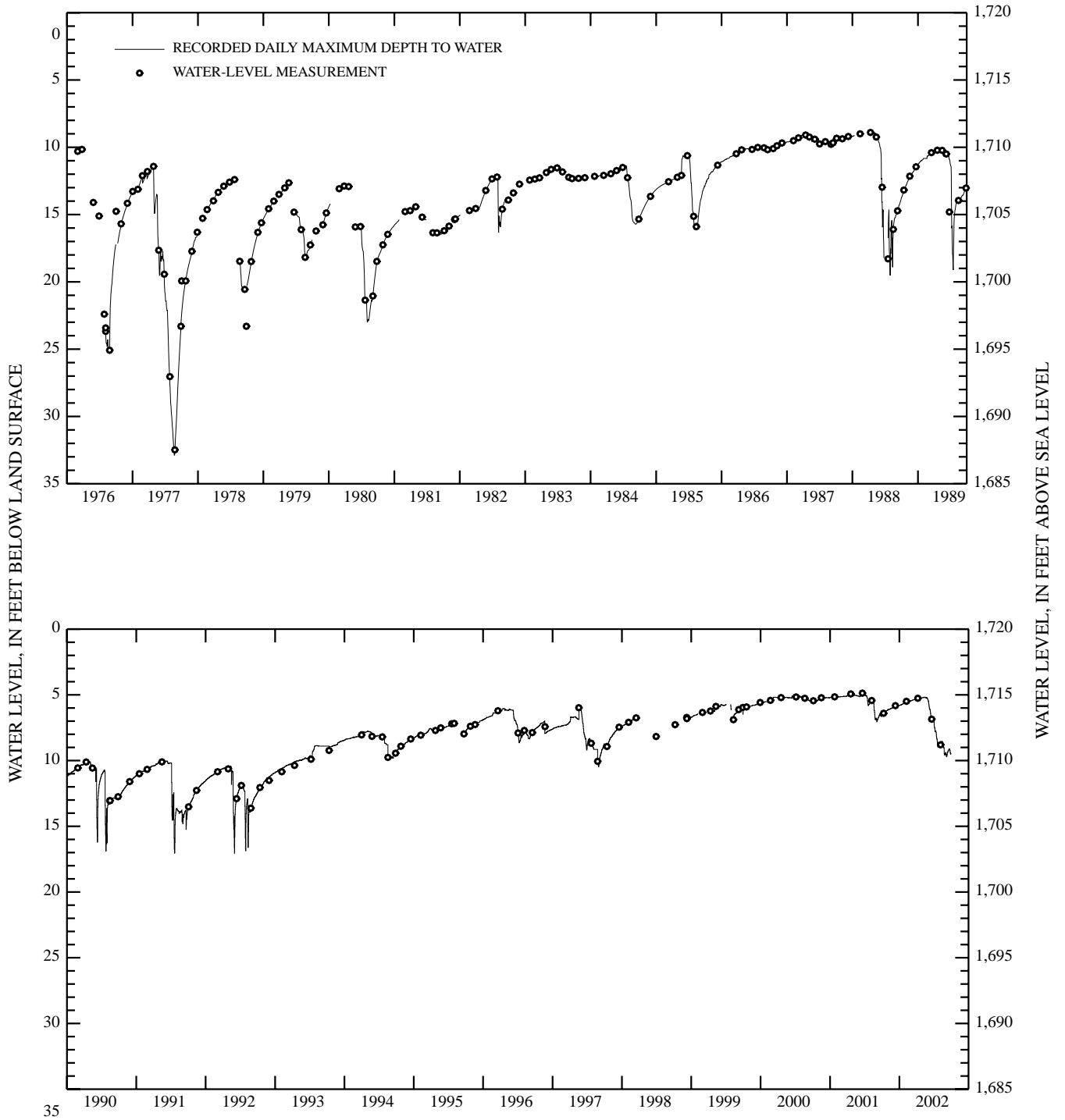
DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.59	6.12	5.89	5.79	5.60	5.43	5.31	5.21	5.72	7.47	8.87	9.62
10	6.44	6.09	5.87	5.75	5.54	5.42	5.31	5.18	6.07	7.80	8.68	9.44
15	6.35	6.05	5.83	5.71	5.50	5.37	5.27	5.18	6.59	8.15	8.68	9.26
20	6.28	6.04	5.83	5.67	5.49	5.37	5.27	5.23	6.90	8.66	8.97	9.13
25	6.20	5.98	5.81	5.63	5.49	5.37	5.27	5.22	6.76	8.83	9.47	9.35
EOM	6.16	5.93	5.80	5.62	5.46	5.31	5.22	5.32	6.74	8.99	9.46	9.46
MAX	6.61	6.12	5.92	5.80	5.61	5.46	5.31	5.32	6.90	8.99	9.57	9.71
MIN	6.16	5.93	5.79	5.62	5.46	5.30	5.22	5.18	5.43	6.84	8.53	9.11

CAL YR 2001 HIGH 4.88 JUN 16 LOW 7.05 SEP 4
WTR YR 2002 HIGH 5.18 MAY 10 LOW 9.71 SEP 6



138-077-22AAD--Continued



GROUND-WATER LEVELS

BURLEIGH COUNTY--Continued

470556100142501. Local number, 142-075-19CCB.

LOCATION.--Lat 47°05'56", long 100°14'25", Hydrologic Unit 10130103. Owner: North Dakota State Water Commission.

AQUIFER.--Wing Channel.

WELL CHARACTERISTICS.--Drilled observation well, depth 210 ft, cased with 197 ft of 1.25-in diameter plastic pipe, slotted 190 to 197 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,884.25 ft. Measuring point: Top of casing 2.08 ft above land-surface datum.

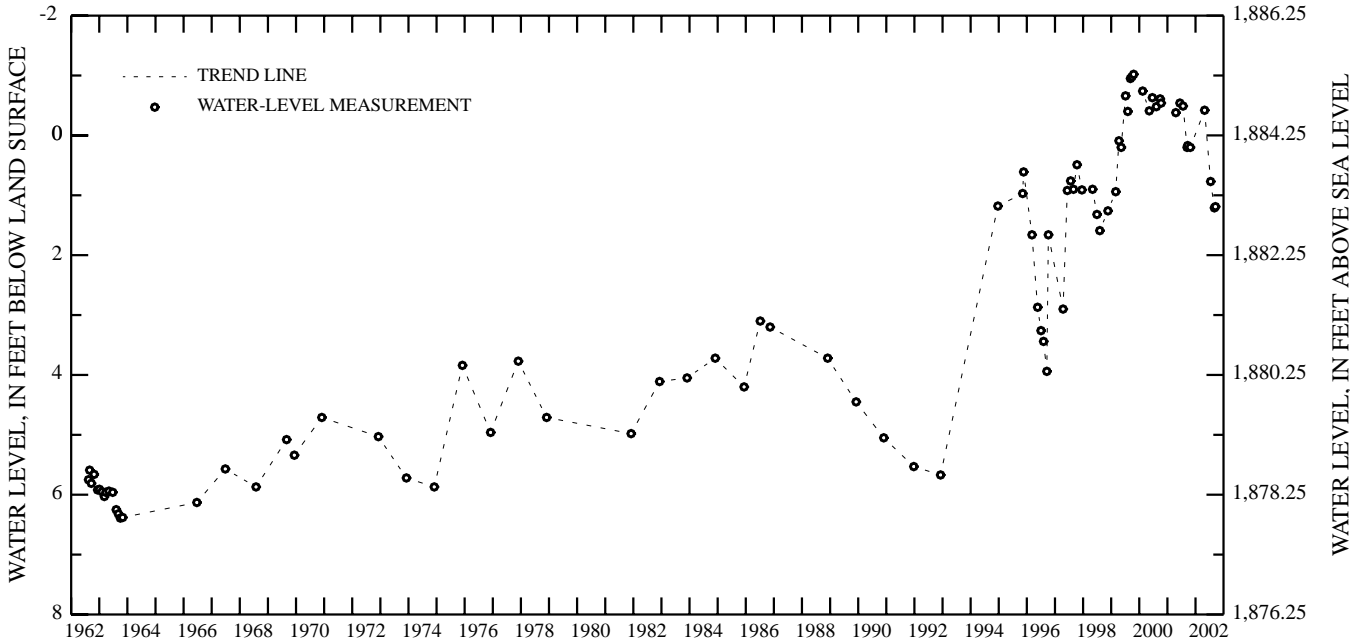
PERIOD OF RECORD.--August 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, -1.02 ft below land-surface datum, October 20, 1999; lowest water level, 6.39 ft below land-surface datum, October 2, 1963.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
(READINGS ABOVE LAND SURFACE INDICATED BY "-")

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	0.20	APR 29	-0.42	JUL 16	0.77	SEP 03	1.21	SEP 17	1.19
WATER YEAR 2002		HIGHEST	-0.42	APR 29, 2002		LOWEST	1.21	SEP 3, 2002	

142-075-19CCB



CASS COUNTY

465312096543301. Local number, 139-049-06ADB.

LOCATION.--Lat 46°53'12", long 96°54'33", Hydrologic Unit 09020204. Owner: North Dakota State Water Commission.

AQUIFER.--West Fargo.

WELL CHARACTERISTICS.--Drilled observation well, depth 230 ft, cased with 220 ft of 8-in diameter steel pipe, screen set 220 to 230 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder January 1938 to April 2002. Measured using a steel tape April 2002 to present. Only intermittent low and EOM water levels obtained from strip chart recorders are available from the District office.

DATUM.--Altitude of land-surface datum is 899.4 ft. Measuring point: Top of casing 0.40 ft above land-surface datum.

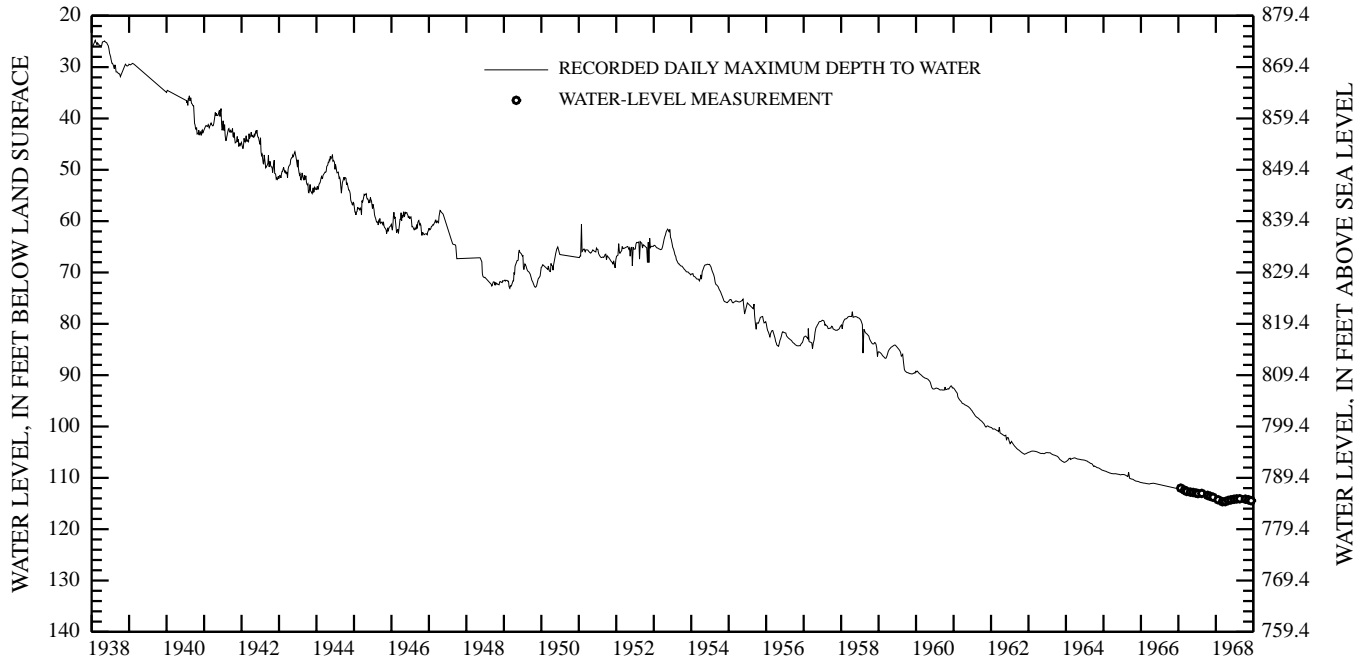
PERIOD OF RECORD.--December 1937 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 24.77 ft below land-surface datum, February 5, 1938; lowest water level, 129.40 ft below land-surface datum, November 7-9, 1998.

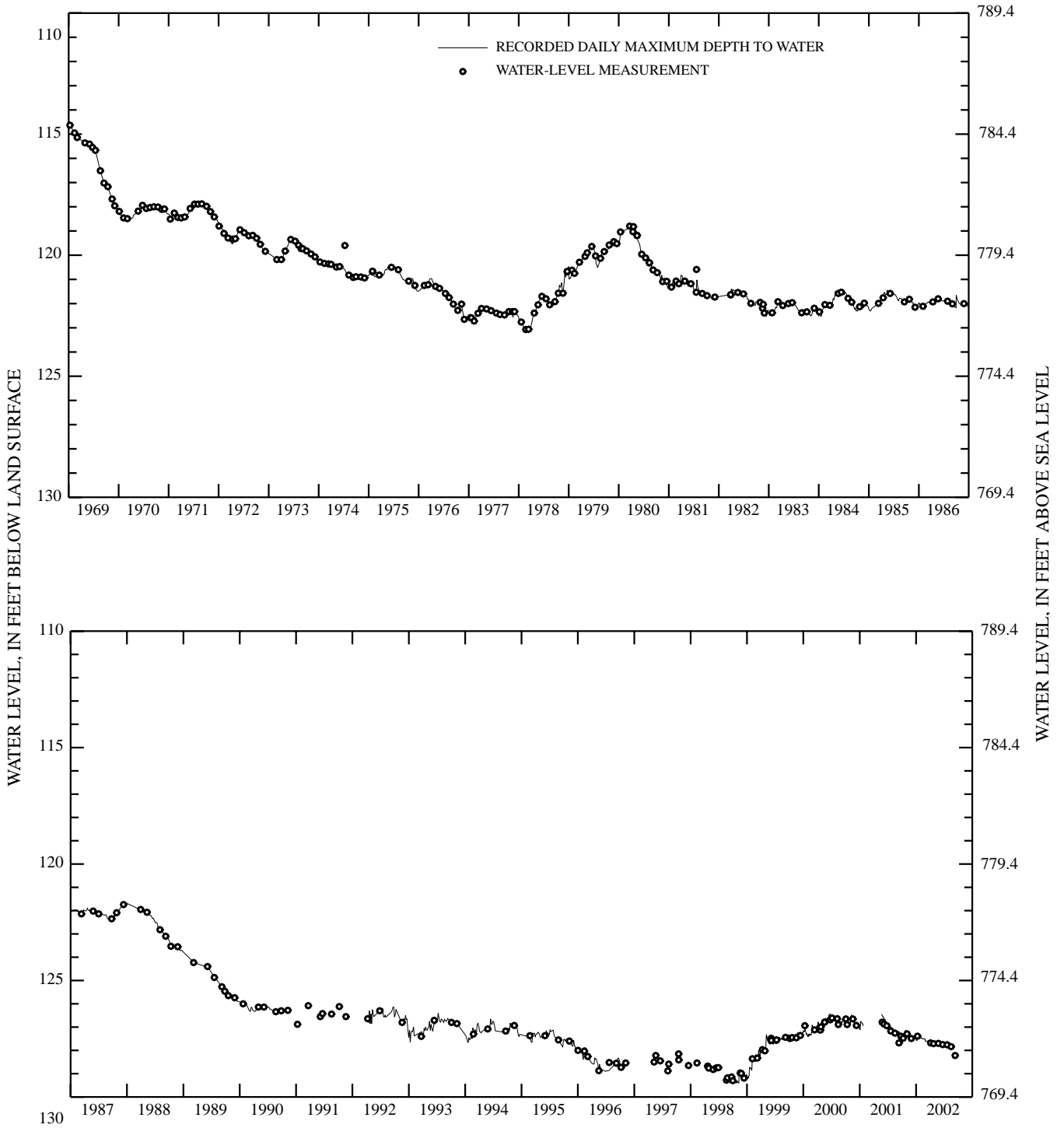
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 09	127.48	NOV 03	127.29	JAN 10	127.79	APR 24	127.71	JUN 22	127.75	AUG 16	127.84
NOV 02	127.29	DEC 01	127.49	APR 05	127.68	MAY 25	127.70	JUL 21	127.76	SEP 11	128.22
WATER YEAR 2002		HIGHEST	127.29	NOV 2, 2001	NOV 3, 2001	LOWEST	128.22	SEP 11, 2002			

139-049-06ADB



139-049-06ADB--Continued



CASS COUNTY--Continued

470818097294104. Local number, 142-054-03DDD4.

LOCATION.--Lat 47°08'18", long 97°29'41", Hydrologic Unit 09020107. Owner: North Dakota State Water Commission.

AQUIFER.--Page.

WELL CHARACTERISTICS.--Drilled observation well, depth 182 ft, cased with 158 ft of 6-in diameter plastic pipe, No. 12 slot screen set 158 to 168 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder October 1982 to June 1986, daily minimum recorded water levels also are available. Measured using a steel tape August 1996 to current year.

DATUM.--Altitude of land-surface datum is 1,226.2 ft. Measuring point: Top of casing 1.20 ft above land-surface datum.

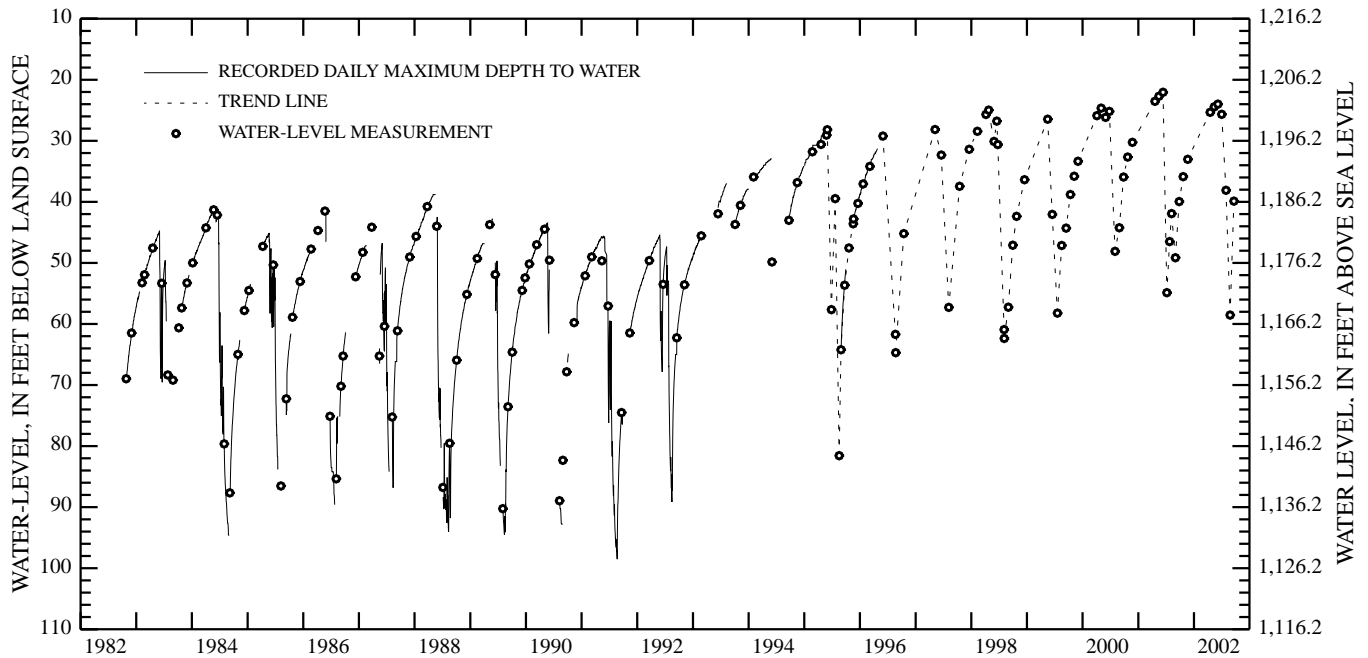
PERIOD OF RECORD.--October 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.05 ft below land-surface datum, June 12, 2001; lowest water level, 98.52 ft below land-surface datum, August 23, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	35.87	APR 17	25.33	JUN 07	23.99	JUL 30	38.10	AUG 26	58.54	SEP 20	39.88
NOV 21	33.03	MAY 14	24.43	JUL 02	25.66						
WATER YEAR 2002		HIGHEST	23.99	JUN 07, 2002		LOWEST	58.54	AUG 26, 2002			

142-054-03DDD4



GROUND-WATER LEVELS
CASS COUNTY--Continued

471326097332902. Local number, 143-054-08BBB2.

LOCATION.--Lat 47°13'26", long 97°33'29", Hydrologic Unit 09020107. Owner: North Dakota State Water Commission.

AQUIFER.--Page.

WELL CHARACTERISTICS.--Drilled observation well, depth 92 ft, cased with 81 ft of 5-in diameter plastic pipe, No. 15 slot screen set 81 to 86 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From September 1982 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,171.33 ft. Measuring point: Top of casing 1.95 ft above land-surface datum.

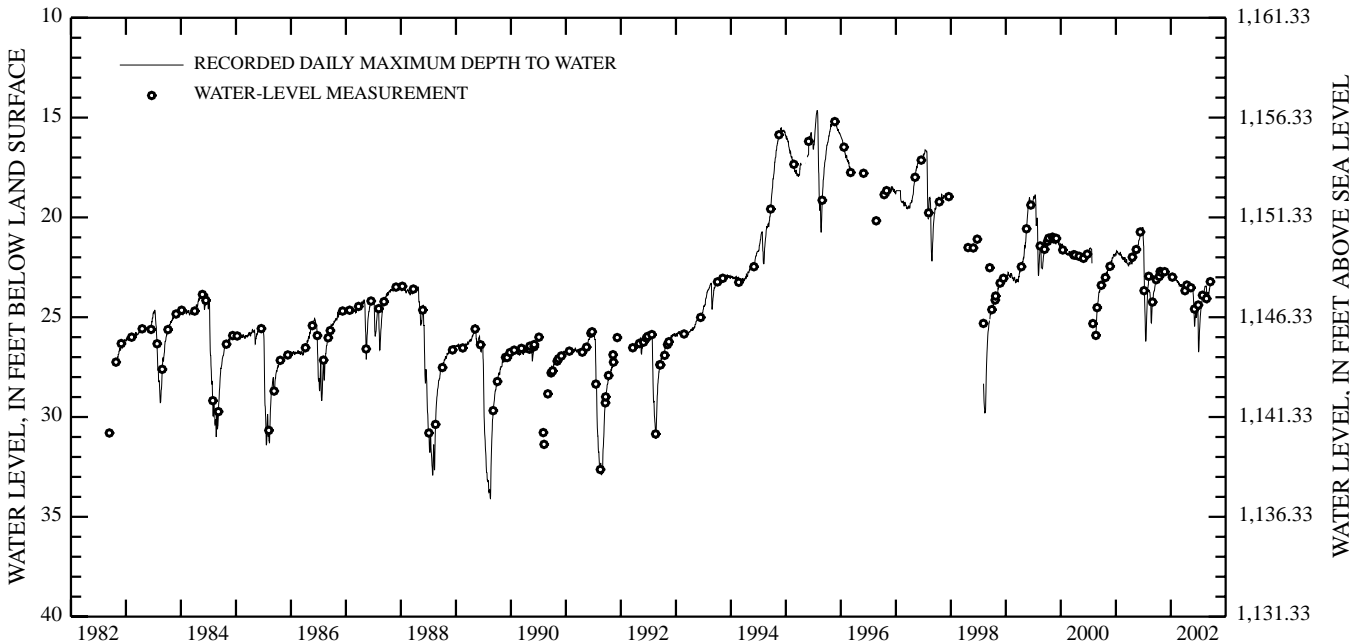
PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.61 ft below land-surface datum, July 27-28, 1995; lowest water level, 34.08 ft below land-surface datum, August 18, 1989.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	23.03	22.89	22.76	23.03	23.04	23.44	23.76	23.65	24.92	26.67	23.76	23.64
10	22.88	22.88	22.85	23.01	23.21	23.51	23.68	23.61	25.23	25.71	23.64	23.80
15	22.89	22.82	22.82	23.08	23.26	23.50	23.55	23.57	24.78	25.01	23.40	23.51
20	22.80	22.88	22.97	23.02	23.30	23.56	23.73	23.71	24.96	24.50	23.36	23.12
25	22.77	22.84	23.00	23.05	23.35	23.66	23.70	23.61	24.56	24.28	23.35	23.13
EOM	22.88	22.82	23.08	23.04	23.44	23.53	23.62	23.99	24.63	23.86	24.17	22.93
MAX	23.11	22.92	23.08	23.13	23.48	23.66	23.76	23.99	25.45	26.67	24.19	24.04
MIN	22.67	22.71	22.76	22.96	23.04	23.40	23.53	23.56	24.18	23.86	23.35	22.93
CAL YR 2001	HIGH 20.49	JUN 25	LOW 26.21	JUL 18								
WTR YR 2002	HIGH 22.60	OCT 24	LOW 26.67	JUL 5								

143-054-08BBB2



CAVALIER COUNTY

484534098254401. Local number, 161-060-21BBB.

LOCATION.--Lat 48°45'34", long 98°25'44", Hydrologic Unit 09020313. Owner: North Dakota State Water Commission.

AQUIFER.--Pierre Shale.

WELL CHARACTERISTICS.--Drilled observation well, depth 40 ft, cased with 10 ft of 4-in diameter steel pipe, open ended.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,603 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

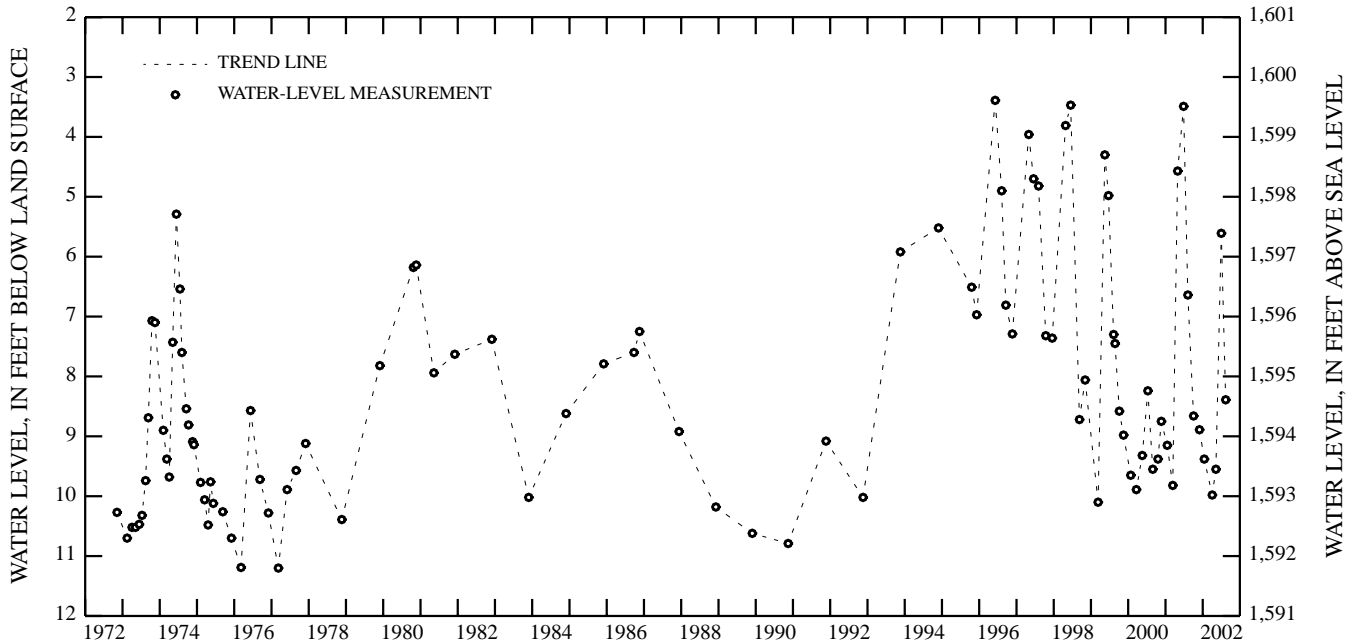
PERIOD OF RECORD.--November 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.39 ft below land-surface datum, June 6, 1996; lowest water level, 11.20 ft below land-surface datum, March 9, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	8.66	JAN 16	9.38	APR 04	9.98	MAY 10	9.55	JUL 02	5.61	AUG 14	8.39
NOV 30	8.89										
WATER YEAR 2002		HIGHEST	5.61	JUL 02, 2002	LOWEST	9.98	APR 04, 2002				

161-060-21BBB



GROUND-WATER LEVELS

CAVALIER COUNTY--Continued

484444098504301. Local number, 161-063-29BBB.

LOCATION.--Lat 48°44'44", long 98°50'43", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Munich.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased with 133 ft of 1.25-in diameter plastic pipe, slotted 113 to 133 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,619 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

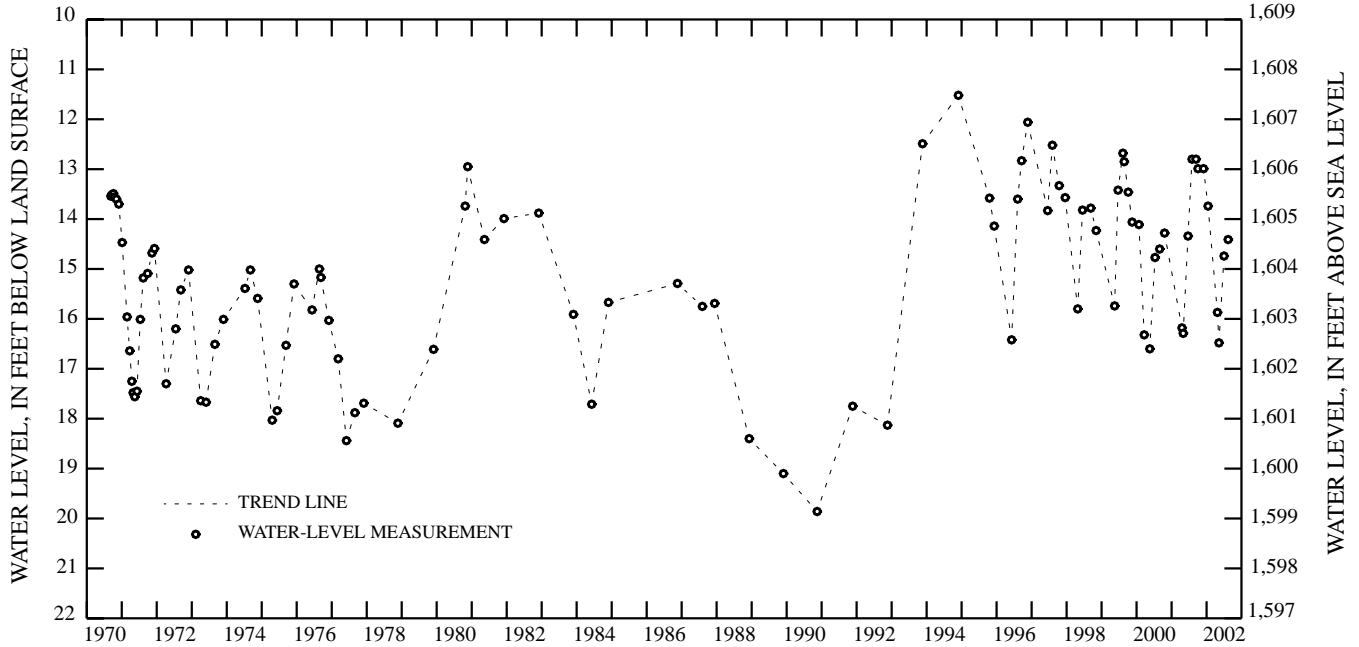
PERIOD OF RECORD.--September 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.52 ft below land-surface datum, November 28, 1994; lowest water level, 19.86 ft below land-surface datum, November 15, 1990.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	12.99	JAN 16	13.74	APR 24	15.87	MAY 10	16.48	JUL 02	14.74	AUG 14	14.41
NOV 30	12.99										
WATER YEAR 2002		HIGHEST	12.99	OCT 03, 2001		NOV 30, 2001	LOWEST	16.48	MAY 10, 2002		

161-063-29BBB



DICKEY COUNTY

460830098224701. Local number, 131-062-24DDD1.

LOCATION.--Lat 46°08'30", long 98°22'47", Hydrologic Unit 10160004. Owner: North Dakota State Water Commission.

AQUIFER.--Nortonville.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, cased with 190 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 190 to 196 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

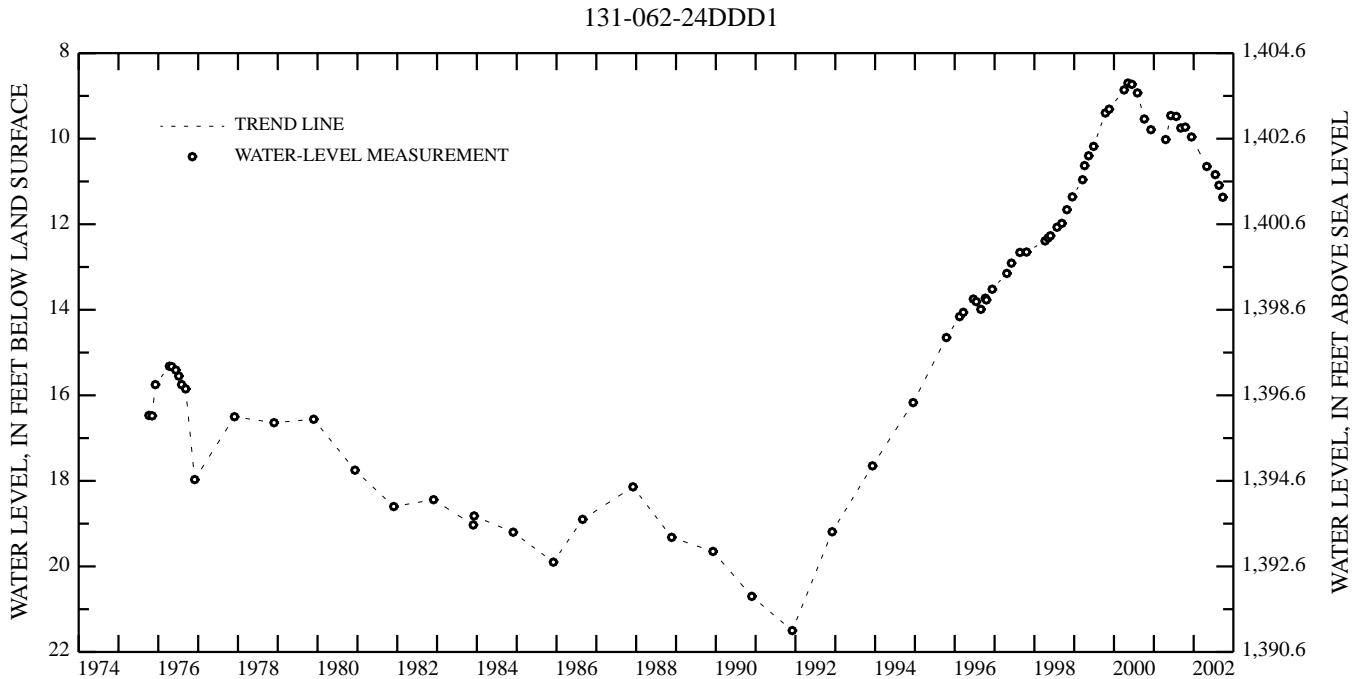
DATUM.--Altitude of land-surface datum is 1,412.6 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.70 ft below land-surface datum, May 8, 2000; lowest water level, 21.50 ft below land-surface datum, December 3, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	9.73	DEC 12	9.96	MAY 01	10.65	JUL 18	10.84	AUG 21	11.09	SEP 25	11.37
WATER YEAR 2002		HIGHEST	9.73	OCT 16, 2001		LOWEST	11.37	SEP 25, 2002			



GROUND-WATER LEVELS

DICKEY COUNTY--Continued

460830098224702. Local number, 131-062-24DDD2.

LOCATION.--Lat 46°08'30", long 98°22'47", Hydrologic Unit 10160004. Owner: North Dakota State Water Commission.

AQUIFER.--Ellendale.

WELL CHARACTERISTICS.--Drilled observation well, depth 100 ft, cased with 78 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 78 to 81 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,412.5 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

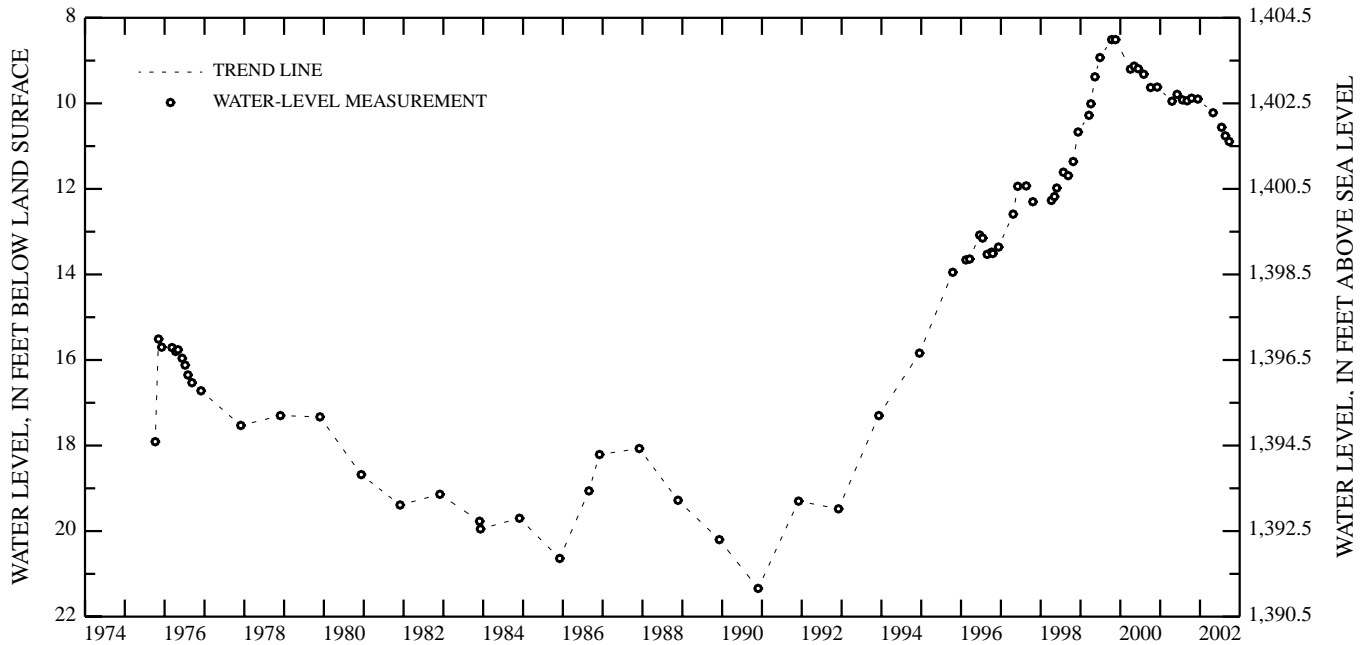
PERIOD OF RECORD.--October 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.51 ft below land-surface datum, October 14, 1999, and November 18, 1999; lowest water level, 21.34 ft below land-surface datum, November 27, 1990.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	9.88	DEC 12	9.90	MAY 01	10.22	JUL 18	10.56	AUG 21	10.76	SEP 25	10.89
WATER YEAR 2002		HIGHEST	9.88	OCT 16, 2001		LOWEST	10.89	SEP 25, 2002			

131-062-24DDD2



DIVIDE COUNTY

484746104015901. Local number, 161-103-02CCB.

LOCATION.--Lat 48°47'46", long 104°01'59", Hydrologic Unit 10060007. Owner: North Dakota State Water Commission.

AQUIFER.--Skjermo Lake.

WELL CHARACTERISTICS.--Drilled observation well, depth 200 ft, cased with 91 ft of 5-in diameter steel pipe, No. 18 slot screen set 91 to 96 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder June 1982 to September 1997, daily minimum recorded water levels also are available. Measured using a steel tape October 1997 to current year.

DATUM.--Altitude of land-surface datum is 2,073.9 ft. Measuring point: Top of casing 2.33 ft above land-surface datum.

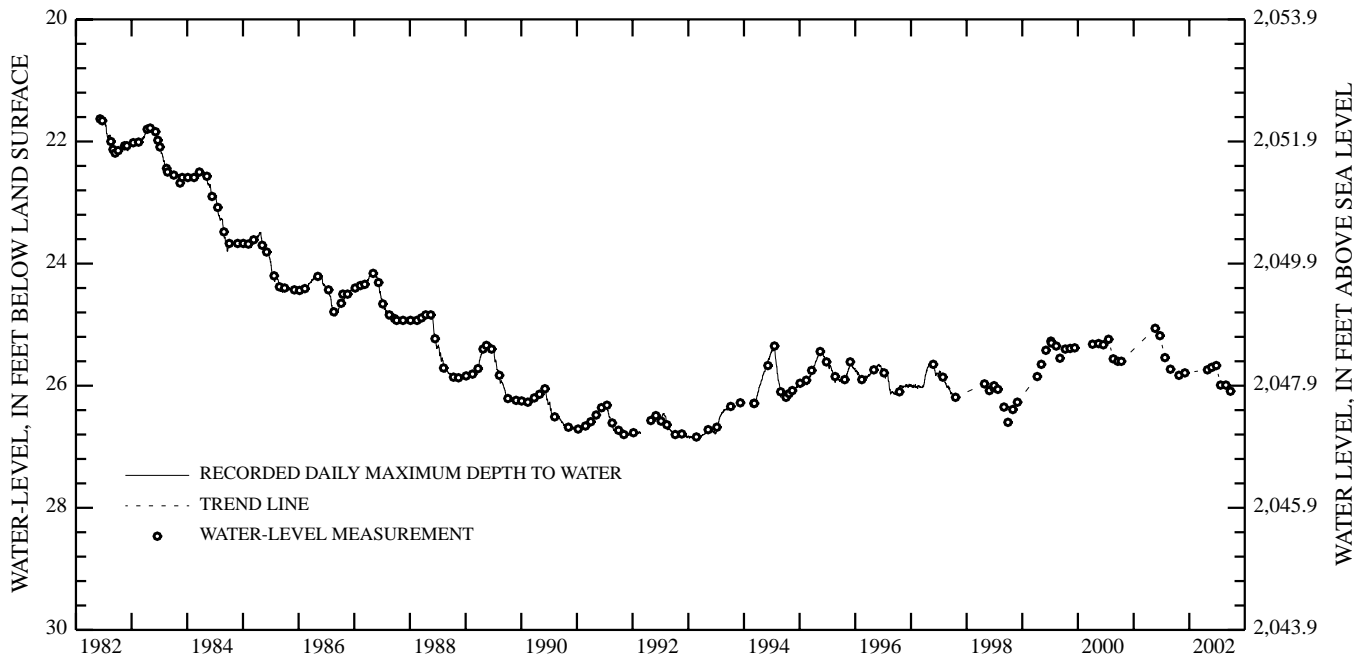
PERIOD OF RECORD.--June 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.61 ft below land-surface datum, July 2 and 5, 1982; lowest water level, 26.87 ft below land-surface datum, March 3-6, 9-12, and 16-17, 1993.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	25.83	APR 30	25.74	JUN 27	25.67	JUL 25	25.99	AUG 29	25.99	SEP 28	26.09
DEC 03	25.79	MAY 28	25.70								
WATER YEAR 2002		HIGHEST	25.67	JUN 27, 2002		LOWEST	26.09	SEP 28, 2002			

161-103-02CCB



GROUND-WATER LEVELS

DIVIDE COUNTY--Continued

485439103155701. Local number, 163-097-27CCC.

LOCATION.--Lat 48°54'39", long 103°15'57", Hydrologic Unit 09010001. Owner: North Dakota State Water Commission.

AQUIFER.--Yellowstone.

WELL CHARACTERISTICS.--Drilled observation well, depth 500 ft, cased with 257 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 257 to 263 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

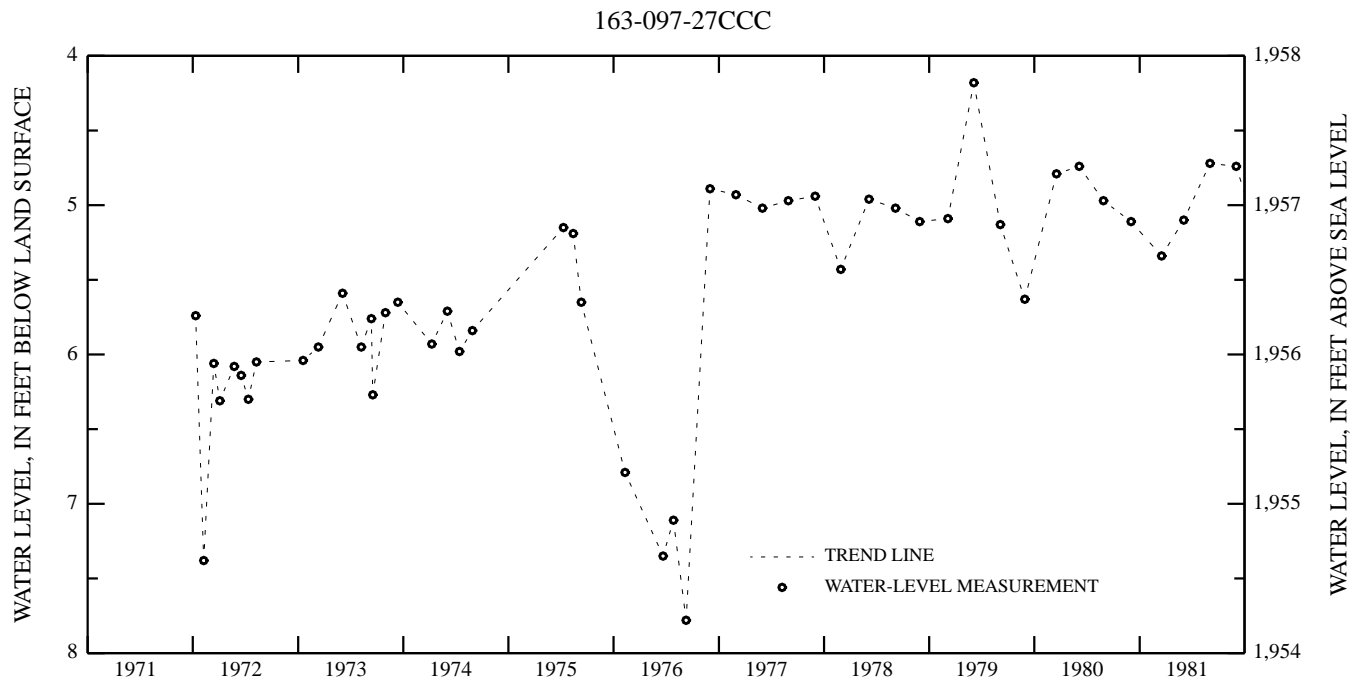
DATUM.--Altitude of land-surface datum is 1,962 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--January 1972 to August 1995 and September 1997 to current year.

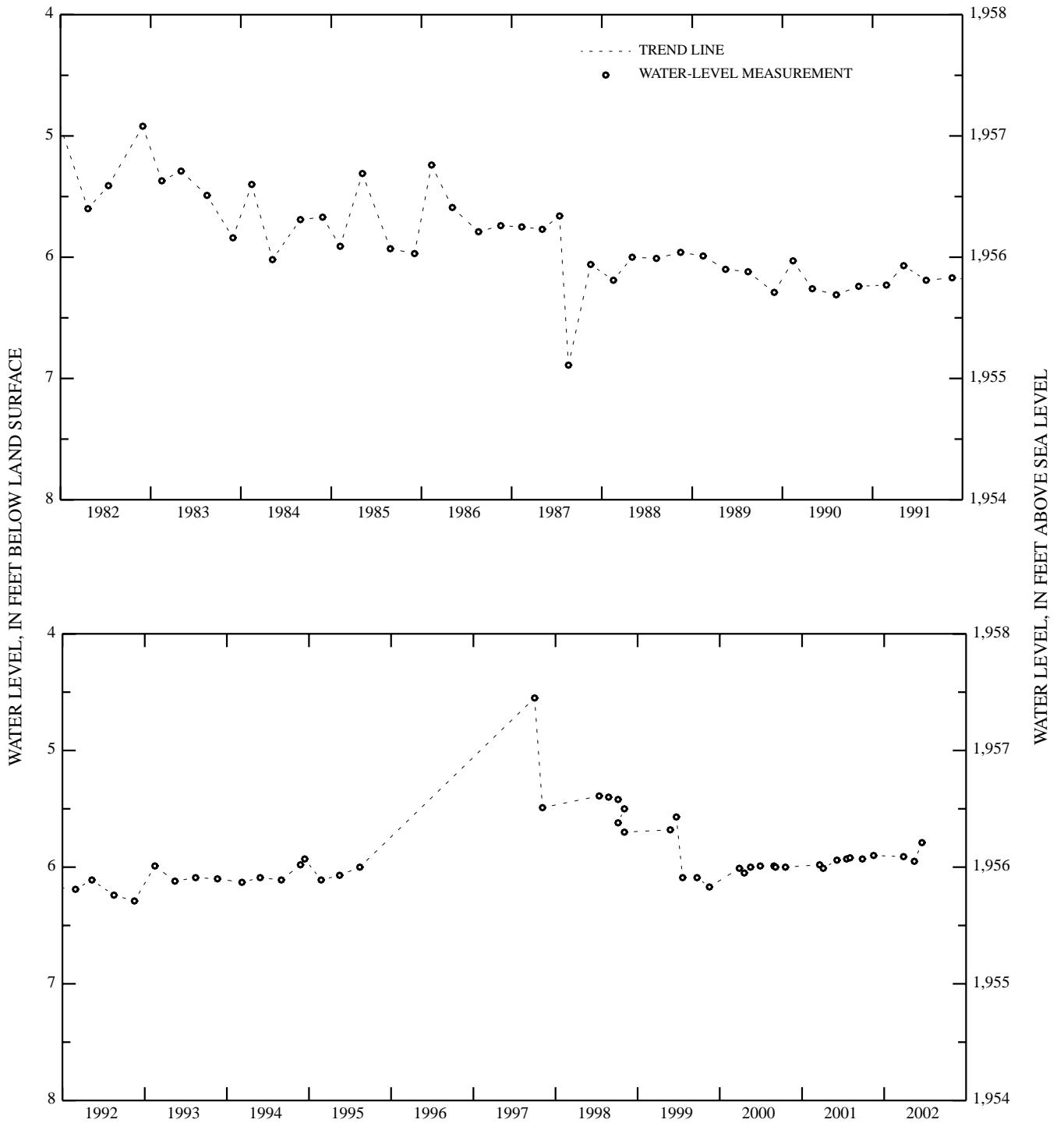
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.18 ft below land-surface datum, June 5, 1979; lowest water level, 7.78 ft below land-surface datum, September 9, 1976.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 15	5.90	MAR 28	5.91	MAY 15	5.95	JUN 18	5.79
WATER YEAR 2002 HIGHEST		5.79	JUN 18, 2002		LOWEST		5.95 MAY 15, 2002



163-097-27CCC--Continued



GROUND-WATER LEVELS

DUNN COUNTY

471323102290101. Local number, 143-093-09BCB.

LOCATION.--Lat 47°13'23", long 102°29'01", Hydrologic Unit 10130201. Owner: North Dakota State Water Commission.

AQUIFER.--Sentinel Butte.

WELL CHARACTERISTICS.--Drilled observation well, depth 965 ft, cased with 378 ft of 2-in diameter steel pipe, No. 12 slot screen set 378 to 396 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,133 ft. Measuring point: Top of casing 2.10 ft above land-surface datum.

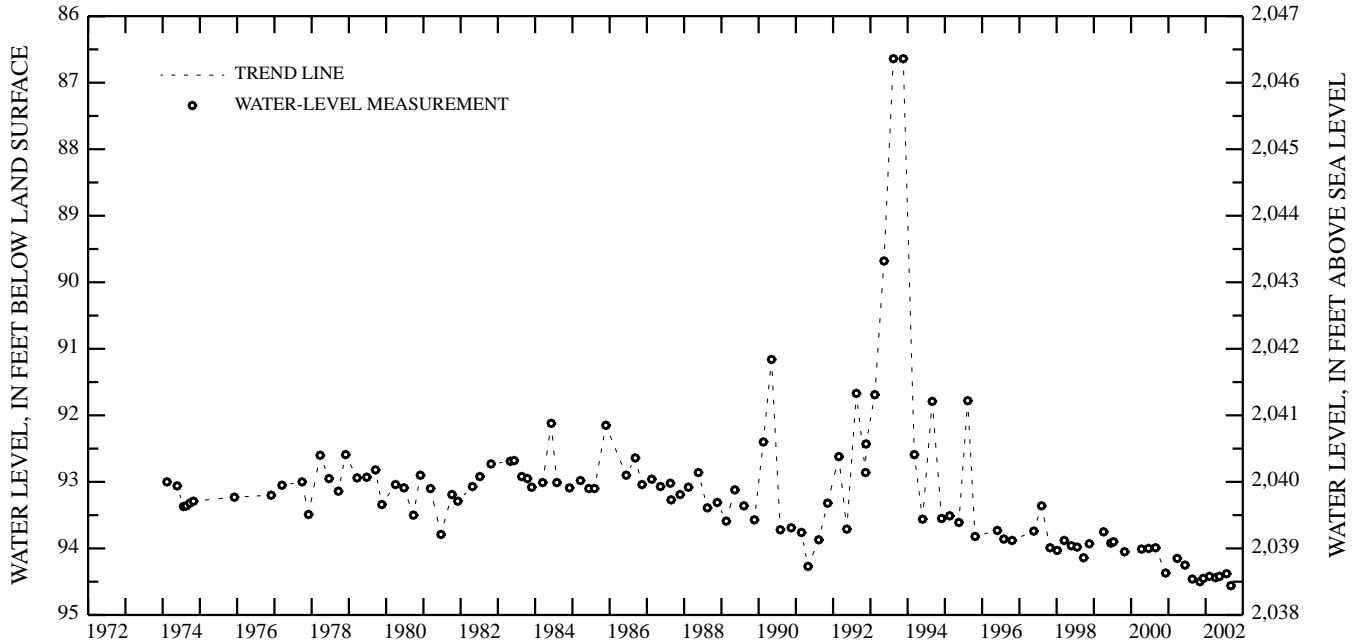
PERIOD OF RECORD.--February 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 86.64 ft below land-surface datum, August 14, 1993, and November 19, 1993; lowest water level, 94.56 ft below land-surface datum, September 5, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 06	94.50	FEB 07	94.42	APR 09	94.44	MAY 16	94.42	JUL 25	94.38	SEP 05	94.56
DEC 09	94.45										
WATER YEAR 2002		HSIGHEST 94.38		JUL 25, 2002		LOWEST 94.56		SEP 05, 2002			

143-093-09BCB



DUNN COUNTY--Continued

472144102453402. Local number, 145-095-22DAD2.

LOCATION.--Lat 47°21'44", long 102°45'34", Hydrologic Unit 10130201. Owner: North Dakota State Water Commission.

AQUIFER.--Killdeer.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased with 157 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 157 to 160 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

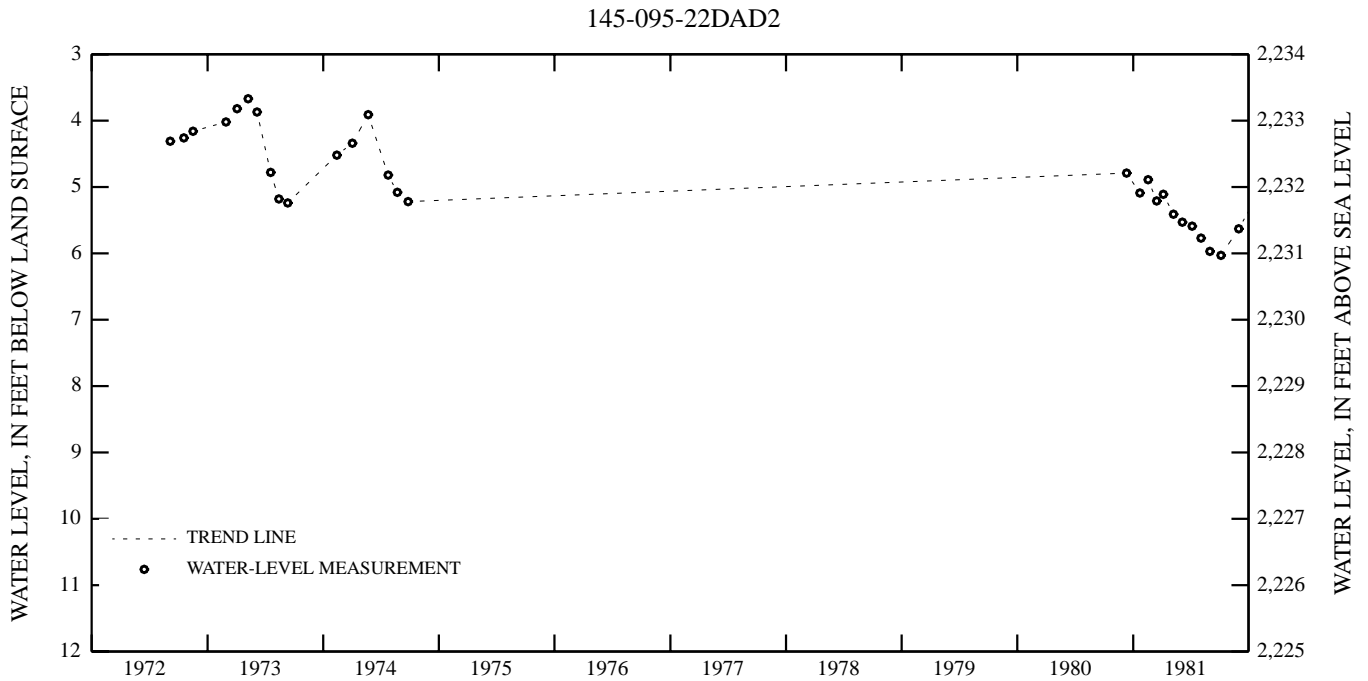
DATUM.--Altitude of land-surface datum is 2,237 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--September 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.67 ft below land-surface datum, May 9, 1973; lowest water level, 11.78 ft below land-surface datum, September 4, 1990.

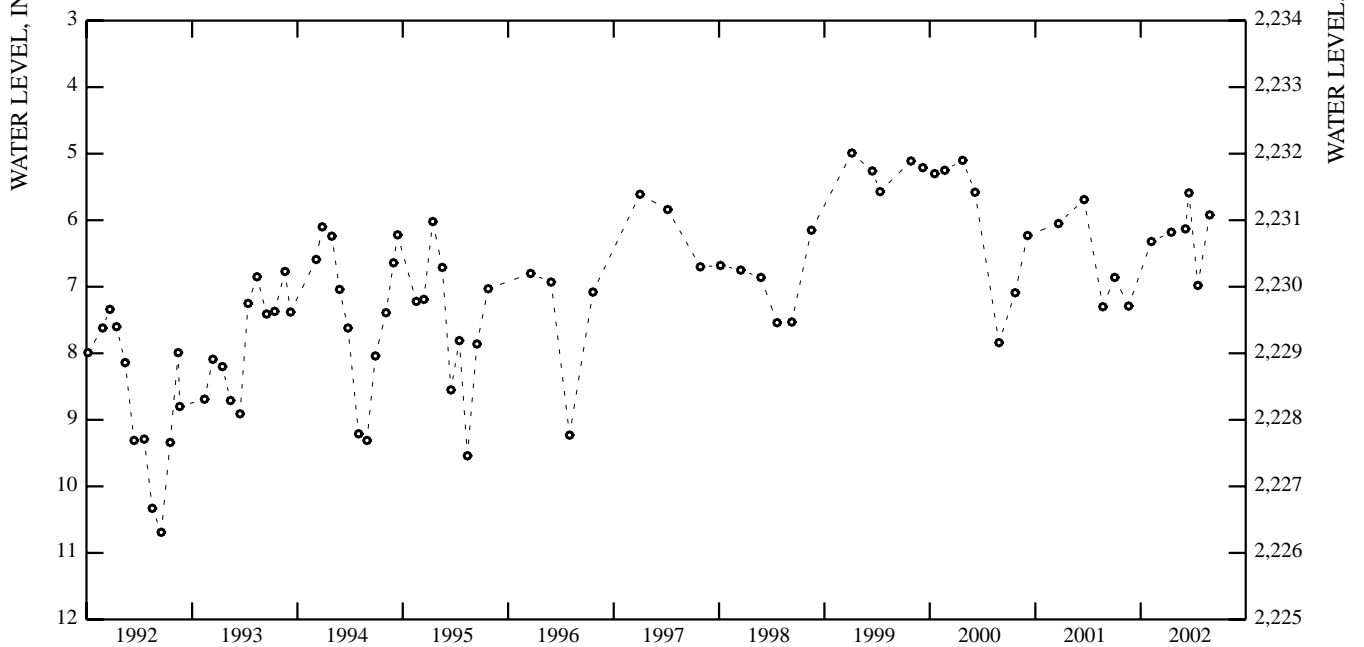
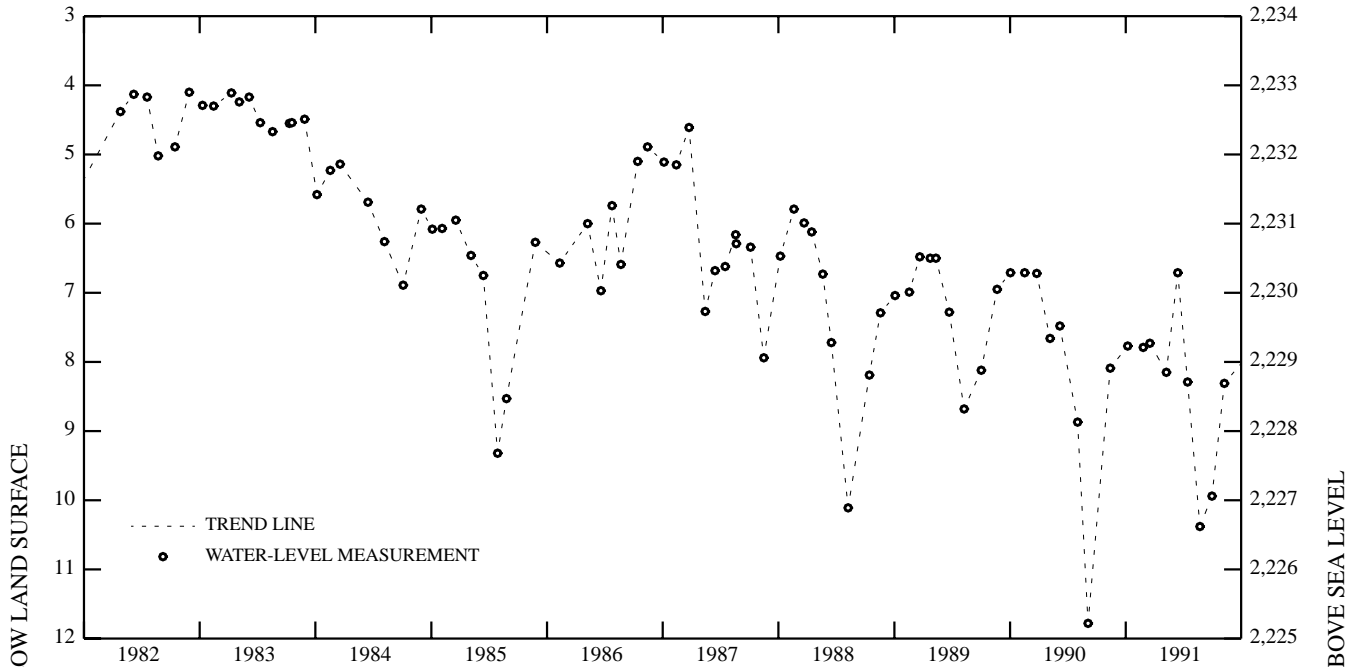
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	6.86	FEB 07	6.32	JUN 05	6.13	JUN 17	5.59	JUL 18	6.98	AUG 28	5.92
NOV 20	7.29	APR 17	6.18								
WATER YEAR 2002		HIGHEST	5.59	JUN 17, 2002		LOWEST	7.29	NOV 20, 2001			



GROUND-WATER LEVELS
DUNN COUNTY--Continued

145-095-22DAD2--Continued



DUNN COUNTY--Continued

472144102453403. Local number, 145-095-22DAD3.

LOCATION.--Lat 47°21'44", long 102°45'34", Hydrologic Unit 10130201. Owner: North Dakota State Water Commission.

AQUIFER.--Killdeer.

WELL CHARACTERISTICS.--Drilled observation well, depth 54 ft, cased with 49 ft of 4-in diameter plastic pipe, No. 18 slot screen set 49 to 54 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

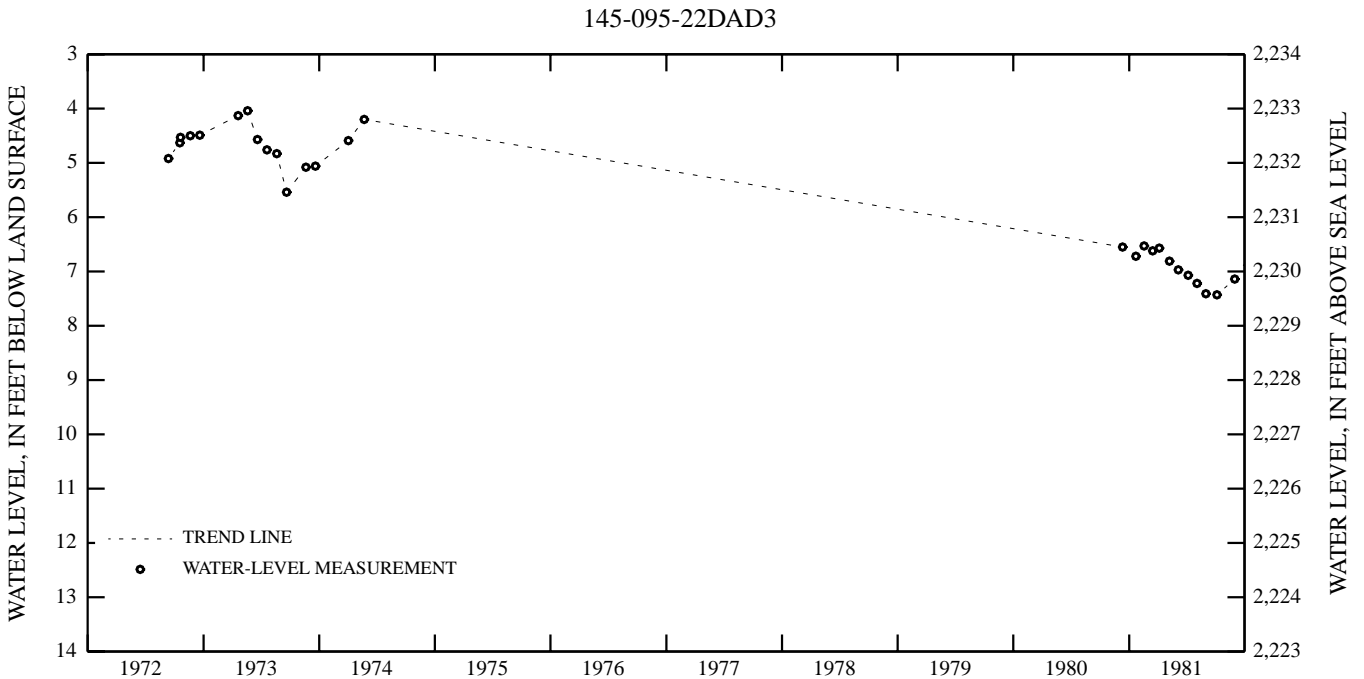
DATUM.--Altitude of land-surface datum is 2,237 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

PERIOD OF RECORD.--September 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.04 ft below land-surface datum, May 20, 1973; lowest water level, 13.07 ft below land-surface datum, September 4, 1990.

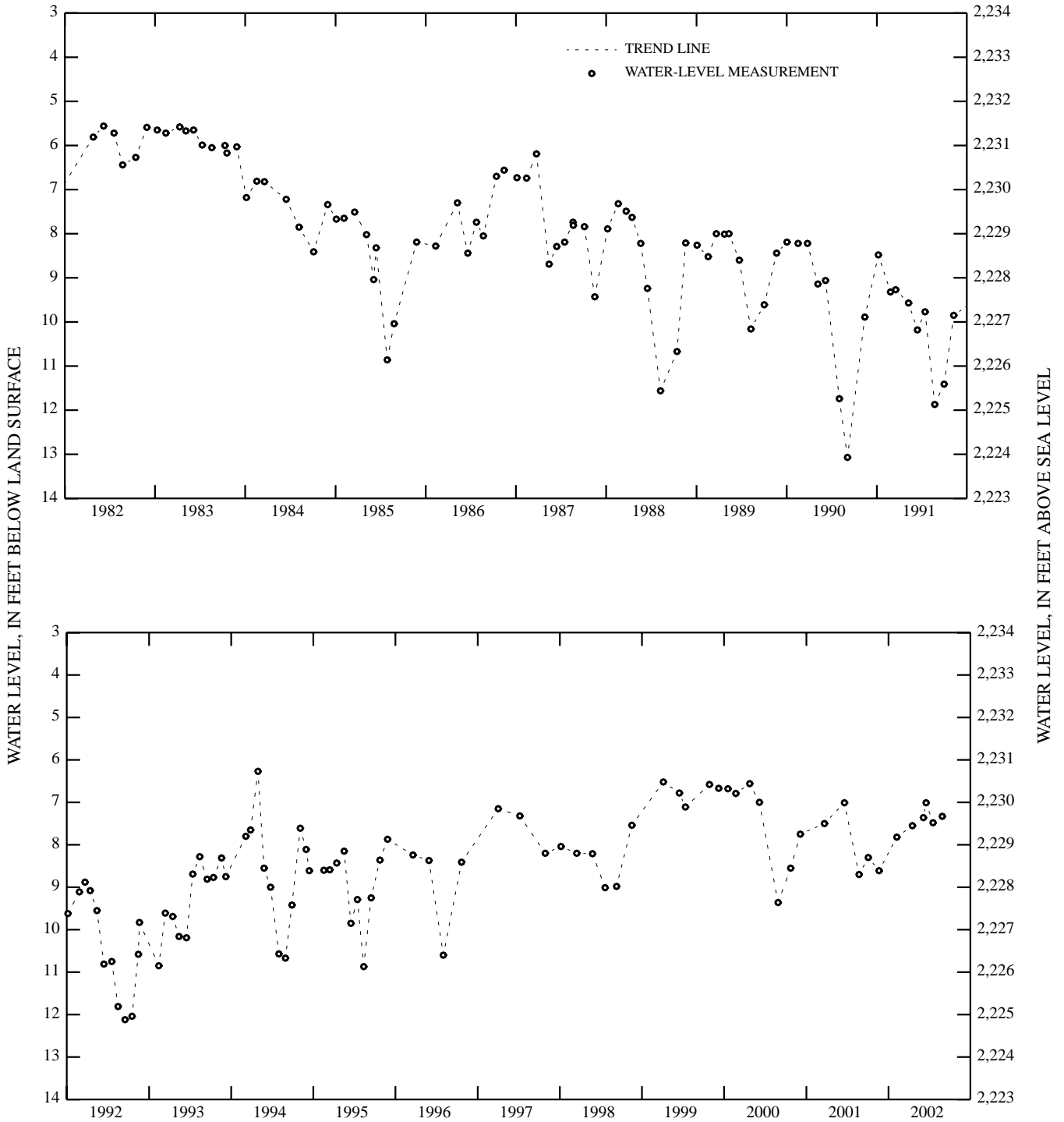
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	8.30	FEB 07	7.82	JUN 05	7.36	JUN 17	7.01	JUL 18	7.48	AUG 28	7.33
NOV 20	8.61	APR 17	7.55								
WATER YEAR 2002		HIGHEST	7.01	JUN 17, 2002		LOWEST	8.61	NOV 20, 2001			



GROUND-WATER LEVELS
DUNN COUNTY--Continued

145-095-22DAD3--Continued



DUNN COUNTY--Continued

472537102144801. Local number, 146-091-35BBC.

LOCATION.--Lat 47°25'37", long 102°14'48", Hydrologic Unit 10110205. Owner: North Dakota State Water Commission.

AQUIFER.--Goodman Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 320 ft, cased with 218 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 218 to 221 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

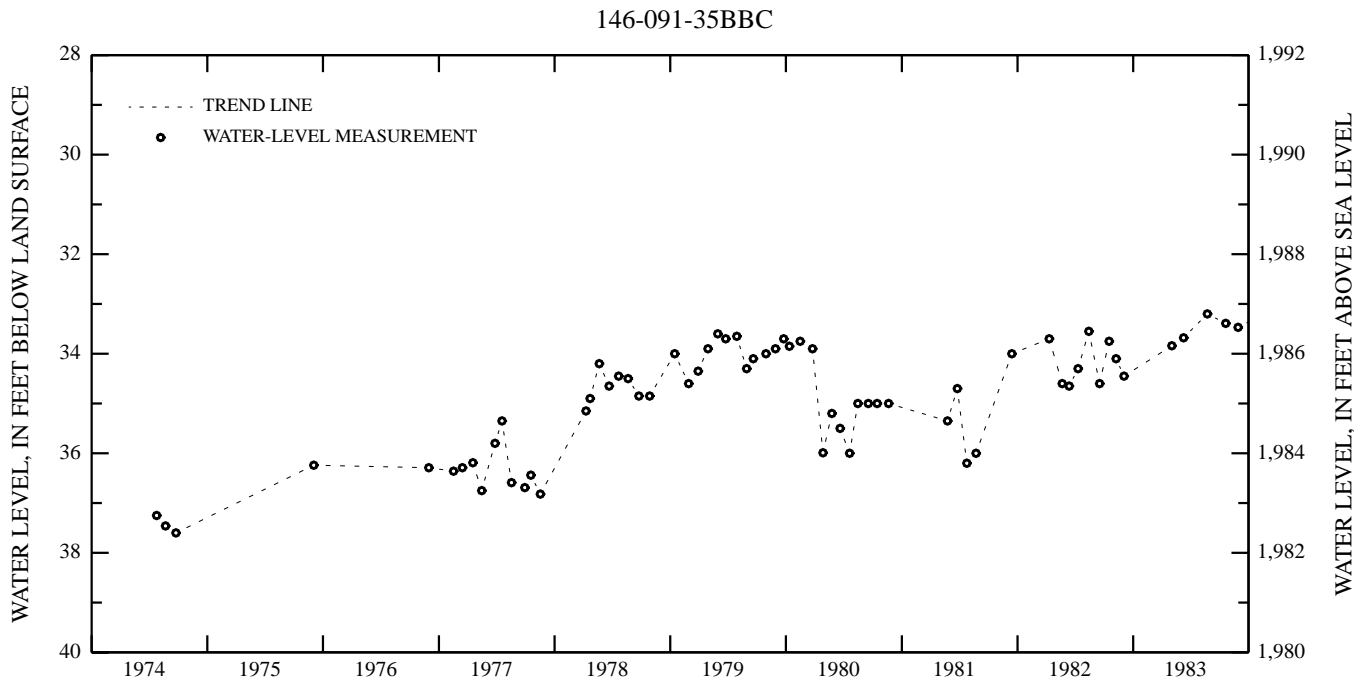
DATUM.--Altitude of land-surface datum is 2,020 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--July 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 29.97 ft below land-surface datum, May 14, 1987; lowest water level, 37.60 ft below land-surface datum, September 24, 1974.

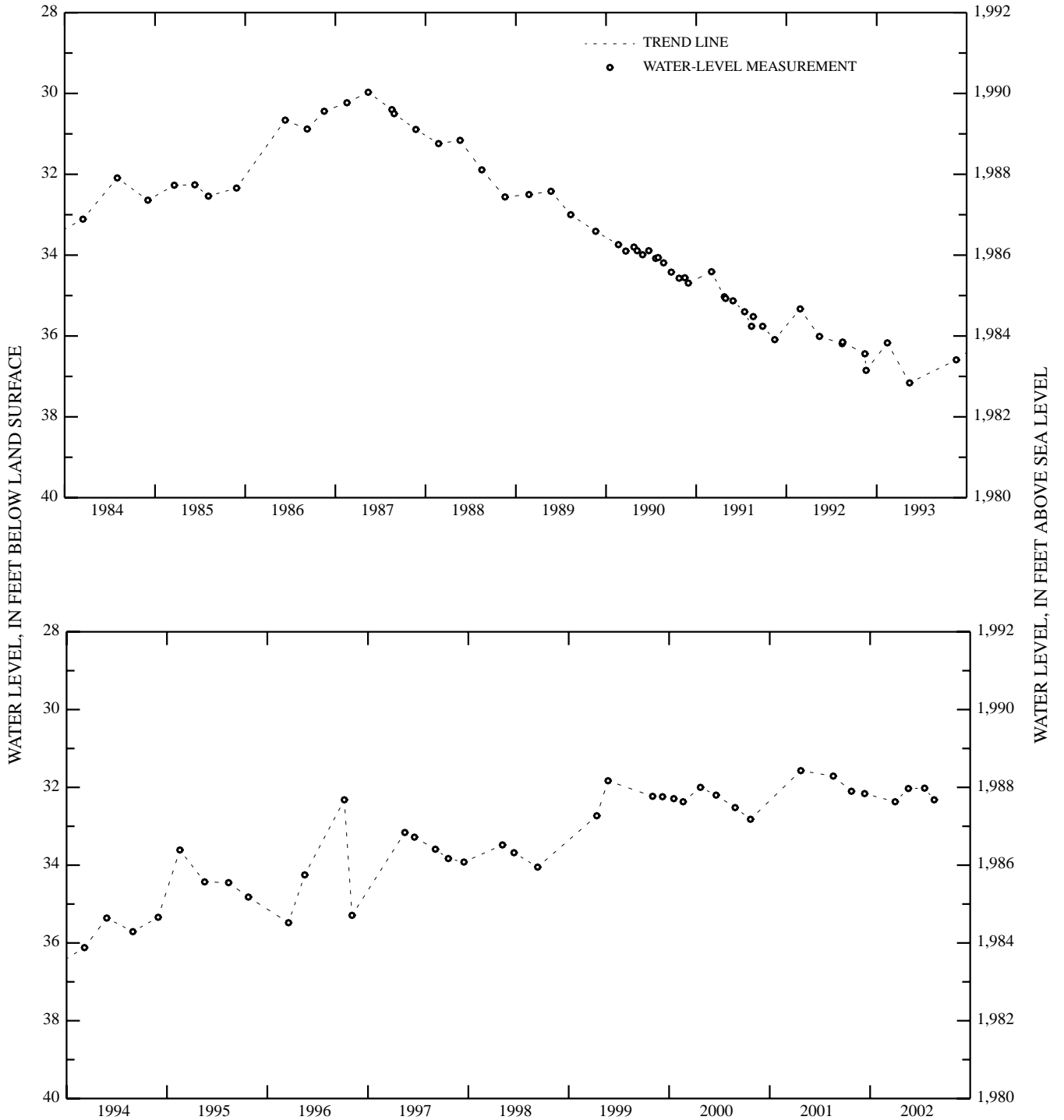
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	32.10	DEC 12	32.16	APR 02	32.37	MAY 20	32.03	JUL 18	32.02	AUG 22	32.32
WATER YEAR 2002		HIGHEST	32.02	JUL 18, 2002	LOWEST		32.37	APR 02, 2002			



GROUND-WATER LEVELS
DUNN COUNTY--Continued

146-091-35BBC--Continued



EDDY COUNTY

473934099032301. Local number, 148-066-03DDC.

LOCATION.--Lat 47°39'34", long 99°03'23", Hydrologic Unit 10160001. Owner: North Dakota State Water Commission.

AQUIFER.--New Rockford.

WELL CHARACTERISTICS.--Drilled observation well, depth 252 ft, cased with 218 ft of 1.25-in diameter plastic pipe, slotted 210 to 218 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

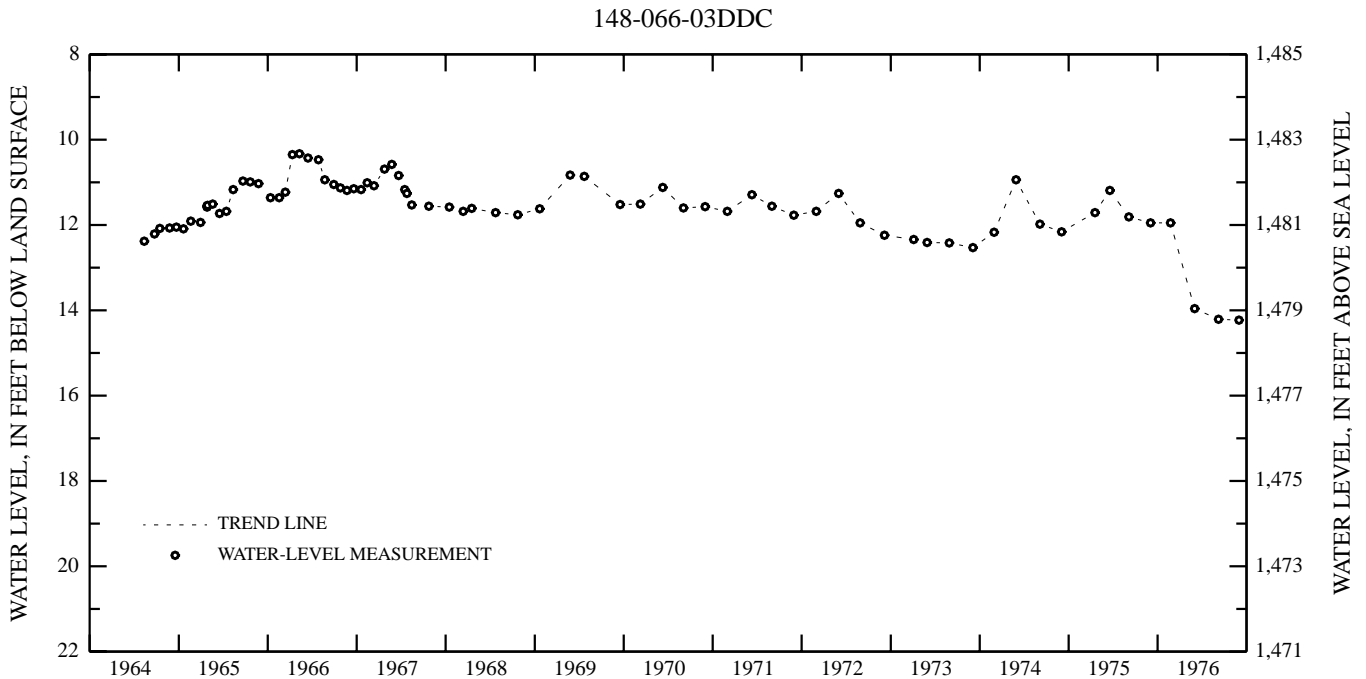
DATUM.--Altitude of land-surface datum is 1,493 ft. Measuring point: Top of casing 4.00 ft above land-surface datum.

PERIOD OF RECORD.--August 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.50 ft below land-surface datum, May 1, 2001; lowest water level, 21.44 ft below land-surface datum, August 1, 1978.

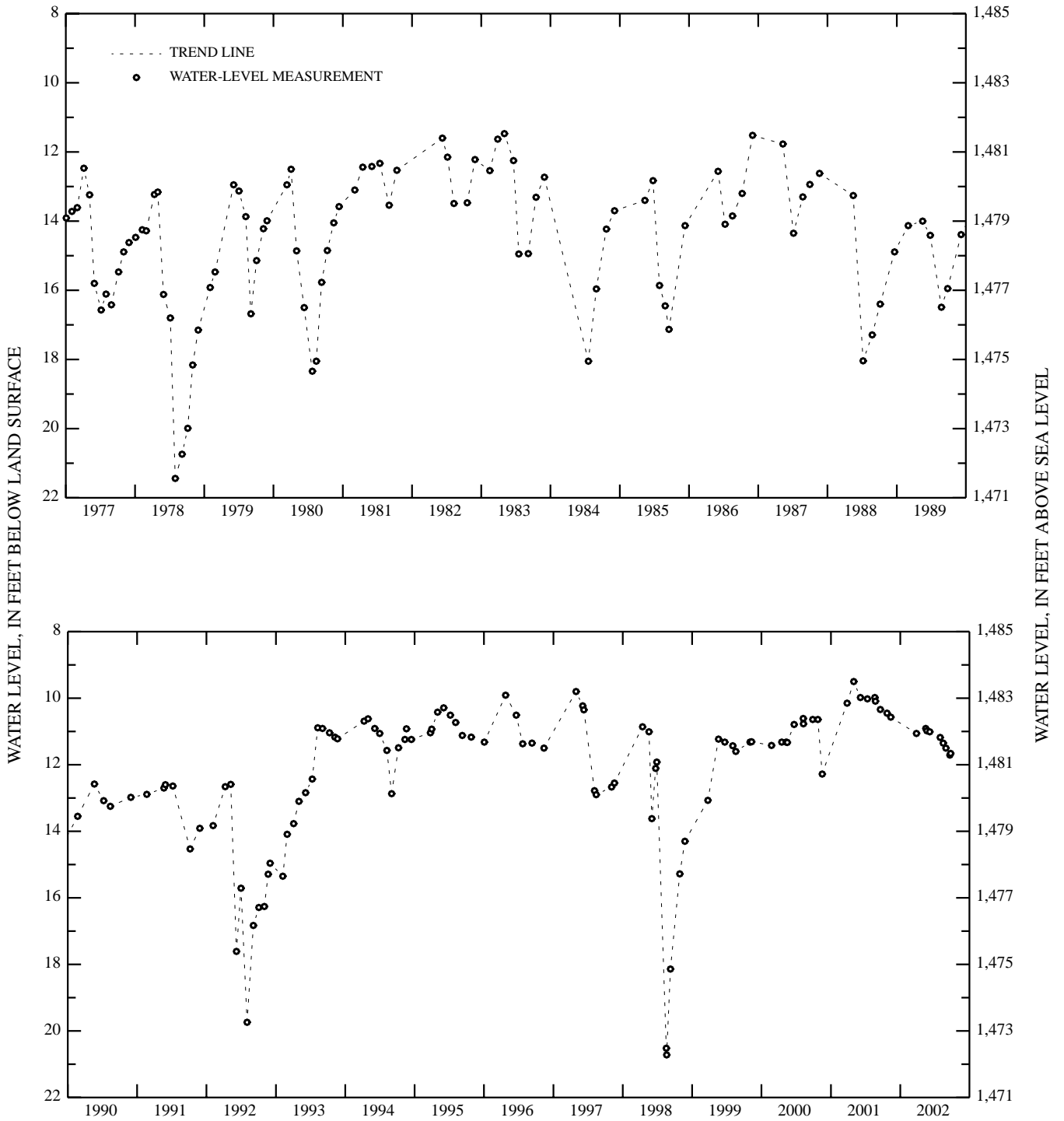
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	10.45	MAR 27	11.06	MAY 21	10.98	JUL 30	11.18	AUG 29	11.50	SEP 23	11.66
NOV 12	10.57	MAY 15	10.91	JUN 05	11.01	AUG 15	11.35	SEP 19	11.71		
WATER YEAR 2002		HIGHEST	10.45	OCT 23, 2001		LOWEST	11.71	SEP 19, 2002			



GROUND-WATER LEVELS
EDDY COUNTY--Continued

148-066-03DDC--Continued



EMMONS COUNTY

462539100061101. Local number, 134-075-15BBB.

LOCATION.--Lat 46°25'39", long 100°06'11", Hydrologic Unit 10130103. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 280 ft, cased with 97 ft of 1.25-in diameter plastic pipe, screen set 97 to 103 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

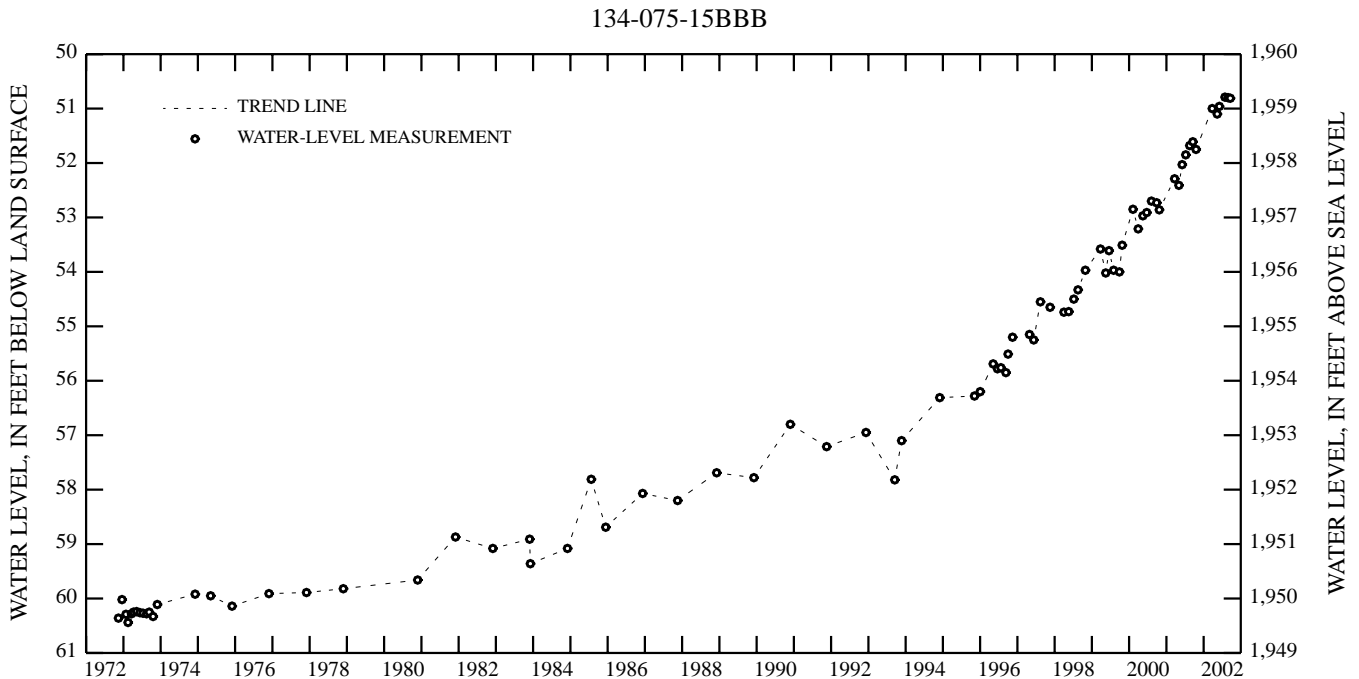
DATUM.--Altitude of land-surface datum is 2,010 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 50.79 ft below land-surface datum, July 29, 2002; lowest water level, 60.44 ft below land-surface datum, February 15, 1973.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	51.75	MAY 14	51.10	JUN 04	50.96	JUL 29	50.79	AUG 28	50.80	SEP 19	50.81
MAR 26	51.00										
WATER YEAR 2002		HIGHEST 50.79		JUL 29, 2002		LOWEST 51.75		OCT 18, 2001			



GROUND-WATER LEVELS

FOSTER COUNTY

473051099093601. Local number, 147-067-35AAA.

LOCATION.--Lat 47°30'51", long 99°09'36", Hydrologic Unit 10160001. Owner: North Dakota State Water Commission.

AQUIFER.--Carrington.

WELL CHARACTERISTICS.--Drilled observation well, depth 100 ft, cased with 77.7 ft of 8-in diameter plastic pipe, No. 18 slot screen set 77.7 to 87.7 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From July 1991 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,567.03 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--July 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.42 ft below land-surface datum, August 14, 2001; lowest water level, 26.06 ft below land-surface datum, September 27, 1992.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	18.17	18.02	18.22	18.37	18.46	18.62	18.71	18.74	18.85	19.28	19.67	19.71
10	17.98	18.25	18.37	18.43	18.63	18.72	18.61	18.78	18.84	19.18	19.52	19.81
15	18.34	18.21	18.24	18.54	18.43	18.55	18.42	18.83	18.86	19.06	19.57	19.79
20	18.11	18.14	18.50	18.17	18.58	18.81	18.78	18.80	19.10	19.31	19.46	19.72
25	18.44	18.49	18.42	18.33	18.67	18.67	18.80	18.58	18.82	19.16	19.87	19.81
EOM	17.80	18.07	18.46	18.44	18.62	18.58	18.62	18.71	19.14	19.70	19.77	19.72
MAX	18.53	18.49	18.52	18.58	18.76	18.81	18.89	18.89	19.14	19.70	19.87	19.88
MIN	17.79	17.99	18.09	18.05	18.28	18.19	18.32	18.53	18.73	18.91	19.44	19.48
CAL YR 2001	HIGH 17.60 AUG 14		LOW 19.27 FEB 1									
WTR YR 2002	HIGH 17.79 OCT 23		LOW 19.88 SEP 9									

147-067-35AAA



GOLDEN VALLEY COUNTY

465421103590706. Local number, 140-105-30CCC6.

LOCATION.--Lat 46°54'21", long 103°59'07", Hydrologic Unit 10110204. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek-Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 1,140 ft, cased with 1,050 ft of 4-in diameter steel pipe, screen set 1,050 to 1,130 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

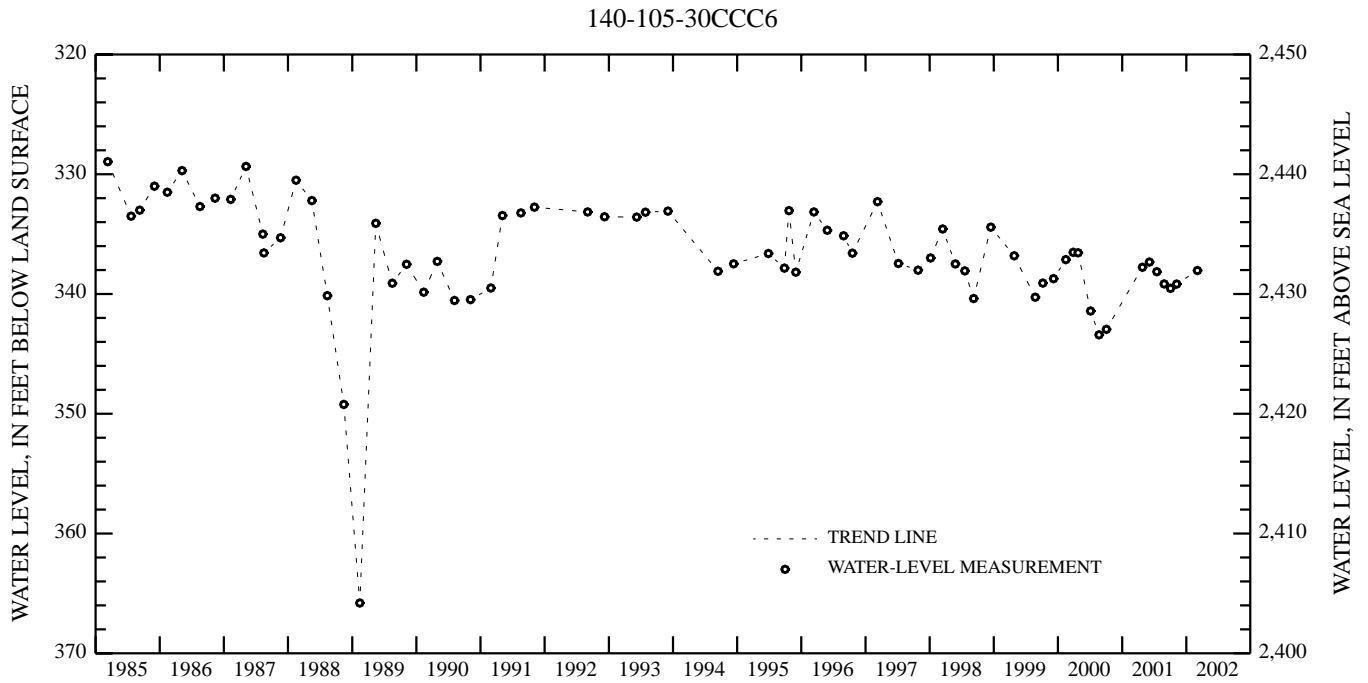
DATUM.--Altitude of land-surface datum is 2,770 ft. Measuring point: Top of casing 1.50 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 328.95 ft below land-surface datum, March 11, 1985; lowest water level, 365.80 ft below land-surface datum, February 13, 1989.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	339.53	NOV 07	339.17	MAR 05	338.04
WATER YEAR 2002	HIGHEST 338.04	MAR 05, 2002	LOWEST 339.53	OCT 03, 2001	



GROUND-WATER LEVELS

GRAND FORKS COUNTY

475646097372201. Local number, 152-054-31BBB.

LOCATION.--Lat 47°56'46", long 97°37'22", Hydrologic Unit 09020307. Owner: North Dakota State Water Commission.

AQUIFER.--Elk Valley.

WELL CHARACTERISTICS.--Drilled observation well, depth 84 ft, cased with 60 ft of 4-in diameter plastic pipe, slotted 50 to 60 ft below land-surface datum.

INSTRUMENTATION.--Water-level data September 1965 to current year. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for June 1968 to September 1973. From October 1973 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,122.6 ft. Measuring point: Top of casing 1.31 ft above land-surface datum. Prior to road construction completed on October 19, 1978, altitude of land-surface datum was 1,127 ft.

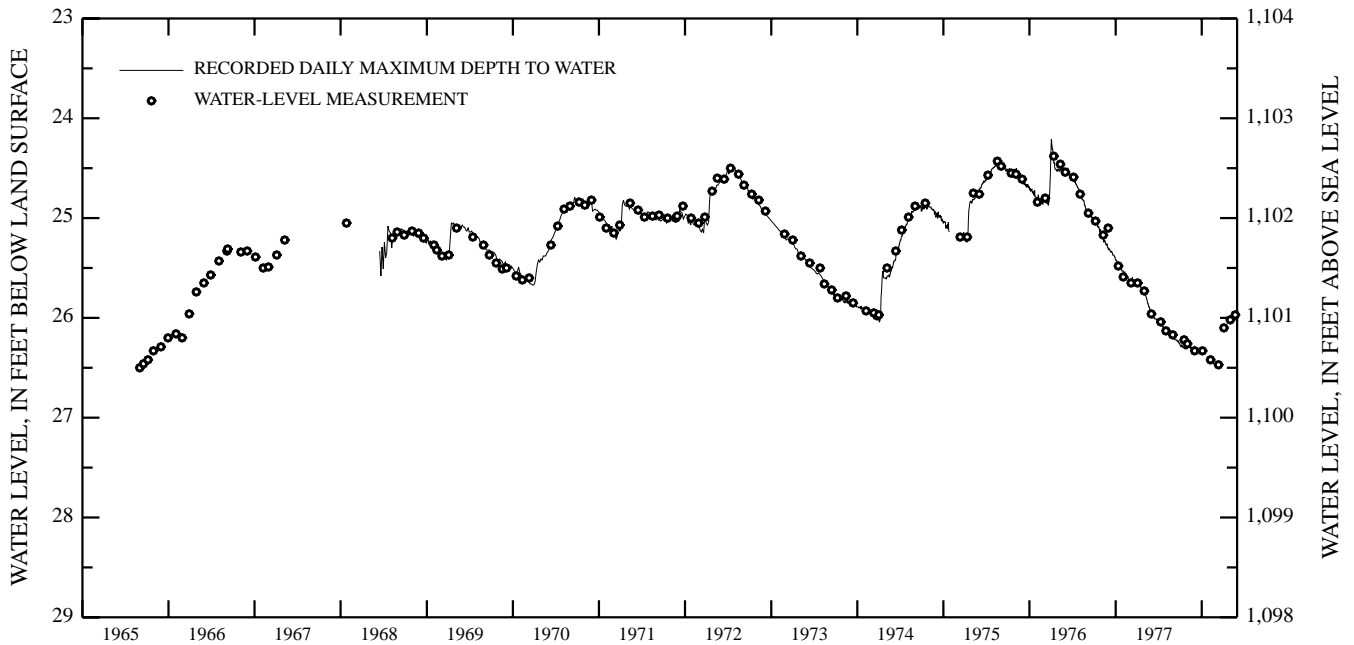
PERIOD OF RECORD.--September 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.40 ft below land-surface datum, June 10-11, 2001; lowest water level 26.50 ft below land-surface datum, September 1, 1965.

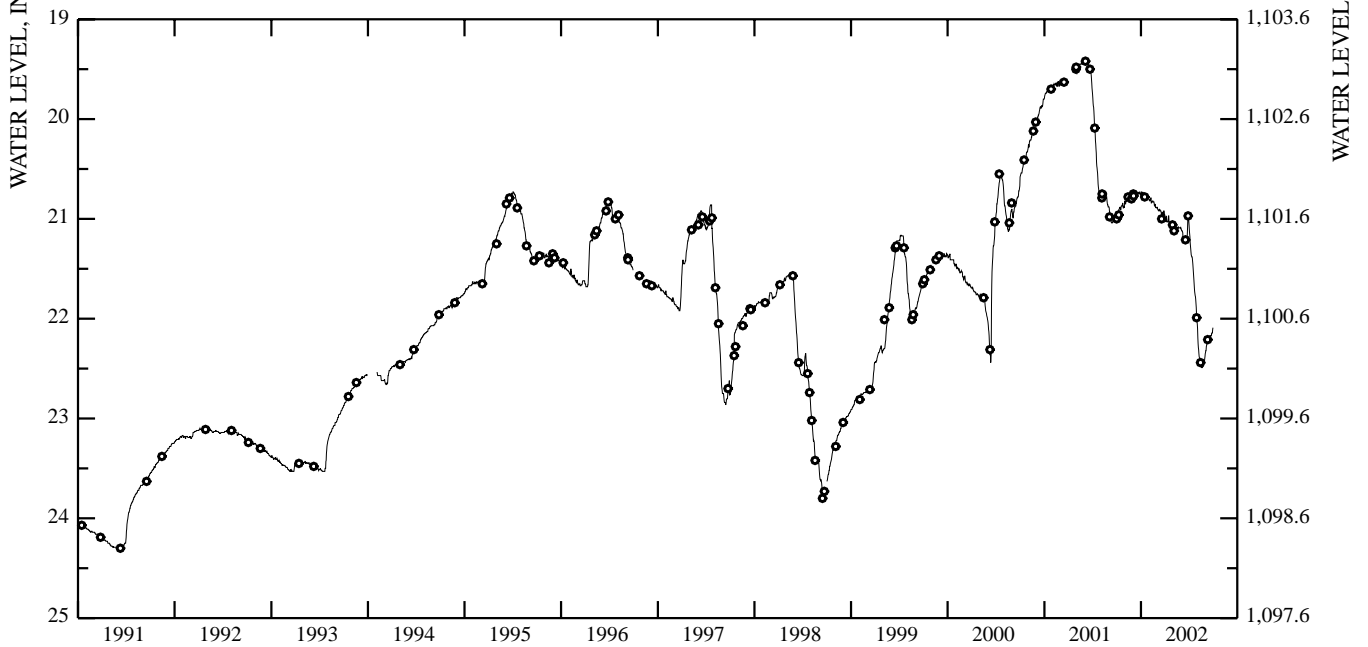
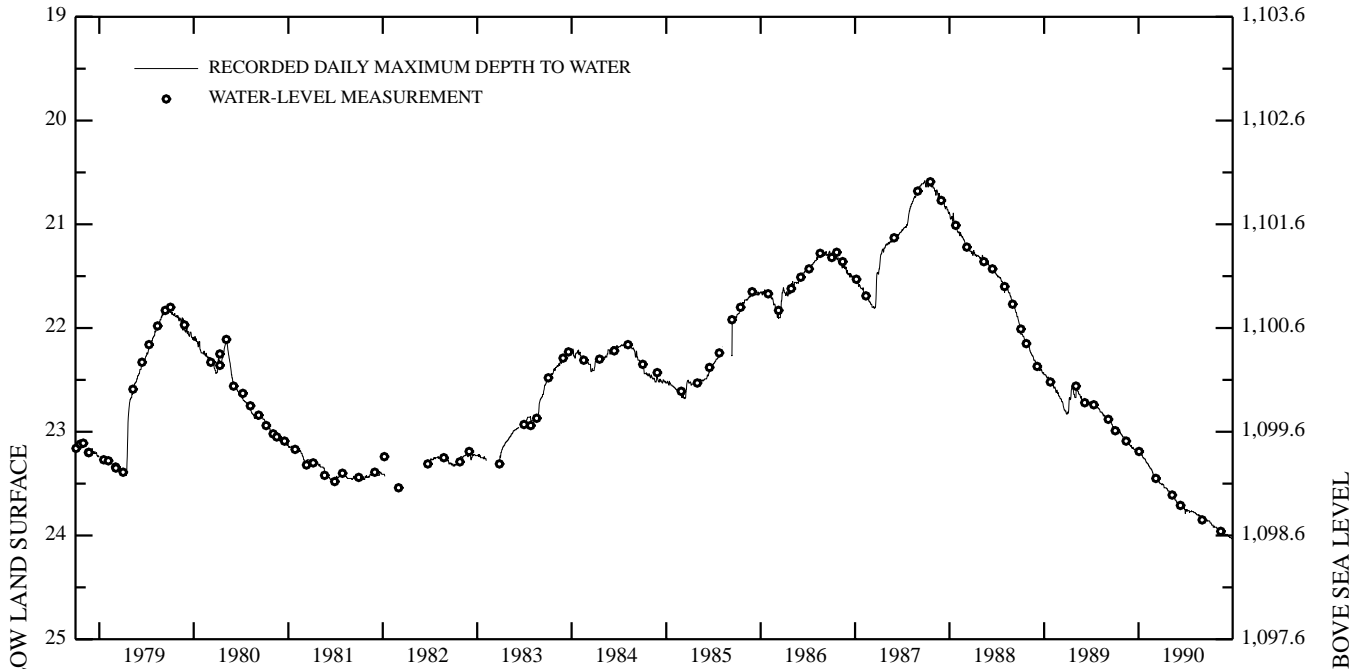
DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.97	20.83	20.74	20.74	20.81	20.90	21.03	21.07	21.12	21.18	22.25	22.28
10	20.91	20.81	20.74	20.76	20.84	20.92	21.03	21.07	21.22	21.36	22.39	22.23
15	20.90	20.79	20.73	20.78	20.82	20.92	20.97	21.08	21.23	21.42	22.44	22.19
20	20.87	20.79	20.75	20.75	20.85	21.00	21.06	21.10	21.23	21.61	22.49	22.17
25	20.87	20.79	20.75	20.76	20.88	21.00	21.07	21.09	21.16	21.77	22.47	22.15
EOM	20.83	20.76	20.75	20.80	20.89	20.96	21.07	21.08	21.00	22.00	22.38	22.09
MAX	21.00	20.85	20.75	20.80	20.89	21.00	21.07	21.10	21.23	22.00	22.49	22.35
MIN	20.83	20.76	20.72	20.73	20.79	20.88	20.96	21.07	20.96	21.03	22.03	22.09
CAL YR 2001	HIGH 19.41	JUN 10	LOW 21.04	SEP 12-15								
WTR YR 2002	HIGH 20.71	JAN 08	LOW 22.49	AUG 18-21								

152-054-31BBB



152-054-31BBB--Continued



GROUND-WATER LEVELS

GRANT COUNTY

463000101575101. Local number, 135-090-23BBB1.

LOCATION.--Lat 46°30'00", long 101°57'51", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 1,080 ft, cased with 1,029 ft of 2-in diameter steel pipe, No. 12 slot screen set 1,029 to 1,047 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,362 ft. Measuring point: Top of casing 3.00 ft above land-surface datum.

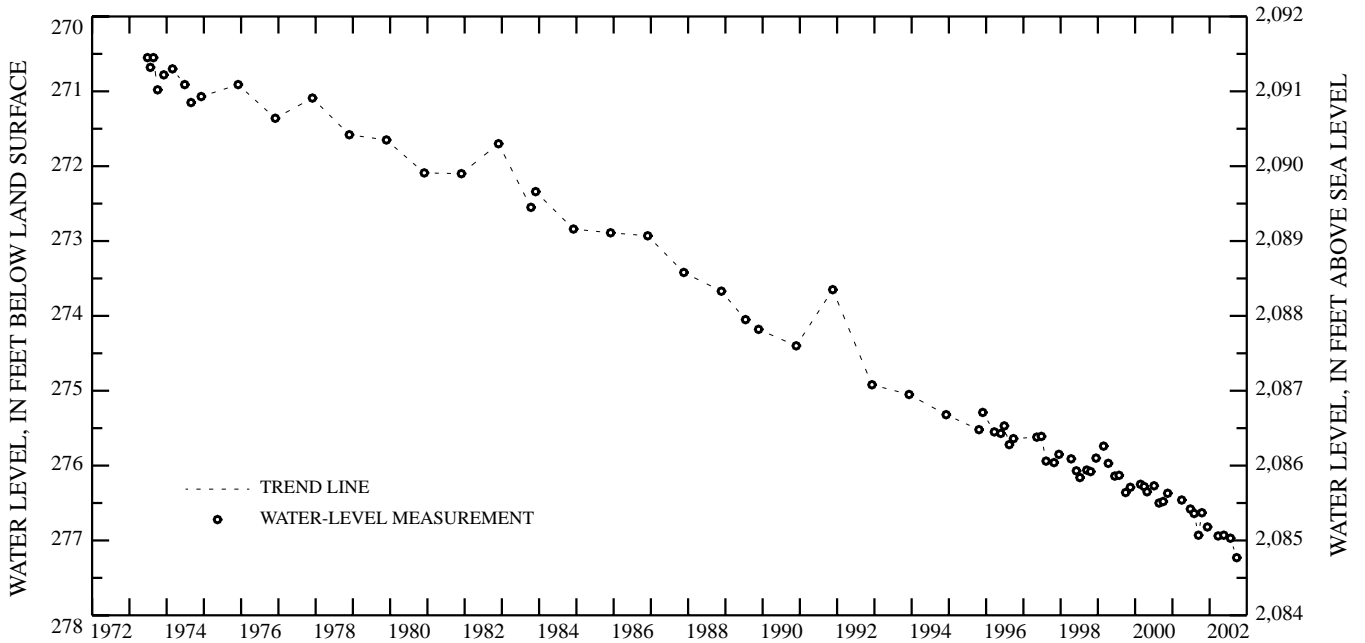
PERIOD OF RECORD.--June 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 270.55 ft below land-surface datum, June 27, 1973, and August 24, 1973; lowest water level, 277.23 ft below land-surface datum, September 23, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	276.63	DEC 10	276.82	MAR 25	276.94	MAY 20	276.93	JUL 24	276.97	SEP 23	277.23
WATER YEAR 2002		HIGHEST	276.63	OCT 17, 2001		LOWEST	277.23	SEP 23, 2002			

135-090-23BBB1



GRANT COUNTY--Continued

463000101575102. Local number, 135-090-23BBB2.

LOCATION.--Lat 46°30'00", long 101°57'51", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission.

AQUIFER.--Tongue River.

WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, cased with 277 ft of 1.25-in diameter plastic pipe, screen set 277 to 283 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,366 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

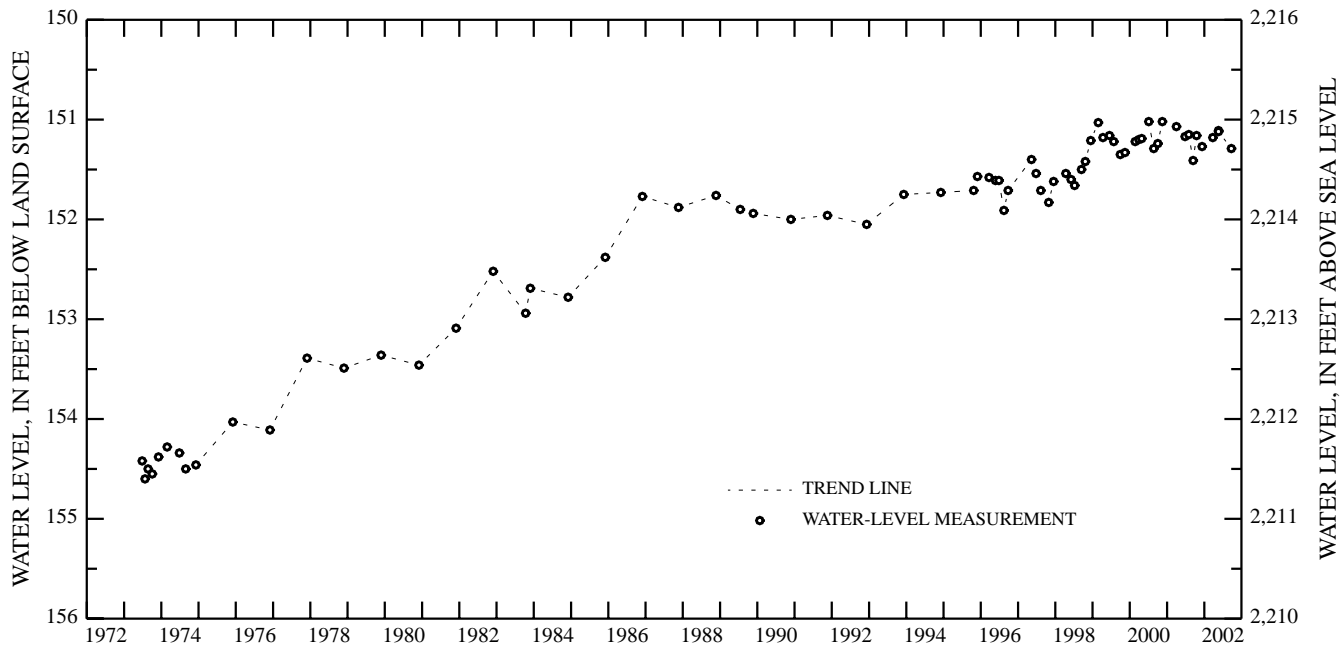
PERIOD OF RECORD.--June 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 151.02 ft below land-surface datum, July 5 and November 15, 2000; lowest water level, 154.60 ft below land-surface datum, July 25, 1973.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	151.16	DEC 10	151.27	MAR 25	151.18	MAY 20	151.11	JUL 24	151.12	SEP 23	151.29
WATER YEAR 2002		HIGHEST	151.11	MAY 20, 2002		LOWEST	151.29	SEP 23, 2002			

135-090-23BBB2



GROUND-WATER LEVELS

GRIGGS COUNTY

472412098261201. Local number, 145-061-04DAD1.

LOCATION.--Lat 47°24'12", long 98°26'12", Hydrologic Unit 09020203. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased with 102 ft of 6-in diameter plastic pipe, No. 30 slot screen set 102 to 107 ft below land-surface datum.

INSTRUMENTATION.--Water-level data December 1970 to current year. From March 1974 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,470 ft. Measuring point: Top of casing 1.60 ft above land-surface datum.

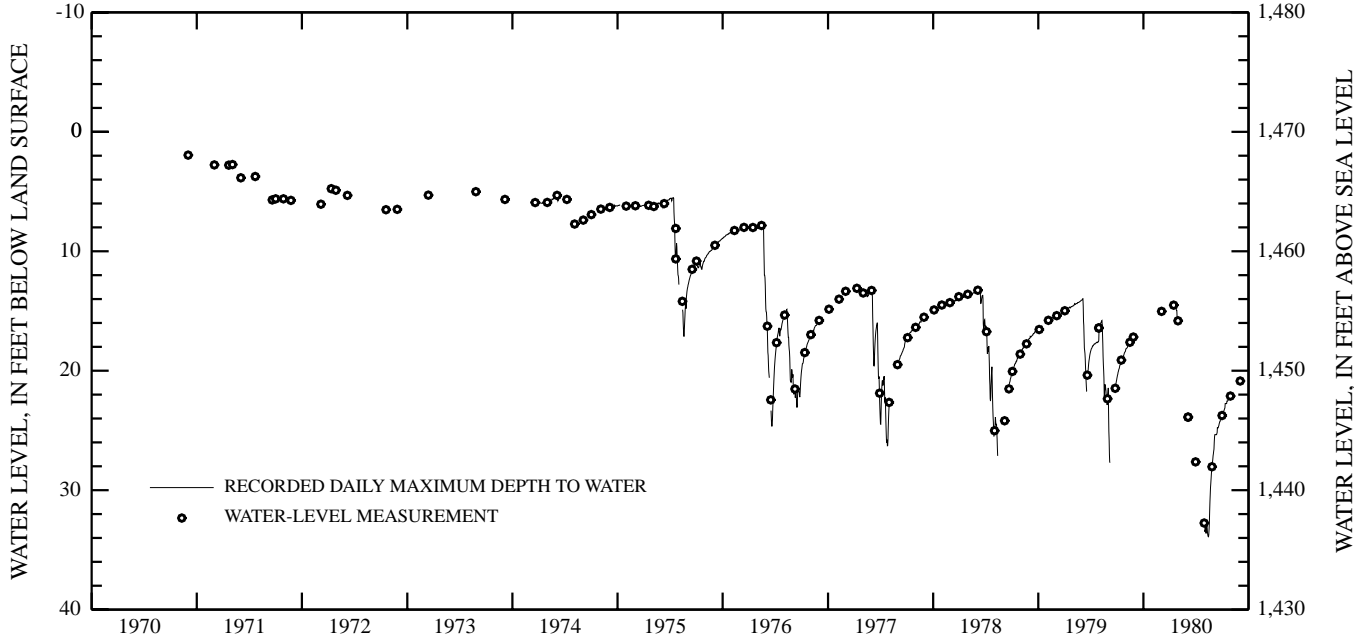
PERIOD OF RECORD.--December 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, -1.17 ft below land-surface datum, September 1, 2, 7, and 8, 2001; lowest water level, 33.90 ft below land-surface datum, August 14, 1980.

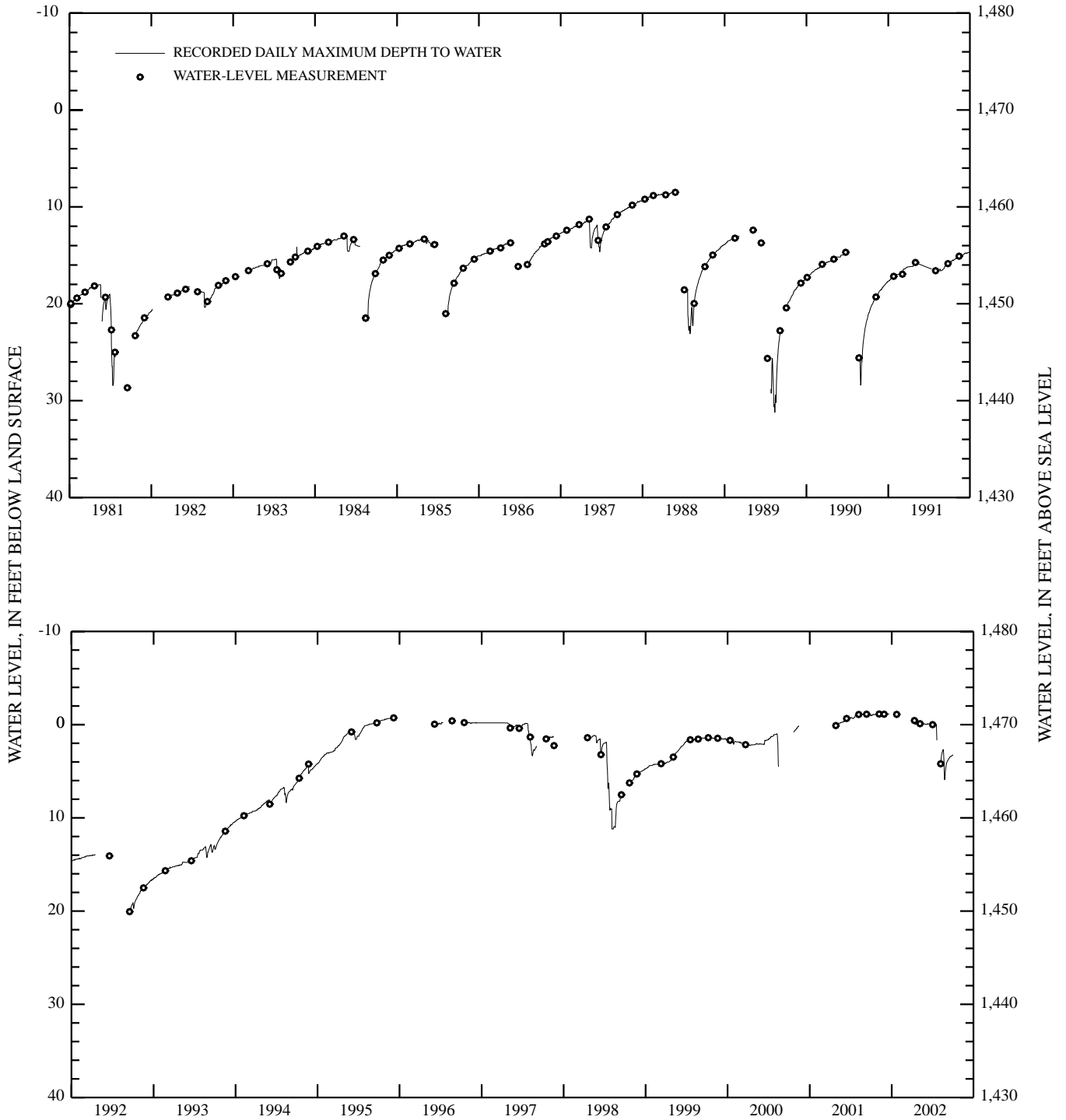
DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES
(READINGS ABOVE LAND SURFACE INDICATED BY "--")

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-0.99	-1.13	-1.16	---	---	---	---	-0.05	-0.03	-0.05	---	3.95
10	-1.08	-1.16	-1.17	---	---	---	---	-0.18	-0.11	-0.03	3.47	3.74
15	-1.08	-1.15	-1.15	---	---	---	-0.06	-0.15	-0.07	-0.05	2.86	3.58
20	-1.09	-1.13	-1.09	---	---	---	-0.08	-0.04	-0.03	0.84	3.07	3.40
25	-1.12	-1.14	---	---	---	---	-0.06	-0.06	-0.06	---	5.90	3.35
EOM	-1.11	-1.13	---	---	---	---	-0.11	-0.06	-0.03	---	4.42	3.21
MAX	-0.98	-1.12	-1.09	---	---	---	-0.02	-0.04	-0.03	1.68	5.90	4.29
MIN	-1.12	-1.16	-1.17	---	---	---	-0.25	-0.22	-0.11	-0.09	2.68	3.21
CAL YR 2001	HIGH	-1.17	DEC 6	LOW	0.09	APR 28						
WTR YR 2002	HIGH	-1.17	DEC 6	LOW	5.90	AUG 25						

145-061-04DAD1



145-061-04DAD1--Continued



472624098013101. Local number, 146-058-26BBDB.

LOCATION.--Lat 47°26'24", long 98°01'31", Hydrologic Unit 09020203. Owner: Corps of Engineers.

AQUIFER.--McVille.

WELL CHARACTERISTICS.--Augered observation well, depth 27 ft, cased from -2.6 to 19.3 ft with 2-in diameter plastic pipe, screen set 19.3 to 24.3 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,305.24 ft. Measuring point: Top of casing 2.60 ft above land-surface datum.

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

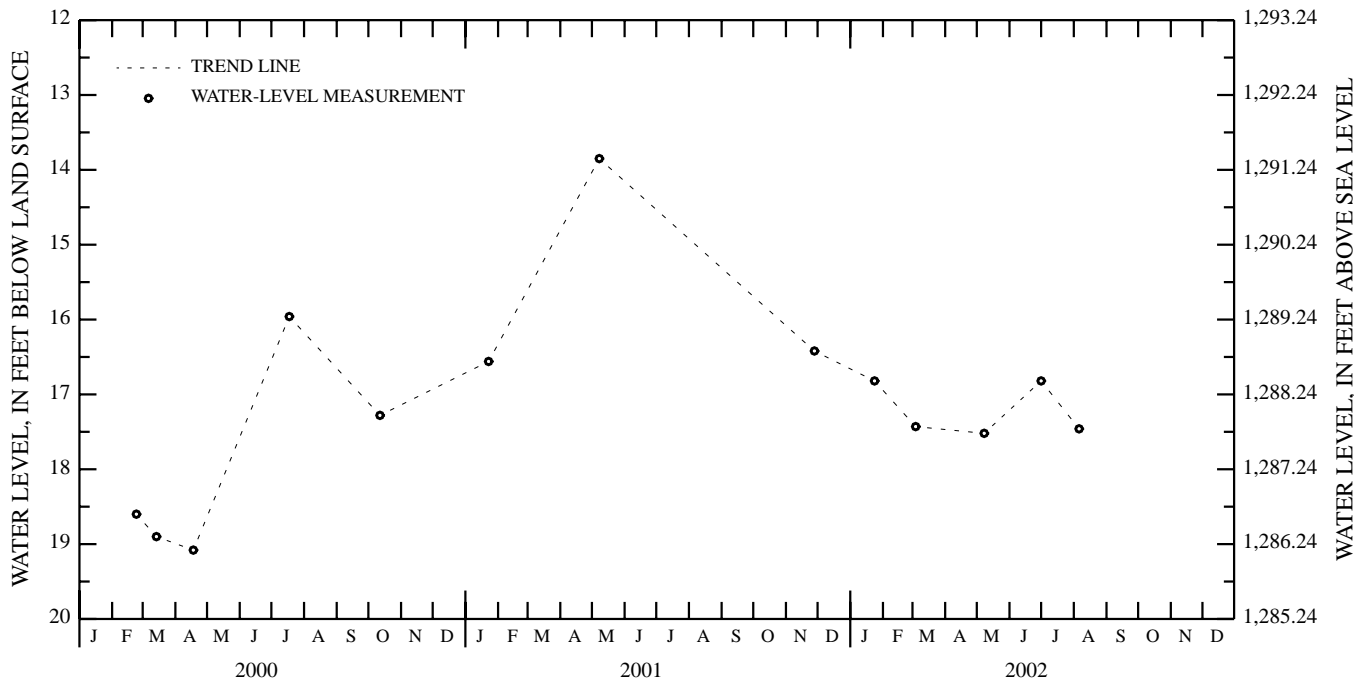
REMARKS.--Replaces well 146-058-26CBC

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 13.85 ft below land-surface datum, May 8, 2001; lowest water level, 19.08 ft below land-surface datum, April 18, 2000.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	16.42	JAN 24	16.82	MAR 04	17.43	MAY 08	17.52	JUL 01	16.82	AUG 06	17.46
WATER YEAR 2002		HIGHEST	16.42	NOV 28, 2001		LOWEST	17.52	MAY 08, 2002			

146-058-26BBDB



GRIGGS COUNTY--Continued

47255098013501. Local number, 146-058-26CBC.

LOCATION.--Lat 47°25'55", long 98°01'35", Hydrologic Unit 09020203. Owner: North Dakota State Water Commission.

AQUIFER.--McVille.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased from 0 to 38 ft with 6-in diameter plastic pipe and from 38 to 138 ft with 4-in diameter plastic pipe, screen set 138 to 143 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,290 ft. Measuring point: Top of casing 3.60 ft above land-surface datum.

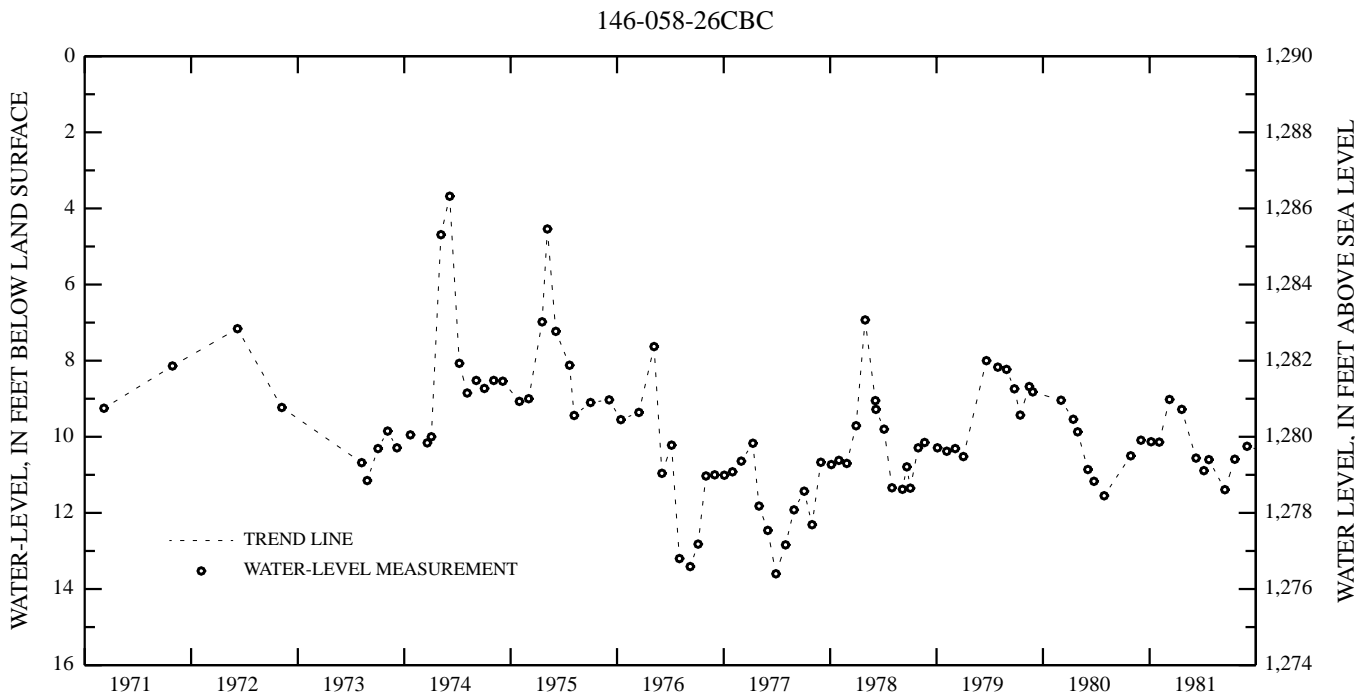
PERIOD OF RECORD.--March 1971 to October 2001. Measurements discontinued.

REMARKS.--Replaced with 146-058-26BBDB November 2001.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.65 ft below land-surface datum, April 23, 2001; lowest water level, 13.60 ft below land-surface datum, June 29, 1977.

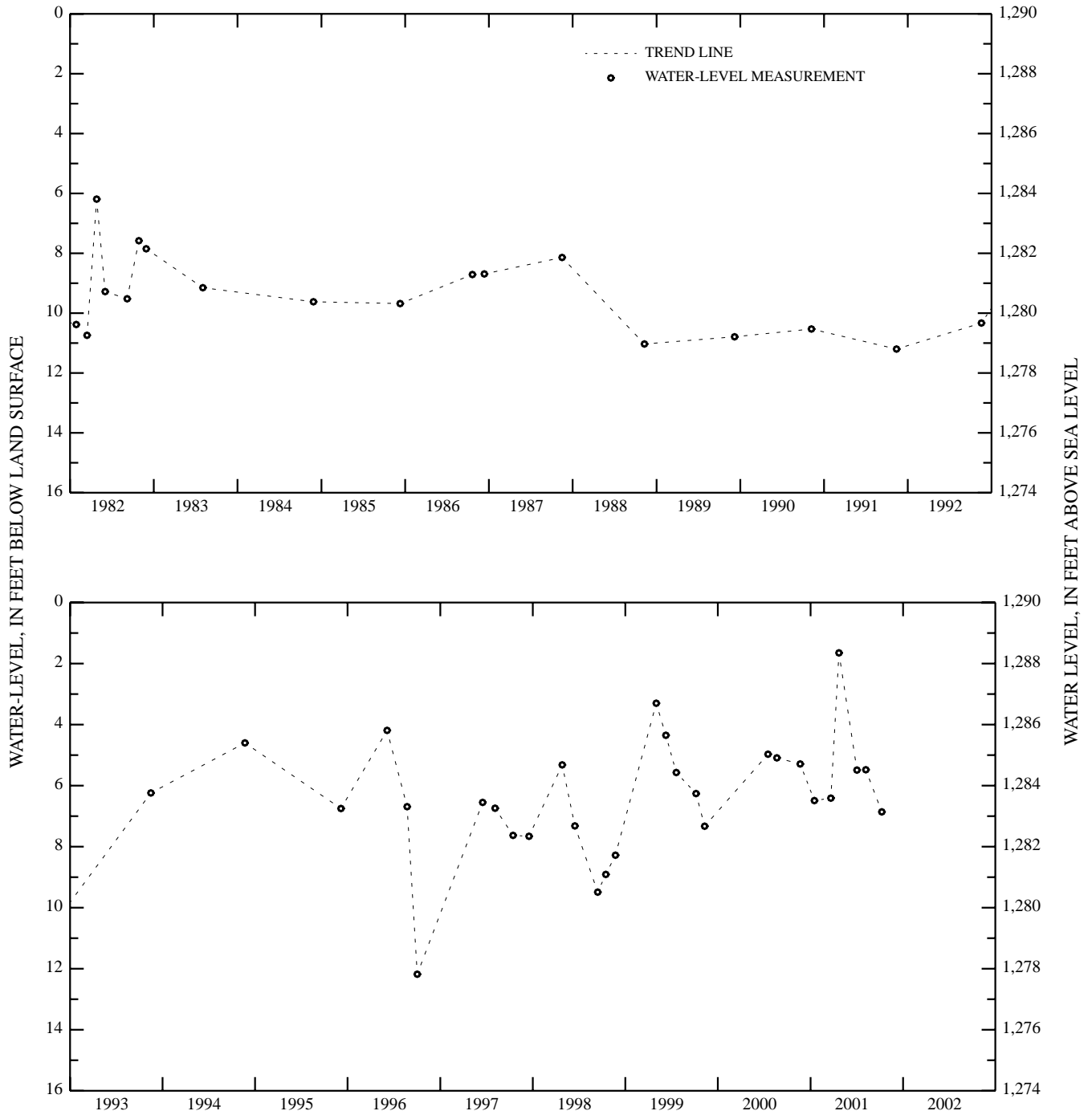
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	LEVEL
OCT 09	6.86
WATER YEAR 2002	HIGHEST 6.86 OCT 09, 2001
	LOWEST 6.86 OCT 09, 2001



GROUND-WATER LEVELS
GRIGGS COUNTY--Continued

146-058-26CBC--Continued



GRIGGS COUNTY--Continued

473425098232901. Local number, 147-061-01CCC.

LOCATION.--Lat 47°34'25", long 98°23'29", Hydrologic Unit 09020203. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 340 ft, cased with 237 ft of 1.25-in diameter plastic pipe, No. 25 slot screen set 237 to 240 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,520.61 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

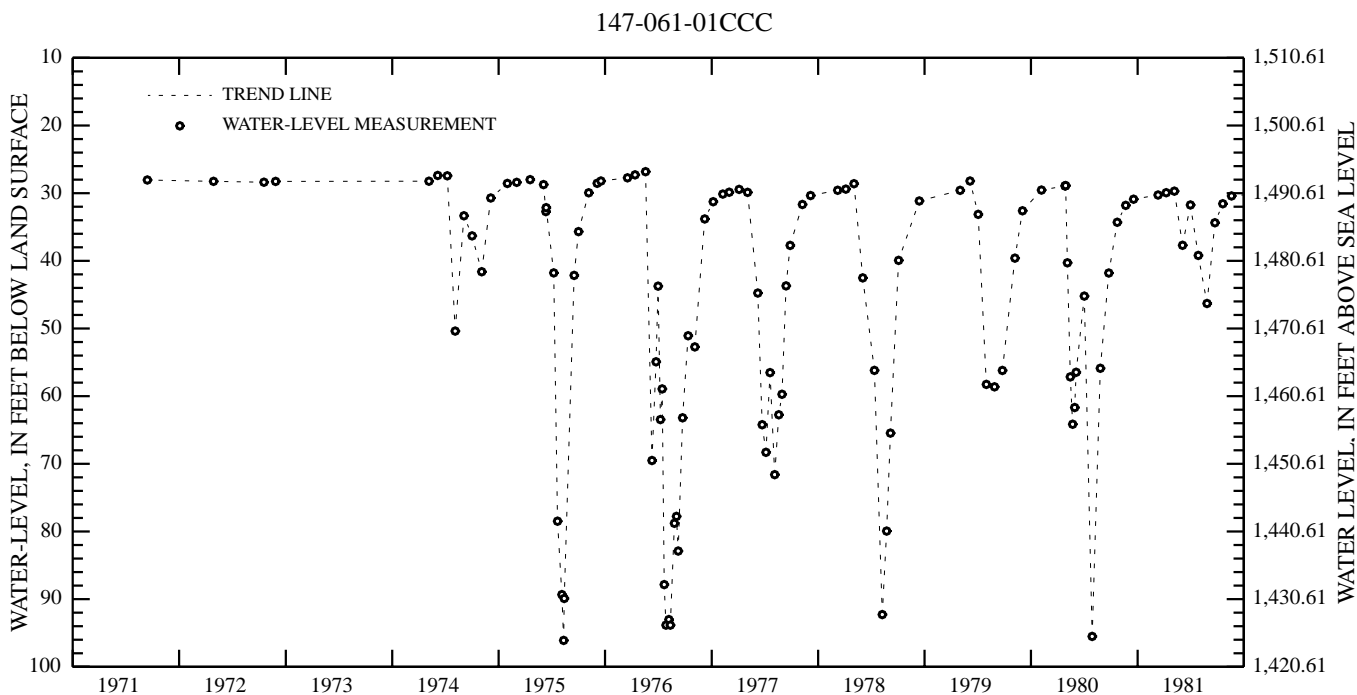
PERIOD OF RECORD.--September 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.39 ft below land-surface datum, July 19, 1999; lowest water level, 96.10 ft below land-surface datum, August 12, 1975.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

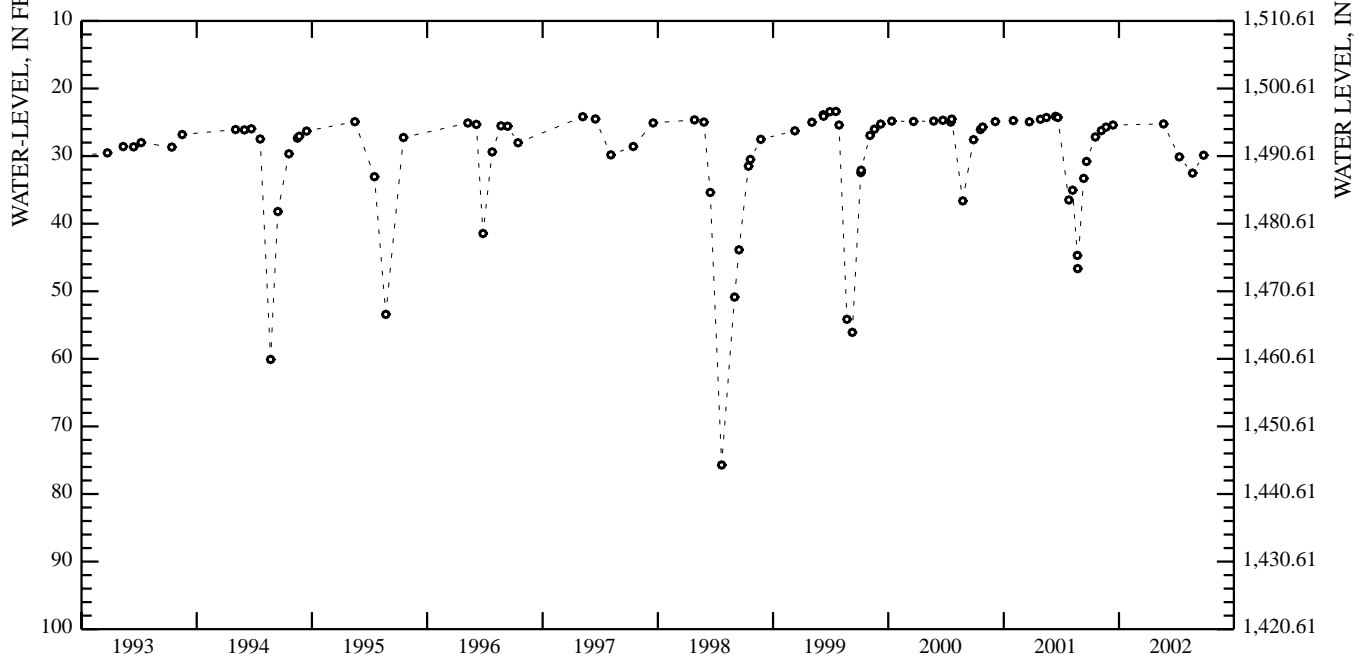
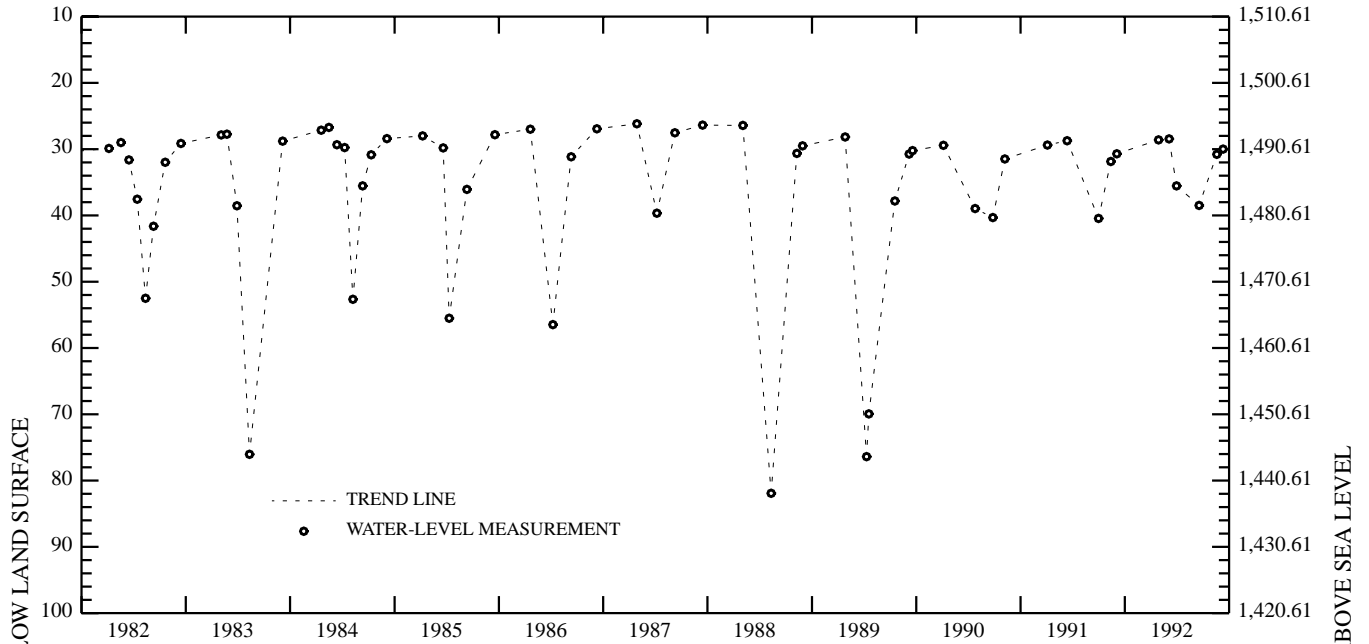
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	27.17	NOV 21	25.71	MAY 22	25.24	JUL 11	30.12	AUG 22	32.52	SEP 26	29.87
NOV 06	26.23	DEC 13	25.40								

WATER YEAR 2002 HIGHEST 25.24 MAY 22, 2002 LOWEST 32.52 AUG 22, 2002



GROUND-WATER LEVELS
GRIGGS COUNTY--Continued

147-061-01CCC--Continued



HETTINGER COUNTY

463153102521001. Local number, 135-097-04DCA.

LOCATION.--Lat 46°31'53", long 102°52'10", Hydrologic Unit 10130204. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 1,360 ft, cased with 1,320 ft of 4-in diameter steel pipe, open ended.

INSTRUMENTATION.--Measured using a steel tape.

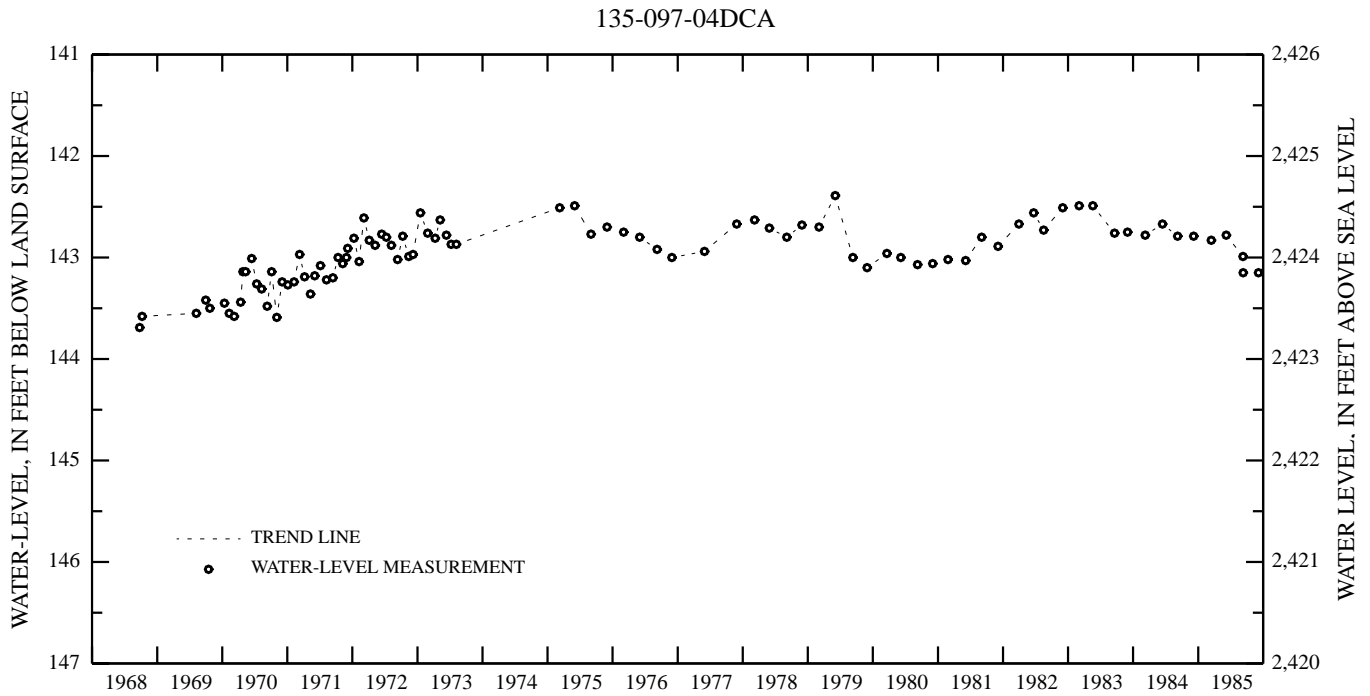
DATUM.--Altitude of land-surface datum is 2,567 ft. Measuring point: Top of casing 0.80 ft above land-surface datum.

PERIOD OF RECORD.--September 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 142.39 ft below land-surface datum, June 4, 1979; lowest water level, 146.00 ft below land-surface datum, November 8, 2001.

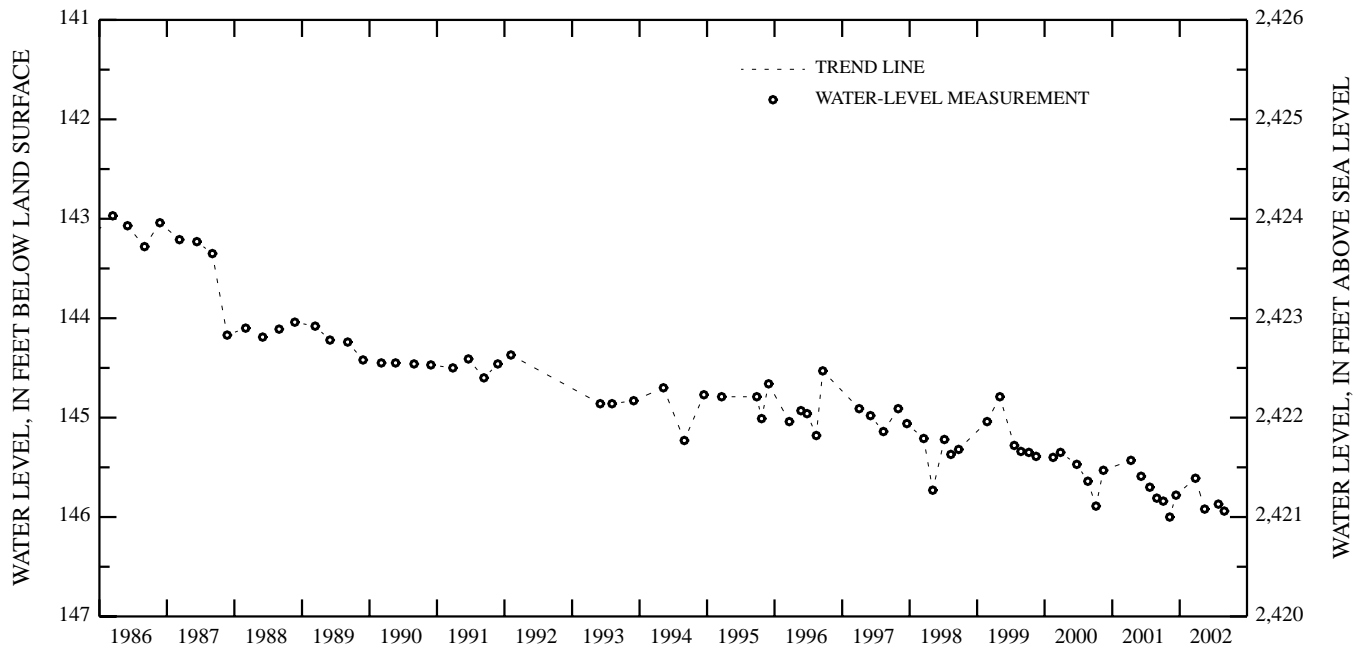
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	145.84	DEC 12	145.78	MAR 27	145.61	MAY 16	145.92	JUL 29	145.87	AUG 30	145.94
NOV 08	146.00										
WATER YEAR 2002		HIGHEST	145.61	MAR 27, 2002		LOWEST	146.00	NOV 08, 2001			



GROUND-WATER LEVELS
HETTINGER COUNTY--Continued

135-097-04DCA--Continued



KIDDER COUNTY--Continued

470638099324301. Local number, 142-070-16DDD.

LOCATION.--Lat 47°06'38", long 99°32'43", Hydrologic Unit 10130103. Owner: North Dakota State Water Commission.

AQUIFER.--Long Lake.

WELL CHARACTERISTICS.--Drilled observation well, depth 84 ft, cased with 70 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 70 to 73 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,809.29 ft. Measuring point: Top of casing 1.90 ft above land-surface datum.

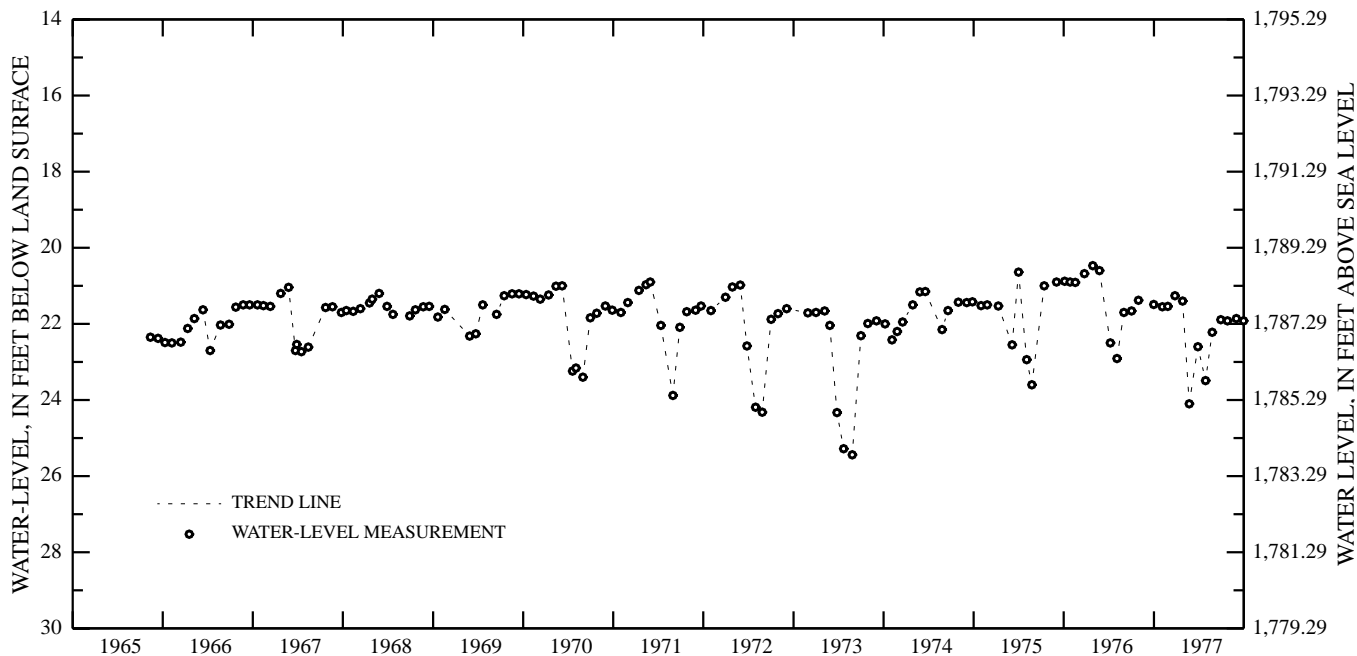
PERIOD OF RECORD.--November 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.94 ft below land-surface datum, May 23, 1997; lowest water level, 26.18 ft below land-surface datum, August 5, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

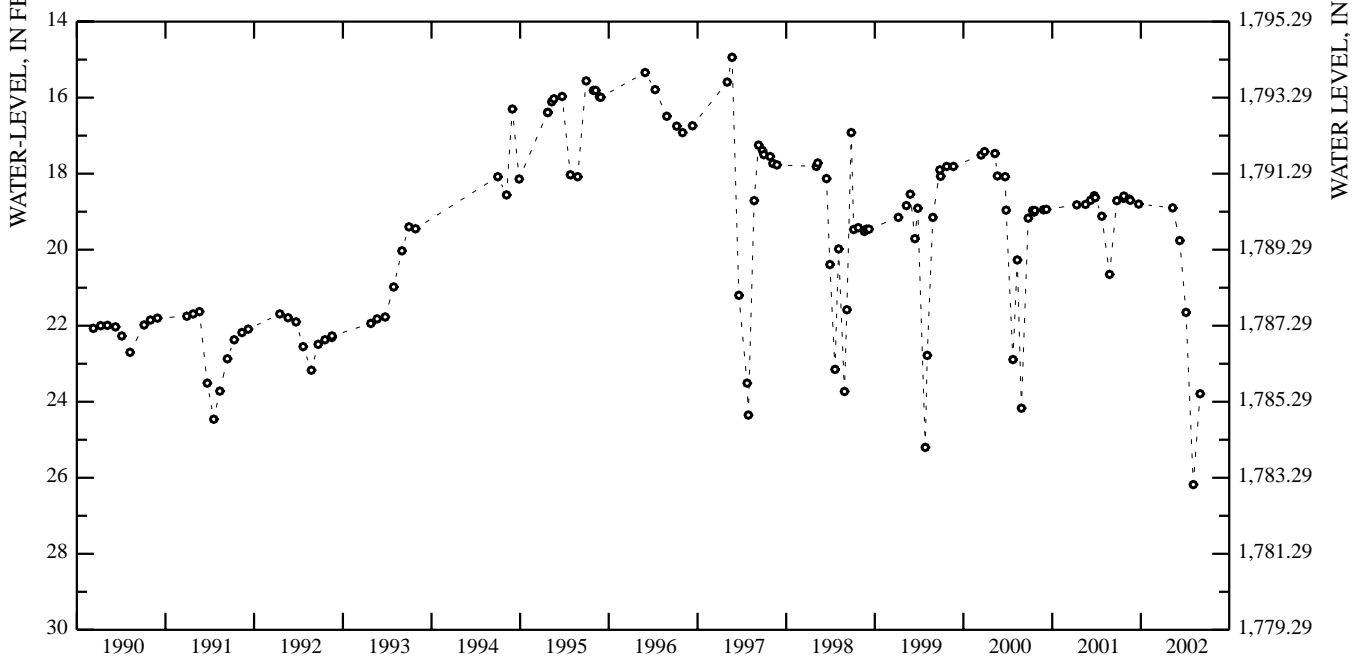
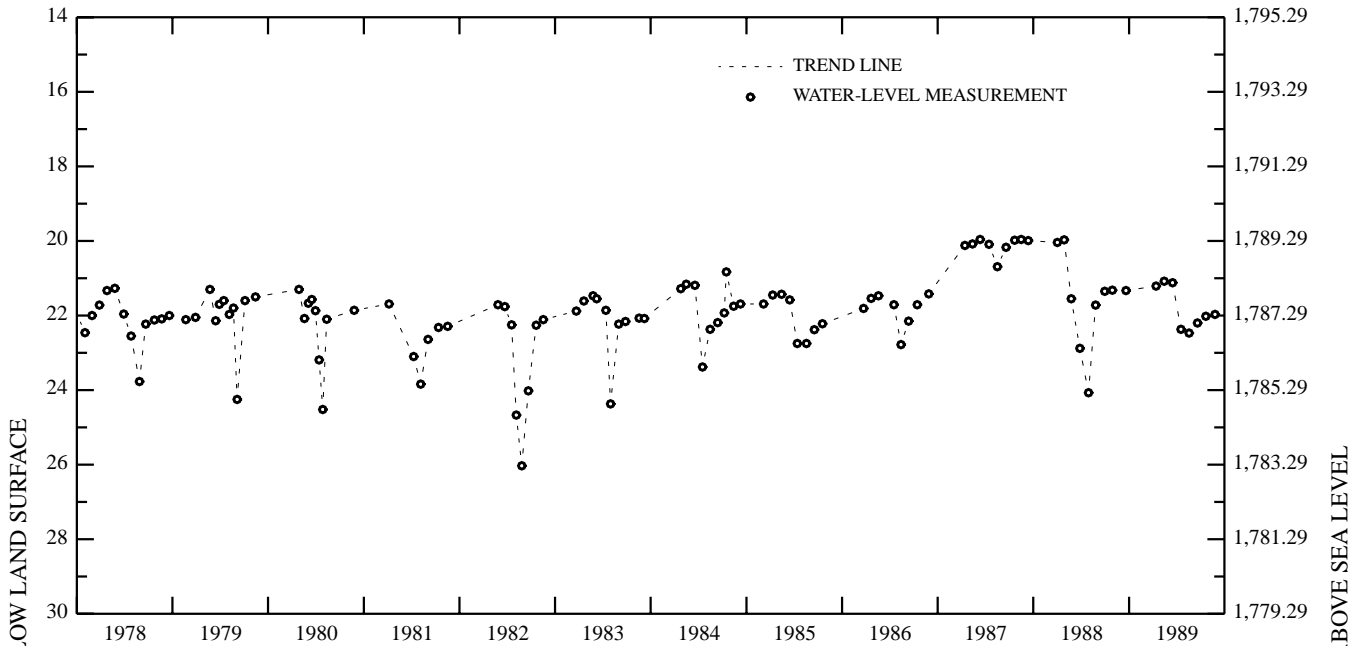
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	18.65	NOV 14	18.67	DEC 23	18.80	JUN 10	19.76	AUG 05	26.18	SEP 02	23.79
OCT 23	18.59	NOV 18	18.70	MAY 12	18.90	JUL 06	21.65				
WATER YEAR 2002		HIGHEST	18.59	OCT 23, 2001		LOWEST	26.18	AUG 05, 2002			

142-070-16DDD



GROUND-WATER LEVELS
KIDDER COUNTY--Continued

142-070-16DDD--Continued



LaMOURE COUNTY

461958098132901. Local number, 133-060-16DAA.

LOCATION.--Lat 46°19'58", long 98°13'29", Hydrologic Unit 10160003. Owner: North Dakota State Water Commission.

AQUIFER.--LaMoire.

WELL CHARACTERISTICS.--Drilled observation well, depth 110 ft, cased with 58 ft of 6-in diameter plastic pipe, No. 25 slot screen set 58 to 63 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From November 1975 to October 29, 2000, daily minimum recorded water levels also are available. Measured using a steel tape October 29, 2000, to present.

DATUM.--Altitude of land-surface datum is 1,320 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

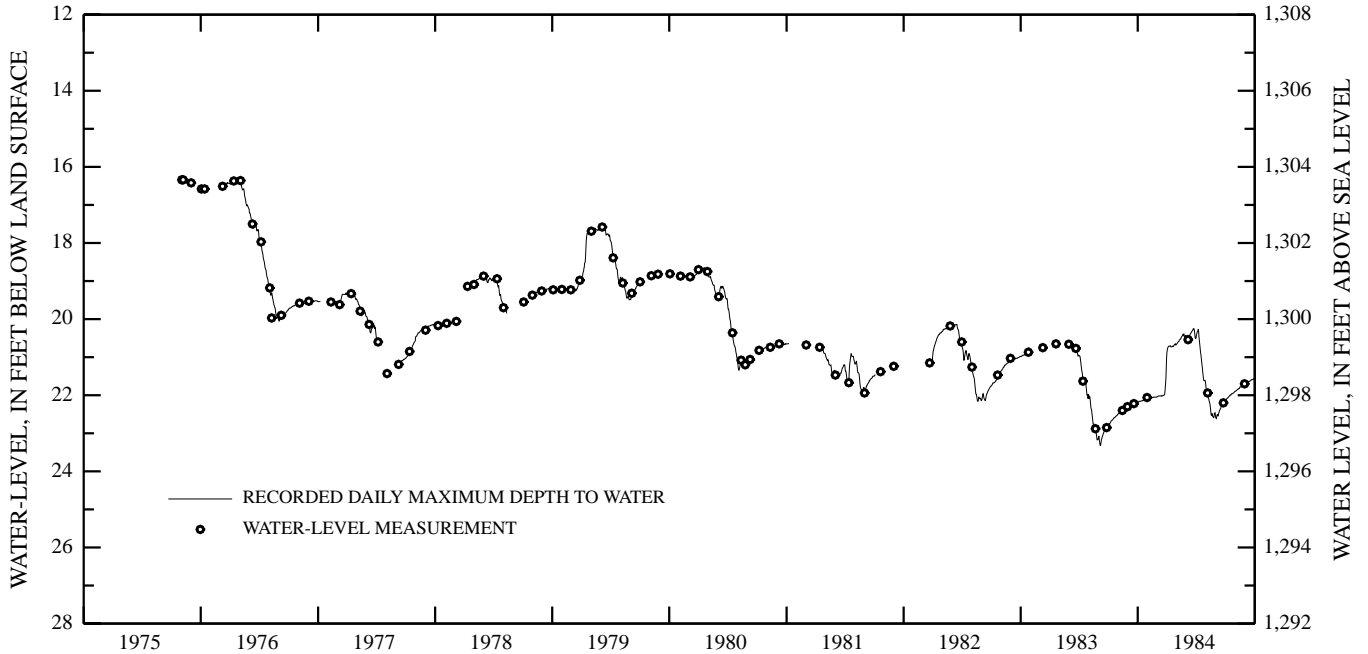
PERIOD OF RECORD.--November 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 13.63 ft below land-surface datum, May 19, 1999; lowest water level, 26.84 ft below land-surface datum, August 20, 1990.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

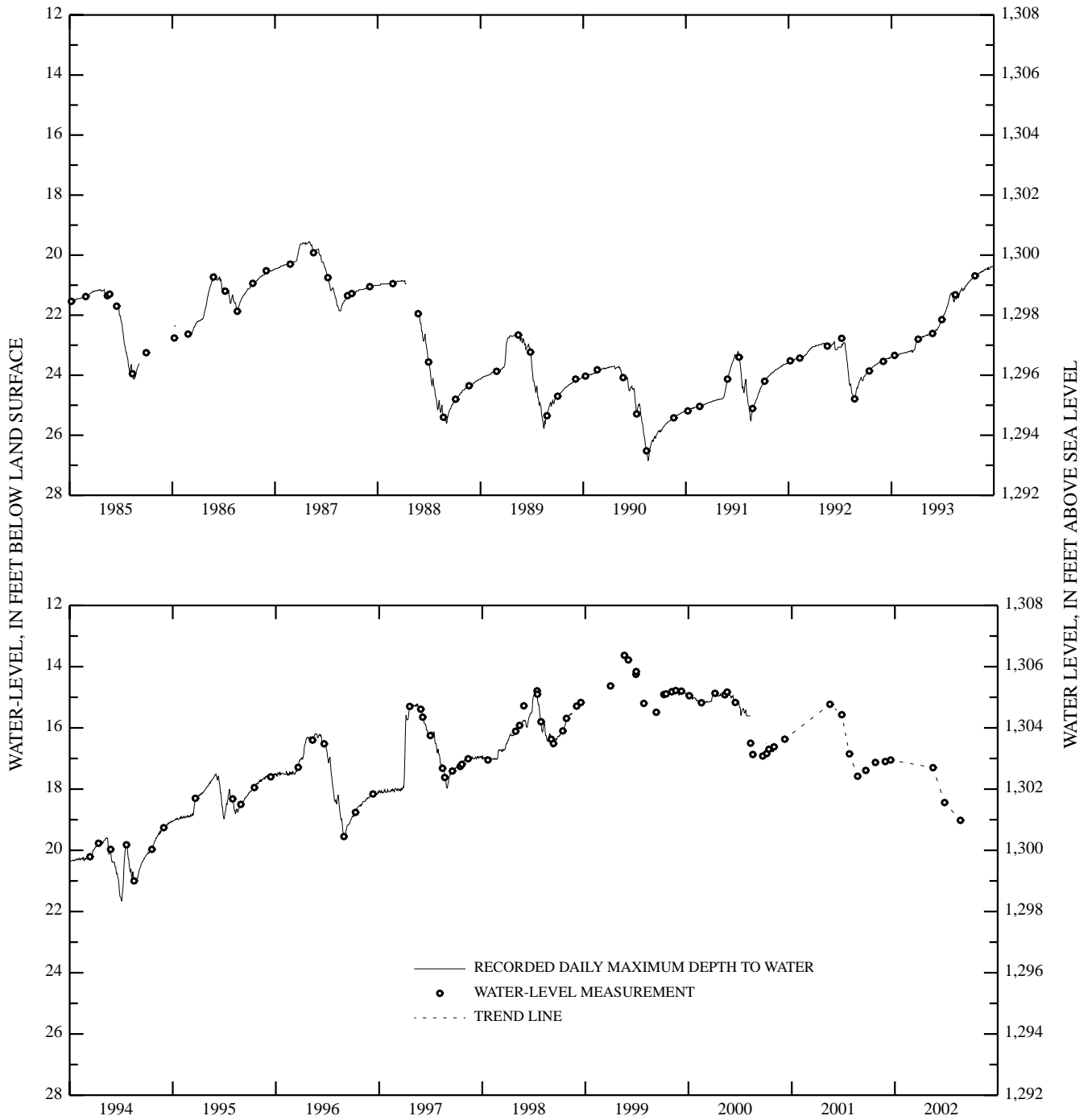
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	17.13	NOV 28	17.10	DEC 17	17.05	MAY 16	17.30	JUN 26	18.44	AUG 21	19.02
WATER YEAR 2002		HIGHEST	17.05	DEC 17, 2001		LOWEST	19.02	AUG 21, 2002			

133-060-16DAA



GROUND-WATER LEVELS
LaMOURE COUNTY--Continued

133-060-16DAA--Continued



LaMOURE COUNTY--Continued

462447098432602. Local number, 134-064-22BBB2.

LOCATION.--Lat 46°24'47", long 98°43'26", Hydrologic Unit 10160004. Owner: North Dakota State Water Commission.

AQUIFER.--Edgeley.

WELL CHARACTERISTICS.--Drilled observation well, depth 40 ft, cased with 27 ft of 4-in diameter plastic pipe, screen set 27 to 32 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder January 1975 to January 1998, daily minimum recorded water levels also are available. Measured using a steel tape January 1998 to present.

DATUM.--Altitude of land-surface datum is 1,550 ft. Measuring point: Top of casing 2.40 ft above land-surface datum.

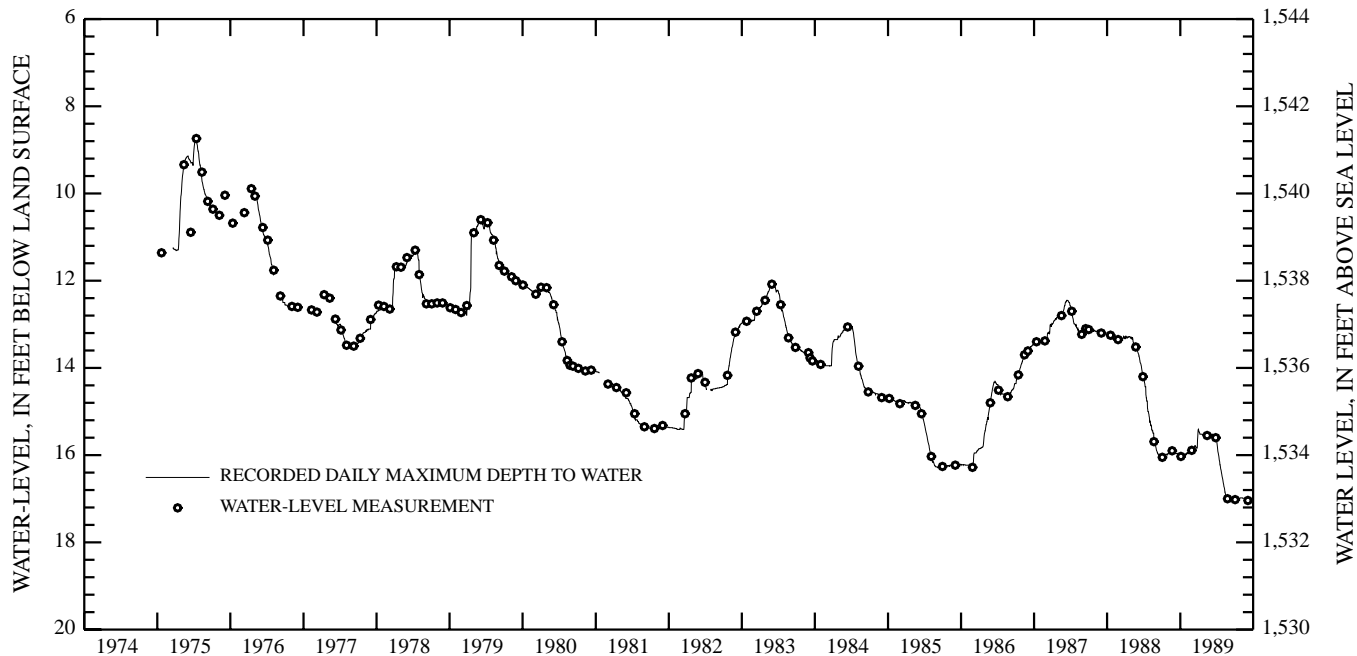
PERIOD OF RECORD.--January 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.86 ft below land-surface datum, June 2, 1999; lowest water level, 19.44 ft below land-surface datum, October 11, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

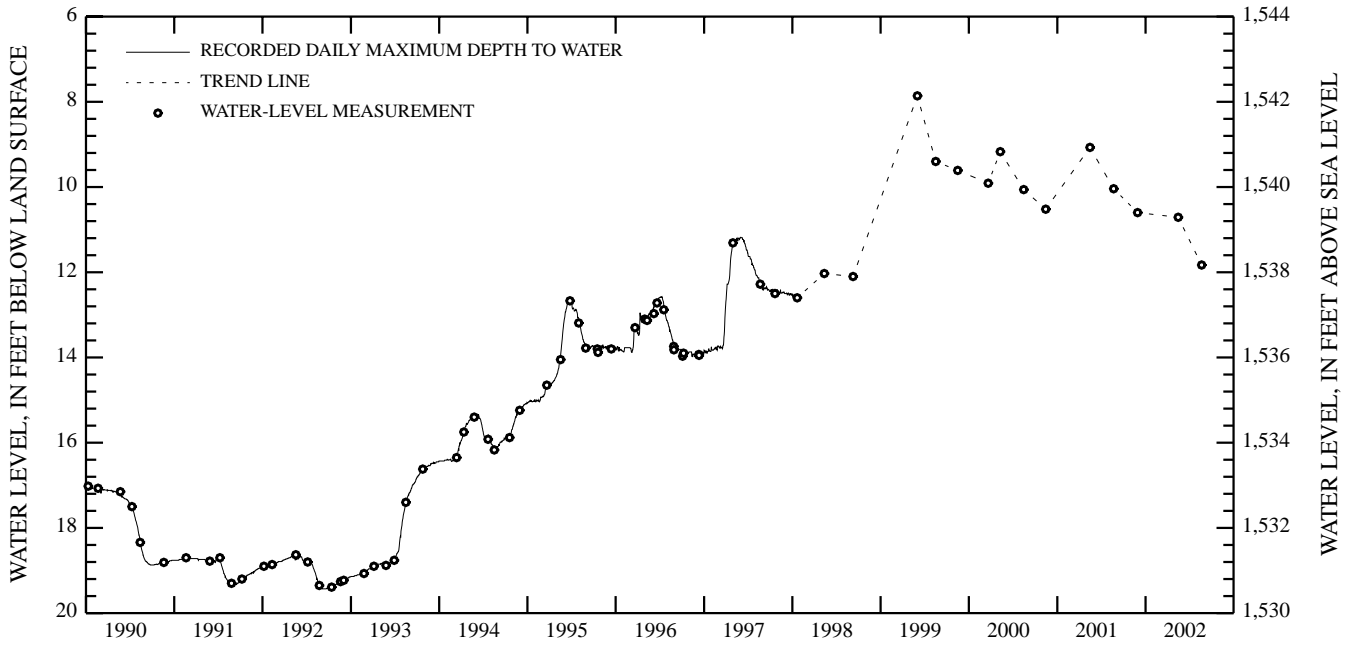
	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	NOV 29	10.60	MAY 16	10.71	AUG 21	11.83
WATER YEAR 2002	HIGHEST	10.60	NOV 29, 2001	LOWEST	11.83	AUG 21, 2002

134-064-22BBB2



GROUND-WATER LEVELS
LaMOURE COUNTY--Continued

134-064-22BBB2--Continued



LOGAN COUNTY

463417099271002. Local number, 136-070-26BBB2.

LOCATION.--Lat 46°34'17", long 99°27'10", Hydrologic Unit 10130103. Owner: North Dakota State Water Commission.

AQUIFER.--Streeter.

WELL CHARACTERISTICS.--Drilled observation well, depth 62 ft, cased with 39 ft of 6-in diameter plastic pipe, No. 25 slot screen set 39 to 44 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From November 1978 to current year, daily minimum recorded water levels also are available.

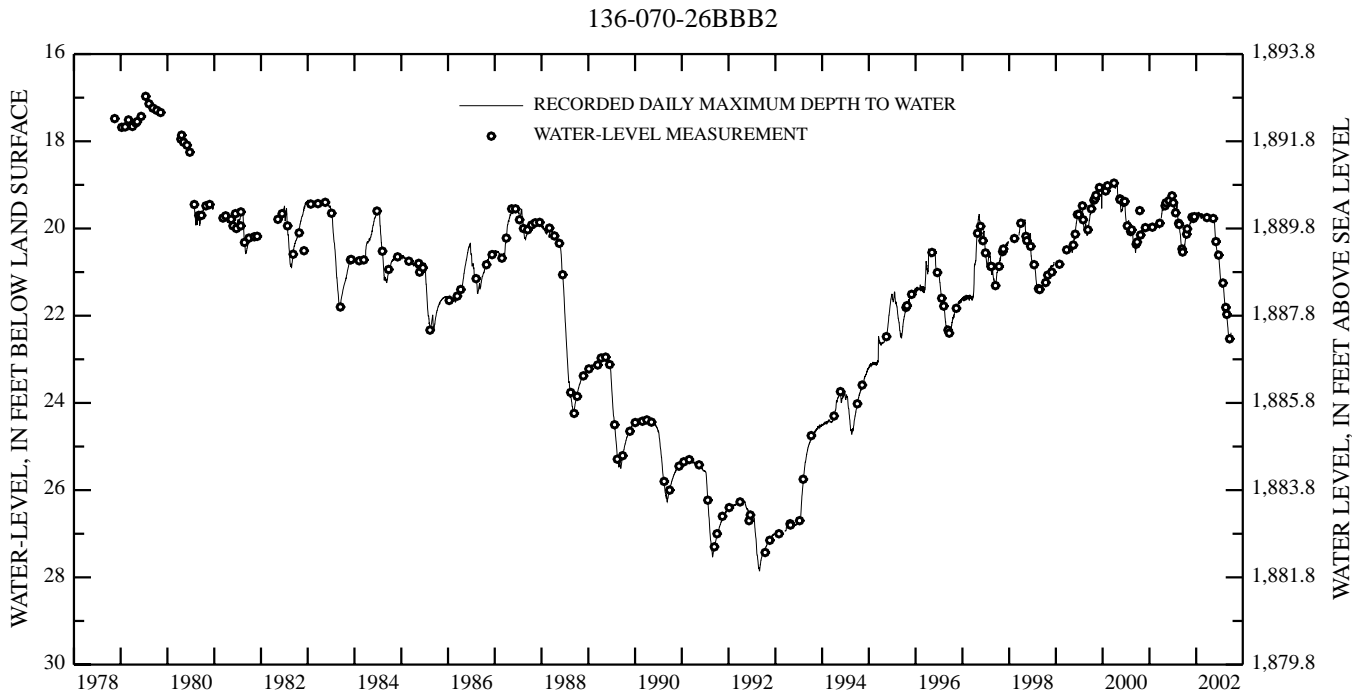
DATUM.--Altitude of land-surface datum is 1,909.8 ft. Measuring point: Top of casing 1.80 ft above land-surface datum.

PERIOD OF RECORD.--November 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 16.97 ft below land-surface datum, July 15, 1979; lowest water level, 27.85 ft below land-surface datum, August 29-31, 1992.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.36	19.95	19.75	19.68	19.71	19.71	19.80	19.80	20.33	20.95	21.45	22.26
10	20.23	19.93	19.76	19.70	19.77	19.79	19.75	19.83	20.48	21.17	21.63	22.44
15	20.21	19.87	19.71	19.73	19.69	19.74	19.69	19.79	20.55	21.30	21.78	22.56
20	20.10	19.85	19.74	19.63	19.70	19.82	19.82	19.86	20.59	21.34	21.82	22.53
25	20.11	19.84	19.72	19.64	19.76	19.78	19.82	19.90	20.62	21.30	21.91	22.50
EOM	19.97	19.76	19.73	19.70	19.74	19.74	19.76	20.21	20.77	21.26	22.10	22.39
MAX	20.45	20.03	19.79	19.76	19.77	19.82	19.83	20.21	20.77	21.35	22.10	22.56
MIN	19.97	19.76	19.66	19.62	19.65	19.67	19.68	19.73	20.25	20.81	21.28	22.12
CAL YR 2001	HIGH 19.18 JUL 2		LOW 20.56 SEP 13									
WTR YR 2002	HIGH 19.62 JAN 21		LOW 22.56 SEP 15									



GROUND-WATER LEVELS

LOGAN COUNTY--Continued

463240099483801. Local number, 136-073-35DDD1.

LOCATION.--Lat 46°32'40", long 99°48'38", Hydrologic Unit 10130103. Owner: North Dakota State Water Commission.

AQUIFER.--Napoleon.

WELL CHARACTERISTICS.--Drilled observation well, depth 282 ft, cased with 168 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 168 to 171 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,970 ft. Measuring point: Top of casing 1.80 ft above land-surface datum.

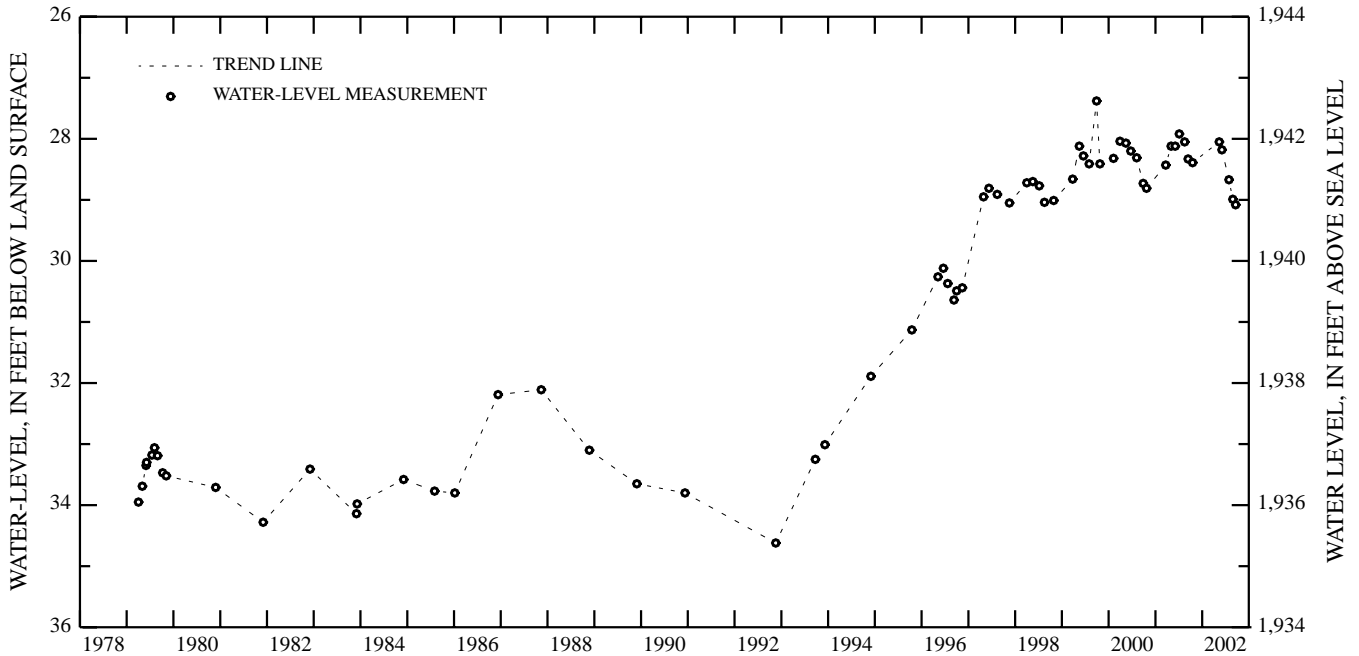
PERIOD OF RECORD.--April 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.38 ft below land-surface datum, September 29, 1999; lowest water level, 34.62 ft below land-surface datum, November 18, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	28.39	MAY 14	28.05	JUN 04	28.18	JUL 29	28.67	AUG 28	28.99	SEP 19	29.08
WATER YEAR 2002		HIGHEST	28.05	MAY 14, 2002		LOWEST	29.08	SEP 19, 2002			

136-073-35DDD1



LOGAN COUNTY--Continued

463240099483802. Local number, 136-073-35DDD2.

LOCATION.--Lat 46°32'40", long 99°48'38", Hydrologic Unit 10130103. Owner: North Dakota State Water Commission.

AQUIFER.--Napoleon.

WELL CHARACTERISTICS.--Drilled observation well, depth 131 ft, cased with 118 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 118 to 121 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,970 ft. Measuring point: Top of casing 1.90 ft above land-surface datum.

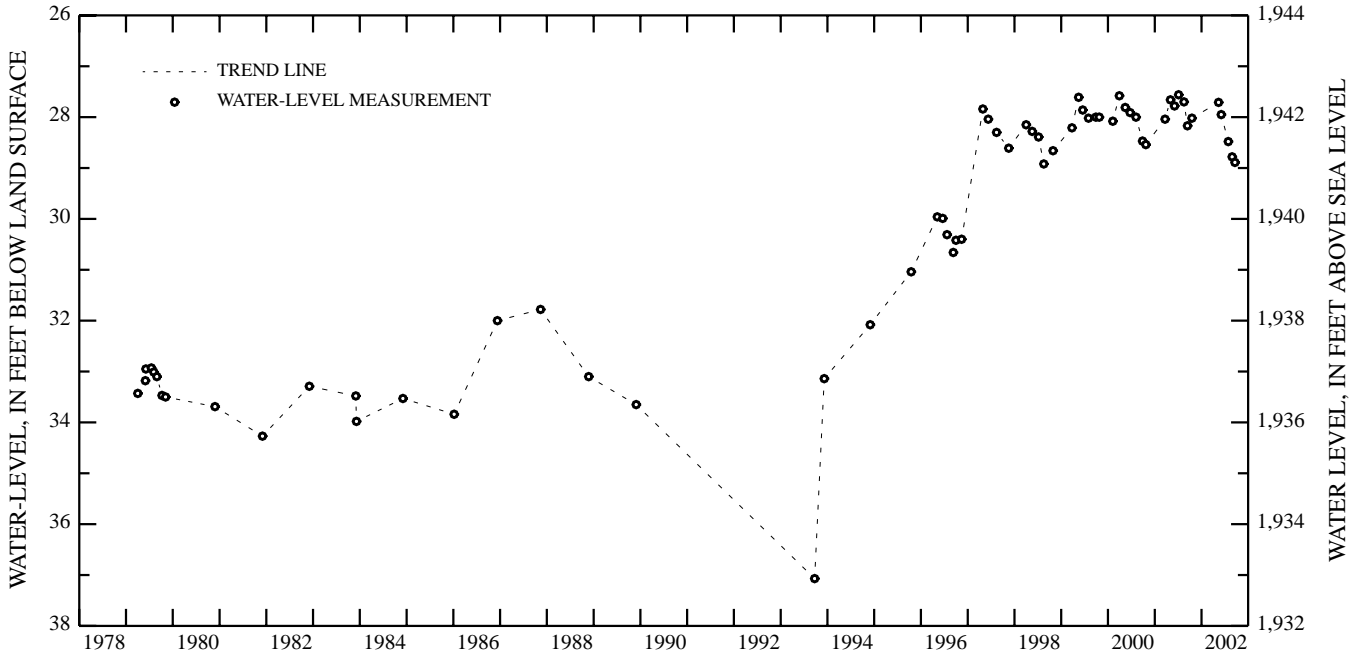
PERIOD OF RECORD.--April 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.56 ft below land-surface datum, July 6, 2001; lowest water level, 37.07 ft below land-surface datum, September 23, 1993.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	28.02	MAY 14	27.71	JUN 04	27.95	JUL 29	28.48	AUG 28	28.78	SEP 19	28.89
WATER YEAR 2002		HIGHEST	27.71	MAY 14, 2002		LOWEST	28.89	SEP 19, 2002			

136-073-35DDD2



GROUND-WATER LEVELS

McHENRY COUNTY

480302100515201. Local number, 153-079-30AAA1.

LOCATION.--Lat 48°03'02", long 100°51'52", Hydrologic Unit 09010003. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 720 ft, cased with 456 ft of 2-in diameter steel pipe, No. 12 slot screen set 456 to 467 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,595 ft. Measuring point: Top of casing 3.40 ft above land-surface datum.

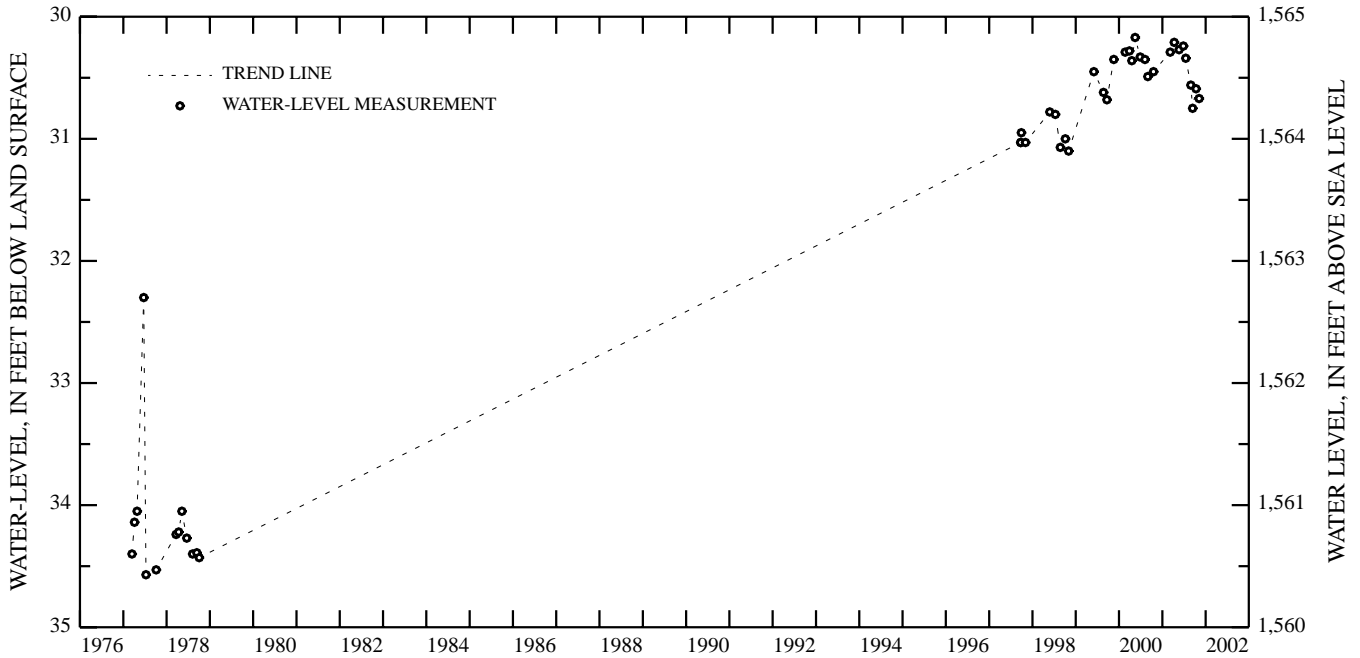
PERIOD OF RECORD.--March 1977 to October 1978 and September 1997 to November 7, 2001.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 30.17 ft below land-surface datum, May 16, 2000; lowest water level, 34.57 ft below land-surface datum, July 11, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

	DATE	WATER LEVEL	DATE	WATER LEVEL	
	OCT 12	30.59	NOV 07	30.67	
WATER YEAR 2002	HIGHEST	30.59	OCT 12, 2001	LOWEST	30.67
			NOV 07, 2001		

153-079-30AAA1



McHENRY COUNTY--Continued

480302100515202. Local number, 153-079-30AAA2.

LOCATION.--Lat 48°03'02", long 100°51'52", Hydrologic Unit 09010003. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 410 ft, cased with 404 ft of 2-in diameter steel pipe, No. 12 slot screen set 404 to 410 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,595 ft. Measuring point: Top of casing 2.75 ft above land-surface datum.

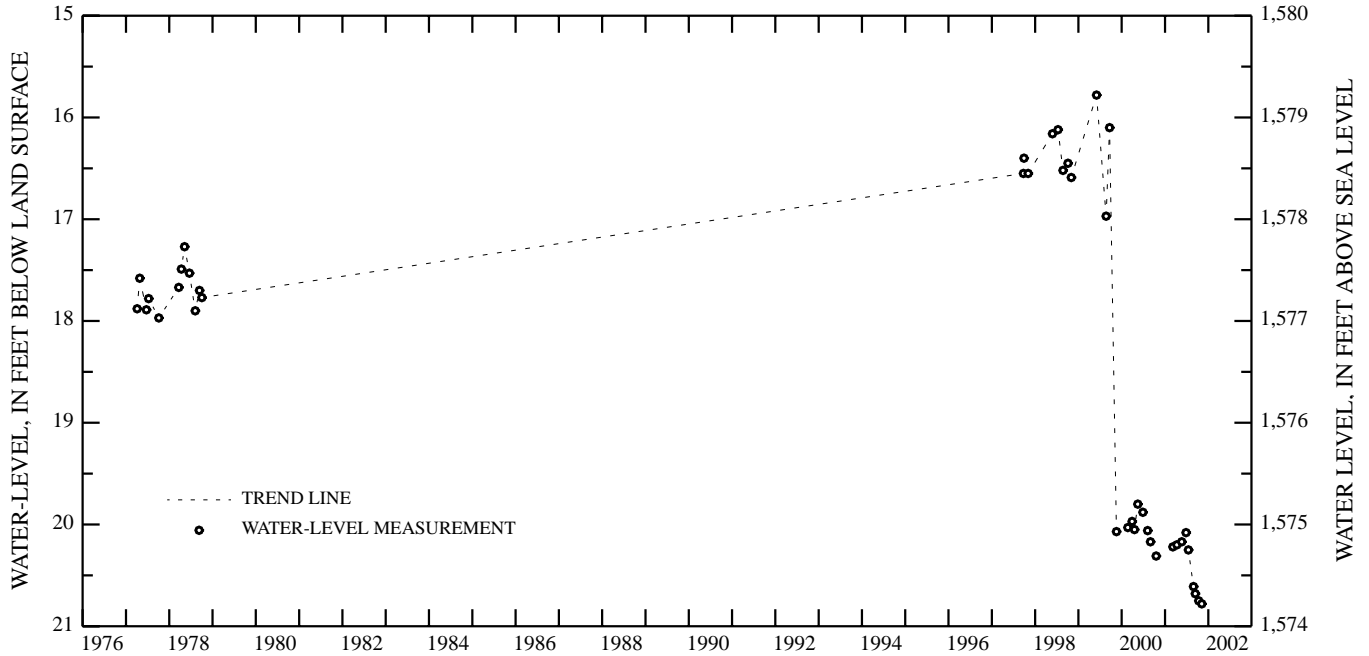
PERIOD OF RECORD.--April 1977 to October 1978 and September 1997 to November 2001.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.78 ft below land-surface datum, June 3, 1999; lowest water level, 20.78 ft below land-surface datum, November 7, 2001.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	20.75	NOV 07	20.78
WATER YEAR 2002	HIGHEST 20.75	OCT 21, 2001	LOWEST 20.78
		NOV 07, 2001	

153-079-30AAA2



McHENRY COUNTY--Continued

480913100372501. Local number, 154-077-18CCC.

LOCATION.--Lat 48°09'13", long 100°37'25", Hydrologic Unit 09010003. Owner: North Dakota State Water Commission.

AQUIFER.--New Rockford.

WELL CHARACTERISTICS.--Drilled observation well, depth 260 ft, cased with 173 ft of 4-in diameter plastic pipe, No. 18 slot screen set 173 to 178 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From May 1976 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,576.07 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

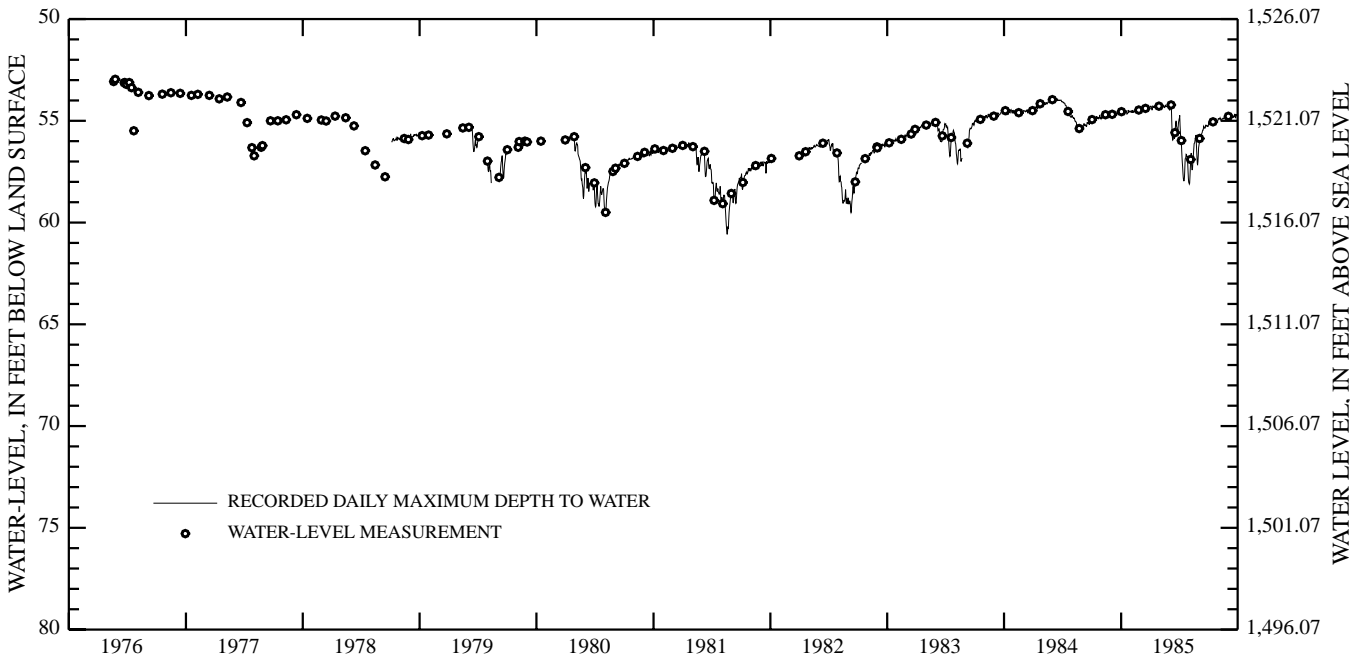
PERIOD OF RECORD.--May 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 52.96 ft below land-surface datum, May 25, 1976; lowest water level, 75.43 ft below land-surface datum, August 1, 1994.

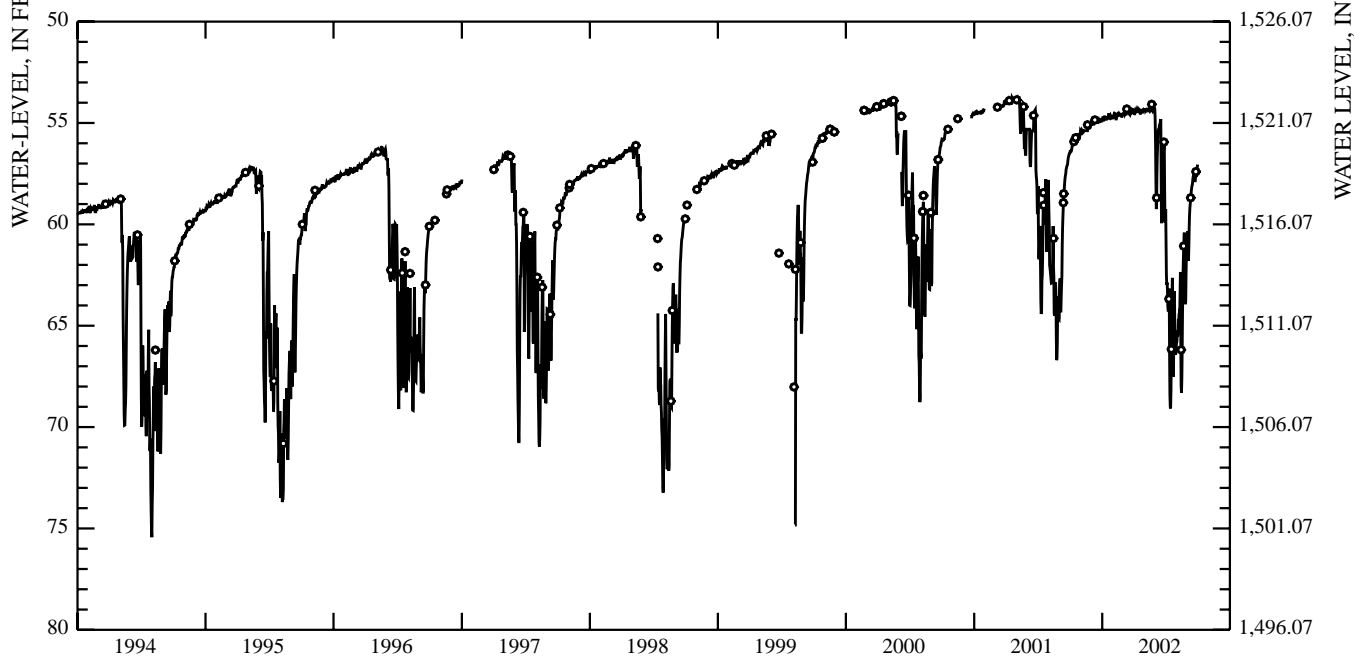
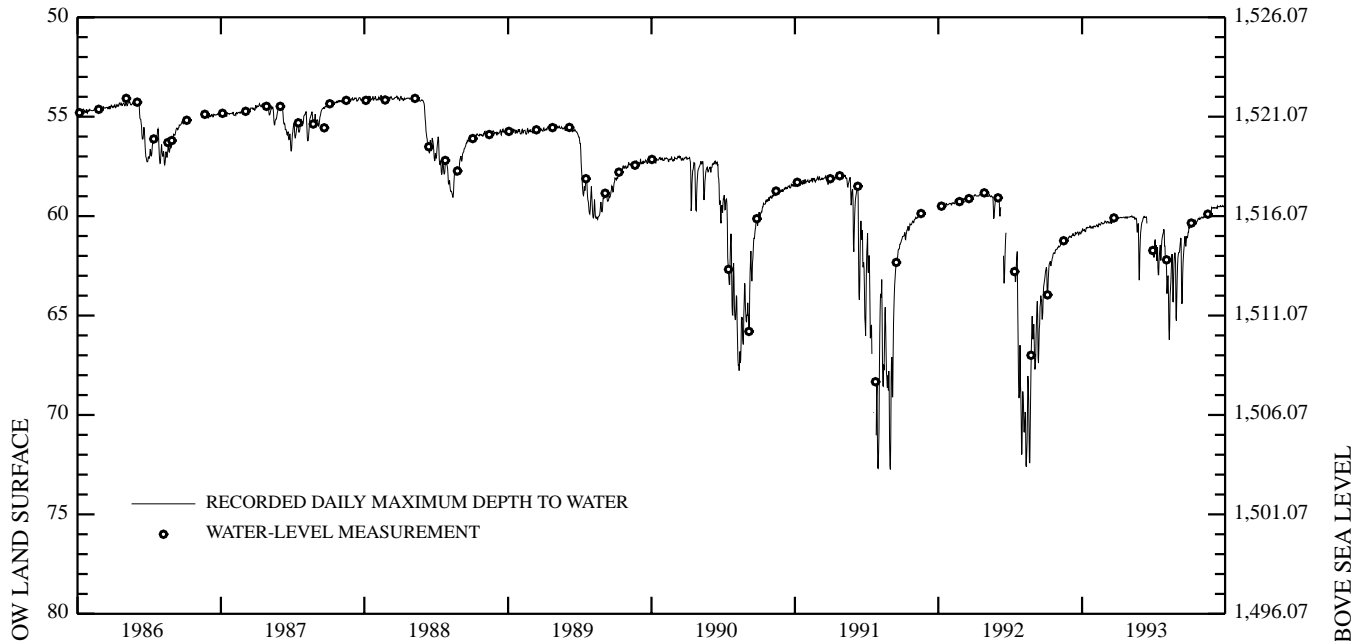
DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	56.38	55.38	55.03	54.82	54.64	54.54	54.51	54.38	59.18	62.87	65.38	61.10
10	56.02	55.38	54.98	54.80	54.80	54.57	54.44	54.33	55.35	63.71	64.38	58.77
15	55.98	55.38	54.92	54.80	54.58	54.49	54.31	54.32	55.00	69.08	68.30	58.05
20	55.69	55.38	54.95	54.58	54.61	54.58	54.53	54.39	59.88	62.64	61.99	57.52
25	55.72	55.25	54.93	54.64	54.68	54.51	54.47	54.31	56.38	64.65	63.72	57.42
EOM	55.38	54.97	54.90	54.69	54.58	54.49	54.33	54.31	59.70	66.10	61.05	57.05
MAX	56.48	55.53	55.06	54.90	54.80	54.60	54.55	54.43	59.90	69.08	68.30	61.79
MIN	55.38	54.97	54.77	54.58	54.53	54.32	54.29	54.16	54.81	59.26	60.41	57.05
CAL YR 2001	HIGH 53.70 APR 29		LOW 66.70 AUG 24									
WTR YR 2002	HIGH 54.16 MAY 22		LOW 69.08 JUL 15									

154-077-18CCC



154-077-18CCC--Continued



GROUND-WATER LEVELS

McHENRY COUNTY--Continued

480725100373303. Local number, 154-078-36AAA3.

LOCATION.--Lat 48°07'25", long 100°37'33", Hydrologic Unit 09010003. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 400 ft, cased with 282 ft of 2-in plastic pipe, No. 18 slot screen set 282 to 292 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,546.96 ft. Measuring point: Top of casing 1.79 ft above land-surface datum.

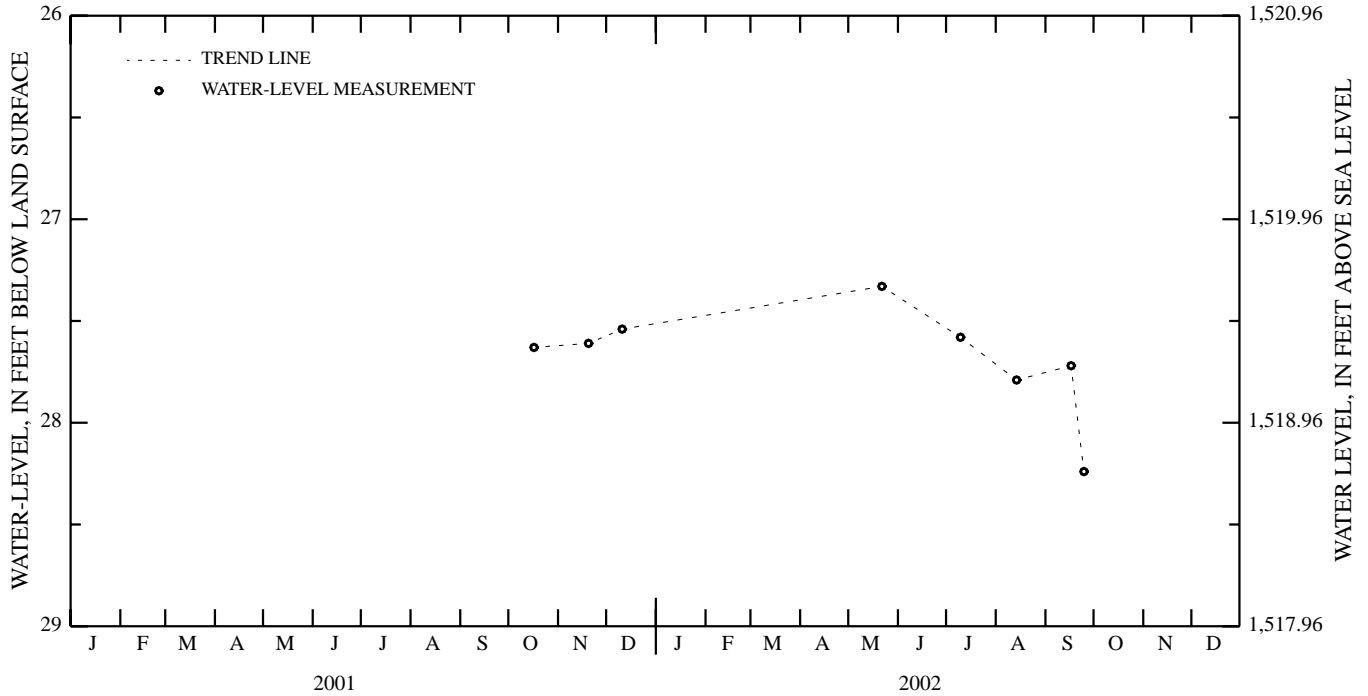
PERIOD OF RECORD.--October 2001 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.33 ft below land-surface datum, May 22,2002; lowest water level, 28.24 ft below land-surface datum, September 25, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	27.63	DEC 11	27.54	JUL 10	27.58	AUG 14	27.79	SEP 17	27.72	SEP 25	28.24
NOV 20	27.61	MAY 22	27.33								
WATER YEAR 2002		HIGHEST	27.33	MAY 22, 2002		LOWEST	28.24	SEP 25, 2002			

154-078-36AAA3



McHENRY COUNTY--Continued

480725100373304. Local number, 154-078-36AAA4.

LOCATION.--Lat 48°07'25", long 100°37'33", Hydrologic Unit 09010003. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 230 ft, cased with 211 ft of 2-in plastic pipe, No. 18 slot screen set 211 to 221 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

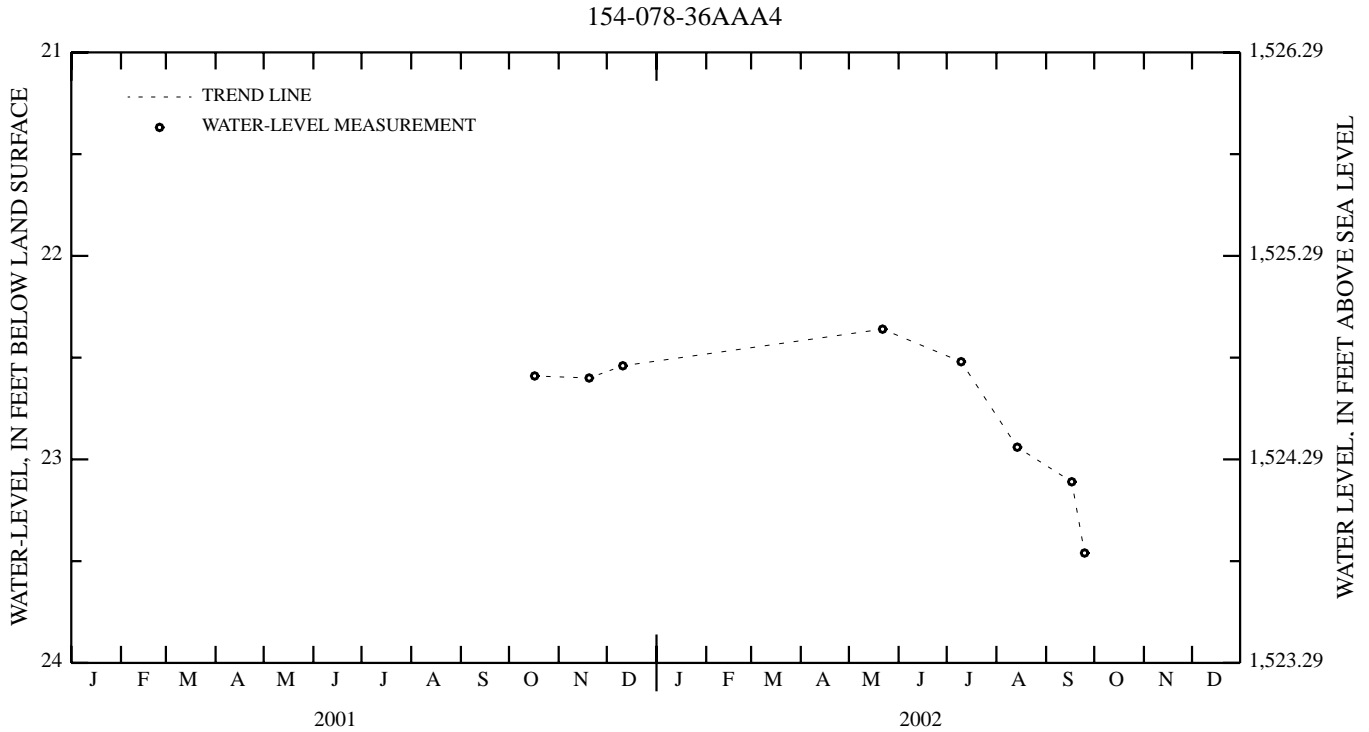
DATUM.--Altitude of land-surface datum is 1,547.29 ft. Measuring point: Top of casing 1.88 ft above land-surface datum.

PERIOD OF RECORD.--October 2001 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.36 ft below land-surface datum, May 22, 2002; lowest water level, 23.46 ft below land-surface datum, September 25, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	22.59	DEC 11	22.54	JUL 10	22.52	AUG 14	22.94	SEP 17	23.11	SEP 25	23.46
NOV 20	22.60	MAY 22	22.36								
WATER YEAR 2002		HIGHEST	22.36	MAY 22, 2002		LOWEST	23.46	SEP 25, 2002			



GROUND-WATER LEVELS

McHENRY COUNTY--Continued

481948100305901. Local number, 156-077-13CCB1.

LOCATION.--Lat 48°19'48", long 100°30'59", Hydrologic Unit 09010003. Owner: North Dakota State Water Commission.

AQUIFER.--Denbigh.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased with 123 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 123 to 126 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

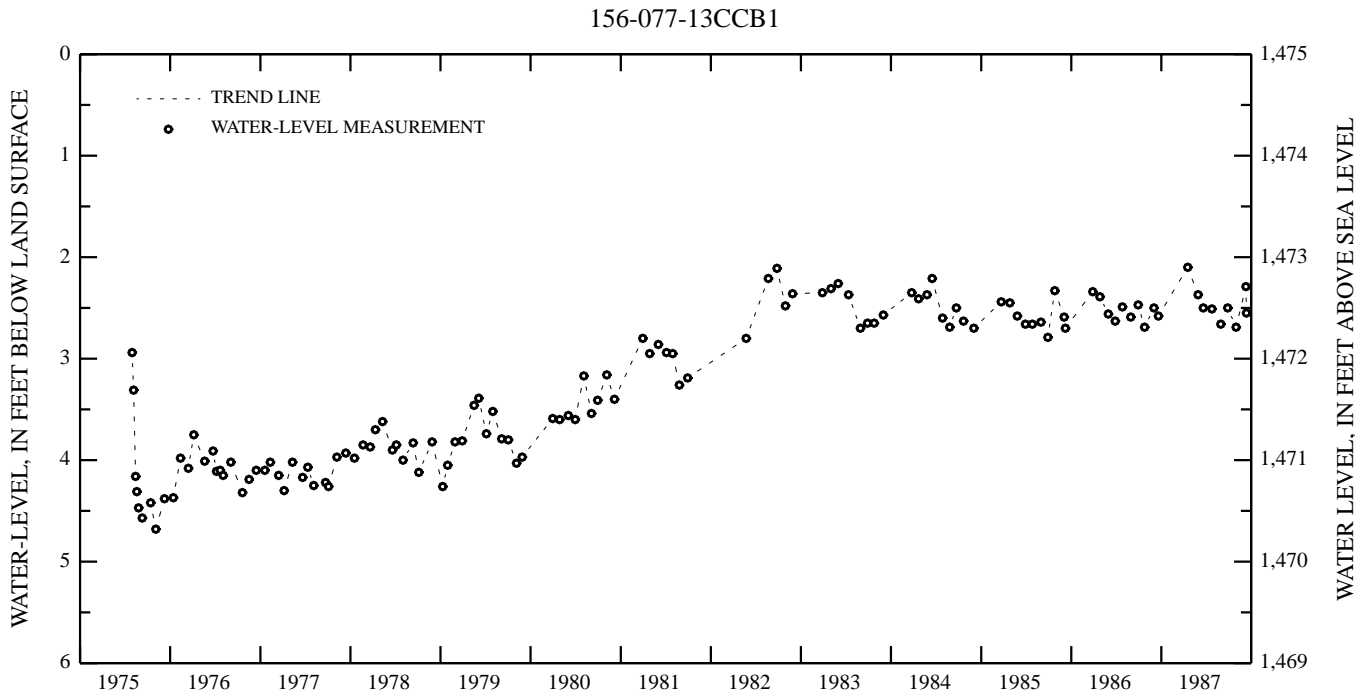
DATUM.--Altitude of land-surface datum is 1,475 ft. Measuring point: Top of casing 1.70 ft above land-surface datum.

PERIOD OF RECORD.--July 1975 to current year.

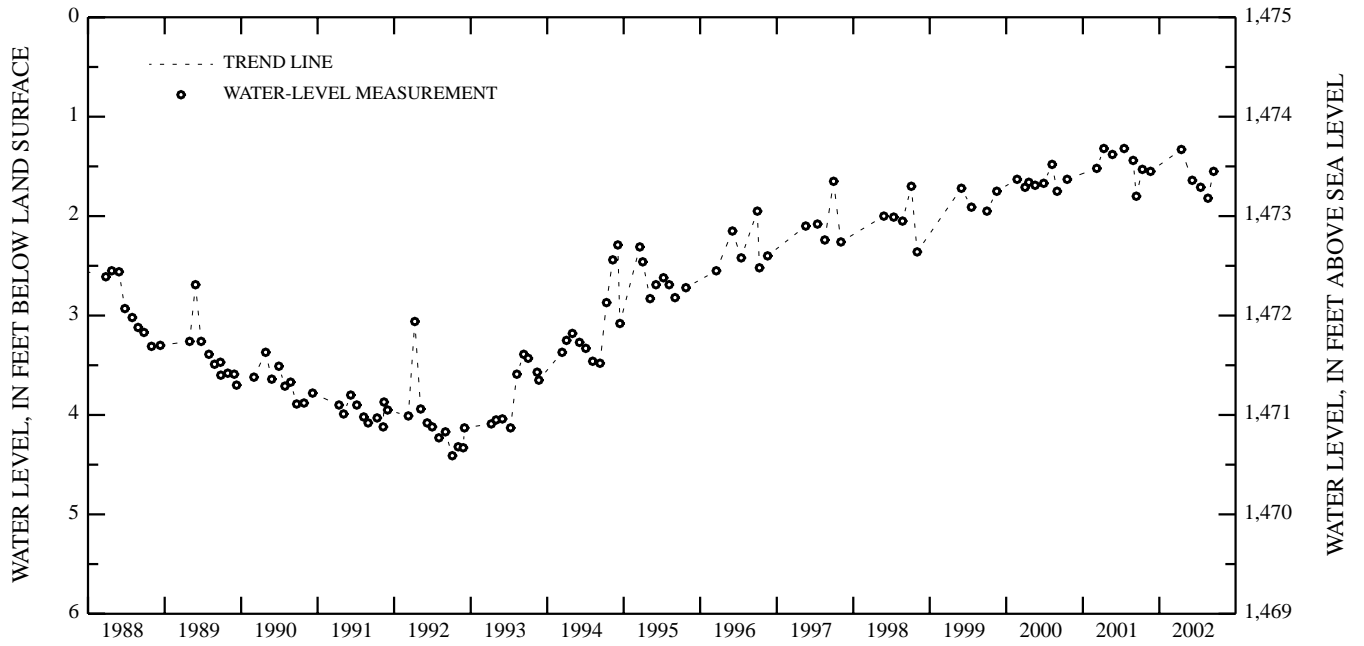
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.32 ft below land-surface datum, April 11 and July 17, 2001; lowest water level, 4.68 ft below land-surface datum, November 4, 1975.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	1.53	APR 16	1.33	JUN 07	1.64	JUL 17	1.71	AUG 21	1.82	SEP 17	1.55
NOV 20	1.55										
WATER YEAR 2002		HIGHEST	1.33	APR 16, 2002		LOWEST	1.82	AUG 21, 2002			



156-077-13CCB1--Continued



GROUND-WATER LEVELS

McHENRY COUNTY--Continued

481948100305902. Local number, 156-077-13CCB2.

LOCATION.--Lat 48°19'48", long 100°30'59", Hydrologic Unit 09010003. Owner: North Dakota State Water Commission.

AQUIFER.--Denbigh.

WELL CHARACTERISTICS.--Drilled observation well, depth 60 ft, cased with 53 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 53 to 56 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,475 ft. Measuring point: Top of casing 1.80 ft above land-surface datum.

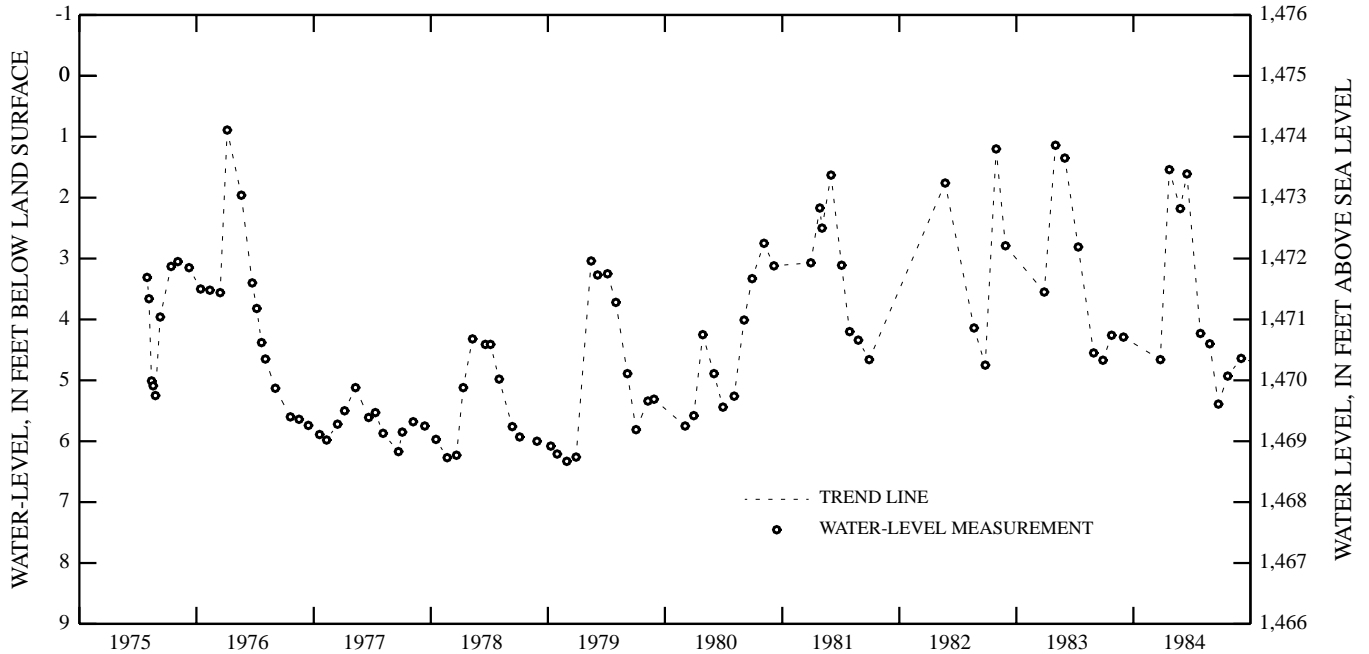
PERIOD OF RECORD.--July 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.05 ft below land-surface datum, June 1, 1999; lowest water level, 7.16 ft below land-surface datum, November 10, 1991.

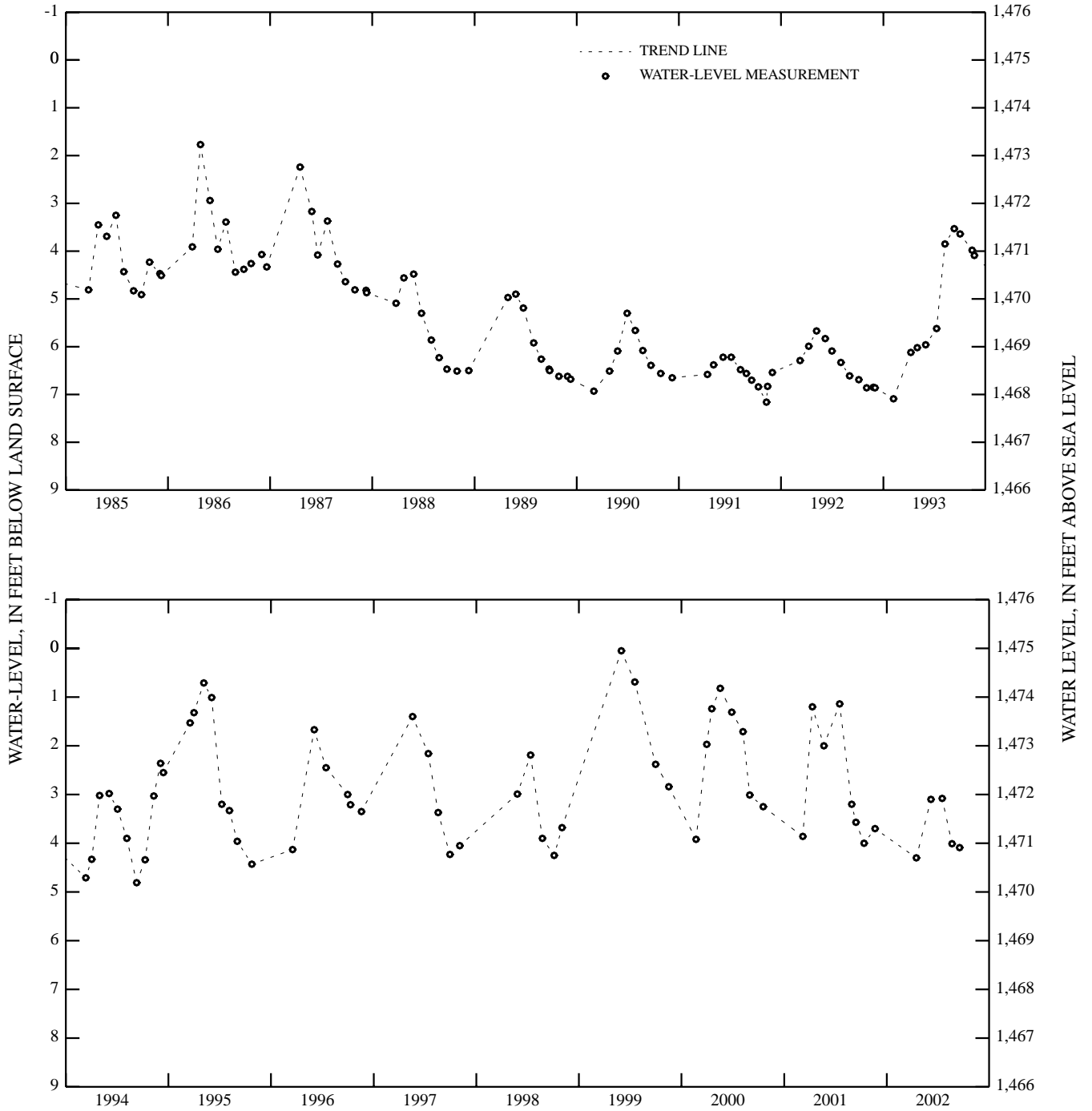
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	4.00	APR 16	4.30	JUN 07	3.10	JUL 17	3.08	AUG 21	4.01	SEP 17	4.09
NOV 20	3.70										
WATER YEAR 2002		HIGHEST	3.08	JUL 17, 2002		LOWEST	4.30	APR 16, 2002			

156-077-13CCB2



156-077-13CCB2--Continued



GROUND-WATER LEVELS

McINTOSH COUNTY

455807099450701. Local number, 129-072-30BBB.

LOCATION.--Lat 45°58'07", long 99°45'07", Hydrologic Unit 10130102. Owner: North Dakota State Water Commission.

AQUIFER.--Zeeland.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased with 123 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 123 to 126 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,968.3 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

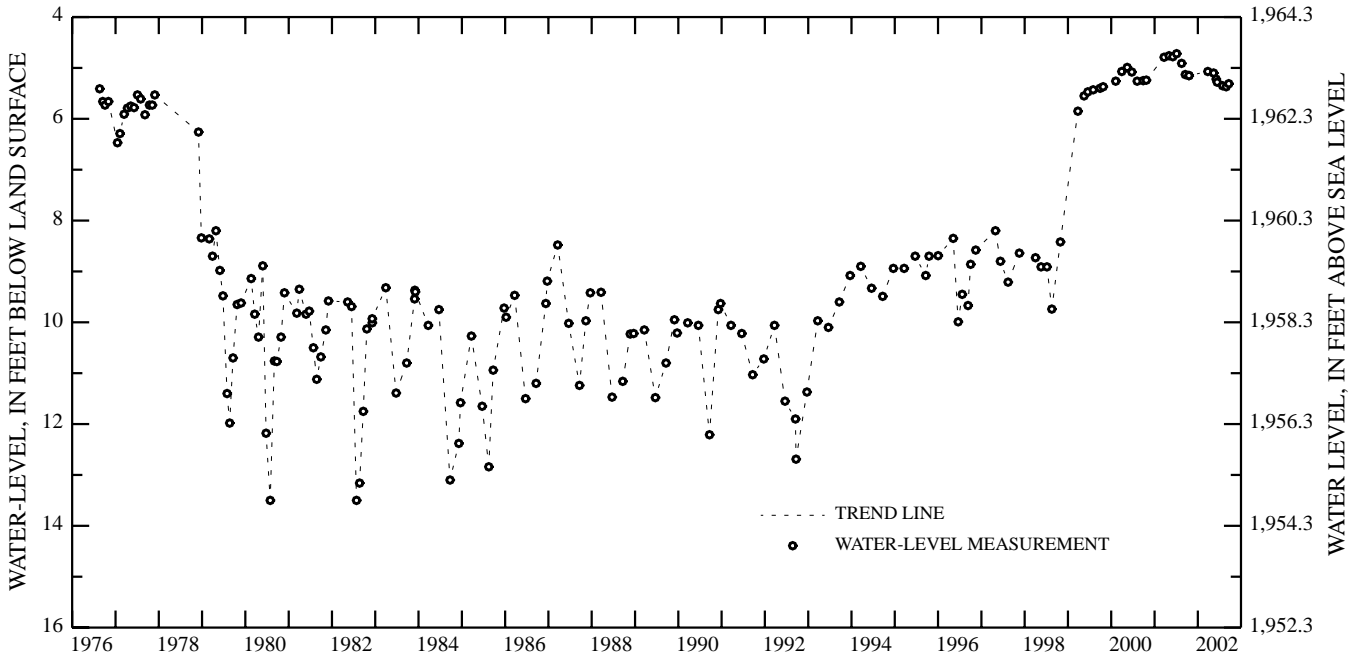
PERIOD OF RECORD.--August 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.72 ft below land-surface datum, July 6, 2001; lowest water level, 13.50 ft below land-surface datum, July 29, 1980, and July 27, 1982.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	5.15	MAY 14	5.10	JUN 13	5.28	JUL 29	5.35	AUG 28	5.37	SEP 19	5.31
MAR 26	5.07	JUN 04	5.22								
WATER YEAR 2002		HIGHEST	5.07	MAR 26, 2002		LOWEST	5.37	AUG 28, 2002			

129-072-30BBB



McINTOSH COUNTY--Continued

460411099200701. Local number, 130-069-21BBB1.

LOCATION.--Lat 46°04'11", long 99°20'07", Hydrologic Unit 10130106. Owner: North Dakota State Water Commission.

AQUIFER.--Spring Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 222 ft, cased with 177 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 177 to 180 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,033 ft. Measuring point: Top of casing 2.20 ft above land-surface datum.

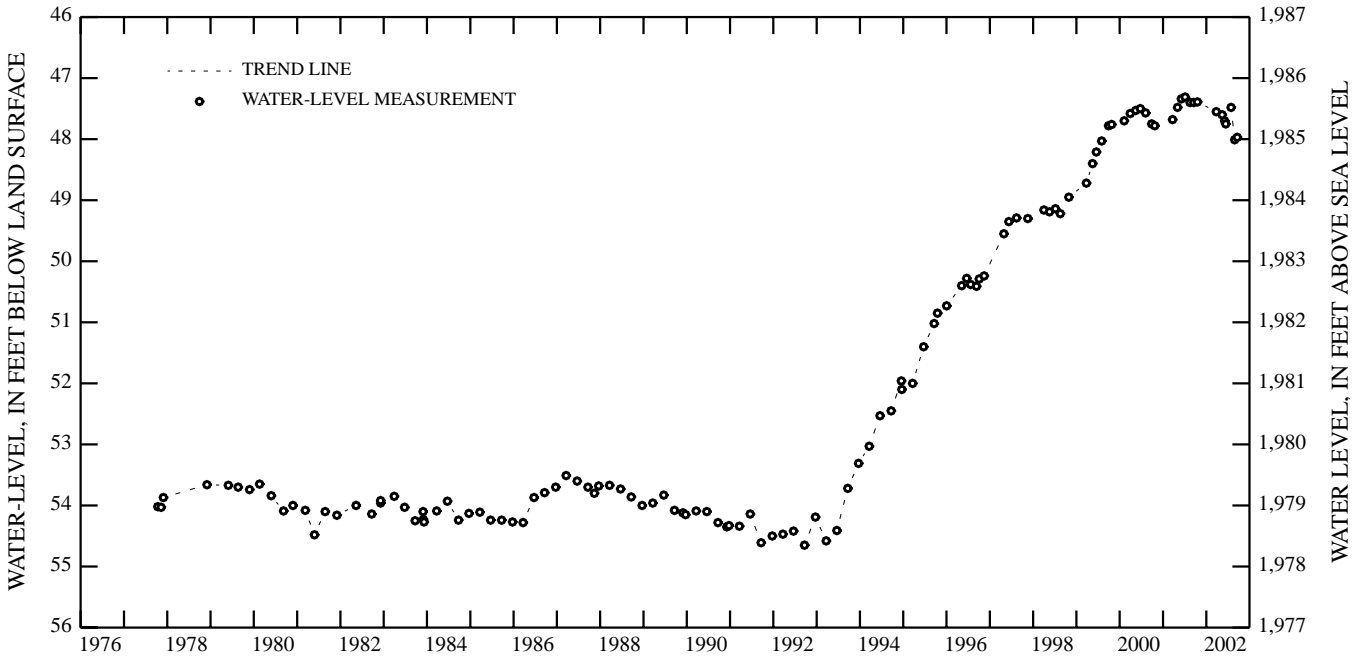
PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 47.31 ft below land-surface datum, July 6, 2001; lowest water level, 54.65 ft below land-surface datum, September 20, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	47.39	MAY 14	47.60	JUN 14	47.75	JUL 29	47.48	AUG 28	48.01	SEP 19	47.97
MAR 26	47.55	JUN 04	47.70								
WATER YEAR 2002		HIGHEST	47.39	OCT 18, 2001		LOWEST	48.01	AUG 28, 2002			

130-069-21BBB1



GROUND-WATER LEVELS

McINTOSH COUNTY--Continued

460411099200702. Local number, 130-069-21BBB2.

LOCATION.--Lat 46°04'11", long 99°20'07", Hydrologic Unit 10130106. Owner: North Dakota State Water Commission.

AQUIFER.--Spring Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 102 ft, cased with 97 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 97 to 100 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,033 ft. Measuring point: Top of casing 2.40 ft above land-surface datum.

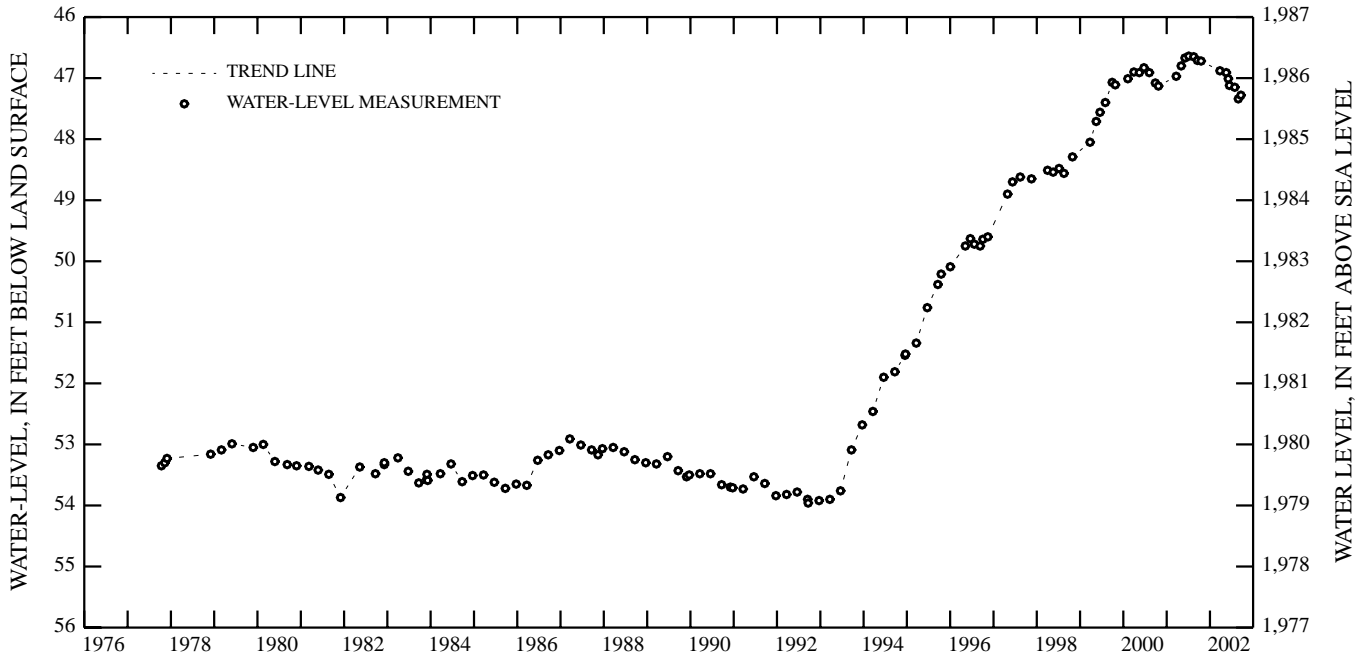
PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 46.64 ft below land-surface datum, July 6, 2001; lowest water level, 53.96 ft below land-surface datum, September 20, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	46.72	MAY 18	46.91	JUN 14	47.12	JUL 29	47.15	AUG 28	47.34	SEP 19	47.28
MAR 26	46.88	JUN 04	47.01								
WATER YEAR 2002		HIGHEST	46.72	OCT 18, 2001		LOWEST	47.34	AUG 28, 2002			

130-069-21BBB2



McINTOSH COUNTY--Continued

461446099312801. Local number, 132-071-14DDD1.

LOCATION.--Lat 46°14'46", long 99°31'28", Hydrologic Unit 10130104. Owner: North Dakota State Water Commission.

AQUIFER.--Wishek.

WELL CHARACTERISTICS.--Drilled observation well, depth 182 ft, cased with 118 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 118 to 121 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,028 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

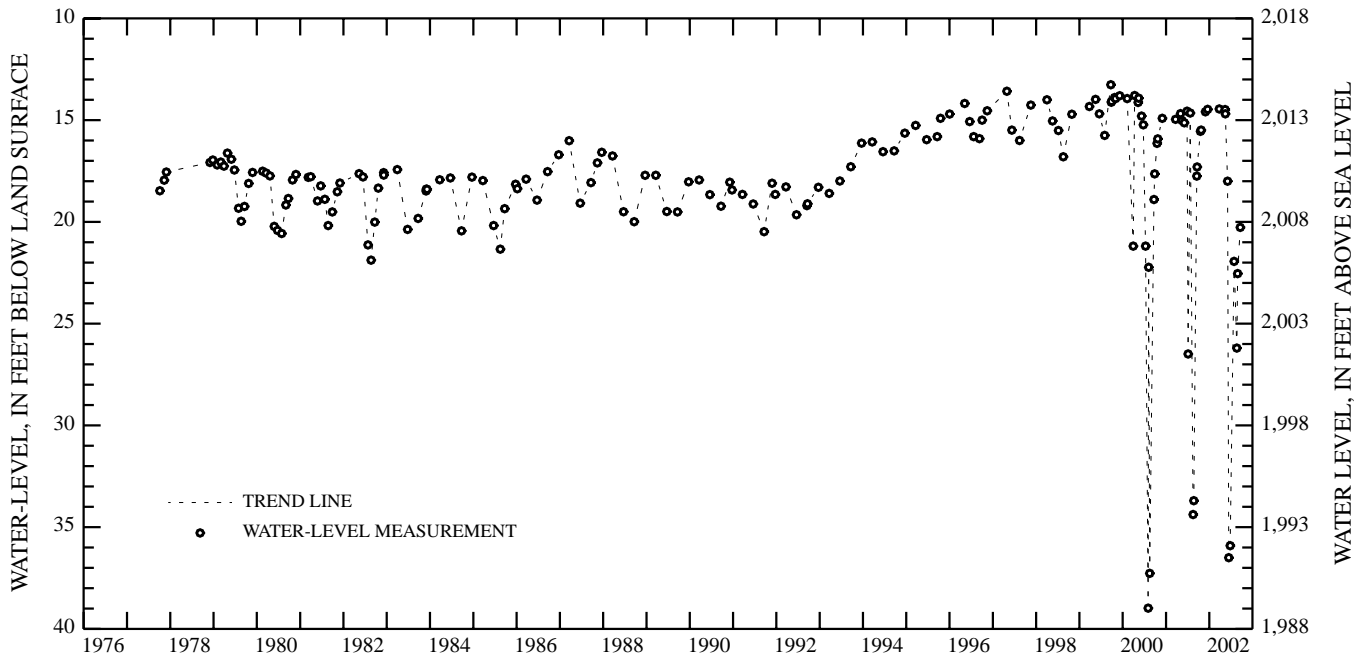
PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 13.26 ft below land-surface datum, September 23, 1999; lowest water level, 38.98 ft below land-surface datum, August 3, 2000.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	15.55	DEC 18	14.47	MAY 16	14.69	JUN 26	35.91	AUG 28	22.54	SEP 19	20.27
OCT 24	15.49	MAR 26	14.45	JUN 04	18.00	JUL 29	21.94				
NOV 29	14.59	MAY 14	14.48	JUN 14	36.50	AUG 21	26.20				
WATER YEAR 2002		HIGHEST	14.45	MAR 26, 2002		LOWEST	36.50	JUN 14, 2002			

132-071-14DDD1



GROUND-WATER LEVELS

McINTOSH COUNTY--Continued

461446099312802. Local number, 132-071-14DDD2.

LOCATION.--Lat 46°14'46", long 99°31'28", Hydrologic Unit 10130104. Owner: North Dakota State Water Commission.

AQUIFER.--Wishek.

WELL CHARACTERISTICS.--Drilled observation well, depth 50 ft, cased with 38 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 38 to 41 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,028 ft. Measuring point: Top of casing 2.20 ft above land-surface datum.

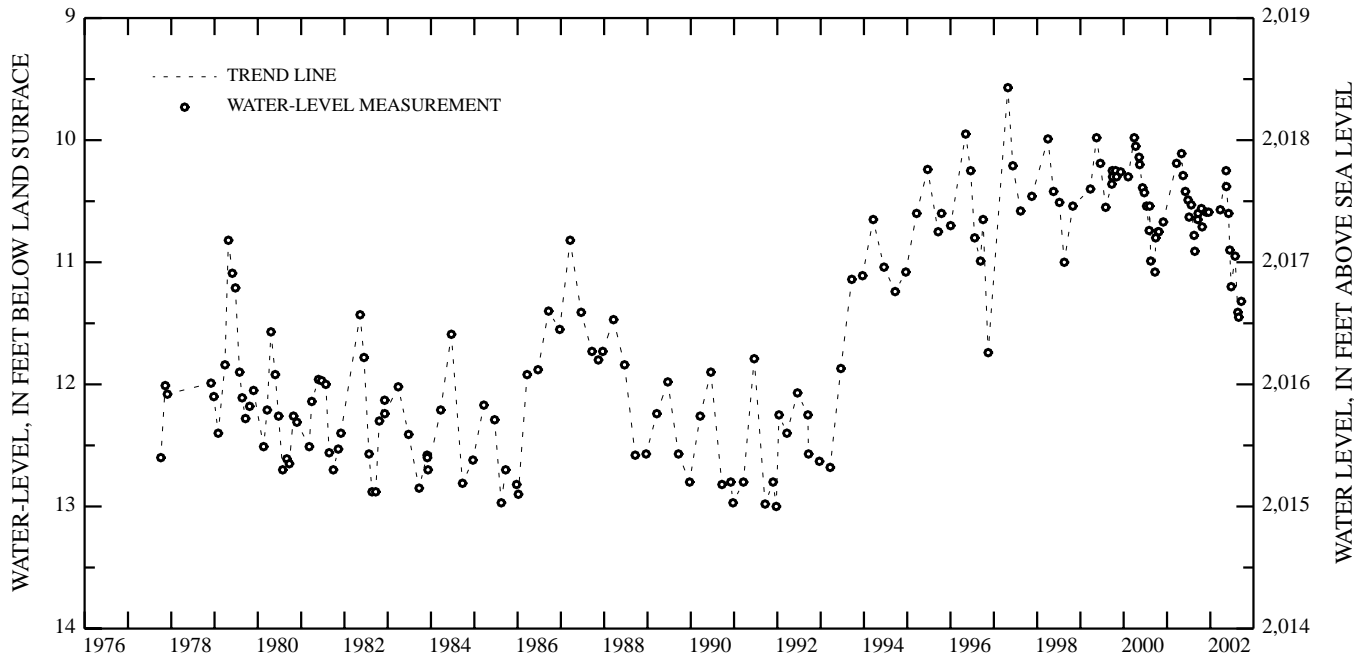
PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.57 ft below land-surface datum, April 29, 1997; lowest water level, 13.00 ft below land-surface datum, December 23, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	10.56	DEC 18	10.59	MAY 16	10.38	JUN 26	11.20	AUG 28	11.45	SEP 19	11.32
OCT 24	10.71	MAR 26	10.57	JUN 04	10.60	JUL 29	10.95				
NOV 29	10.59	MAY 14	10.25	JUN 14	10.90	AUG 21	11.41				
WATER YEAR 2002		HIGHEST	10.25	MAY 14, 2002		LOWEST	11.45	AUG 28, 2002			

132-071-14DDD2



McKENZIE COUNTY

474814103104702. Local number, 150-098-23AAB2.

LOCATION.--Lat 47°48'14", long 103°10'47", Hydrologic Unit 10110205. Owner: North Dakota State Water Commission.

AQUIFER.--Cherry Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 120 ft, cased with 98 ft of 2-in diameter plastic pipe, No. 18 slot screen set 98 to 103 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,001.8 ft. Measuring point: Top of casing 2.45 ft above land-surface datum.

PERIOD OF RECORD.--December 1979 to current year.

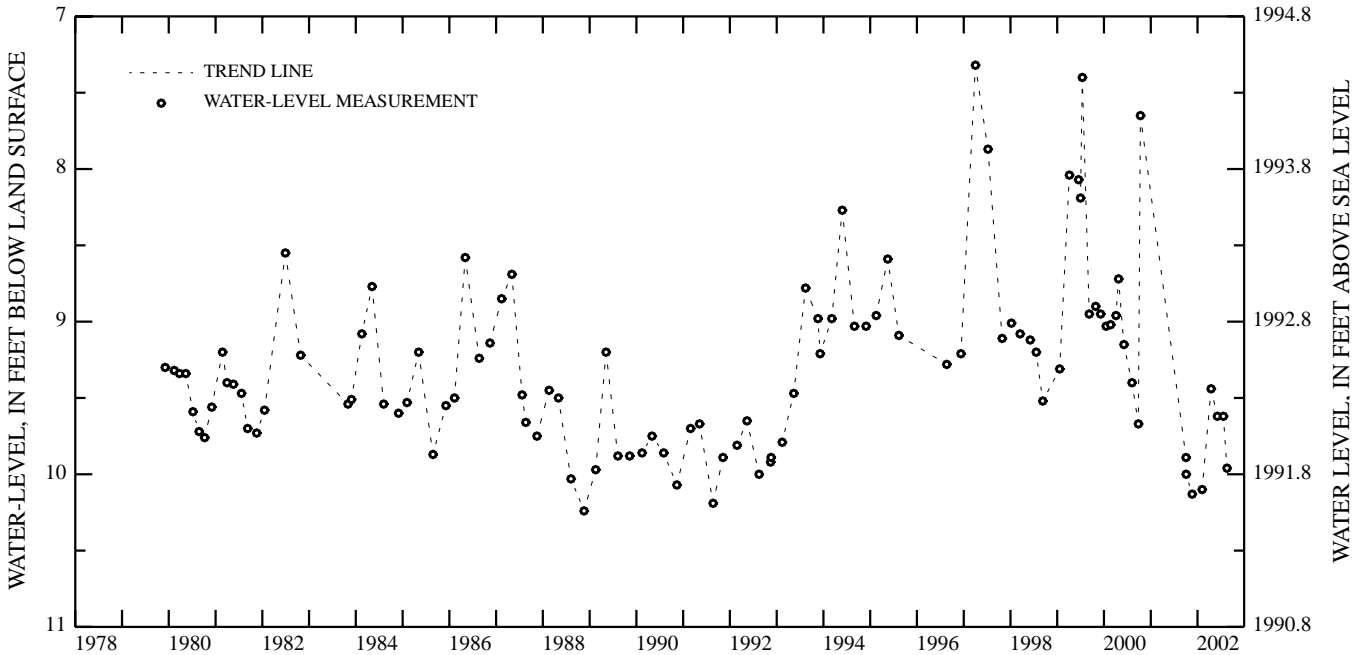
REMARKS.--Replacement well for well at 150-098-23AAB that was inadvertently destroyed. Water levels reflect the original well and the replacement well.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.32 ft below land-surface datum, April 2, 1997; lowest water level, 10.24 ft below land-surface datum, November 18, 1988. Extremes for period of record are a combination of the original well and the replacement well.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	9.89	NOV 20	10.13	APR 17	9.44	JUN 05	9.62	JUL 22	9.62	AUG 19	9.96
OCT 04	10.00	FEB 06	10.10								
WATER YEAR 2002		HIGHEST	9.44	APR 17, 2002		LOWEST	10.13	NOV 20, 2001			

150-098-23AAB2



GROUND-WATER LEVELS

McLEAN COUNTY

474026100583201. Local number, 148-081-03AAB.

LOCATION.--Lat 47°40'26", long 100°58'32", Hydrologic Unit 10130101. Owner: North Dakota State Water Commission.

AQUIFER.--Horseshoe Valley.

WELL CHARACTERISTICS.--Drilled observation well, depth 60 ft, cased with 40 ft of 4-in diameter plastic pipe, slotted 35 to 40 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder December 1967 to October 1997. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for December 1967 to January 1975. From January 1975 to October 1997, daily maximum and minimum recorded water levels also are available. Measured using a steel tape October 1997 to present.

DATUM.--Altitude of land-surface datum is 1,883.4 ft. Measuring point: Top of casing 1.40 ft above land-surface datum.

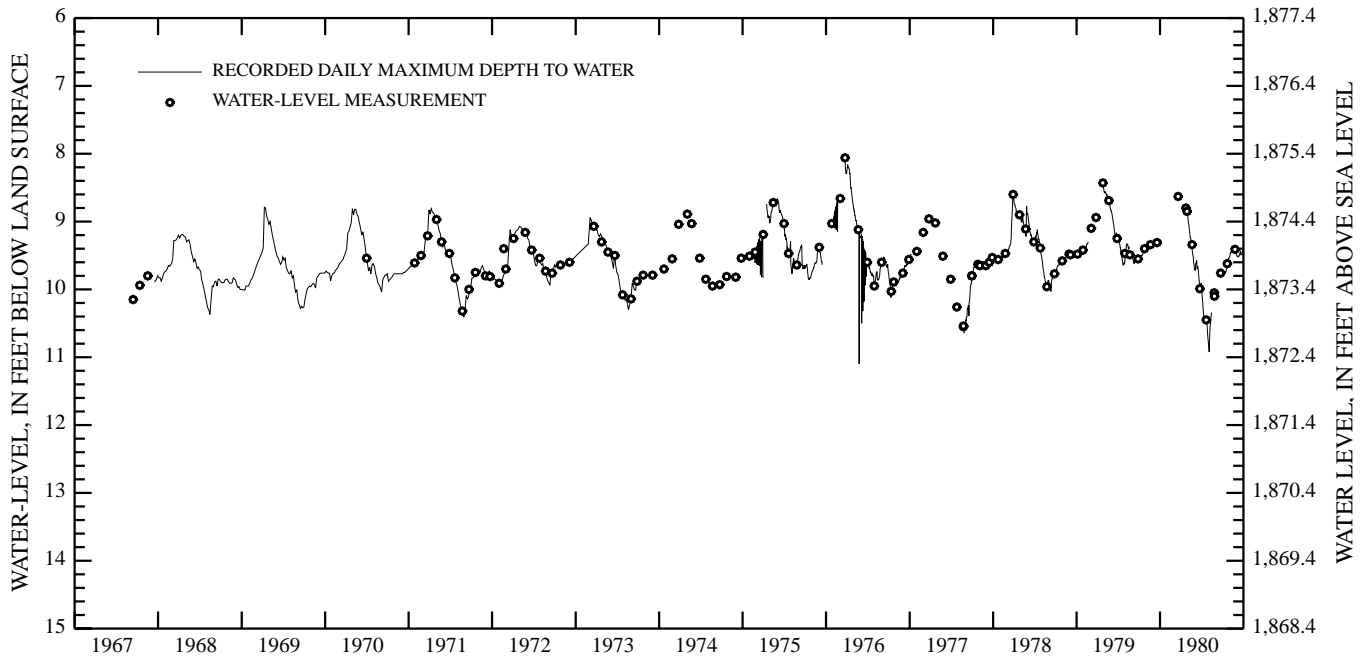
PERIOD OF RECORD.--September 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.04 ft below land-surface datum, April 11, 1996; lowest water level, 14.14 ft below land-surface datum, September 3, 1991.

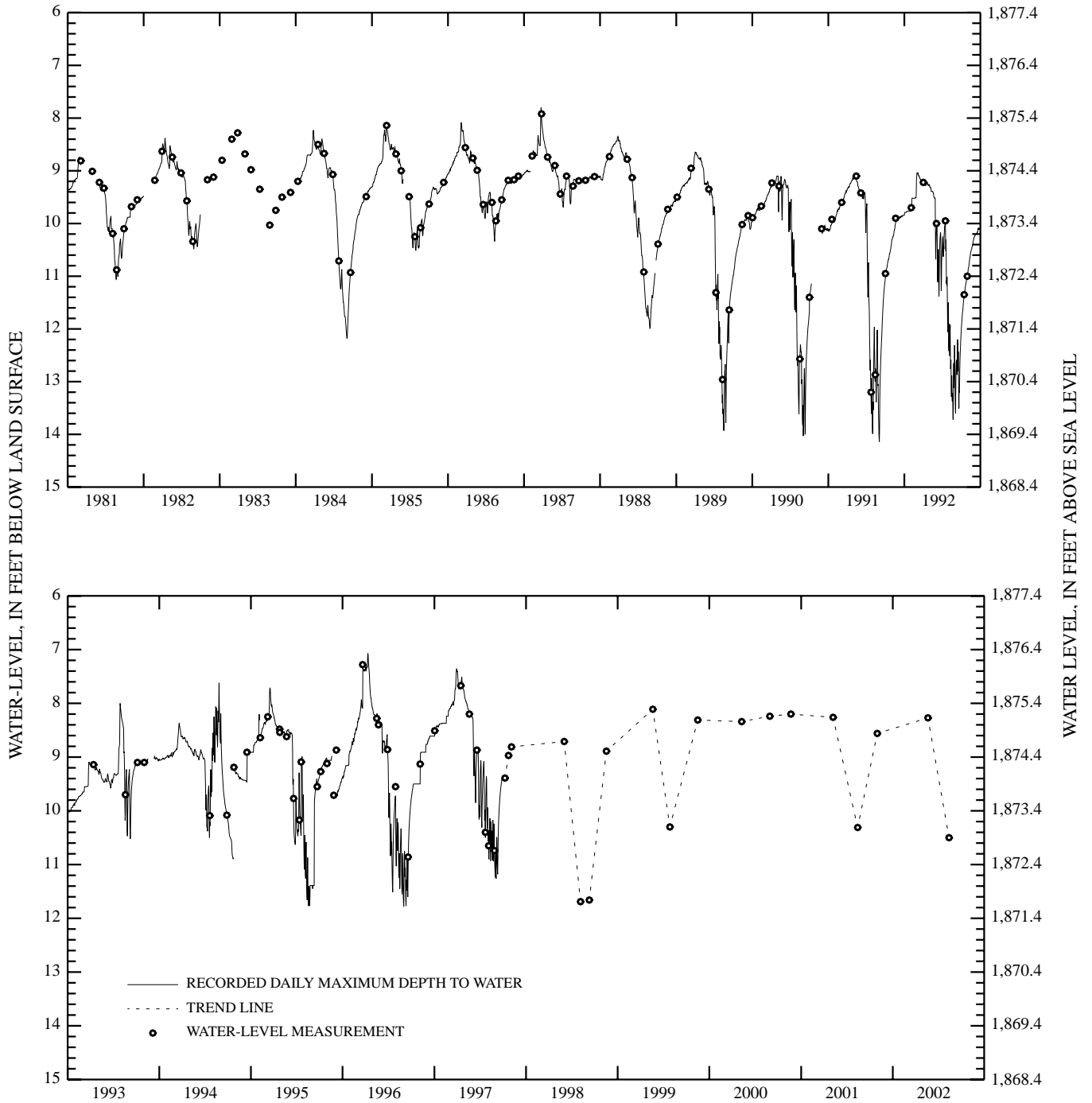
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	8.56	MAY 21	8.27	AUG 13	10.50
WATER YEAR 2002 HIGHEST 8.27		MAY 21, 2002		LOWEST 10.50 AUG 13, 2002	

148-081-03AAB



148-081-03AAB--Continued



GROUND-WATER LEVELS

MERCER COUNTY

472641102105901. Local number, 146-090-20CCC.

LOCATION.--Lat 47°26'41", long 102°10'59", Hydrologic Unit 10130201. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 1,860 ft, cased with 1,540 ft of 4-in diameter steel pipe, open ended.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,120 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

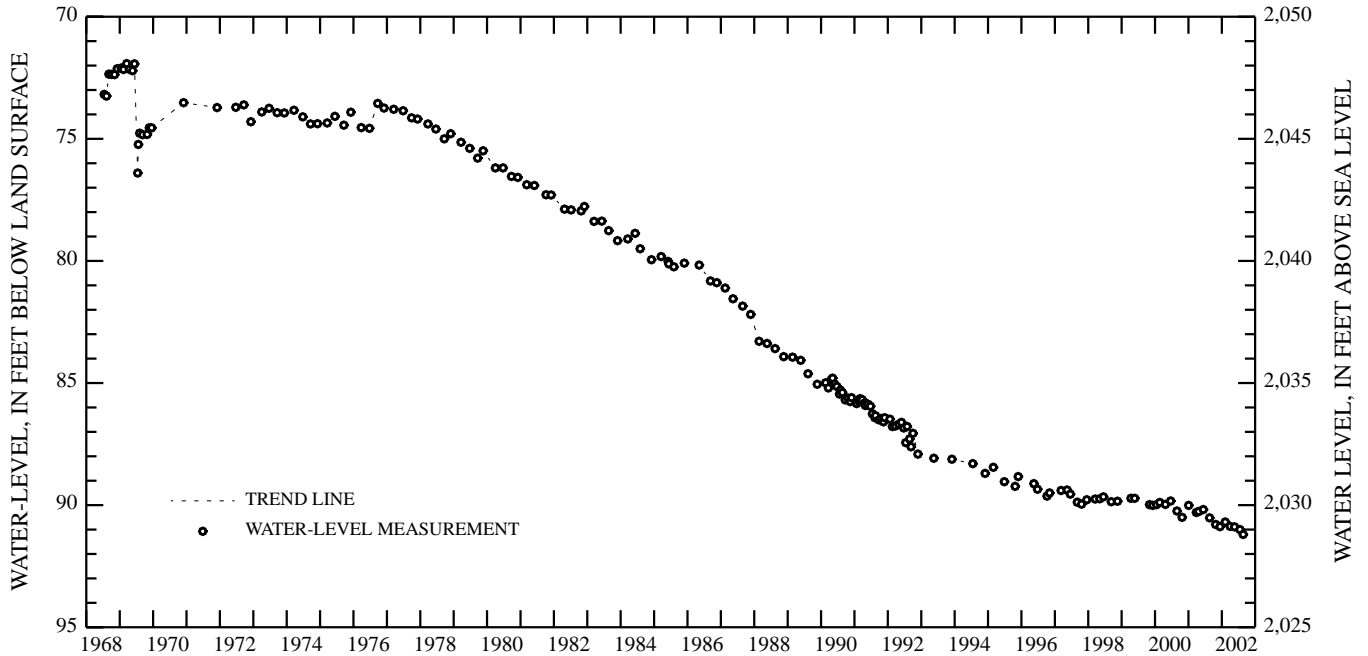
PERIOD OF RECORD.--July 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 71.92 ft below land-surface datum, March 18, 1969; lowest water level, 91.20 ft below land-surface datum, August 22, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	90.79	FEB 07	90.69	APR 02	90.87	MAY 20	90.89	JUL 18	91.00	AUG 22	91.20
DEC 12	90.88										
WATER YEAR 2002		HIGHEST	90.69	FEB 07, 2002		LOWEST	91.20	AUG 22, 2002			

146-090-20CCC



MORTON COUNTY

464734100543501. Local number, 138-081-09ABB1.

LOCATION.--Lat 46°47'34", long 100°54'35", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission. screen set 525 to 537 ft below land-surface datum.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 762 ft, cased with 525 ft of 2-in diameter steel pipe, No. 12 slot screen set 525 to 537 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

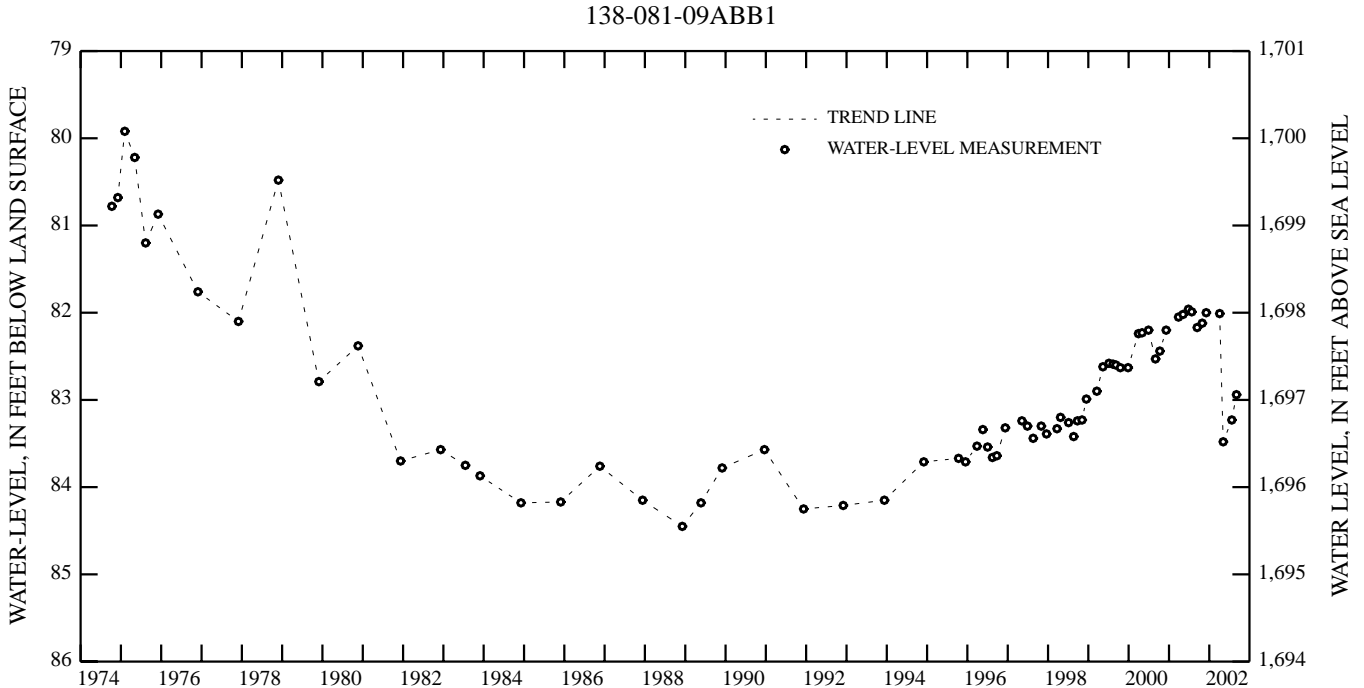
DATUM.--Altitude of land-surface datum is 1,780 ft. Measuring point: Top of casing 3.50 ft above land-surface datum.

PERIOD OF RECORD.--October 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 79.92 ft below land-surface datum, February 5, 1975; lowest water level, 84.45 ft below land-surface datum, December 5, 1988.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	82.12	DEC 04	82.00	APR 05	82.01	MAY 07	83.48	JUL 24	83.23	SEP 04	82.94
WATER YEAR 2002		HIGHEST	82.00	DEC 04, 2001		LOWEST	83.48	MAY 07, 2002			



464734100543502. Local number, 138-081-09ABB2.

LOCATION.--Lat 46°47'34", long 100°54'35", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 362 ft, cased with 336 ft of 2-in diameter steel pipe, No. 12 slot screen set 336 to 348 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,780 ft. Measuring point: Top of casing 3.50 ft above land-surface datum.

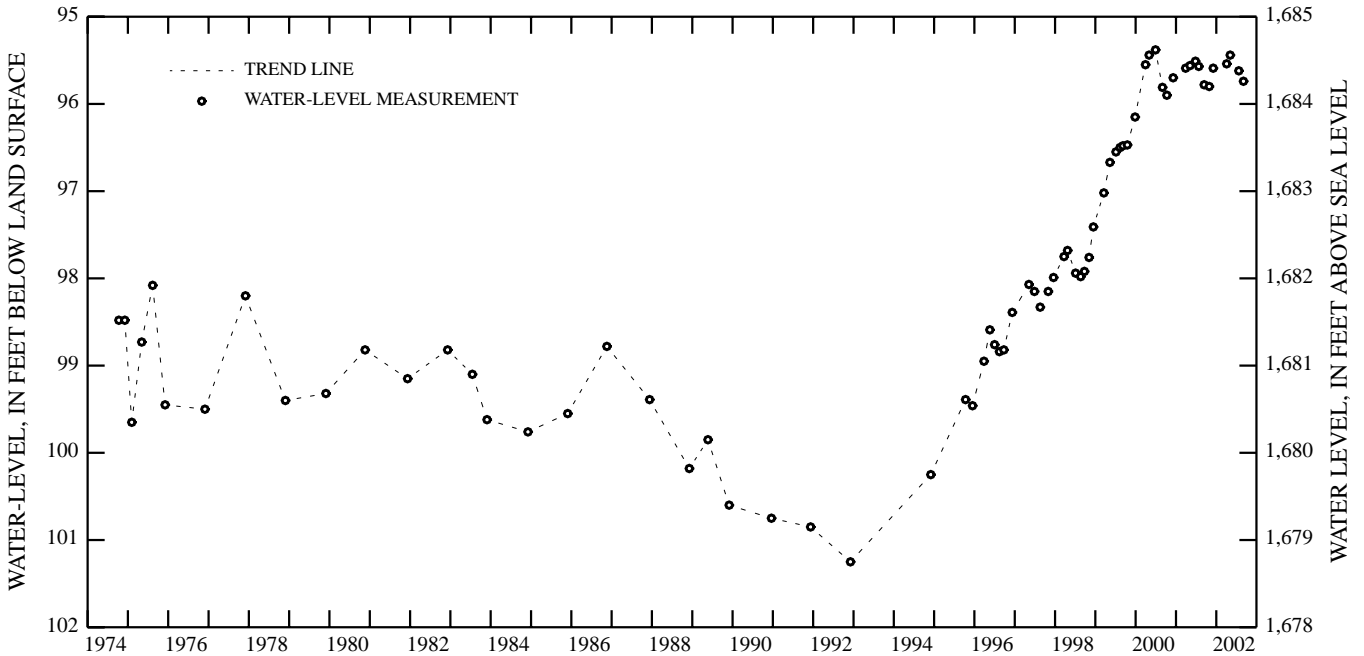
PERIOD OF RECORD.--October 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 95.38 ft below land-surface datum, June 29, 2000; lowest water level, 101.25 ft below land-surface datum, December 4, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	95.80	DEC 04	95.59	APR 05	95.54	MAY 07	95.44	JUL 24	95.62	SEP 04	95.74
WATER YEAR 2002		HIGHEST	95.44	MAY 07, 2002		LOWEST	95.80	OCT 29, 2001			

138-081-09ABB2



MORTON COUNTY--Continued

464734100543504. Local number, 138-081-09ABB4.

LOCATION.--Lat 46°47'34", long 100°54'35", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission.

AQUIFER.--Cannonball-Ludlow.

WELL CHARACTERISTICS.--Drilled observation well, depth 162 ft, cased with 153 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 153 to 159 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,780 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

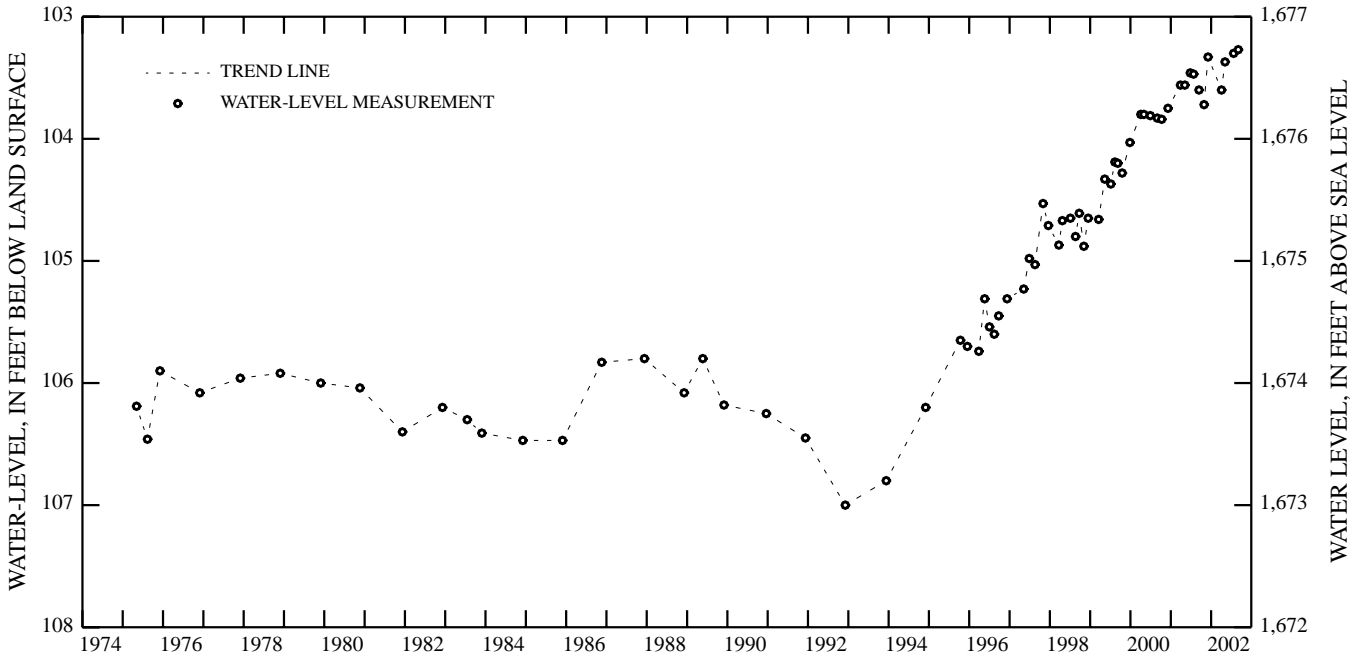
PERIOD OF RECORD.--May 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 103.27 ft below land-surface datum, September 4, 2002; lowest water level, 107.00 ft below land-surface datum, December 4, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	103.72	DEC 04	103.33	APR 05	103.60	MAY 07	103.37	JUL 24	103.30	SEP 04	103.27
WATER YEAR 2002		HIGHEST	103.27	SEP 04, 2002	LOWEST	103.72	OCT 29, 2001				

138-081-09ABB4



GROUND-WATER LEVELS

MORTON COUNTY--Continued

464847101303801. Local number, 139-086-35BCC.

LOCATION.--Lat 46°48'47", long 101°30'38", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission.

AQUIFER.--Sims.

WELL CHARACTERISTICS.--Drilled observation well, depth 140 ft, cased with 57 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 57 to 63 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,010 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

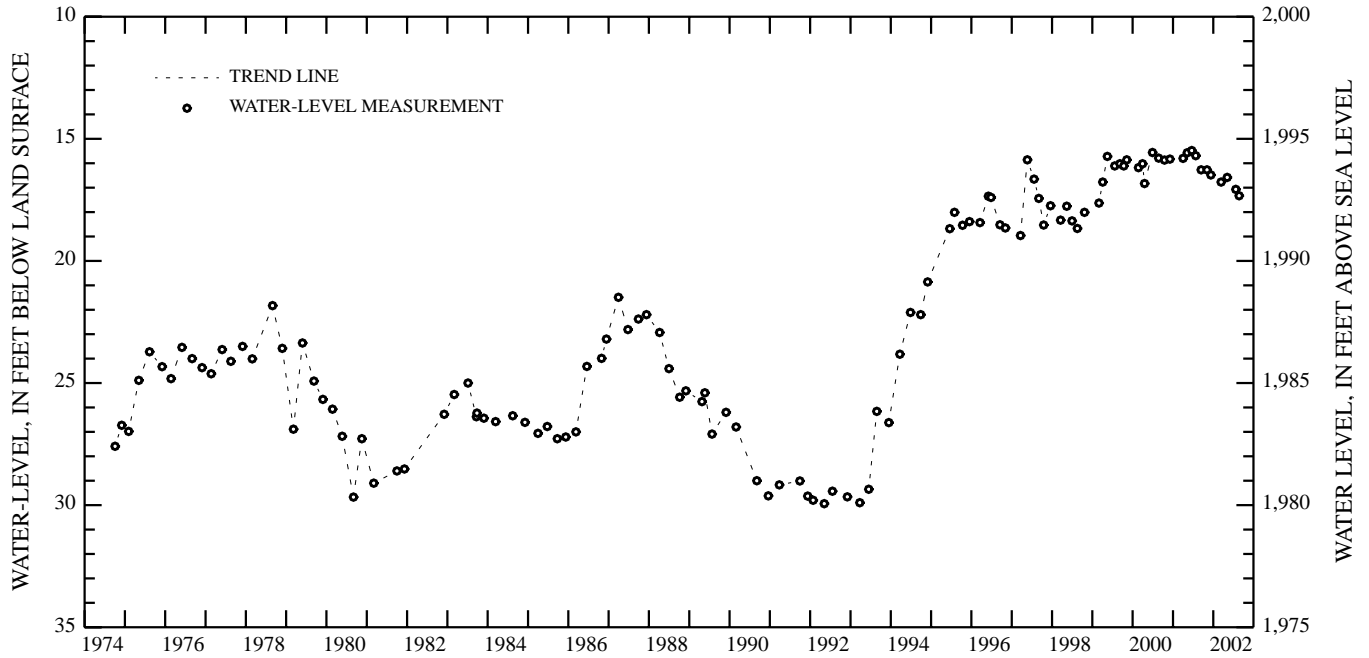
PERIOD OF RECORD.--October 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.48 ft below land-surface datum, June 20, 2001; lowest water level, 29.94 ft below land-surface datum, May 8, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 05	16.27	DEC 10	16.48	MAR 13	16.77	MAY 07	16.58	JUL 24	17.07	AUG 23	17.33
WATER YEAR 2002		HIGHEST	16.27	NOV 05, 2001		LOWEST	17.33	AUG 23, 2002			

139-086-35BCC



MORTON COUNTY--Continued

464846101464502. Local number, 139-088-34BCC2.

LOCATION.--Lat 46°48'46", long 101°46'45", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 862 ft, cased with 842 ft of 2-in diameter steel pipe, No. 12 slot screen set 842 to 860 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,070 ft. Measuring point: Top of casing 4.00 ft above land-surface datum.

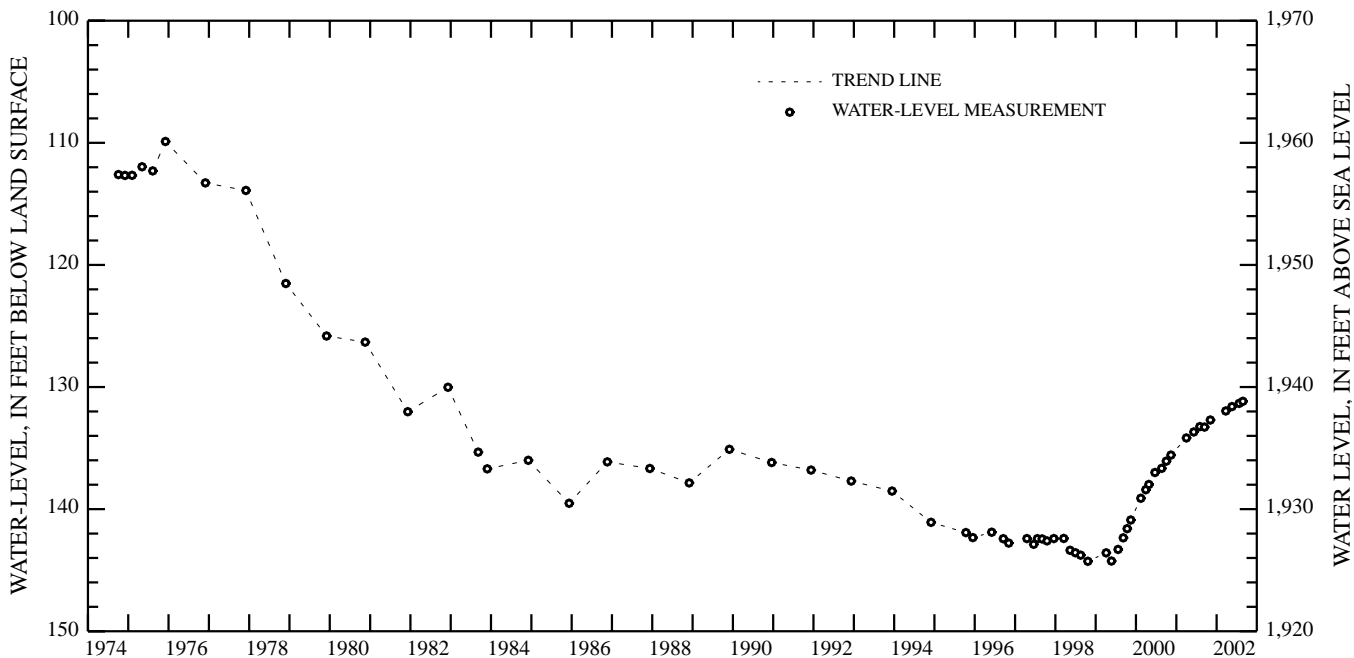
PERIOD OF RECORD.--October 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 109.89 ft below land-surface datum, December 4, 1975; lowest water level, 144.27 ft below land-surface datum, October 22, 1998.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 05	132.70	MAR 25	131.96	MAY 20	131.60	JUL 24	131.34	AUG 27	131.17
WATER YEAR 2002		HIGHEST	131.17	AUG 27, 2002		LOWEST	132.70	NOV 05, 2001	

139-088-34BCC2



GROUND-WATER LEVELS

MORTON COUNTY--Continued

464846101464503. Local number, 139-088-34BCC3.

LOCATION.--Lat 46°48'46", long 101°46'45", Hydrologic Unit 10130203. Owner: North Dakota State Water Commission.

AQUIFER.--Tongue River.

WELL CHARACTERISTICS.--Drilled observation well, depth 302 ft, cased with 288 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 288 to 294 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

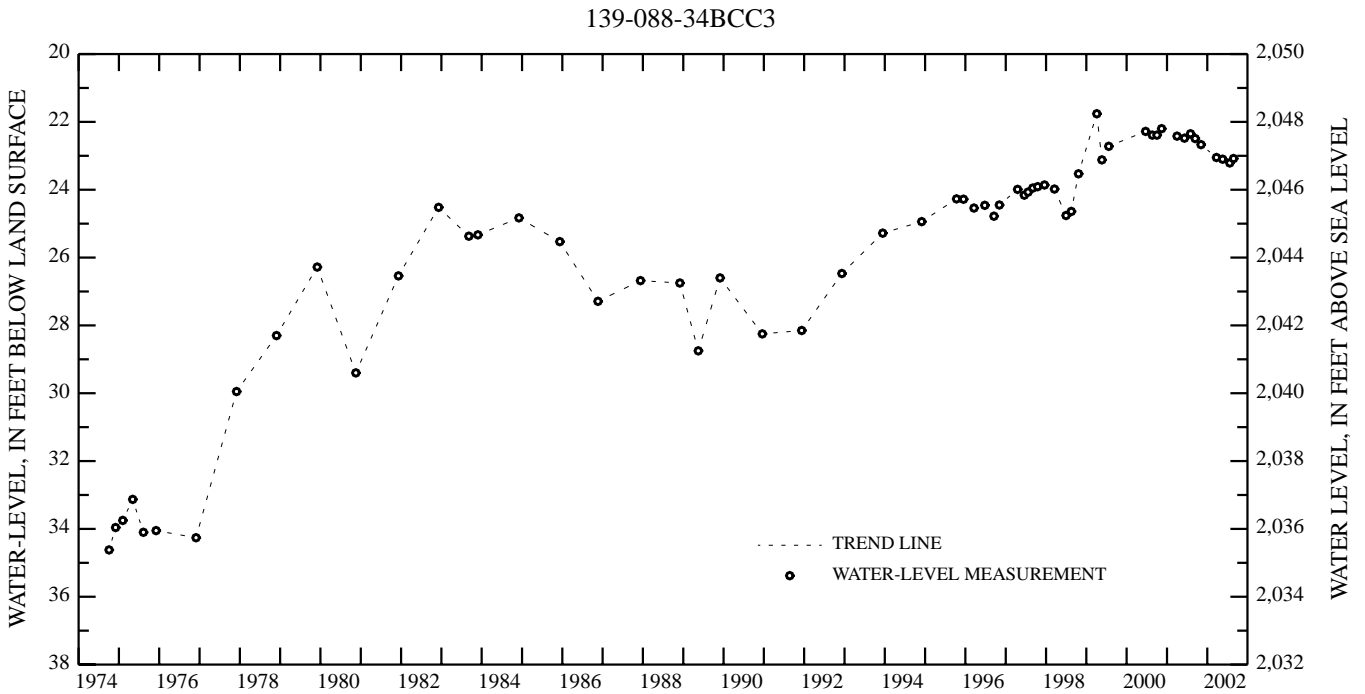
DATUM.--Altitude of land-surface datum is 2,070 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.76 ft below land-surface datum, April 6, 1999; lowest water level, 34.62 ft below land-surface datum, October 4, 1974.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 05	22.67	MAR 25	23.05	MAY 20	23.10	JUL 24	23.21	AUG 27	23.08
WATER YEAR 2002		HIGHEST	22.67	NOV 05, 2001	LOWEST		23.21	JUL 24, 2002	



MOUNTRAIL COUNTY

480120101571901. Local number, 152-088-04BBBD1.

LOCATION.--Lat 48°01'20", long 101°57'19", Hydrologic Unit 10110101. Owner: North Dakota State Water Commission.

AQUIFER.--Sentinel Butte.

WELL CHARACTERISTICS.--Drilled observation well, depth 80 ft, cased with 66 ft of 1.25-in diameter plastic pipe, screen set 66 to 71 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,094.73 ft. Measuring point: Top of casing 1.80 ft above land-surface datum.

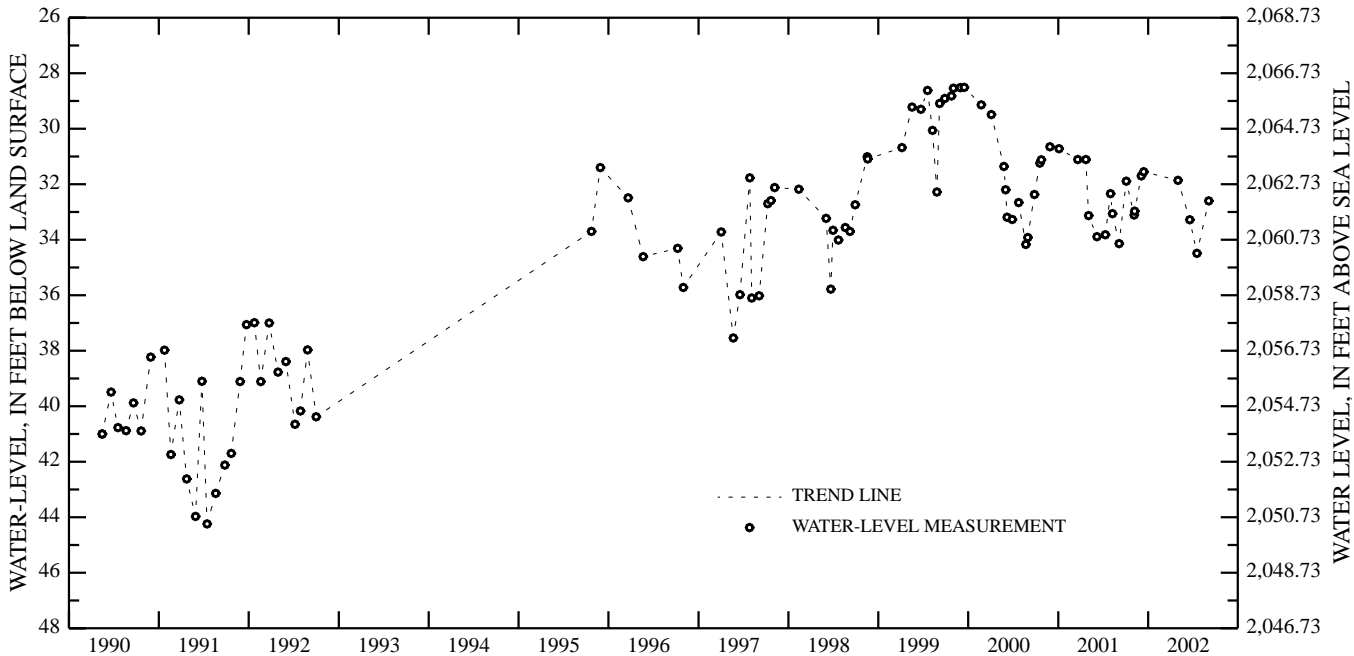
PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 28.51 ft below land-surface datum, December 16, 1999; lowest water level, 44.24 ft below land-surface datum, July 16, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	31.89	NOV 07	32.97	DEC 14	31.55	JUN 19	33.28	JUL 18	34.49	SEP 04	32.60
NOV 05	33.11	DEC 04	31.70	MAY 02	31.86						
WATER YEAR 2002		HIGHEST	31.55	DEC. 14, 2001		LOWEST	34.49	JUL 18, 2002			

152-088-04BBBD1



GROUND-WATER LEVELS

MOUNTRAIL COUNTY--Continued

480120101571902. Local number, 152-088-04BBBD2.

LOCATION.--Lat 48°01'20", long 101°57'19", Hydrologic Unit 10110101. Owner: North Dakota State Water Commission.

AQUIFER.--Sentinel Butte.

WELL CHARACTERISTICS.--Drilled observation well, depth 89 ft, cased with 82 ft of 1.25-in diameter plastic pipe, screen set 82 to 87 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

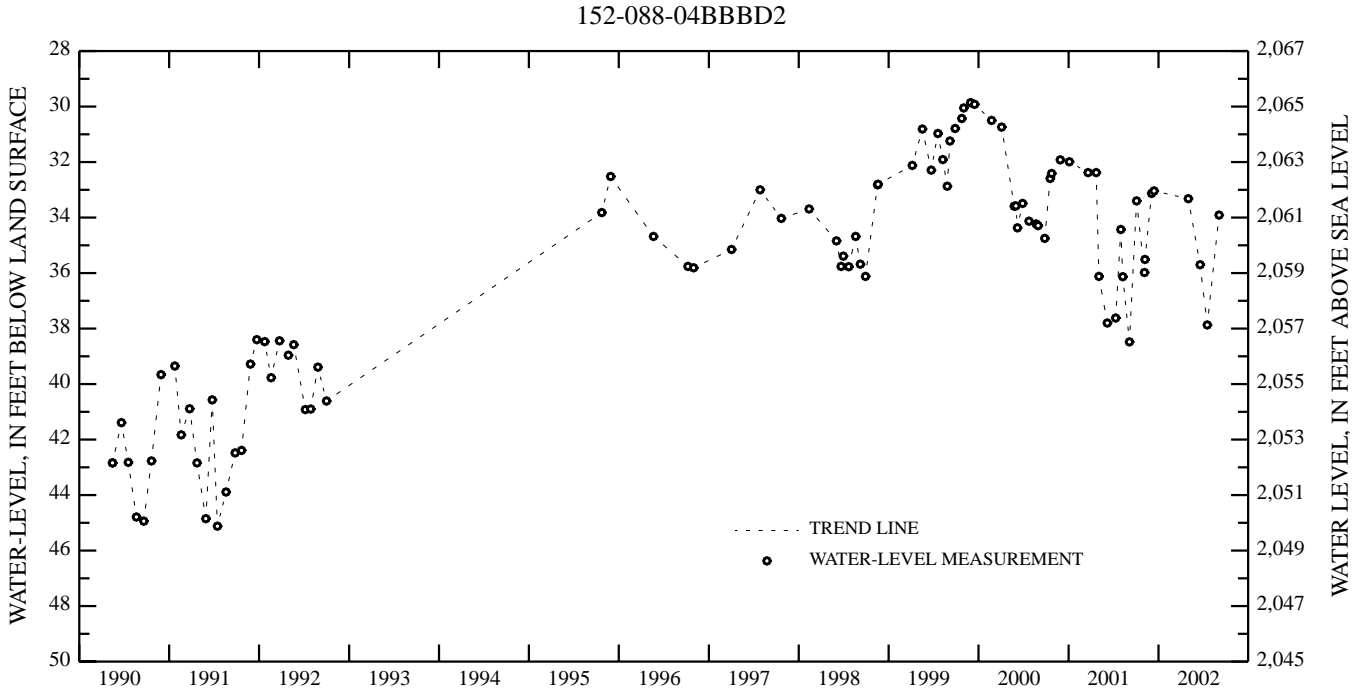
DATUM.--Altitude of land-surface datum is 2,095 ft. Measuring point: Top of casing 1.50 ft above land-surface datum.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 29.86 ft below land-surface datum, November 30, 1999; lowest water level, 45.12 ft below land-surface datum, July 16, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	33.40	NOV 07	35.51	DEC 14	33.04	JUN 19	35.70	JUL 18	37.87	SEP 04	33.91
NOV 05	35.98	DEC 04	33.13	MAY 02	33.32						
WATER YEAR 2002		HIGHEST	33.04	DEC 14, 2001		LOWEST	37.87	JUL 18, 2002			



NELSON COUNTY

474806098133401. Local number, 150-059-20AAA.

LOCATION.--Lat 47°48'06", long 98°13'34", Hydrologic Unit 09020203. Owner: North Dakota State Water Commission.

AQUIFER.--McVille.

WELL CHARACTERISTICS.--Drilled observation well, depth 340 ft, cased with 247 ft of 4-in diameter plastic pipe, No. 20 slot screen set 247 to 253 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder August 1968 to December 1997. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for August 1968 to September 1970. From October 1970 to December 1997, daily maximum and minimum recorded water levels also are available. Measured using a steel tape May 1998 to current year.

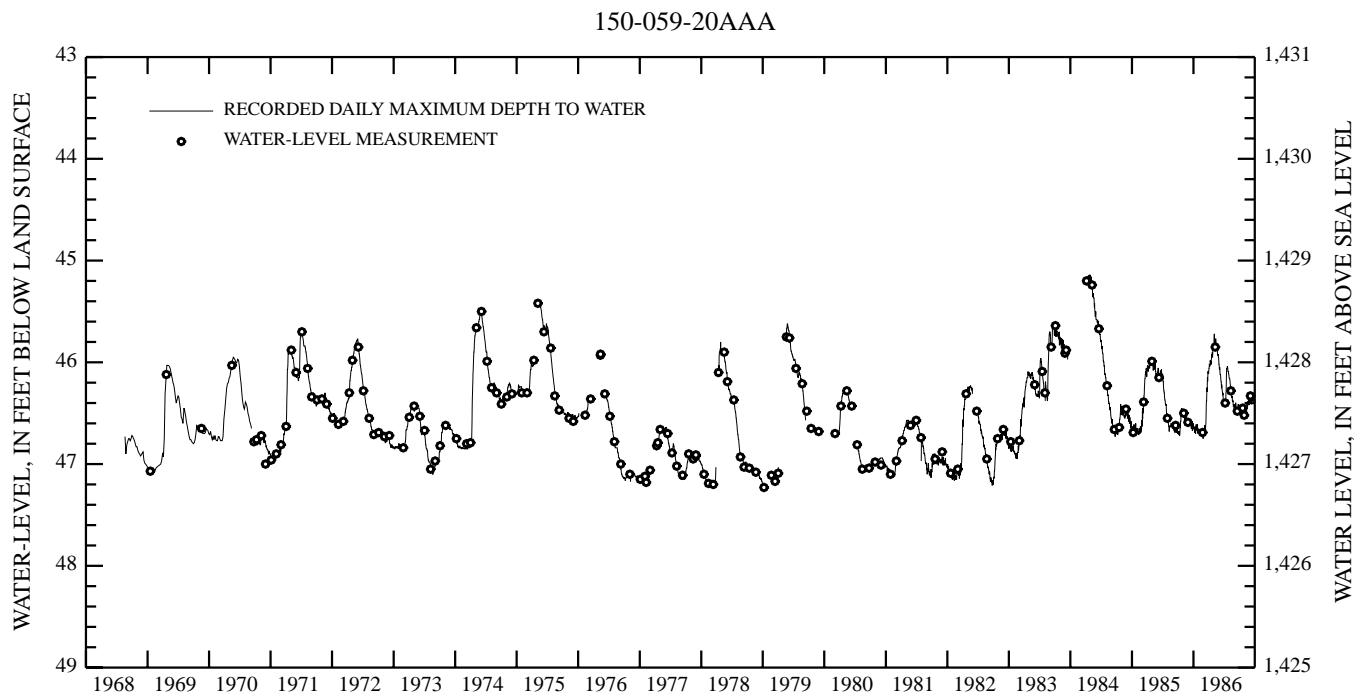
DATUM.--Altitude of land-surface datum is 1,474 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--August 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 43.19 ft below land-surface datum, April 25, 1996; lowest water level, 47.39 ft below land-surface datum, January 28, 1991.

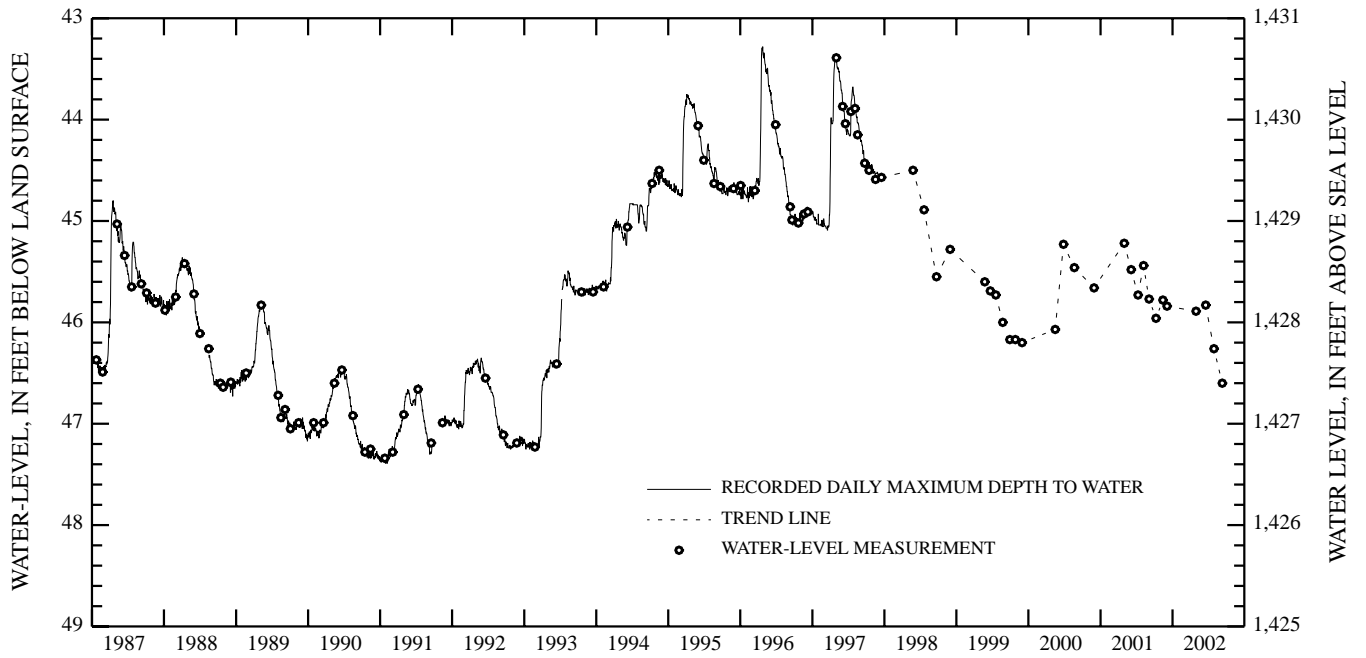
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 09	45.96	DEC 04	45.84	APR 30	45.89	JUN 18	45.83	JUL 30	46.26	SEP 10	46.60
NOV 13	45.78										
WATER YEAR 2002		HIGHEST	45.78	NOV 13, 2001	LOWEST	46.60	SEP 10, 2002				



GROUND-WATER LEVELS
NELSON COUNTY--Continued

150-059-20AAA



NELSON COUNTY--Continued

480138098074101. Local number, 153-058-32DBB.

LOCATION.--Lat 48°01'38", long 98°07'41", Hydrologic Unit 09020307. Owner: North Dakota State Water Commission.

AQUIFER.--Pierre Shale.

WELL CHARACTERISTICS.--Drilled observation well, depth 120 ft, cased with 120 ft of 5-in diameter steel pipe, slotted 110 to 120 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

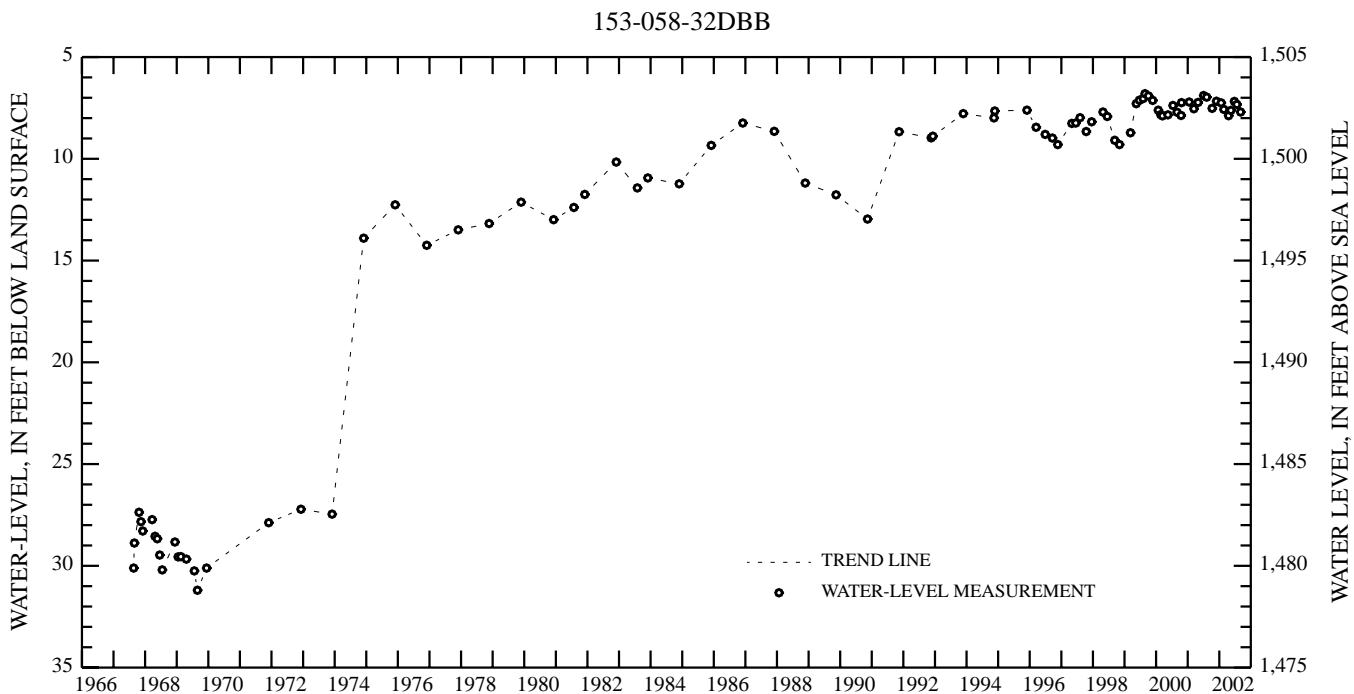
DATUM.--Altitude of land-surface datum is 1,510 ft. Measuring point: Top of casing 1.45 ft above land-surface datum.

PERIOD OF RECORD.--August 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.80 ft below land-surface datum, August 26, 1999; lowest water level, 31.20 ft below land-surface datum, August 28, 1969.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	7.52	JAN 22	7.25	APR 18	7.88	JUN 24	7.18	JUL 23	7.33	SEP 04	7.70
NOV 29	7.17	FEB 22	7.57	MAY 15	7.62						
WATER YEAR 2002		HIGHEST	7.17	NOV 29, 2001	LOWEST	7.88	APR 18, 2002				



GROUND-WATER LEVELS

OLIVER COUNTY

470642101162701. Local number, 142-084-24BBA.

LOCATION.--Lat 47°06'42", long 101°16'27", Hydrologic Unit 10130101. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 1,295 ft, cased with 966 ft of 4-in diameter steel pipe, open ended.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,006 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

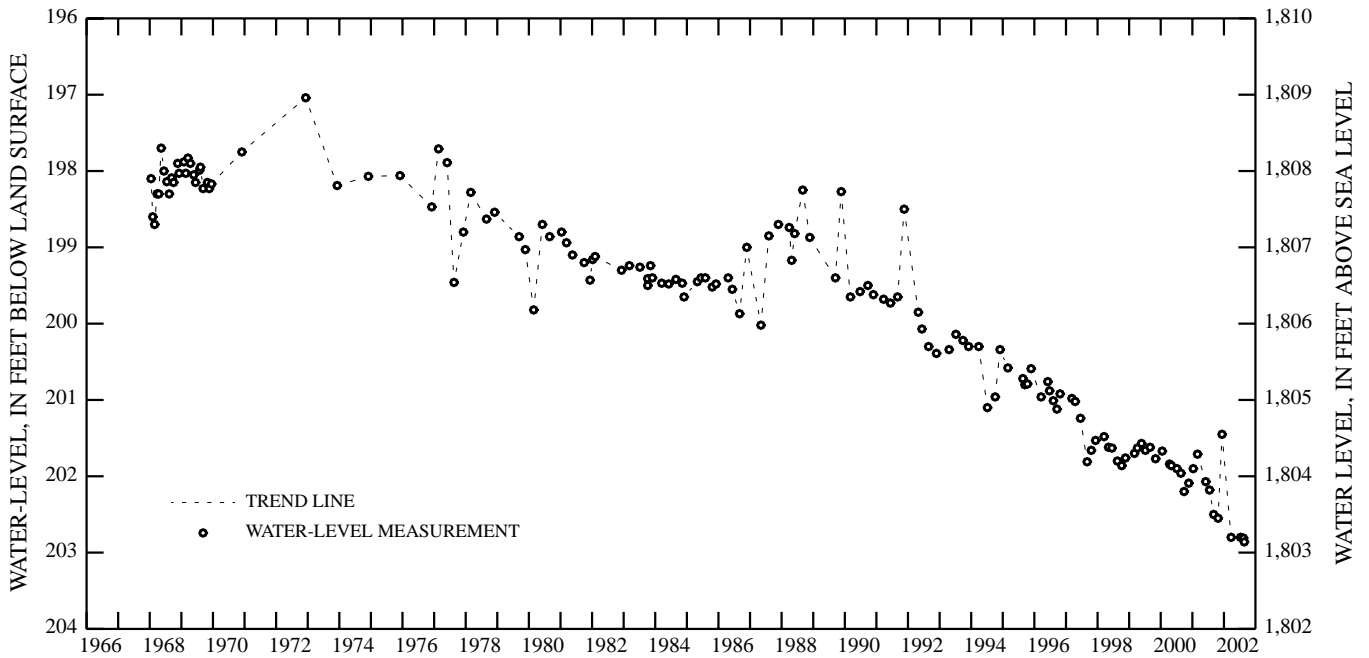
PERIOD OF RECORD.--January 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 197.04 ft below land-surface datum, December 8, 1972; lowest water level, 202.86 ft below land-surface datum, August 24, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	202.55	DEC 10	201.45	MAR 25	202.80	JUL 12	202.80	AUG 14	202.81	AUG 24	202.86
WATER YEAR 2002		HIGHEST	201.45	DEC 10, 2001		LOWEST	202.86	AUG 24, 2002			

142-084-24BBA



PEMBINA COUNTY

485425097550502. Local number, 163-056-29CDD2.

LOCATION.--Lat 48°54'25", long 97°55'05", Hydrologic Unit 09020313. Owner: North Dakota State Water Commission.

AQUIFER.--Pembina River.

WELL CHARACTERISTICS.--Drilled observation well, depth 40 ft, cased with 20 ft of 4-in diameter steel pipe, No. 24 slot screen set 20 to 25 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

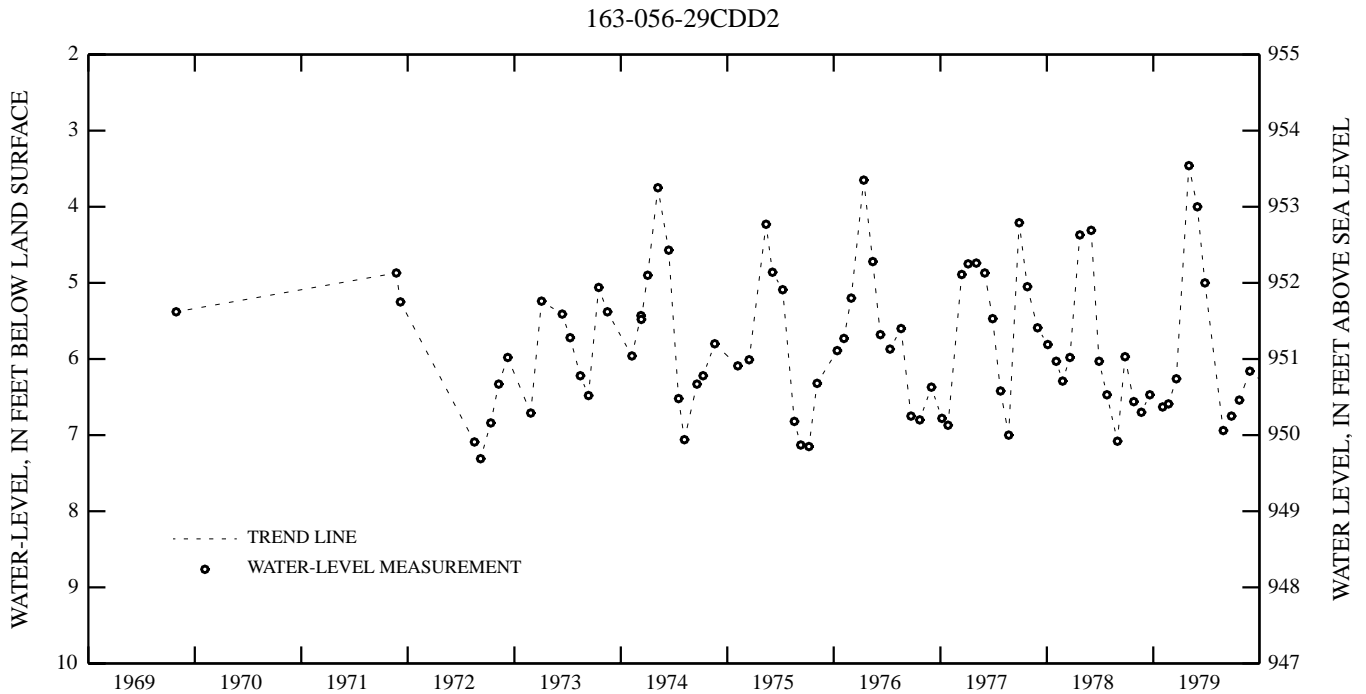
DATUM.--Altitude of land-surface datum is 957 ft. Measuring point: Top of casing 0.60 ft above land-surface datum.

PERIOD OF RECORD.--October 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.82 ft below land-surface datum, May 1, 1997; lowest water level, 7.31 ft below land-surface datum, September 7, 1972.

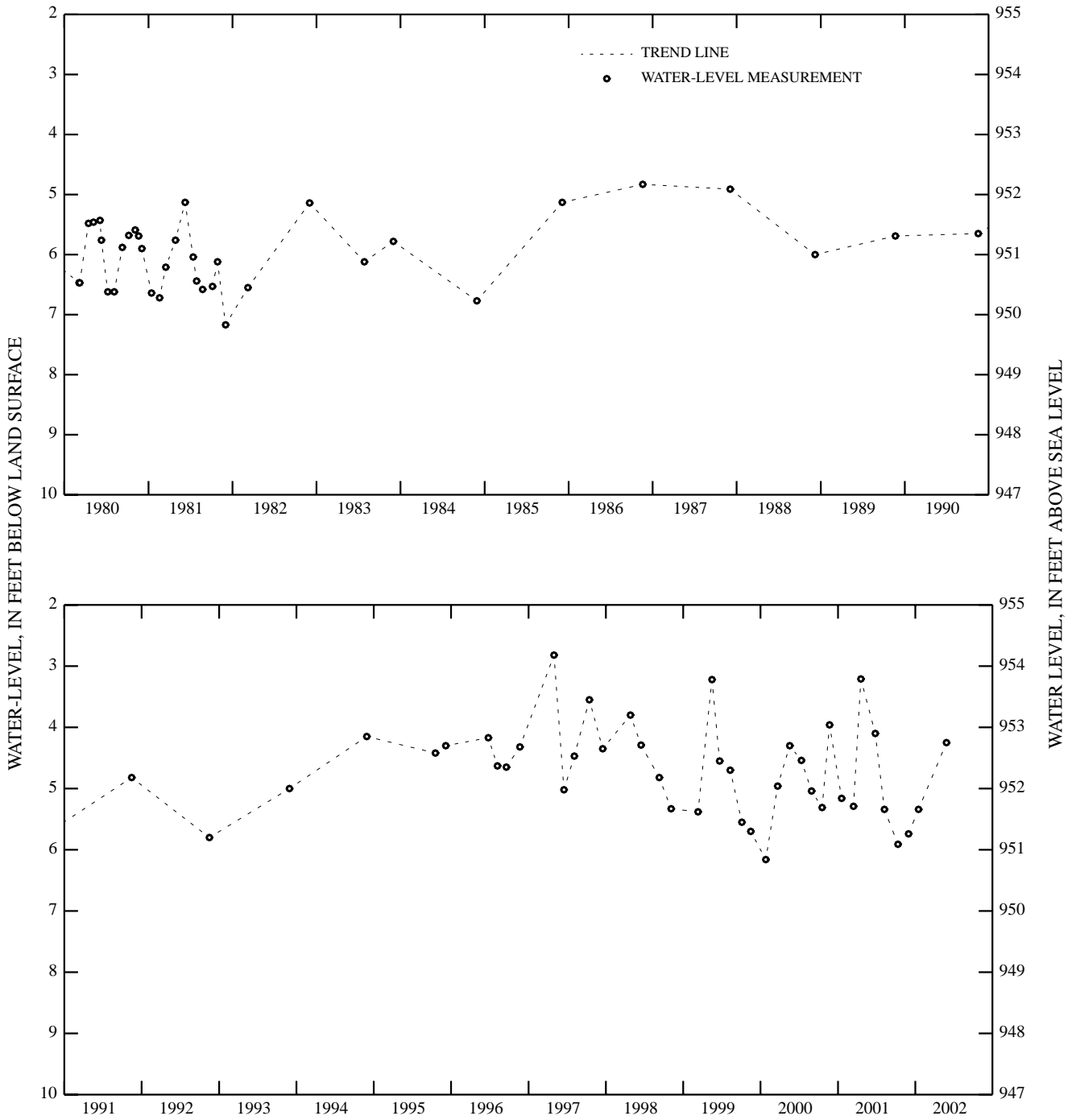
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	5.91	NOV 30	5.74	JAN 16	5.34	MAY 28	4.25
WATER YEAR 2002 HIGHEST		4.25	MAY 28, 2002		LOWEST		5.91
						OCT 11, 2001	



GROUND-WATER LEVELS
PEMBINA COUNTY--Continued

163-056-29CDD2--Continued



PIERCE COUNTY

475139099484801. Local number, 151-072-36AAA1.

LOCATION.--Lat 47°51'39", long 99°48'48", Hydrologic Unit 09020202. Owner: North Dakota State Water Commission.

AQUIFER.--New Rockford.

WELL CHARACTERISTICS.--Drilled observation well, depth 320 ft, cased with 213 ft of 4-in diameter plastic pipe, screen set 213 to 238 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder November 1967 to November 14, 2000. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for November 1967 to July 1974. From August 1974 to November 14, 2000, daily maximum and minimum recorded water levels also are available, measured using a steel tape November 14, 2000, to present.

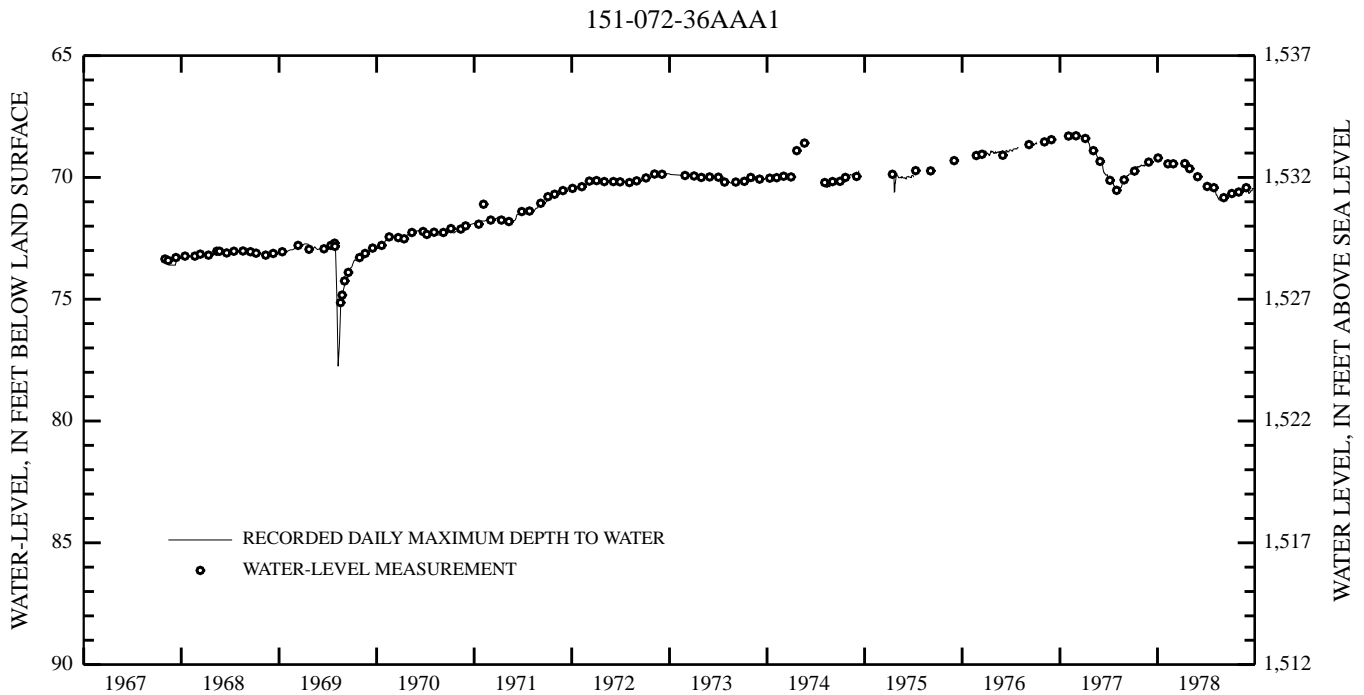
DATUM.--Altitude of land-surface datum is 1,602 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 68.26 ft below land-surface datum, March 10-11, 1977; lowest water level, 86.32 ft below land-surface datum, August 22-27, 1992.

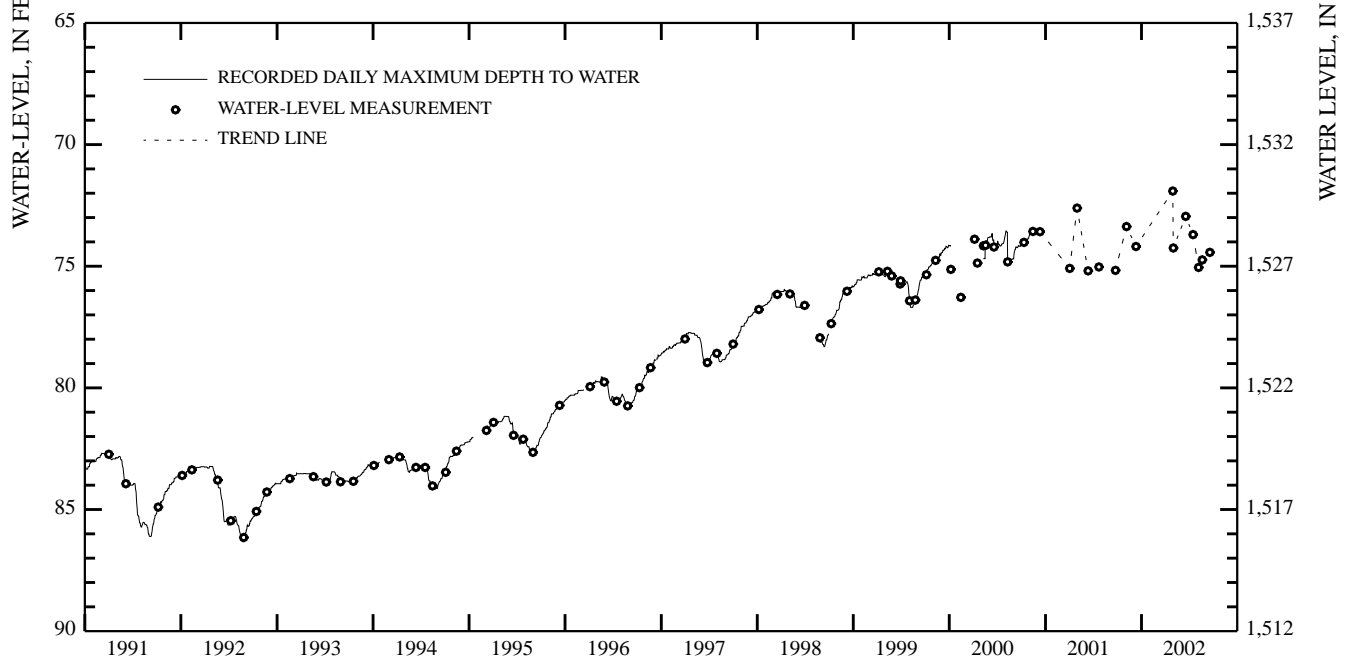
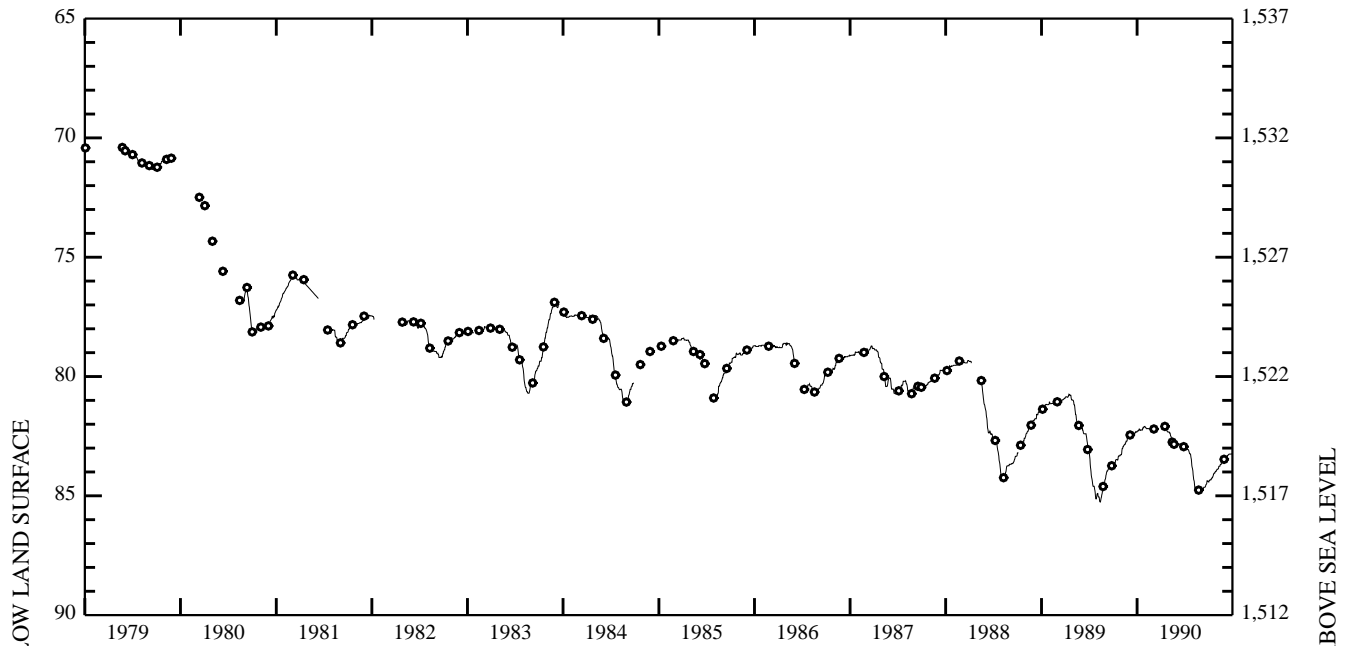
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 05	73.37	APR 30	71.91	JUN 18	72.95	AUG 06	75.05	AUG 20	74.74	SEP 18	74.43
DEC 11	74.19	MAY 02	74.25	JUL 16	73.70						
WATER YEAR 2002		HIGHEST	71.91	APR 30, 2002		LOWEST	75.05	AUG 06, 2002			



GROUND-WATER LEVELS
PIERCE COUNTY--Continued

151-072-36AAA1--Continued



PIERCE COUNTY--Continued

482033099594901. Local number, 156-073-12CCC.

LOCATION.--Lat 48°20'33", long 99°59'49", Hydrologic Unit 09010004. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 120 ft, cased with 72.5 ft of 4-in diameter plastic pipe, screen set 72.5 to 77.5 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,550 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

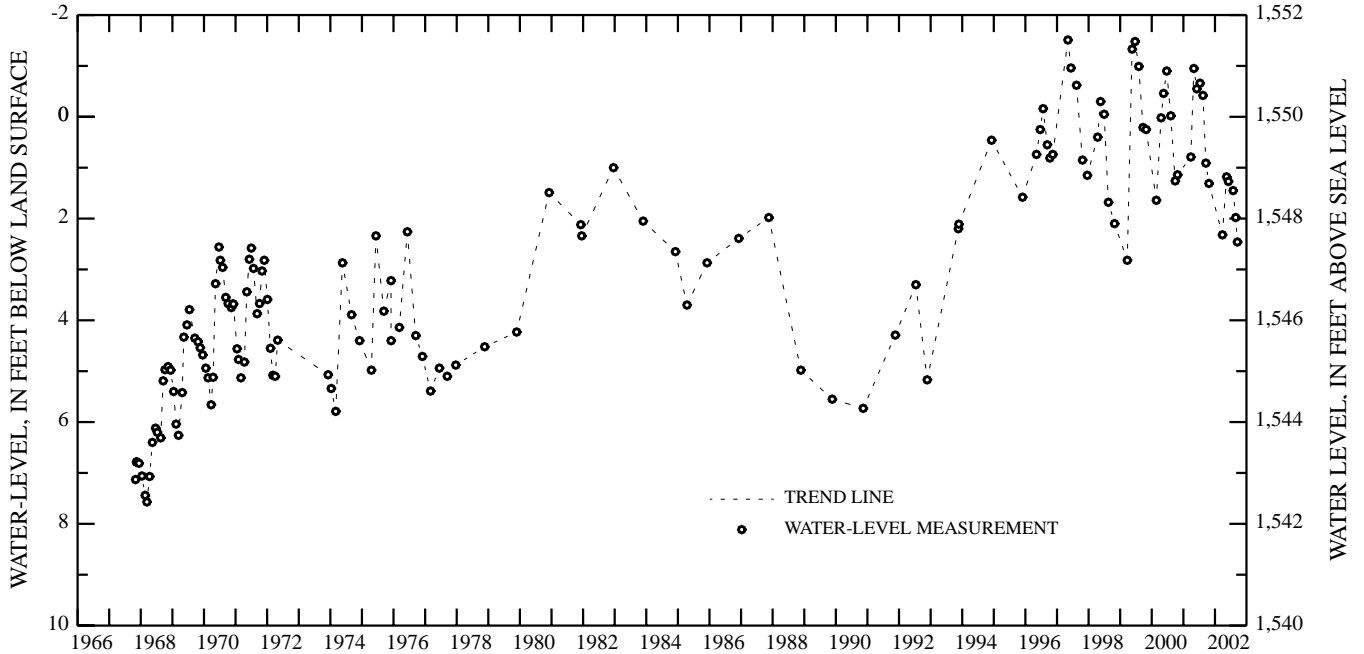
PERIOD OF RECORD.--November 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, -1.51 ft below land-surface datum, May 7, 1997; lowest water level, 7.57 ft below land-surface datum, March 12, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	1.31	MAY 15	1.18	JUN 05	1.27	JUL 30	1.45	AUG 29	1.98	SEP 17	2.46
MAR 28	2.32										
WATER YEAR 2002		HIGHEST	1.18	MAY 15, 2002		LOWEST	2.46	SEP 17, 2002			

156-073-12CCC



483054100071901. Local number, 158-073-17BBB.

LOCATION.--Lat 48°30'54", long 100°07'19", Hydrologic Unit 09010004. Owner: North Dakota State Water Commission.

AQUIFER.--Lake Souris.

WELL CHARACTERISTICS.--Drilled observation well, depth 180 ft, cased with 56 ft of 1.25-in diameter plastic pipe, screen set 56 to 59 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,508 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

PERIOD OF RECORD.--August 1968 to current year.

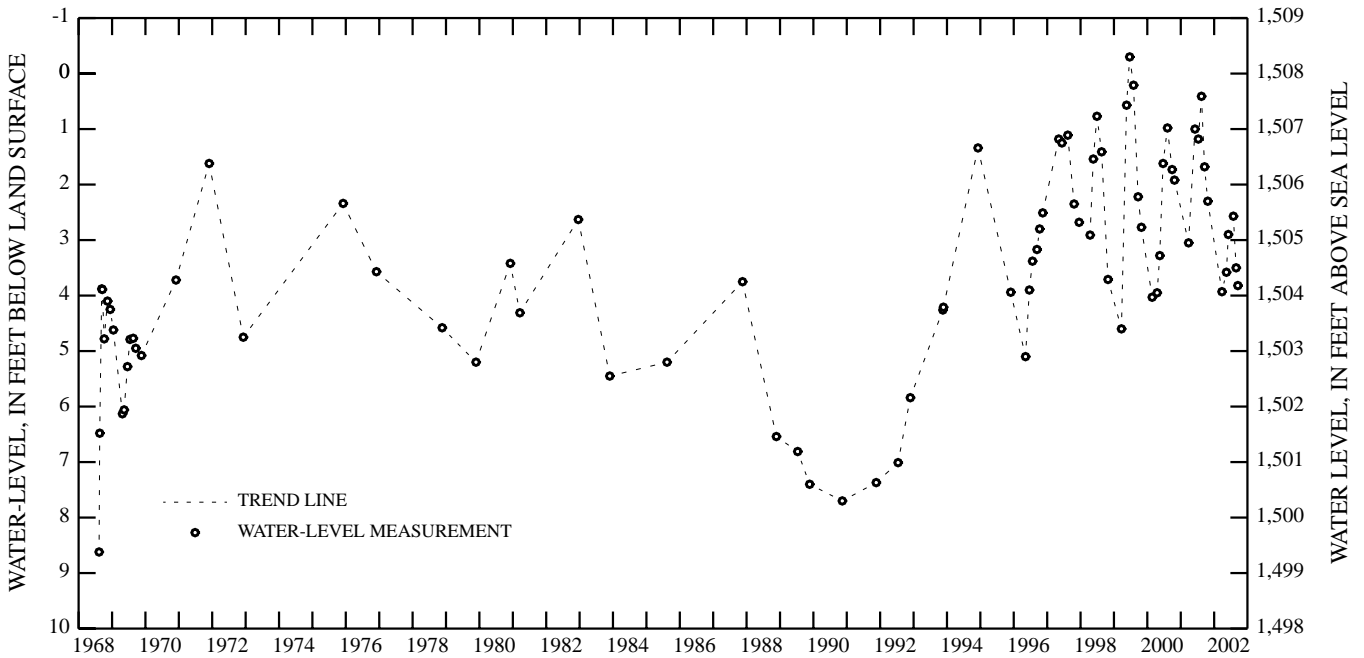
EXTREMES FOR PERIOD OF RECORD.--Highest water level, -0.30 ft below land-surface datum, June 22, 1999; lowest water level, 8.62 ft below land-surface datum, August 12, 1968.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	2.30	MAY 15	3.58	JUN 05	2.90	JUL 30	2.57	AUG 29	3.50	SEP 17	3.82
MAR 27	3.93										

WATER YEAR 2002 HIGHEST 2.30 OCT 23, 2001 LOWEST 3.93 MAR 27, 2002

158-073-17BBB



RAMSEY COUNTY

480449099002402. Local number, 153-065-09DDD2.

LOCATION.--Lat 48°04'49", long 99°00'24", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 140 ft, cased with 117 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 117 to 120 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,458 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

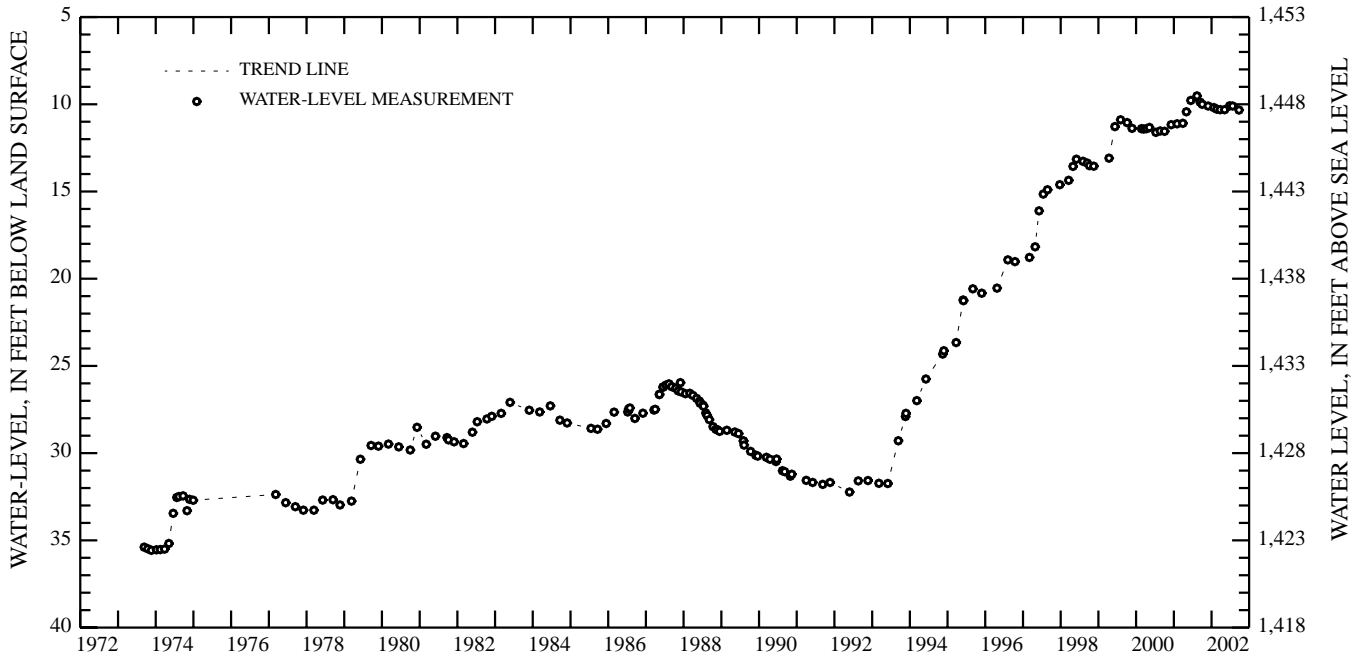
PERIOD OF RECORD.--September 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.52 ft below land-surface datum, August 13, 2001; lowest water level, 35.57 ft below land-surface datum, November 20, 1973.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	10.00	JAN 23	10.19	MAR 26	10.31	JUN 25	10.09	JUL 24	10.10	SEP 24	10.33
NOV 29	10.10	FEB 21	10.28	MAY 08	10.31						
WATER YEAR 2002		HIGHEST	10.00	OCT 03, 2001		LOWEST	10.33	SEP 24, 2002			

153-065-09DDD2



480817099013201. Local number, 154-065-21CCC.

LOCATION.--Lat 48°08'17", long 99°01'32", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased with 127 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 127 to 133 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,473 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

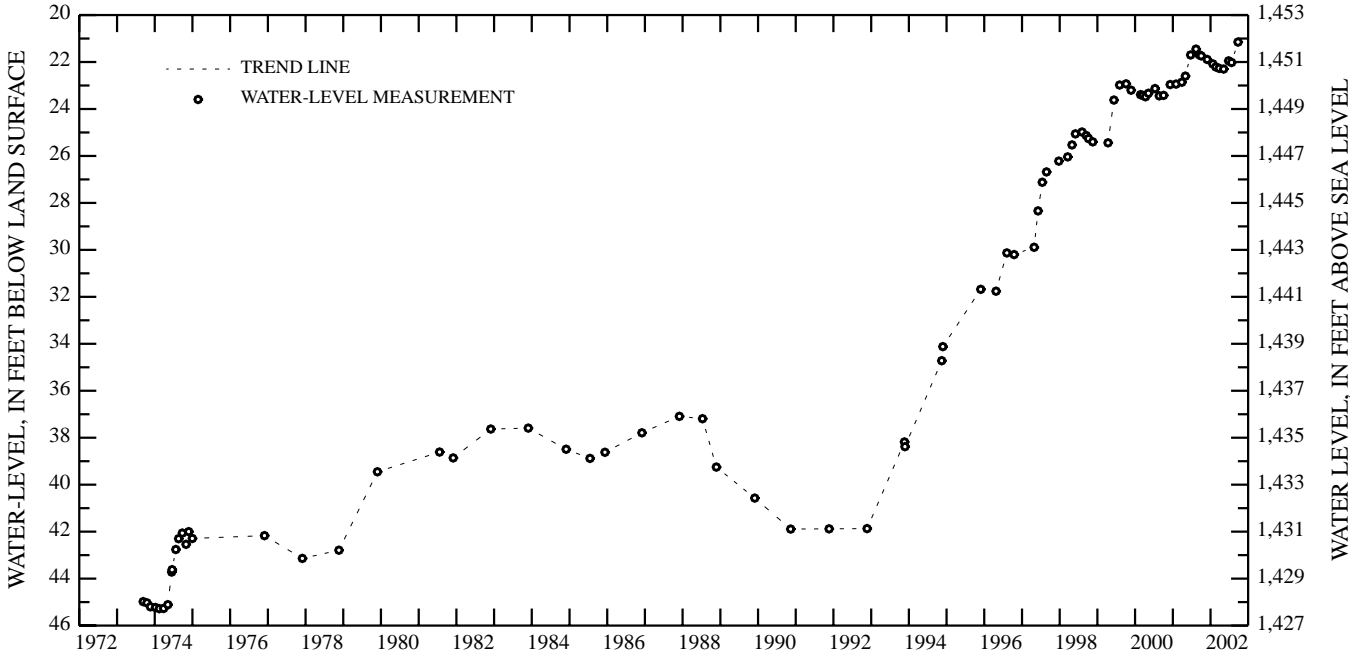
PERIOD OF RECORD.--September 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.15 ft below land-surface datum, September 24, 2002; lowest water level, 45.28 ft below land-surface datum, February 14, 1974.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	21.74	FEB 21	22.21	MAY 08	22.30	JUN 25	21.95	JUL 24	22.02	SEP 24	21.15
JAN 23	22.08	MAR 26	22.27								
WATER YEAR 2002		HIGHEST	21.15	SEP 24, 2002	LOWEST	22.30	MAY 08, 2002				

154-065-21CCC



RAMSEY COUNTY--Continued

481929098392601. Local number, 156-062-20BBB.

LOCATION.--Lat 48°19'29", long 98°39'26", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Pierre Shale.

WELL CHARACTERISTICS.--Drilled observation well, depth 60 ft, cased with 60 ft of 4-in diameter plastic pipe, slotted 48 to 58 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,495 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

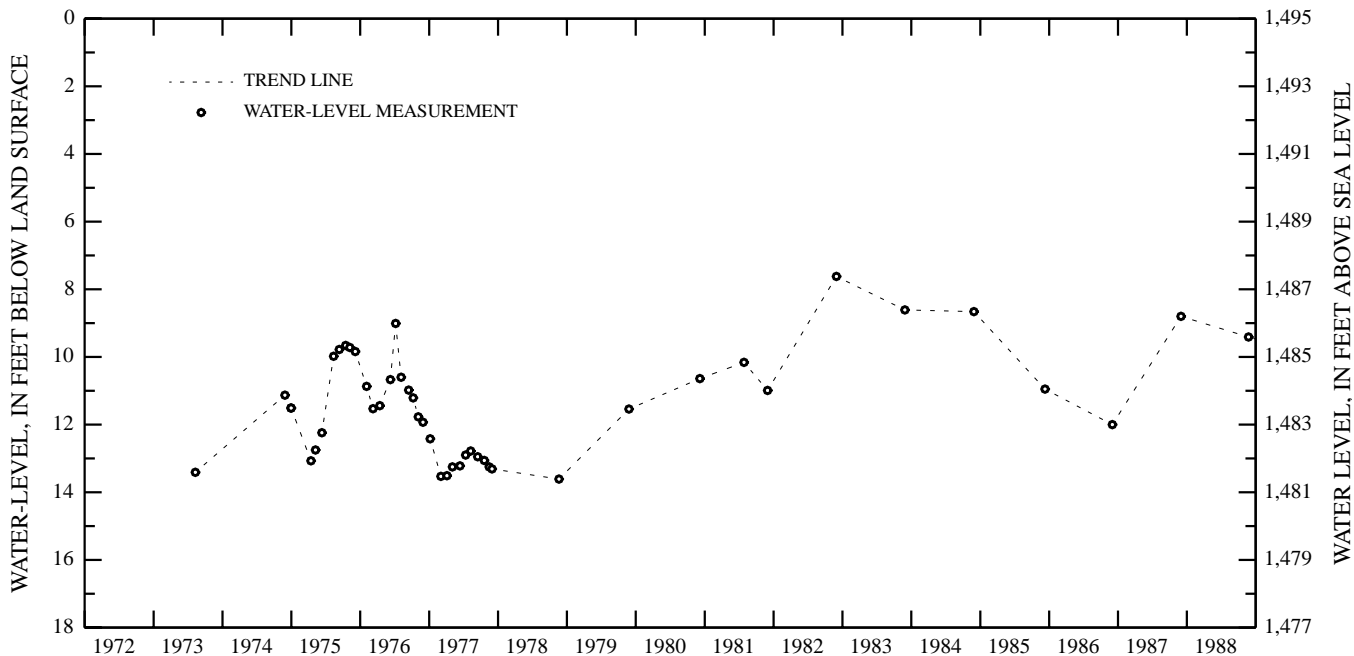
PERIOD OF RECORD.--August 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.56 ft below land-surface datum, November 24, 1993; lowest water level, 15.84 ft below land-surface datum, November 14, 1990.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

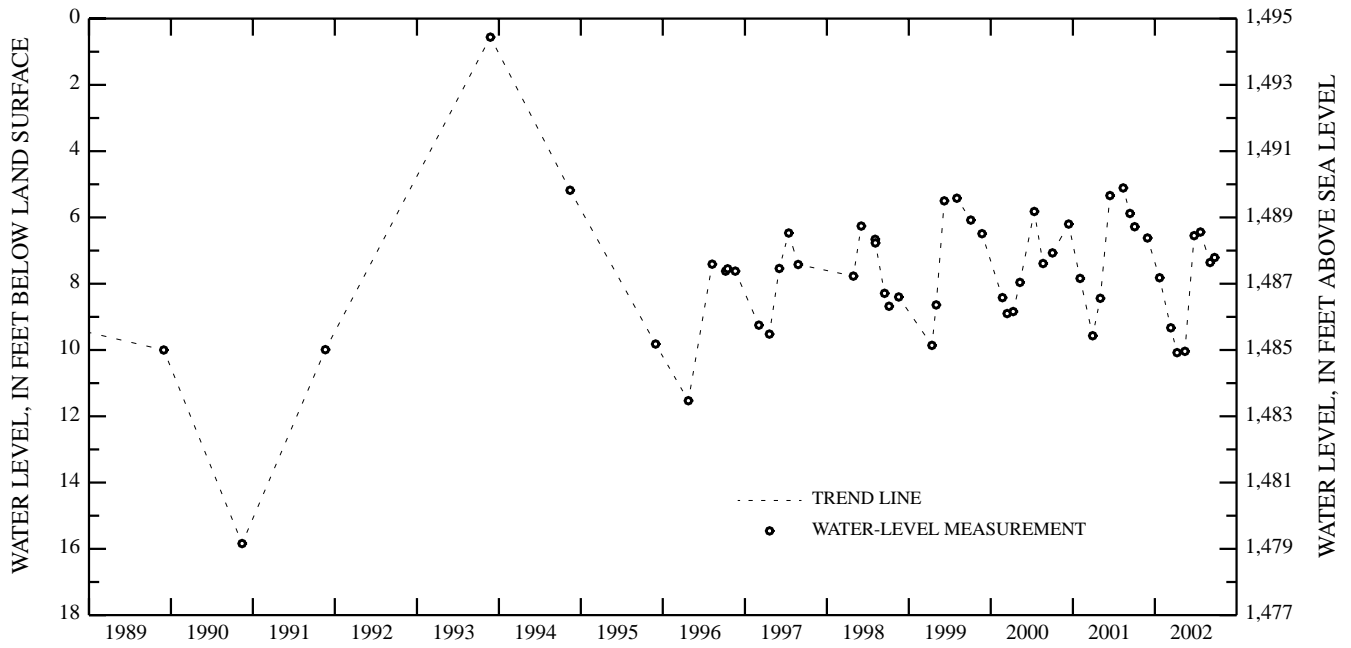
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	6.28	JAN 22	7.82	APR 10	10.08	JUN 25	6.55	SEP 04	7.36	SEP 24	7.21
NOV 29	6.62	MAR 13	9.33	MAY 15	10.04	JUL 23	6.44				
WATER YEAR 2002		HIGHEST	6.28	OCT 03, 2001		LOWEST	10.08	APR 10, 2002			

156-062-20BBB



GROUND-WATER LEVELS
RAMSEY COUNTY--Continued

156-062-20BBB--Continued



RANSOM COUNTY

461838097553402. Local number, 133-058-25BBA2.

LOCATION.--Lat 46°18'38", long 97°55'34", Hydrologic Unit 09020105. Owner: North Dakota State Water Commission.

AQUIFER.--Englevale.

WELL CHARACTERISTICS.--Drilled observation well, depth 60 ft, cased with 34 ft of 5-in diameter plastic pipe, No. 15 slot screen set 34 to 38 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From June 1982 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,315.3 ft. Measuring point: Top of casing 1.50 ft above land-surface datum.

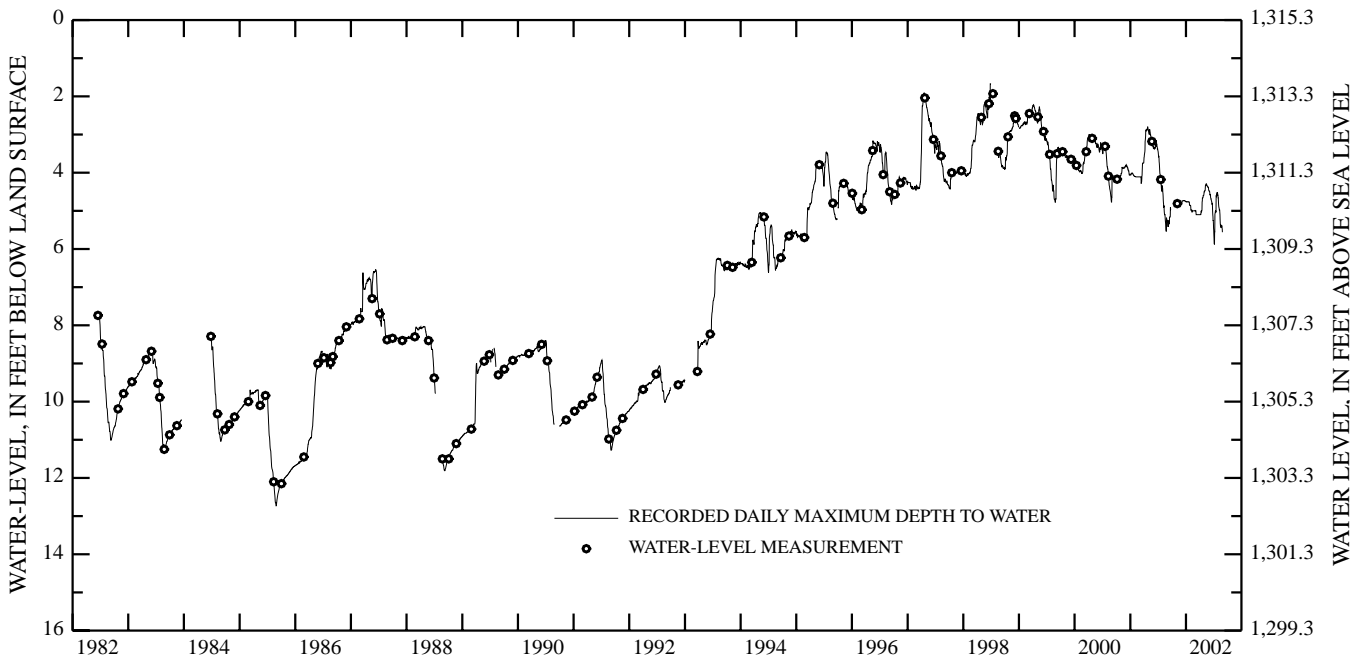
PERIOD OF RECORD.--June 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.87 ft below land-surface datum, April 15, 1997; lowest water level, 12.73 ft below land-surface datum, August 28-29, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	4.78	4.73	4.94	4.96	5.04	4.49	4.53	5.88	4.94	---
10	---	4.81	4.72	4.73	4.99	5.05	5.01	4.35	4.59	5.09	4.99	---
15	---	4.80	4.71	4.73	4.96	5.05	5.01	4.32	4.69	5.01	5.40	---
20	---	4.80	4.71	4.74	4.95	5.04	4.67	4.37	4.80	4.61	5.44	---
25	---	4.79	4.71	4.81	4.95	5.04	4.61	4.41	5.04	4.53	5.41	---
EOM	---	4.78	4.73	4.82	4.95	5.05	4.51	4.50	5.33	4.68	---	---
MAX	---	4.81	4.78	4.82	4.99	5.05	5.05	4.51	5.33	5.89	5.56	---
MIN	---	4.78	4.71	4.73	4.83	4.95	4.51	4.32	4.52	4.53	4.68	---
CAL YR 2001 HIGH 2.80 APR 23-26 LOW 5.54 AUG 25												
WTR YR 2002 HIGH 4.32 MAY 12-16 LOW 5.89 JUL 7												

133-058-25BBA2



RANSOM COUNTY--Continued

462400097552502. Local number, 134-058-24CDC2.

LOCATION.--Lat 46°24'00", long 97°55'25", Hydrologic Unit 09020105. Owner: North Dakota State Water Commission.

AQUIFER.--Englevale.

WELL CHARACTERISTICS.--Drilled observation well, depth 60 ft, cased with 54.5 ft of 4-in diameter plastic pipe, No. 20 slot screen set 54.5 to 59.5 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder April 1968 to current year. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for April 1968 to July 1968. From July 1968 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,343.2 ft. Measuring point: Top of casing 1.30 ft above land-surface datum.

PERIOD OF RECORD.--April 1968 to current year.

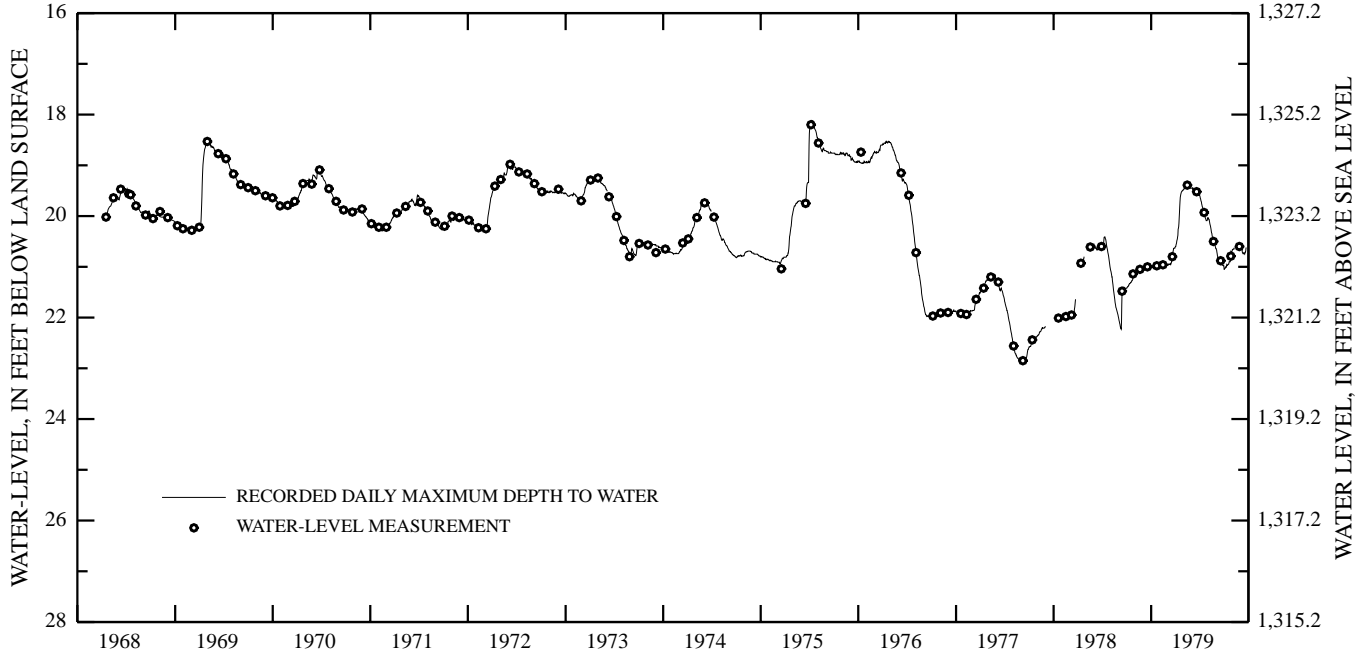
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.30 ft below land-surface datum, July 2 and 3, 1998; lowest water level, 27.08 ft below land-surface datum, September 11-13, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

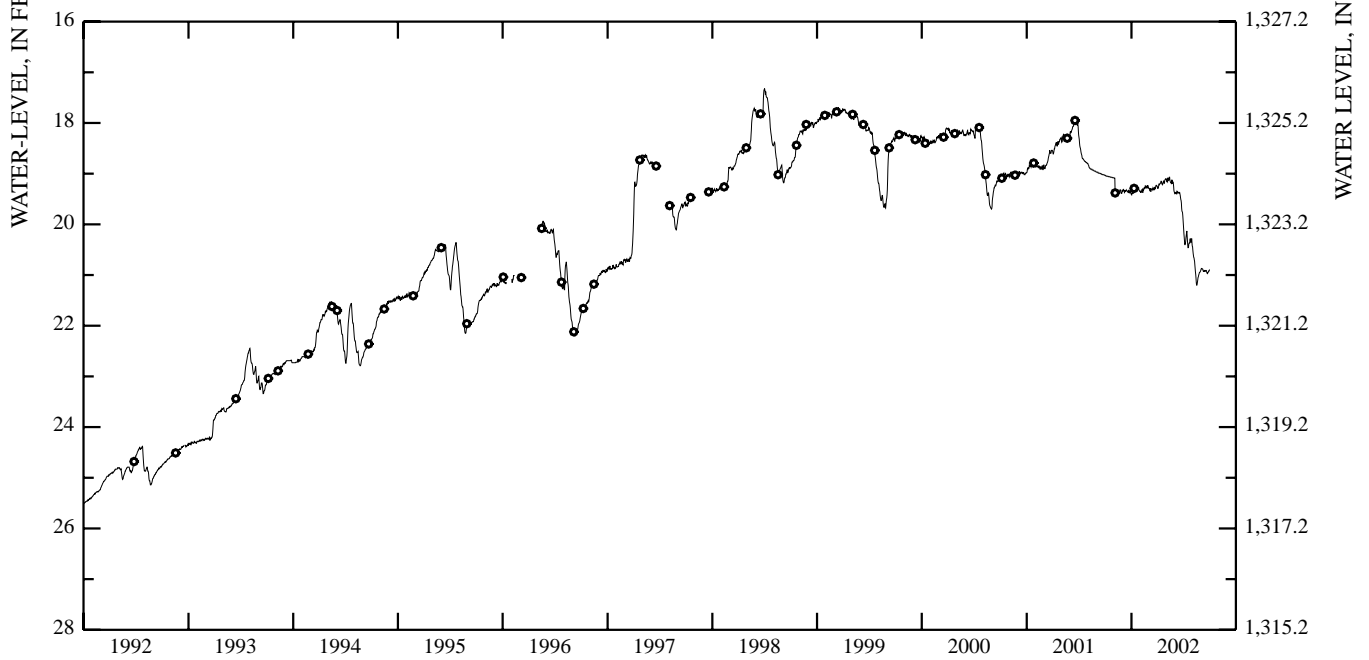
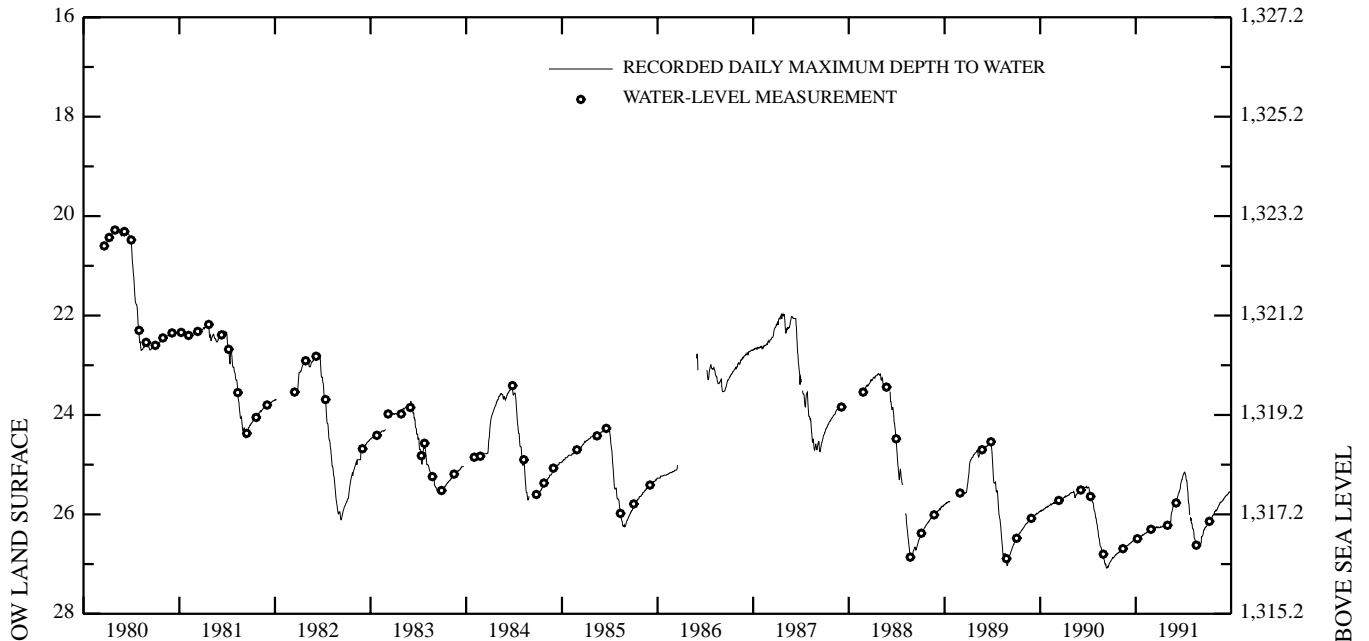
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	19.05	19.38	19.32	19.37	19.36	19.32	19.28	19.12	19.39	20.34	20.61	20.88
10	19.05	19.40	19.35	19.34	19.37	19.35	19.20	19.13	19.36	20.26	20.80	20.93
15	19.06	19.36	19.33	19.31	19.28	19.31	19.15	19.13	19.37	20.31	21.15	20.93
20	19.07	19.38	19.37	19.24	19.27	19.32	19.21	19.19	19.43	20.39	21.10	20.93
25	19.07	19.37	19.38	19.27	19.28	19.30	19.19	19.16	19.68	20.28	20.97	20.95
EOM	19.08	19.32	19.40	19.35	19.27	19.25	19.10	19.37	19.92	20.37	20.90	20.89
MAX	19.08	19.44	19.40	19.42	19.37	19.35	19.29	19.37	19.92	20.46	21.20	20.97
MIN	19.03	19.08	19.32	19.24	19.23	19.23	19.10	19.07	19.35	20.01	20.43	20.87

CAL YR 2001 HIGH 17.98 JUN 18 LOW 19.44 NOV 8
WTR YR 2002 HIGH 19.05 MAY 14-15 LOW 21.20 AUG 16-17

134-058-24CDC2



134-058-24CDC2--Continued



GROUND-WATER LEVELS

RENVILLE COUNTY

484500101294901. Local number, 161-084-24DDD.

LOCATION.--Lat 48°45'00", long 101°29'49", Hydrologic Unit 09010005. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 662 ft, cased with 470 ft of 2-in diameter steel pipe, No. 12 slot screen set 470 to 488 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,619 ft. Measuring point: Top of casing 3.00 ft above land-surface datum.

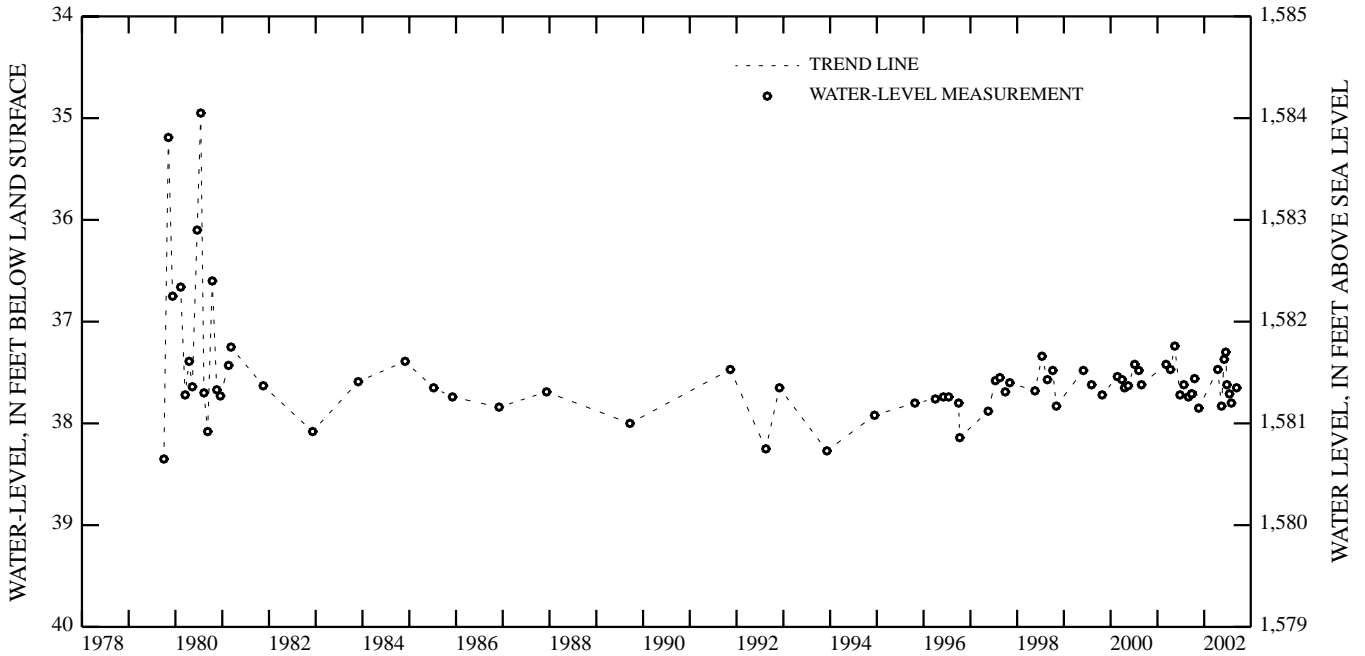
PERIOD OF RECORD.--October 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 34.95 ft below land-surface datum, July 17, 1980; lowest water level, 38.35 ft below land-surface datum, October 3, 1979.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	37.56	APR 17	37.47	JUN 06	37.37	JUN 27	37.62	AUG 01	37.80	SEP 11	37.65
NOV 19	37.85	MAY 16	37.83	JUN 18	37.30	JUL 17	37.71				
WATER YEAR 2002		HIGHEST	37.30	JUN 18, 2002		LOWEST	37.85	NOV 19, 2001			

161-084-24DDD



RICHLAND COUNTY

460358096581401. Local number, 130-050-17DDD.

LOCATION.--Lat 46°03'58", long 96°58'14", Hydrologic Unit 09020105. Owner: North Dakota State Water Commission.

AQUIFER.--Milnor Channel.

WELL CHARACTERISTICS.--Drilled observation well, depth 57.6 ft, cased with 57.6 ft of 1.25-in diameter plastic pipe, slotted 47 to 57.6 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,083.18 ft. Measuring point: Top of casing 1.90 ft above land-surface datum.

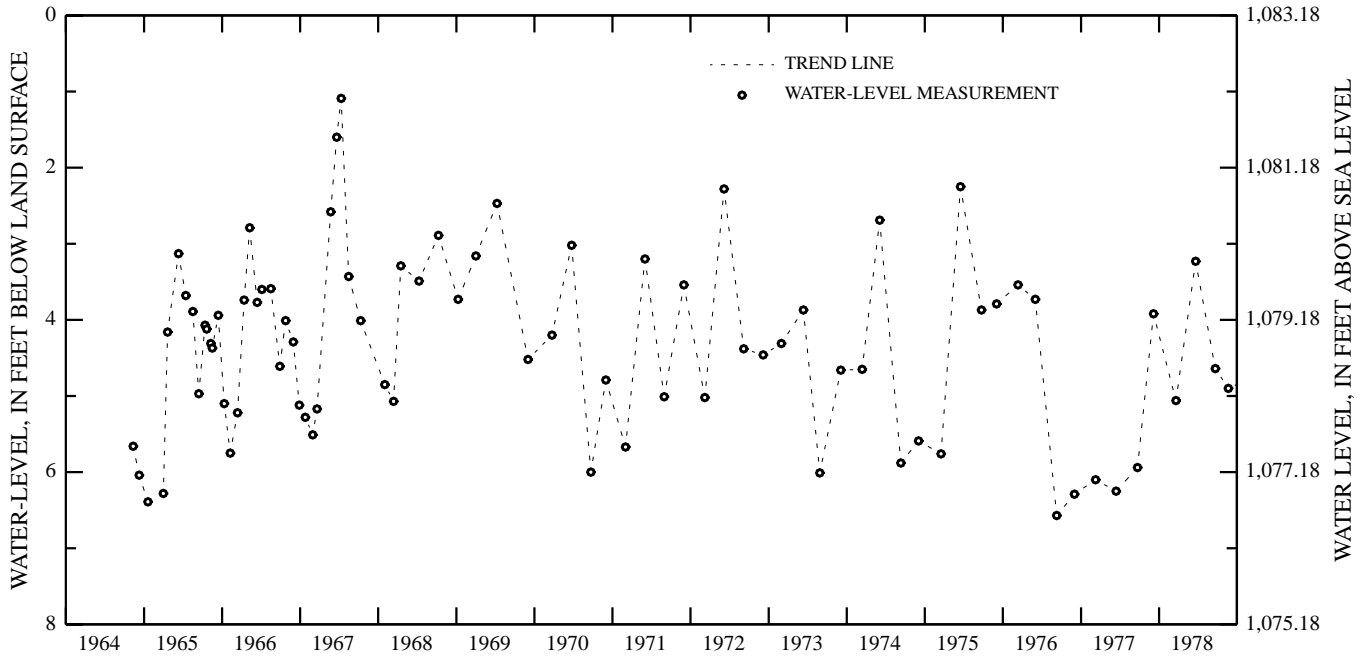
PERIOD OF RECORD.--November 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.53 ft below land-surface datum, April 20, 1997; lowest water level, 6.57 ft below land-surface datum, September 9, 1976.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

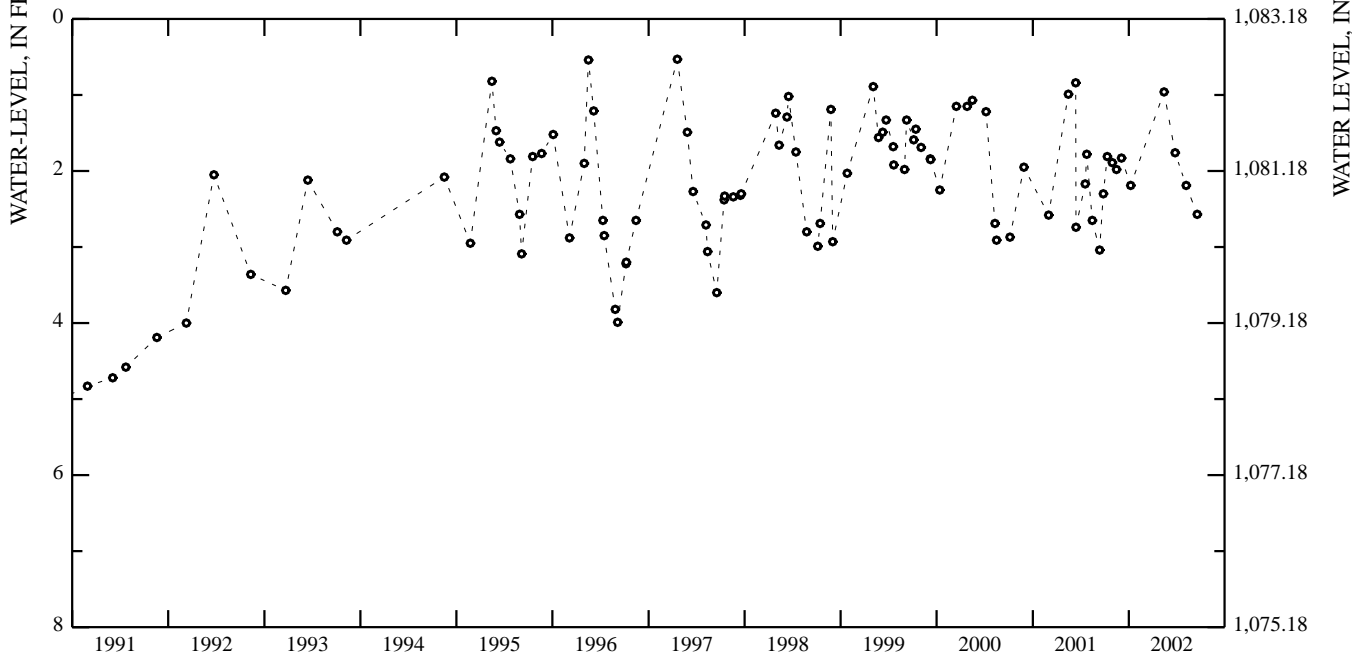
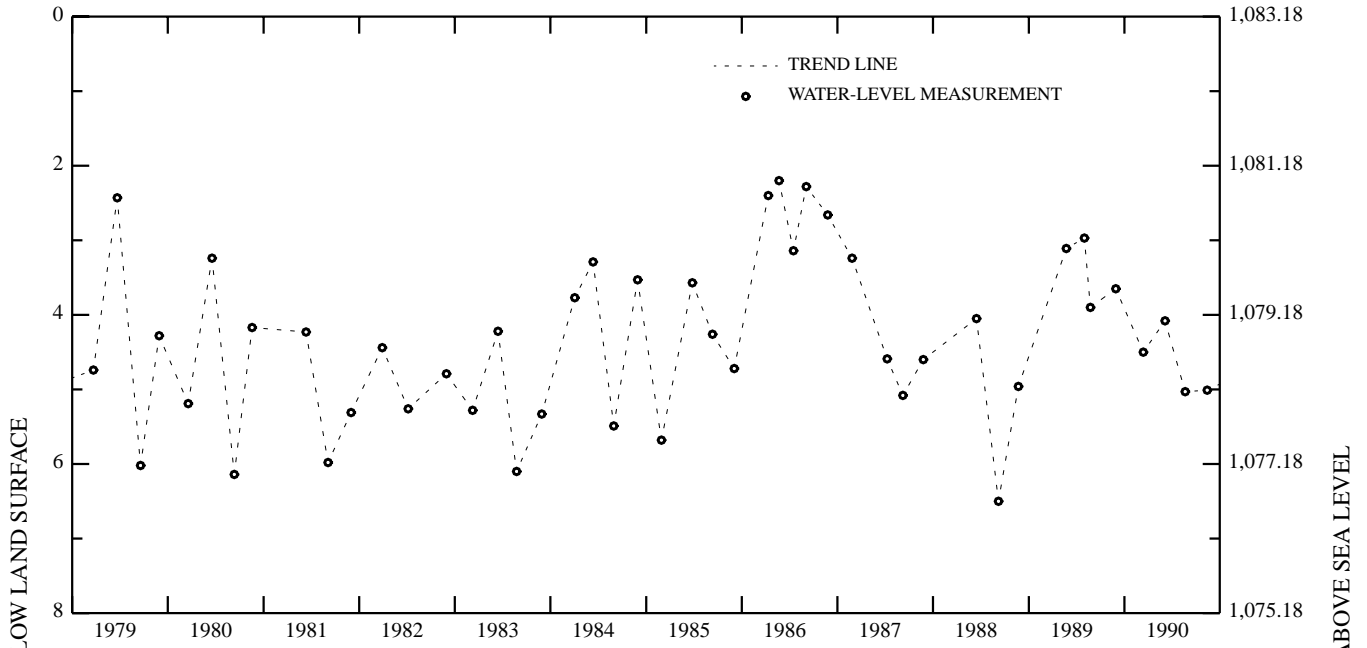
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	1.81	NOV 15	1.98	JAN 08	2.19	JUN 26	1.76	AUG 07	2.19	SEP 18	2.57
OCT 30	1.89	DEC 04	1.83	MAY 15	0.96						
WATER YEAR 2002		HIGHEST	0.96	MAY 15, 2002		LOWEST	2.57	SEP 18, 2002			

130-050-17DDD



GROUND-WATER LEVELS
 RICHLAND COUNTY--Continued

130-050-17DDD--Continued



RICHLAND COUNTY--Continued

462425096441202. Local number, 134-048-20ADD2.

LOCATION.--Lat 46°24'25", long 96°44'12", Hydrologic Unit 09020105. Owner: North Dakota State Water Commission.

AQUIFER.--Colfax.

WELL CHARACTERISTICS.--Drilled observation well, depth 260 ft, cased with 130 ft of 5-in diameter steel pipe, No. 15 slot screen set 130 to 135 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From June 1980 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 941.8 ft. Measuring point: Top of casing 1.70 ft above land-surface datum.

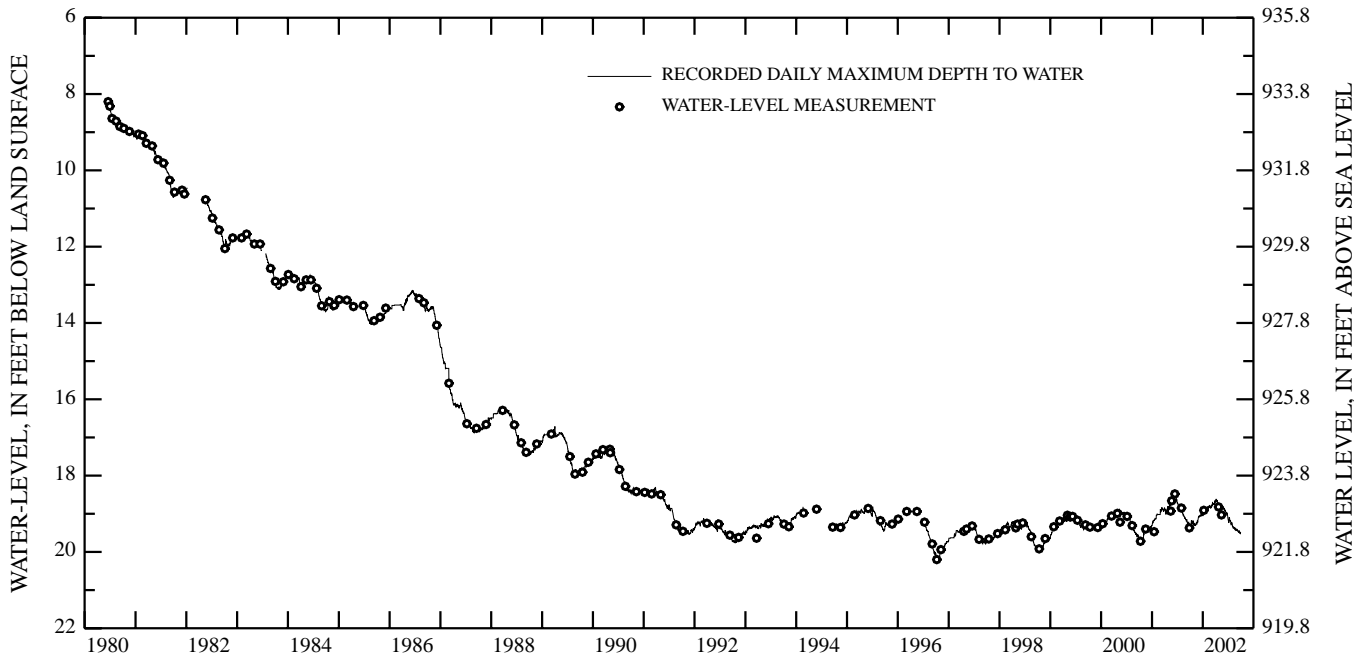
PERIOD OF RECORD.--June 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.20 ft below land-surface datum, June 18, 1980; lowest water level, 20.24 ft below land-surface datum, October 9-10, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	19.30	19.28	19.07	18.98	18.86	18.79	18.69	18.85	18.90	19.19	19.35	19.42
10	19.22	19.30	19.07	18.96	18.87	18.79	18.68	18.78	18.90	19.09	19.36	19.46
15	19.23	19.26	19.04	18.94	18.80	18.75	18.65	18.80	18.96	19.17	19.37	19.49
20	19.23	19.27	19.06	18.86	18.81	18.76	18.80	18.88	19.00	19.19	19.40	19.45
25	19.23	19.22	19.04	18.85	18.85	18.76	18.86	18.85	19.00	19.25	19.41	19.51
EOM	19.25	19.10	19.02	18.86	18.84	18.70	18.81	18.85	19.11	19.26	19.41	19.48
MAX	19.31	19.32	19.09	19.06	18.88	18.84	18.87	18.88	19.11	19.28	19.44	19.51
MIN	19.18	19.10	18.99	18.84	18.77	18.66	18.61	18.75	18.87	19.09	19.30	19.40
CAL YR 2001	HIGH 18.47	JUN 14	LOW 19.32	NOV 8								
WTR YR 2002	HIGH 18.59	APR 6-7	LOW 19.51	SEP 23-26, 28								

134-048-20ADD2



RICHLAND COUNTY--Continued

462633097163402. Local number, 134-052-06CCD2.

LOCATION.--Lat 46°26'33", long 97°16'34", Hydrologic Unit 09020204. Owner: North Dakota State Water Commission.

AQUIFER.--Sheyenne Delta.

WELL CHARACTERISTICS.--Drilled observation well, depth 283 ft, cased with 40 ft of 4-in diameter plastic pipe, slotted 30 to 40 ft below land-surface datum.

INSTRUMENTATION.--Water-level data September 1963 to current year. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for May 1965 to September 1966. From September 1966 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,067.03 ft. Measuring point: Top of casing 0.65 ft above land-surface datum.

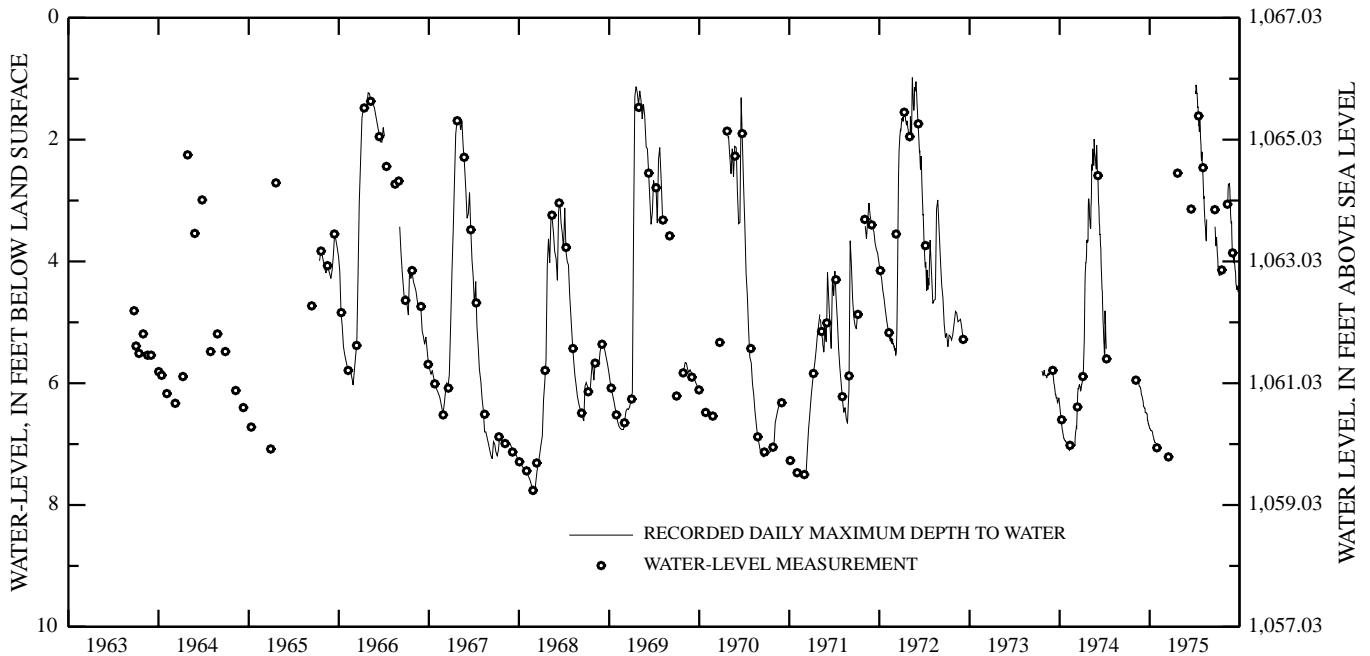
PERIOD OF RECORD.--September 1963 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.78 ft below land-surface datum, May 13, 1972; lowest water level, 9.07 ft below land-surface datum, February 22, 1989.

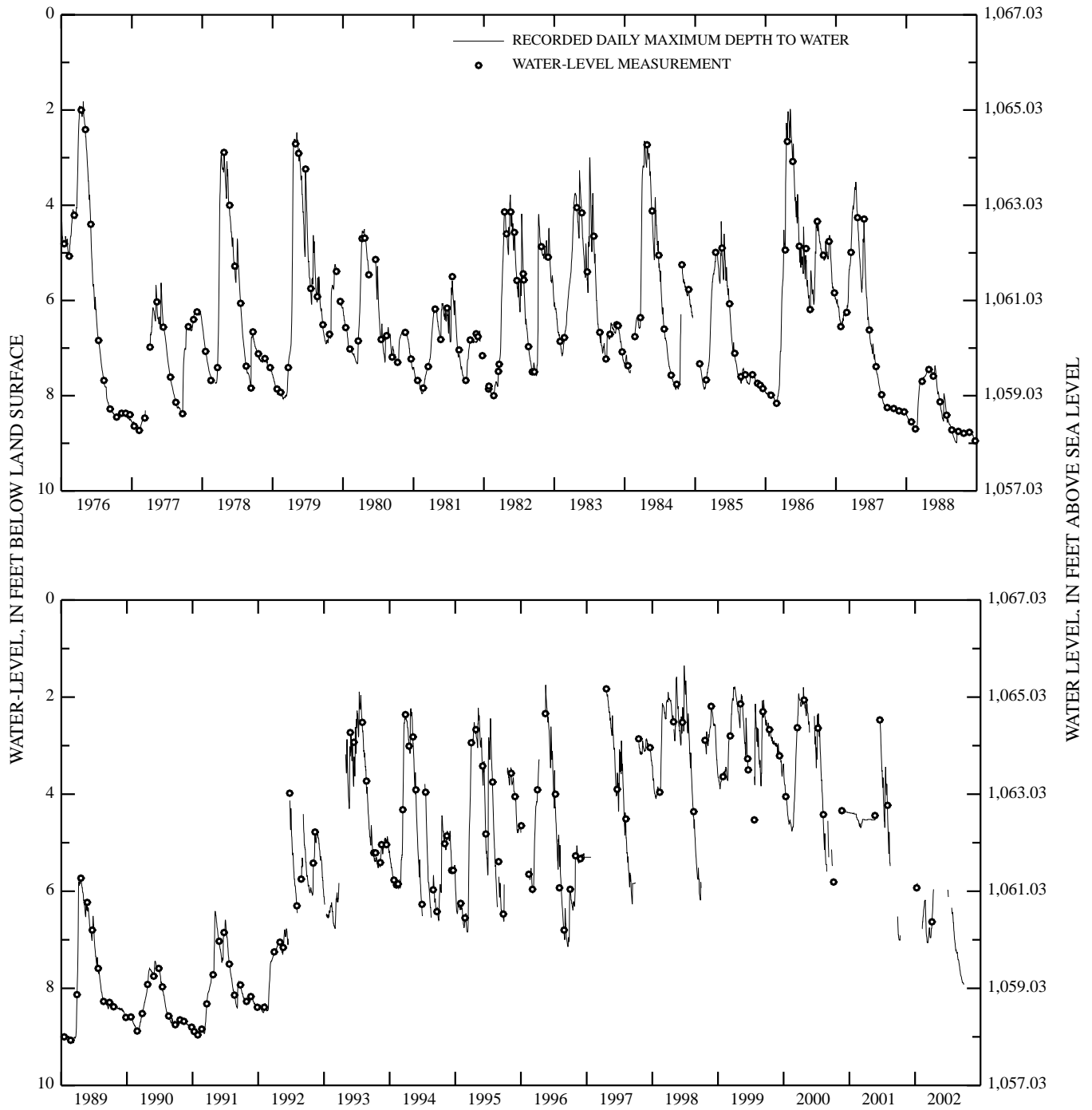
DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.00	---	---	---	---	6.89	6.64	---	---	6.16	7.02	7.63
10	6.91	---	---	---	6.76	7.04	6.29	---	---	---	7.20	7.75
15	---	---	---	5.84	6.53	7.02	---	---	---	---	7.36	7.82
20	---	---	---	---	6.32	6.80	---	---	---	---	7.41	7.89
25	---	---	---	---	6.19	6.91	---	---	---	6.48	7.44	7.91
EOM	---	---	---	---	6.31	6.89	---	---	6.03	6.74	7.52	7.92
MAX	7.01	---	---	5.91	6.76	7.05	6.80	---	6.03	6.74	7.53	7.92
MIN	6.90	---	---	5.84	6.17	6.42	5.96	---	6.03	6.03	6.82	7.53
CAL YR 2001 HIGH 2.38 JUN 20-21 LOW 7.01 OCT 8-9												
WTR YR 2002 HIGH 5.84 JAN 11-16 LOW 7.92 SEP 27-30												

134-052-06CCD2



134-052-06CCD2--Continued



RICHLAND COUNTY--Continued

463422097115602. Local number, 136-052-22DDD2.

LOCATION.--Lat 46°34'22", long 97°11'56", Hydrologic Unit 09020204. Owner: North Dakota State Water Commission.

AQUIFER.--Sheyenne Delta.

WELL CHARACTERISTICS.--Drilled observation well, depth 26.9 ft, cased with 26.4 ft of 4-in diameter plastic pipe, slotted 17 to 26.4 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder October 1963 to current year. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for July 1965 to September 1966. From September 1966 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,050 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

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

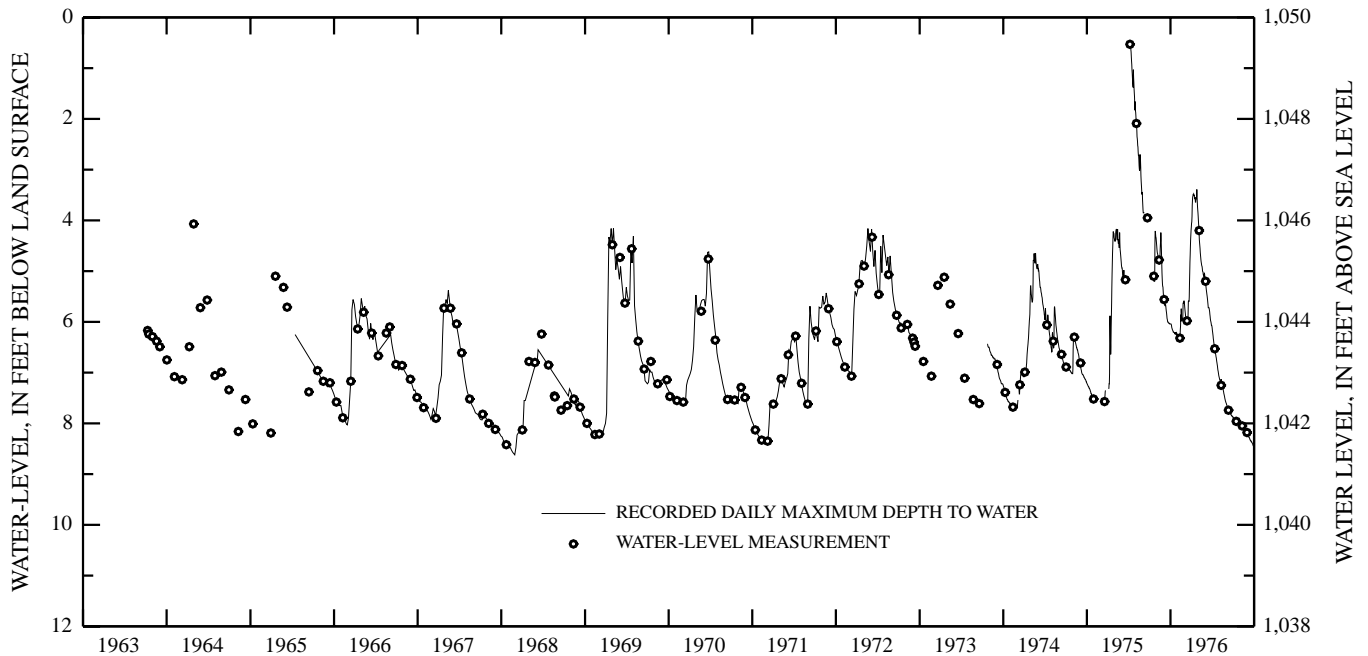
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.21 ft below land-surface datum, July 9, 1975; lowest water level, 9.35 ft below land-surface datum, March 1-10, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

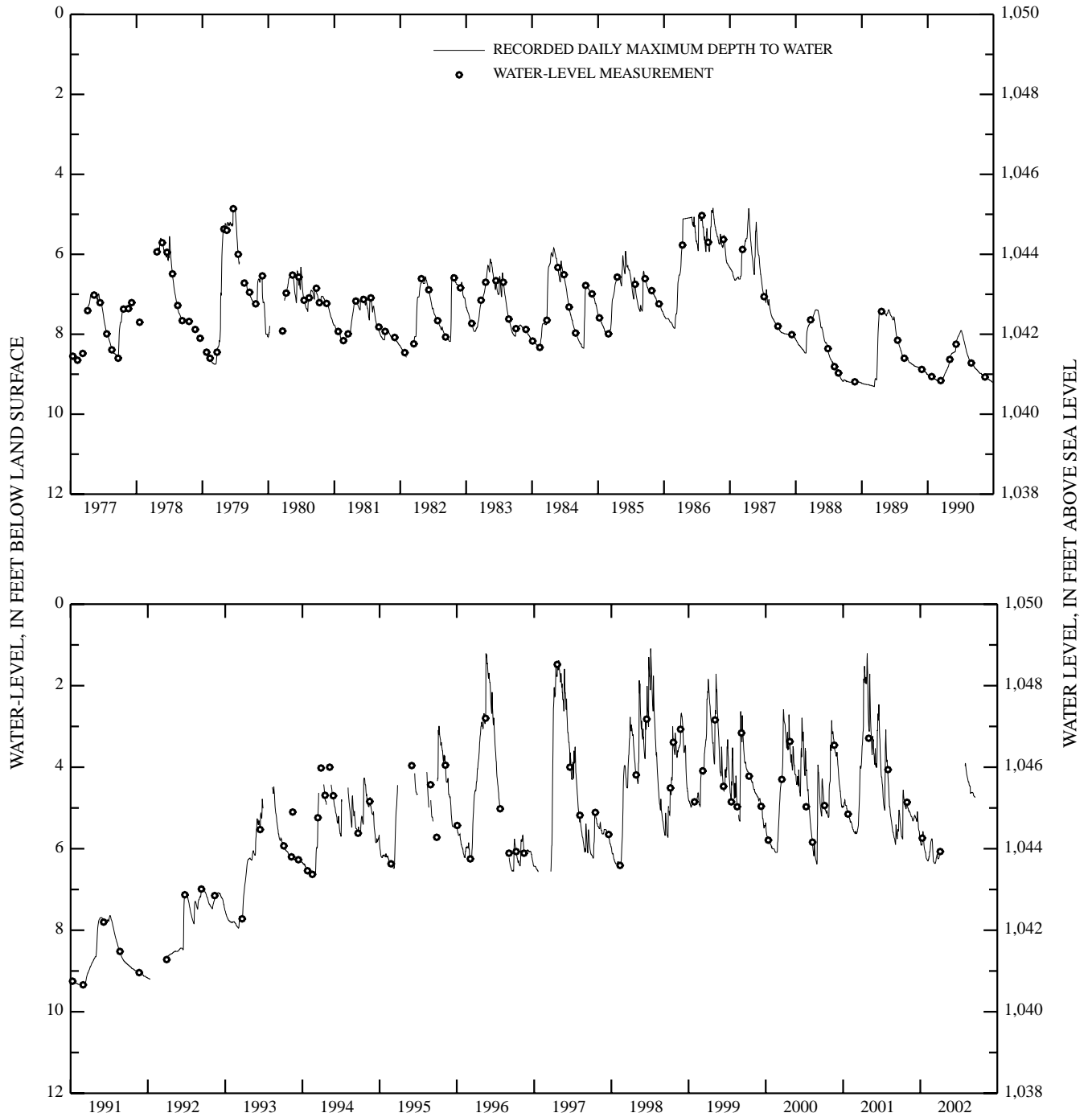
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.71	5.01	5.19	5.91	6.29	6.32	---	---	---	---	4.03	4.62
10	5.76	5.10	5.24	5.81	6.25	6.36	---	---	---	---	4.21	4.70
15	4.75	5.15	5.33	5.61	6.08	6.32	---	---	---	---	4.34	4.73
20	4.93	5.21	5.27	5.98	5.83	6.17	---	---	---	---	4.43	---
25	5.02	5.30	5.55	6.09	5.76	6.24	---	---	---	---	4.48	---
EOM	4.85	5.28	5.75	6.25	5.94	6.21	---	---	---	---	4.62	---
MAX	5.76	5.32	5.75	6.25	6.30	6.36	6.16	---	---	---	4.64	4.74
MIN	4.56	4.91	5.09	5.58	5.76	6.04	6.11	---	---	---	3.90	4.62

CAL YR 2001 HIGH 0.83 MAY 6 LOW 5.90 SEP 6
WTR YR 2002 HIGH 3.88 AUG 1-2 LOW 6.36 MAR 9

136-052-22DDD2



136-052-22DDD2--Continued



GROUND-WATER LEVELS

ROLETTE COUNTY

484731099504104. Local number, 161-071-03CDD4.

LOCATION.--Lat 48°47'31", long 99°50'41", Hydrologic Unit 09010004. Owner: Public Health Service.

AQUIFER.--Shell Valley.

WELL CHARACTERISTICS.--Drilled observation well, depth 42 ft, cased with 28.3 ft of 8-in diameter steel pipe, No. 40 slot screen set 28.3 to 38.3 ft below land-surface datum.

INSTRUMENTATION.--Intermittent water levels November 1974 to August 1979. Water-level recorder August 1979 to February 2002. Daily minimum recorded water levels also are available. Measured using a steel tape February 2002 to current year.

DATUM.--Altitude of land-surface datum is 1,752 ft. Measuring point: Top of casing 1.80 ft above land-surface datum.

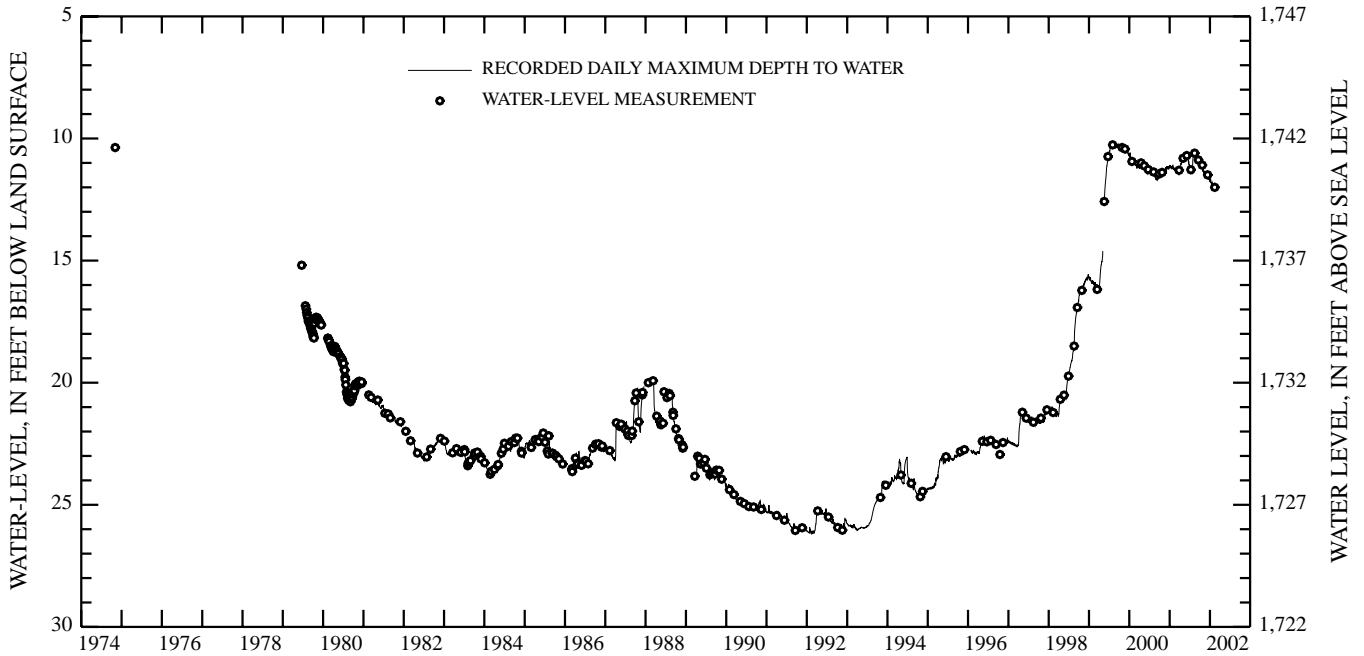
PERIOD OF RECORD.--November 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.05 ft below land-surface datum, August 15, 1999; lowest water level, 26.19 ft below land-surface datum, February 24, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	OCT 23	11.09	DEC 11	11.49	FEB 13	12.00
WATER YEAR 2002	HIGHEST	11.09	OCT 23, 2001	LOWEST	12.00	FEB 13, 2002

161-071-03CDD4



ROLETTE COUNTY--Continued

484310099572401. Local number, 161-072-35CDC.

LOCATION.--Lat 48°43'10", long 99°57'24", Hydrologic Unit 09010004. Owner: North Dakota State Water Commission.

AQUIFER.--Shell Valley.

WELL CHARACTERISTICS.--Drilled observation well, depth 77 ft, cased with 70 ft of 5-in diameter plastic pipe, No. 15 slot screen set 70 to 75 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From November 1982 to September 2001, daily minimum recorded water levels also are available. Measured using a steel tape February 2002 to current year.

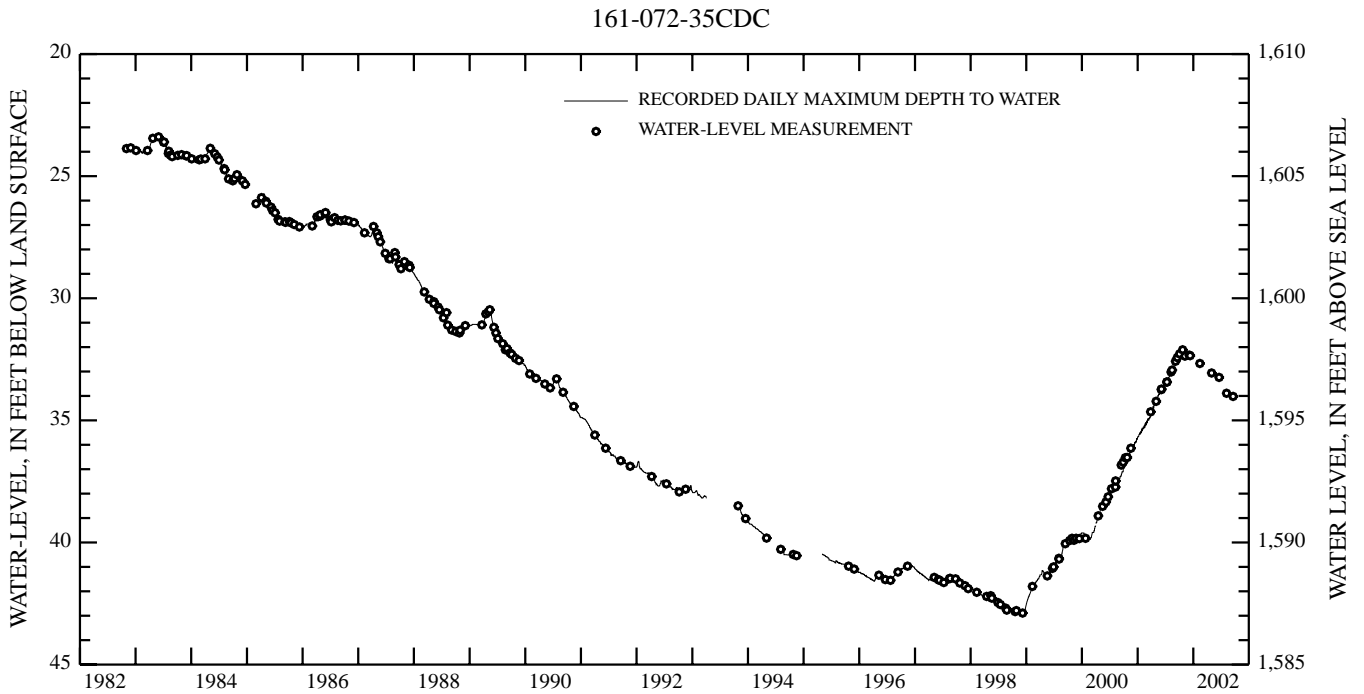
DATUM.--Altitude of land-surface datum is 1,630 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.33 ft below land-surface datum, May 21, 1983; lowest water level, 42.93 ft below land-surface datum, December 14-20, 1998.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 03	32.28	NOV 07	32.37	DEC 11	32.35	MAY 01	33.06	AUG 07	33.89	SEP 19	34.02
OCT 23	32.11	DEC 05	32.33	FEB 13	32.67	JUN 19	33.24				
WATER YEAR 2002		HIGHEST	32.11	OCT 23, 2001		LOWEST	34.02	SEP 19, 2002			



485707100053701. Local number, 163-073-11CCC1.

LOCATION.--Lat 48°57'07", long 100°05'37", Hydrologic Unit 09010004. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 715 ft, cased with 406 ft of 2-in diameter steel pipe, No. 12 slot screen set 406 to 412 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,123 ft. Measuring point: Top of casing 3.30 ft above land-surface datum.

PERIOD OF RECORD.--September 1978 to November 2001.

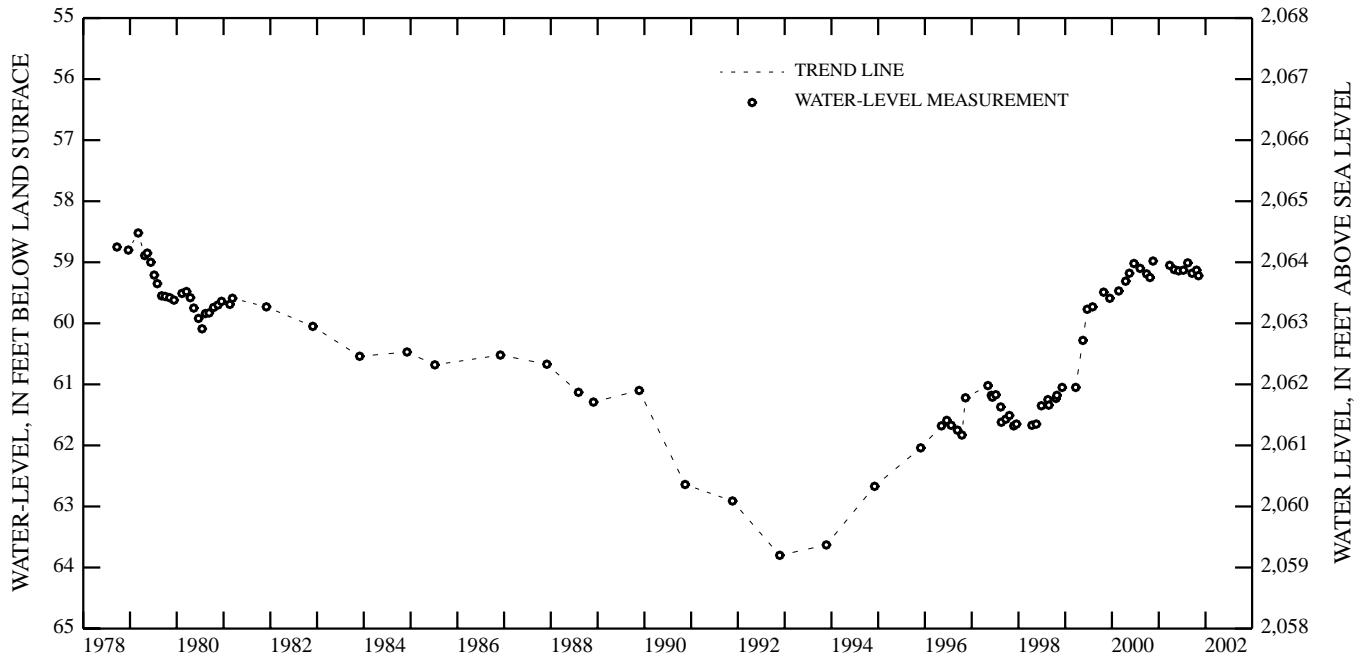
REMARKS.--Well casing appears to have failed causing erroneous water levels. Measurements were discontinued November 2001.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 58.52 ft below land-surface datum, March 6, 1979; lowest water level, 63.80 ft below land-surface datum, November 23, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

	DATE	WATER LEVEL	DATE	WATER LEVEL		
	OCT 23	59.13	NOV 07	59.22		
WATER YEAR 2002	HIGHEST	59.13	OCT 23, 2001	LOWEST	59.22	NOV 07, 2001

163-073-11CCC1



ROLETTE COUNTY--Continued

485707100053702. Local number, 163-073-11CCC2.

LOCATION.--Lat 48°57'07", long 100°05'37", Hydrologic Unit 09010004. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 295 ft, cased with 269 ft of 2-in diameter steel pipe, No. 12 slot screen set 269 to 275 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,123 ft. Measuring point: Top of casing 0.30 ft above land-surface datum.

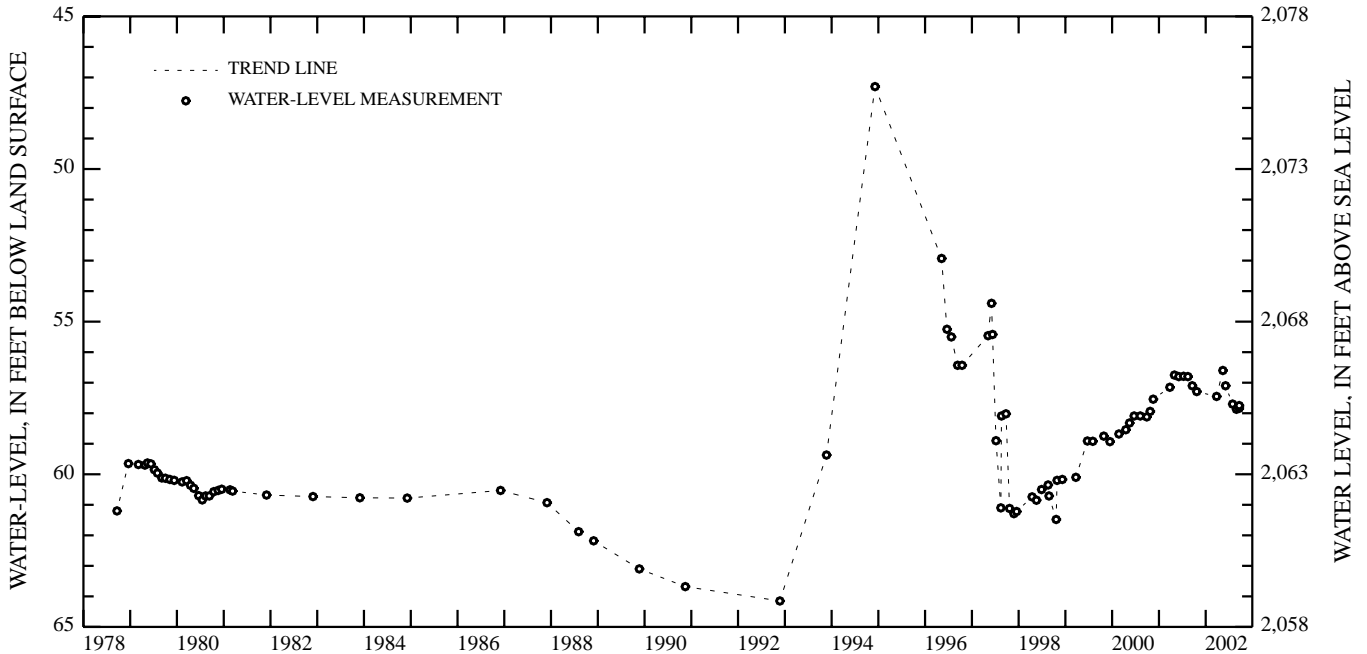
PERIOD OF RECORD.--September 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 47.30 ft below land-surface datum, December 6, 1994; lowest water level, 64.15 ft below land-surface datum, November 23, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	57.29	MAY 15	56.60	JUL 30	57.70	AUG 29	57.87	SEP 19	57.84	SEP 20	57.75
MAR 27	57.45	JUN 05	57.10								
WATER YEAR 2002		HIGHEST	57.10	JUN 5, 2002		LOWEST	57.87	AUG 29, 2002			

163-073-11CCC2



GROUND-WATER LEVELS

SARGENT COUNTY

460120097591803. Local number, 129-058-06AAA3.

LOCATION.--Lat 46°01'20", long 97°59'18", Hydrologic Unit 10160003. Owner: North Dakota State Water Commission.

AQUIFER.--Oakes.

WELL CHARACTERISTICS.--Drilled observation well, depth 80 ft, cased with 52 ft of 6-in diameter plastic pipe, 4 in No. 25 slot screen set 52 to 57 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From November 1993 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,313 ft. Measuring point: Top of casing 1.0 ft above land-surface datum.

PERIOD OF RECORD.--November 1993 to current year.

REMARKS.--This well replaces NDSWC 9619A drilled on July 1, 1976, which collapsed in September 1993. The new well was drilled on October 3, 1993, by the North Dakota State Water Commission and instrumented on November 3, 1993.

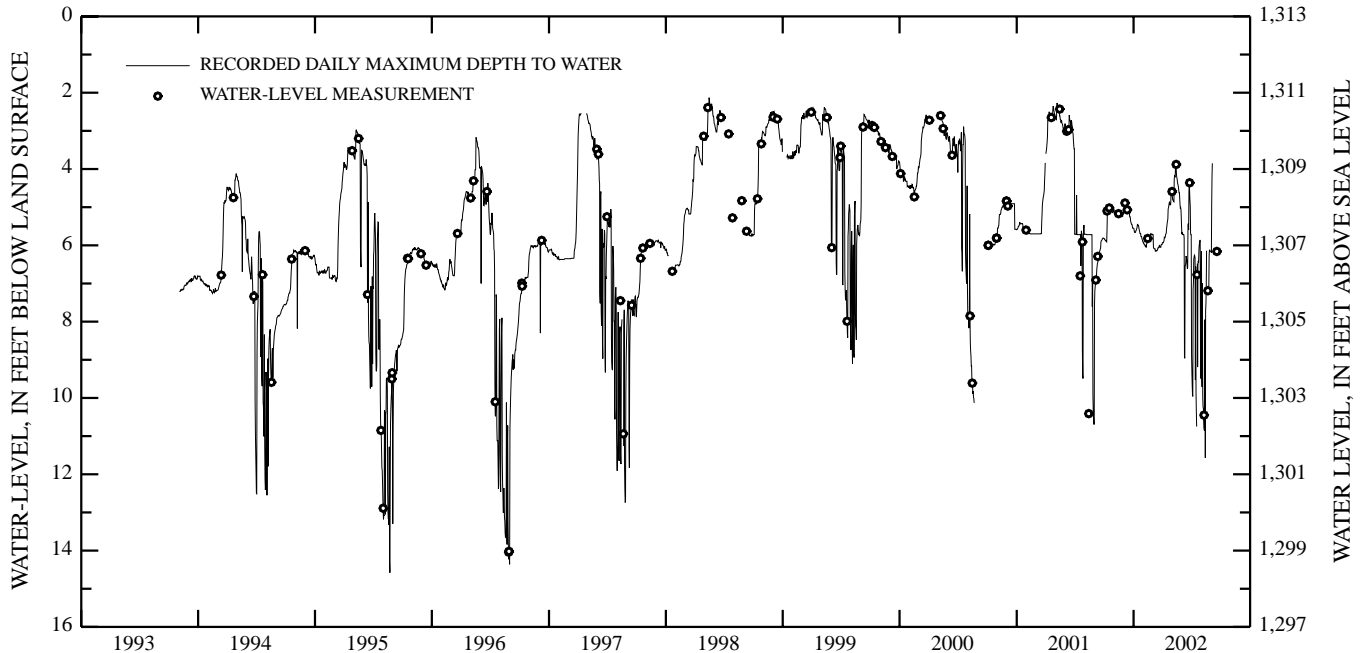
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.15 ft below land-surface datum, April 18, 1997; lowest water level, 14.58 ft below land-surface datum, August 23, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.88	5.15	5.01	5.66	5.99	6.07	5.90	4.84	5.71	9.96	9.98	---
10	5.62	5.21	5.08	5.59	6.05	6.15	5.78	4.19	8.96	6.26	10.85	---
15	5.05	5.21	5.14	5.48	5.88	6.13	5.50	4.15	6.32	9.85	7.53	---
20	5.03	5.25	5.25	5.64	5.78	6.05	5.01	4.42	5.48	9.19	---	---
25	5.09	5.21	5.44	5.77	5.71	6.05	4.94	4.75	4.57	5.99	6.26	---
EOM	5.05	5.14	5.55	5.91	5.72	5.98	4.63	5.54	5.72	6.76	6.16	---
MAX	5.91	5.25	5.55	5.91	6.05	6.15	5.93	5.54	8.96	10.75	11.57	6.19
MIN	5.00	5.08	5.01	5.45	5.70	5.72	4.57	3.93	4.40	5.87	6.13	3.85

CAL YR 2001 HIGH 2.27 MAY 7 LOW 10.69 AUG 30
WTR YR 2002 HIGH 3.85 SEP 4 LOW 11.57 AUG 13

129-058-06AAA3



SARGENT COUNTY--Continued

461003097191501. Local number, 131-053-10CCC.

LOCATION.--Lat 46°10'03", long 97°19'15", Hydrologic Unit 09020105. Owner: North Dakota State Water Commission.

AQUIFER.--Milnor Channel.

WELL CHARACTERISTICS.--Drilled observation well, depth 140 ft, cased with 50 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 50 to 56 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,092 ft. Measuring point: Top of casing 2.20 ft above land-surface datum.

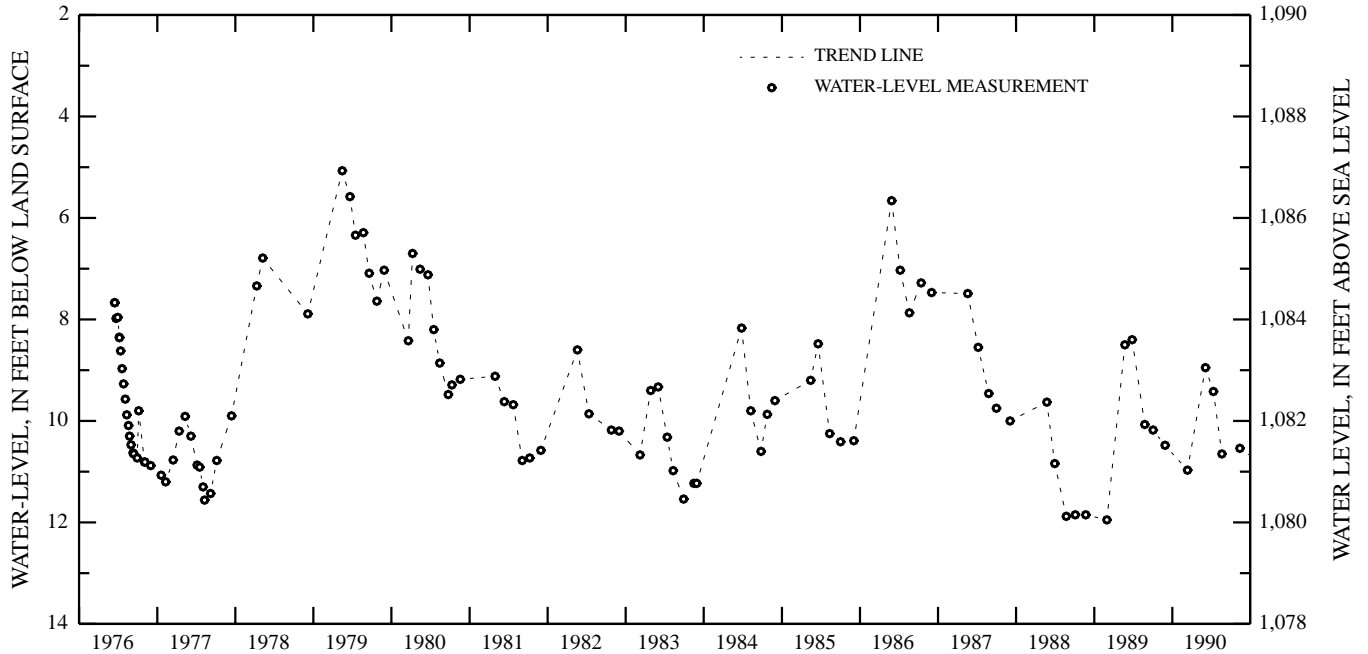
PERIOD OF RECORD.--June 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.80 ft below land-surface datum, July 15, 1998; lowest water level, 11.95 ft below land-surface datum, March 1, 1989.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

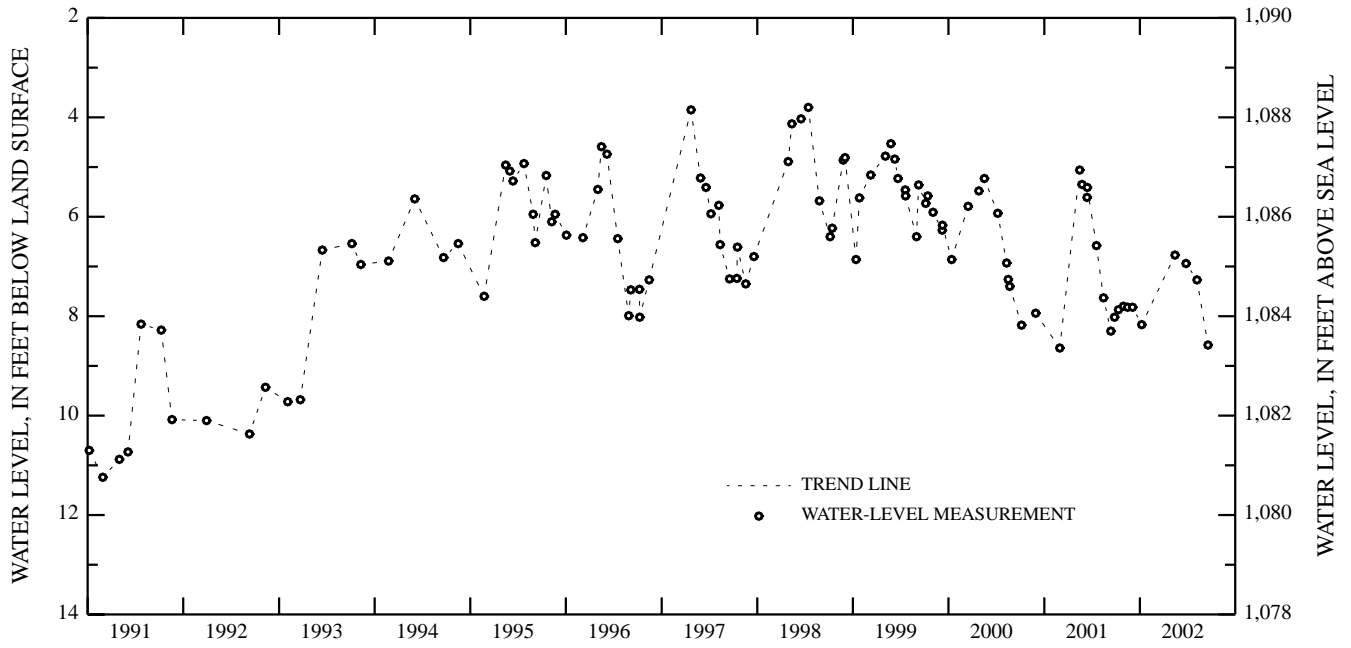
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	7.87	NOV 15	7.82	JAN 08	8.17	JUN 26	6.94	AUG 07	7.27	SEP 18	8.58
OCT 30	7.80	DEC 04	7.82	MAY 15	6.77						
WATER YEAR 2002		HIGHEST	6.77	MAY 15, 2002		LOWEST	8.58	SEP 18, 2002			

131-053-10CCC



GROUND-WATER LEVELS
SARGENT COUNTY--Continued

131-053-10CCC--Continued



SHERIDAN COUNTY

474817100063801. Local number, 150-074-14CCC.

LOCATION.--Lat 47°48'17", long 100°06'38", Hydrologic Unit 09020202. Owner: North Dakota State Water Commission.

AQUIFER.--Martin.

WELL CHARACTERISTICS.--Drilled observation well, depth 235 ft, cased with 130 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 130 to 133 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,630 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

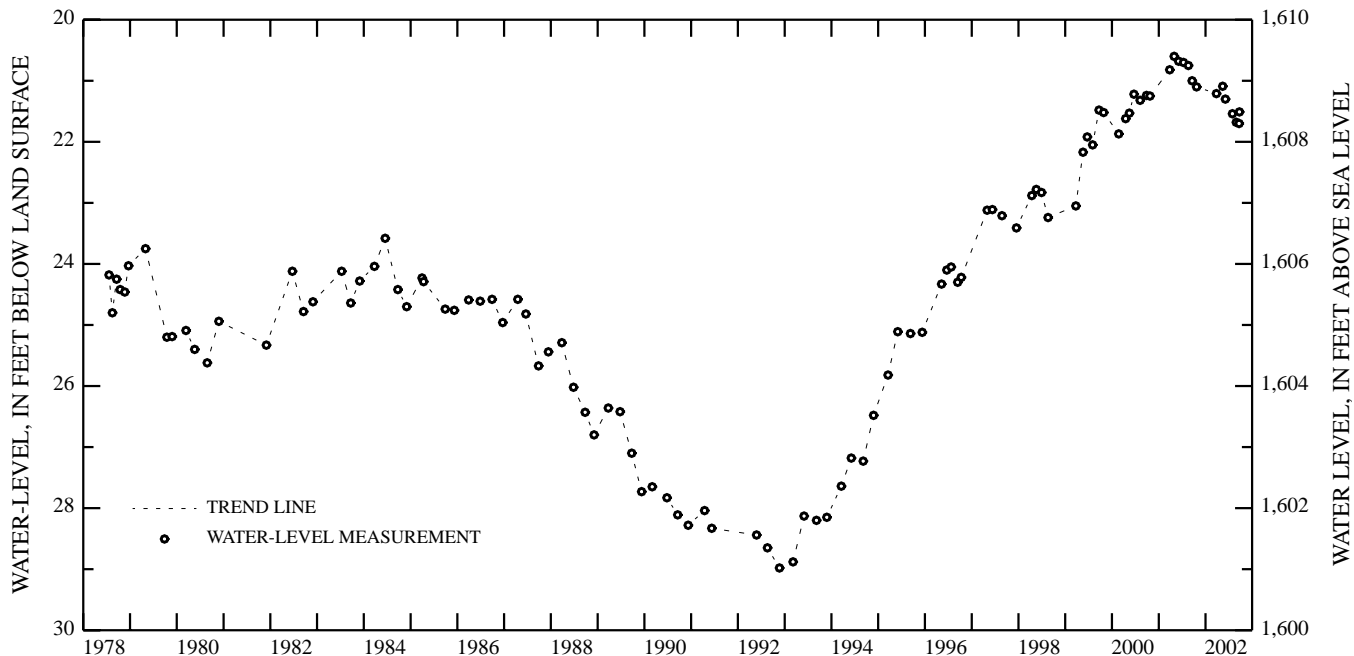
PERIOD OF RECORD.--July 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.60 ft below land-surface datum, May 1, 2001; lowest water level, 29.06 ft below land-surface datum, August 19, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	21.10	MAY 15	21.09	JUL 30	21.54	AUG 29	21.68	SEP 20	21.70	SEP 23	21.51
MAR 27	21.21	JUN 05	21.30								
WATER YEAR 2002		HIGHEST	21.09	MAY 15, 2002		LOWEST	21.70	SEP 20, 2002			

150-074-14CCC



GROUND-WATER LEVELS

SIOUX COUNTY

460244101272701. Local number, 130-086-28CCC1.

LOCATION.--Lat 46°02'44", long 101°27'27", Hydrologic Unit 10130205. Owner: North Dakota State Water Commission.

AQUIFER.--Fox Hills.

WELL CHARACTERISTICS.--Drilled observation well, depth 580 ft, cased with 406 ft of 2-in diameter steel pipe, No. 12 slot screen set 406 to 424 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,062 ft. Measuring point: Top of casing 3.00 ft above land-surface datum.

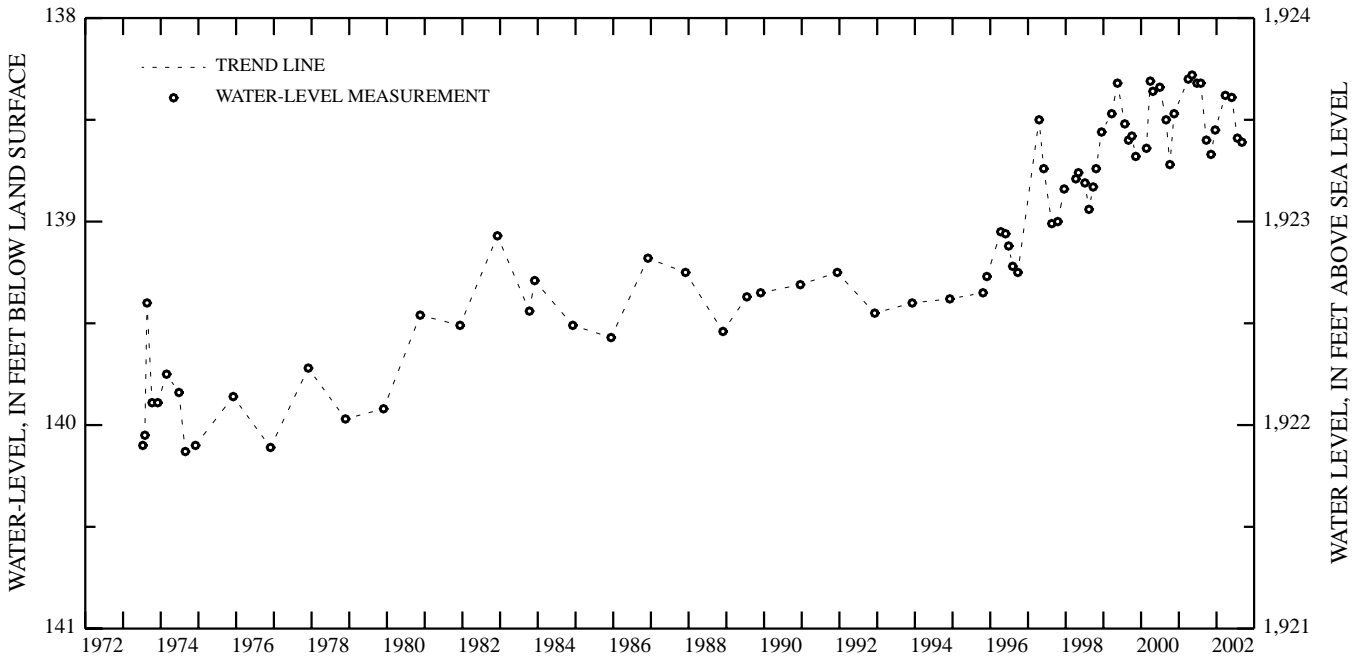
PERIOD OF RECORD.--July 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 138.28 ft below land-surface datum, May 9, 2001; lowest water level, 140.13 ft below land-surface datum, August 27, 1974.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 08	138.67	DEC 19	138.55	MAR 27	138.38	MAY 28	138.39	JUL 22	138.59	SEP 04	138.61
WATER YEAR 2002		HIGHEST	138.38	MAR 27, 2002		LOWEST	138.67	NOV 08, 2001			

130-086-28CCC1



SIOUX COUNTY--Continued

460244101272702. Local number, 130-086-28CCC2.

LOCATION.--Lat 46°02'44", long 101°27'27", Hydrologic Unit 10130205. Owner: North Dakota State Water Commission.

AQUIFER.--Hell Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 210 ft, cased with 204 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 204 to 210 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

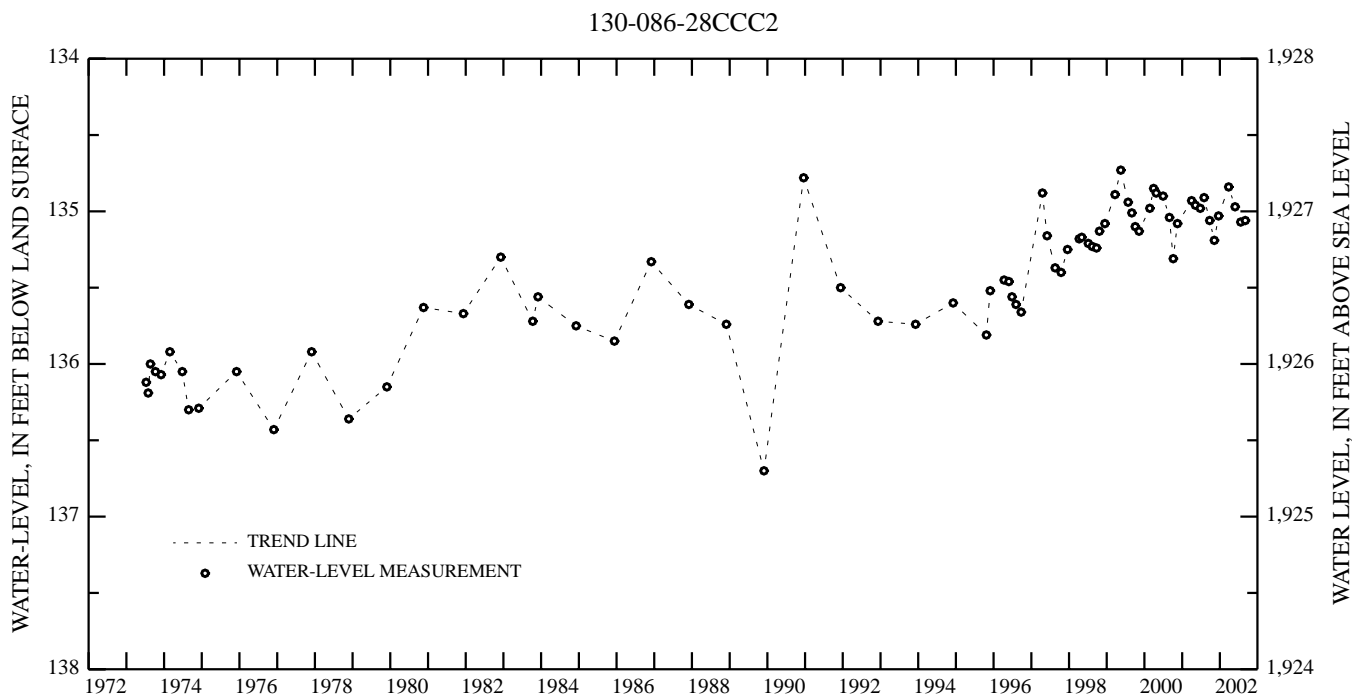
DATUM.--Altitude of land-surface datum is 2,062 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--July 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 134.73 ft below land-surface datum, May 17, 1999; lowest water level, 136.70 ft below land-surface datum, November 29, 1989.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 08	135.19	DEC 19	135.03	MAR 27	134.84	MAY 28	134.97	JUL 22	135.07	SEP 04	135.06
WATER YEAR 2002		HIGHEST	134.84	MAR 27, 2002		LOWEST	135.19	NOV 08, 2001			



462239100375601. Local number, 134-079-32ADD.

LOCATION.--Lat 46°22'39", long 100°37'56", Hydrologic Unit 10130102. Owner: North Dakota State Water Commission.

AQUIFER.--Strasburg.

WELL CHARACTERISTICS.--Drilled observation well, depth 340 ft, cased with 282 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 282 to 288 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,690 ft. Measuring point: Top of casing 1.50 ft above land-surface datum.

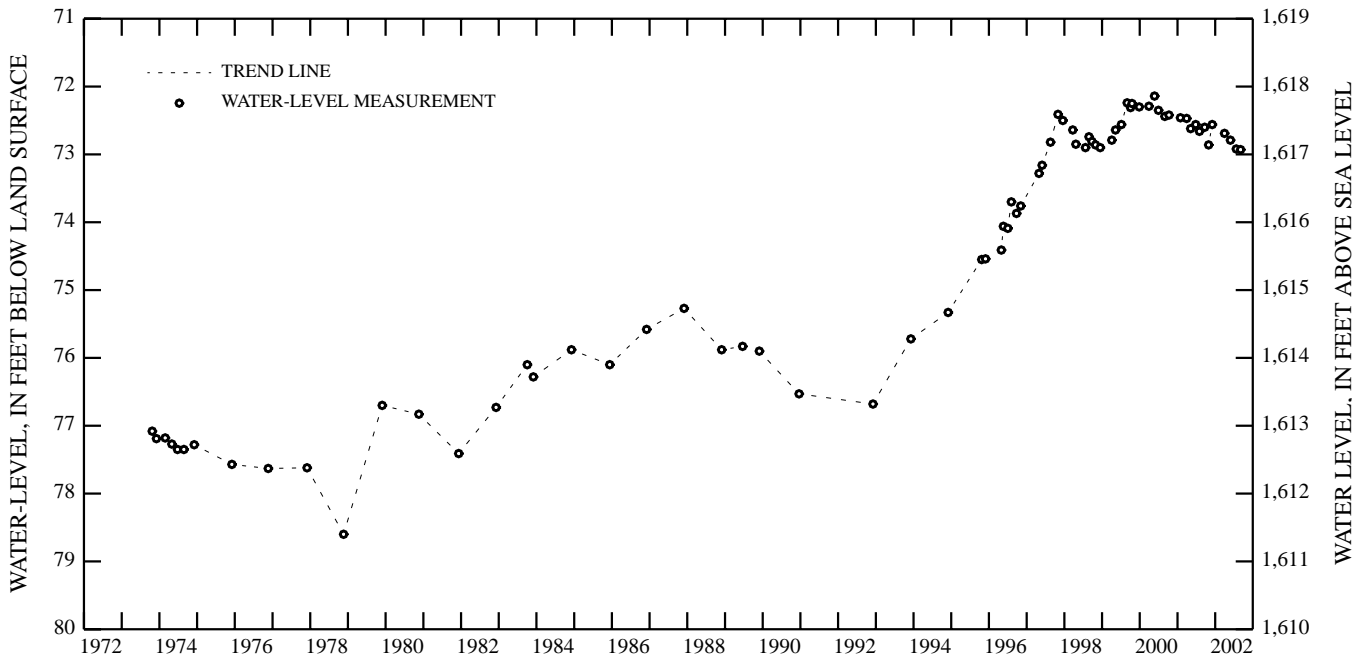
PERIOD OF RECORD.--October 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 72.14 ft below land-surface datum, May 23, 2000; lowest water level, 78.60 ft below land-surface datum, November 20, 1978.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	72.86	DEC 03	72.56	APR 01	72.69	MAY 28	72.79	JUL 24	72.92	SEP 04	72.93
WATER YEAR 2002		HIGHEST	72.56	DEC 03, 2001		LOWEST	72.93	SEP 04, 2002			

134-079-32ADD



STARK COUNTY

465755102410701. Local number, 140-095-08AAA.

LOCATION.--Lat 46°57'55", long 102°41'07", Hydrologic Unit 10130201. Owner: North Dakota State Water Commission.

AQUIFER.--Sentinel Butte.

WELL CHARACTERISTICS.--Drilled observation well, depth 160 ft, cased with 80 ft of 4-in diameter plastic pipe.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 2,419 ft. Measuring point: Top of casing 1.70 ft above land-surface datum.

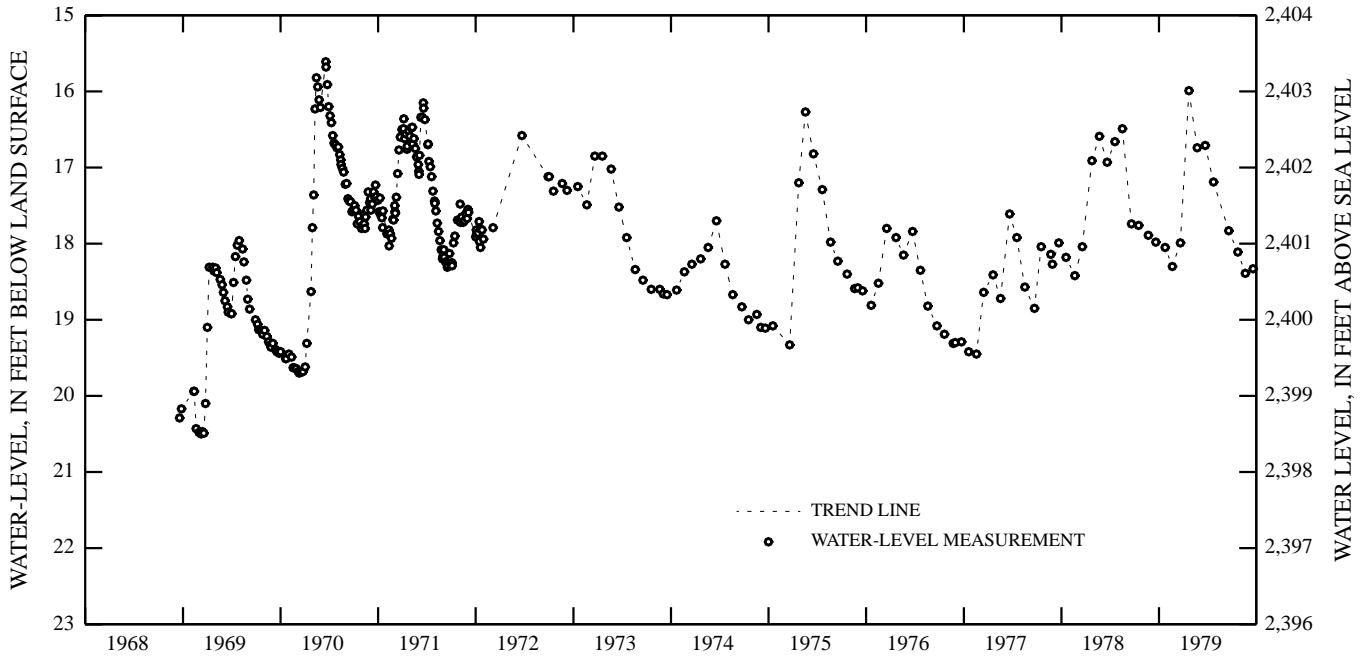
PERIOD OF RECORD.--December 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.61 ft below land-surface datum, June 19, 1970; lowest water level, 22.64 ft below land-surface datum, February 25, 1993.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

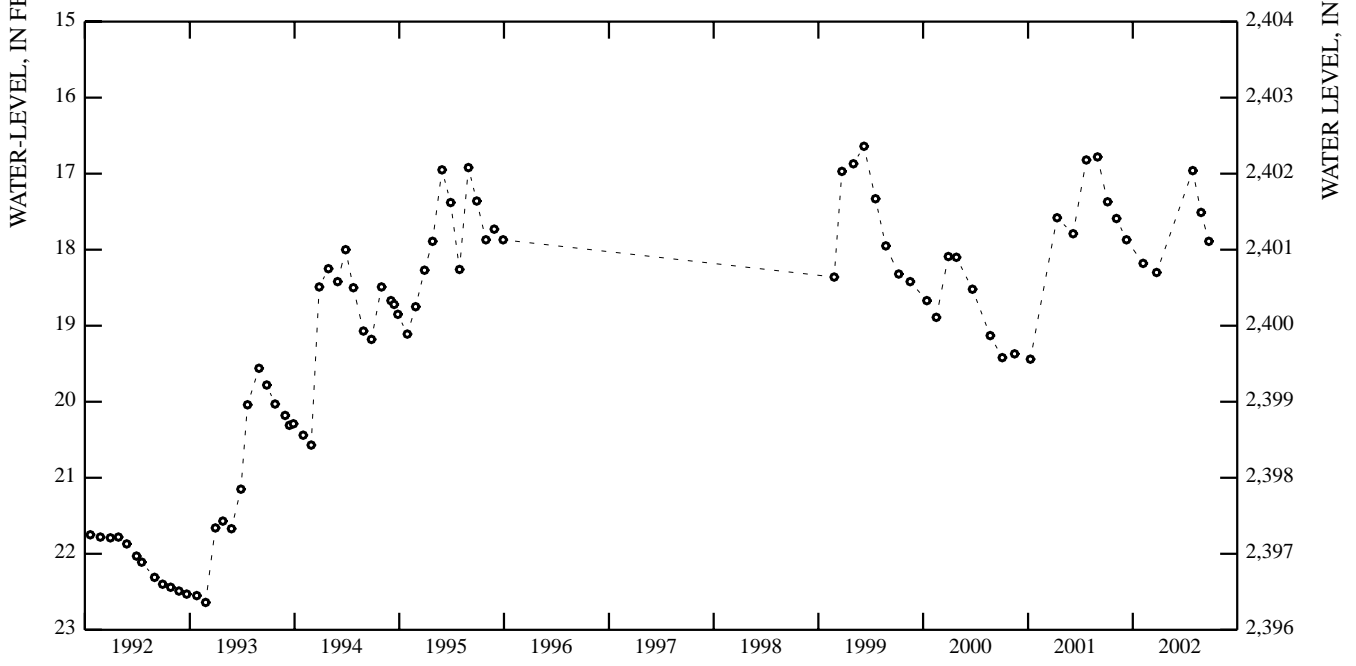
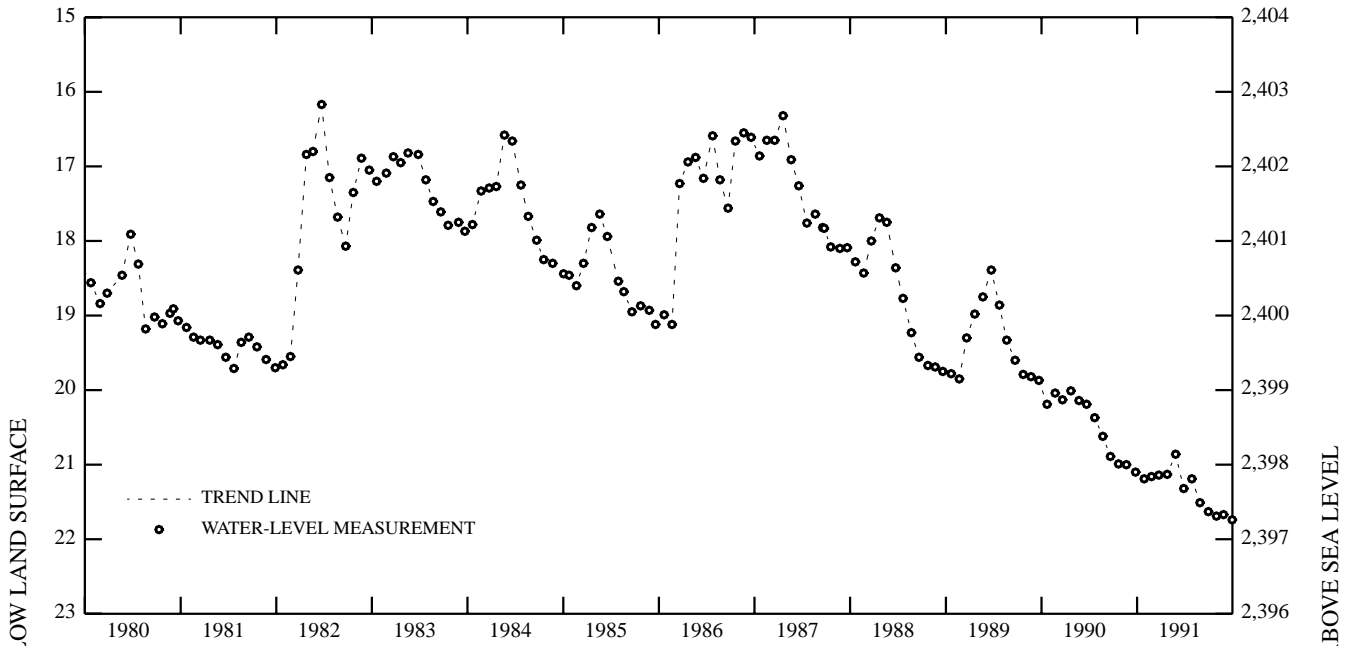
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	17.37	DEC 10	17.87	MAR 25	18.30	JUL 29	16.96	AUG 27	17.51	SEP 23	17.89
NOV 05	17.59	FEB 06	18.18								
WATER YEAR 2002		HIGHEST	16.96	JUL 29, 2002		LOWEST	18.30	MAR 25, 2002			

140-095-08AAA



GROUND-WATER LEVELS
STARK COUNTY--Continued

140-095-08AAA--Continued



STEELE COUNTY

472024097315201. Local number, 145-054-27CDC.

LOCATION.--Lat 47°20'24", long 97°31'52", Hydrologic Unit 09020109. Owner: North Dakota State Water Commission.

AQUIFER.--Dakota.

WELL CHARACTERISTICS.--Drilled observation well, depth 820 ft, cased from 0 to 273 ft with 4-in diameter steel pipe and from 273 to 640 ft with 2 in diameter steel pipe, No. 12 slot screen set 640 to 660 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,145 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

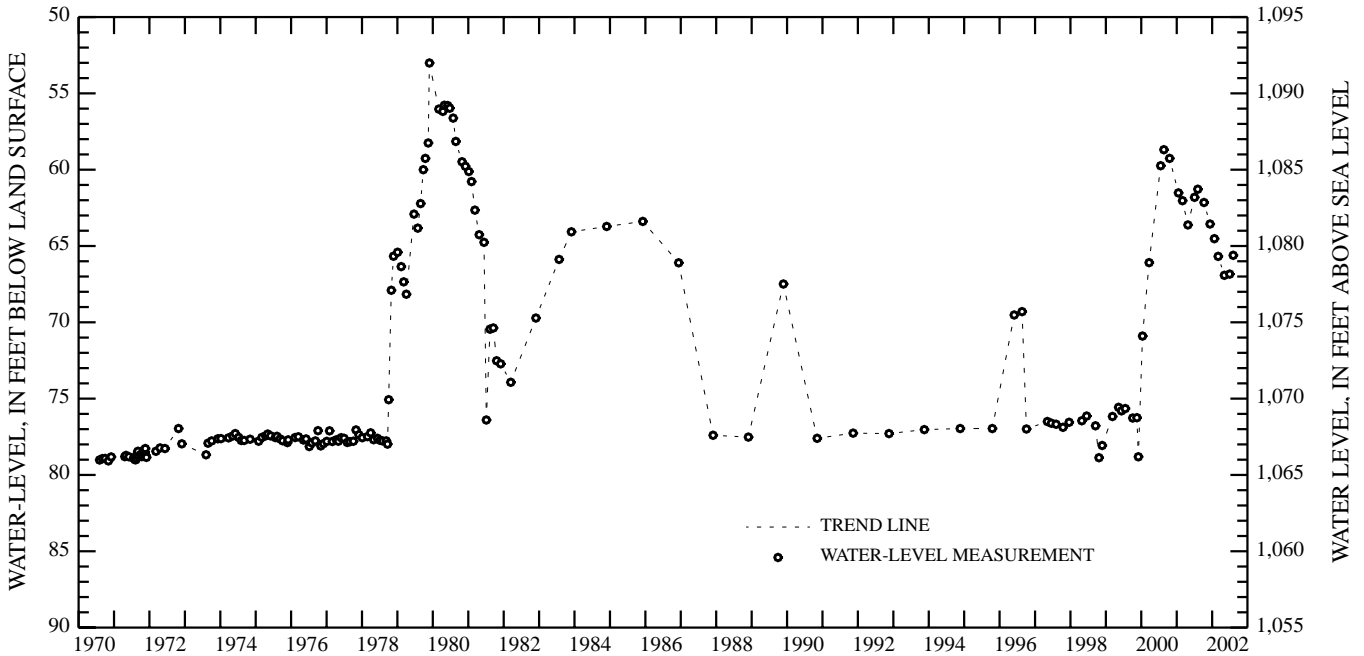
PERIOD OF RECORD.--August 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 53.01 ft below land-surface datum, November 27, 1979; lowest water level, 79.08 ft below land-surface datum, November 4, 1970.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 09	62.15	JAN 24	64.52	MAR 04	65.68	MAY 07	66.92	JUL 01	66.84	AUG 06	65.61
DEC 10	63.56										
WATER YEAR 2002		HIGHEST	62.15	OCT 09, 2001		LOWEST	66.92	MAY 07, 2002			

145-054-27CDC



GROUND-WATER LEVELS

STUTSMAN COUNTY

463846098274101. Local number, 137-062-26DDD.

LOCATION.--Lat 46°38'46", long 98°27'41", Hydrologic Unit 10160003. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 240 ft, cased with 157 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 157 to 163 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,441.8 ft. Measuring point: Top of casing 1.92 ft above land-surface datum.

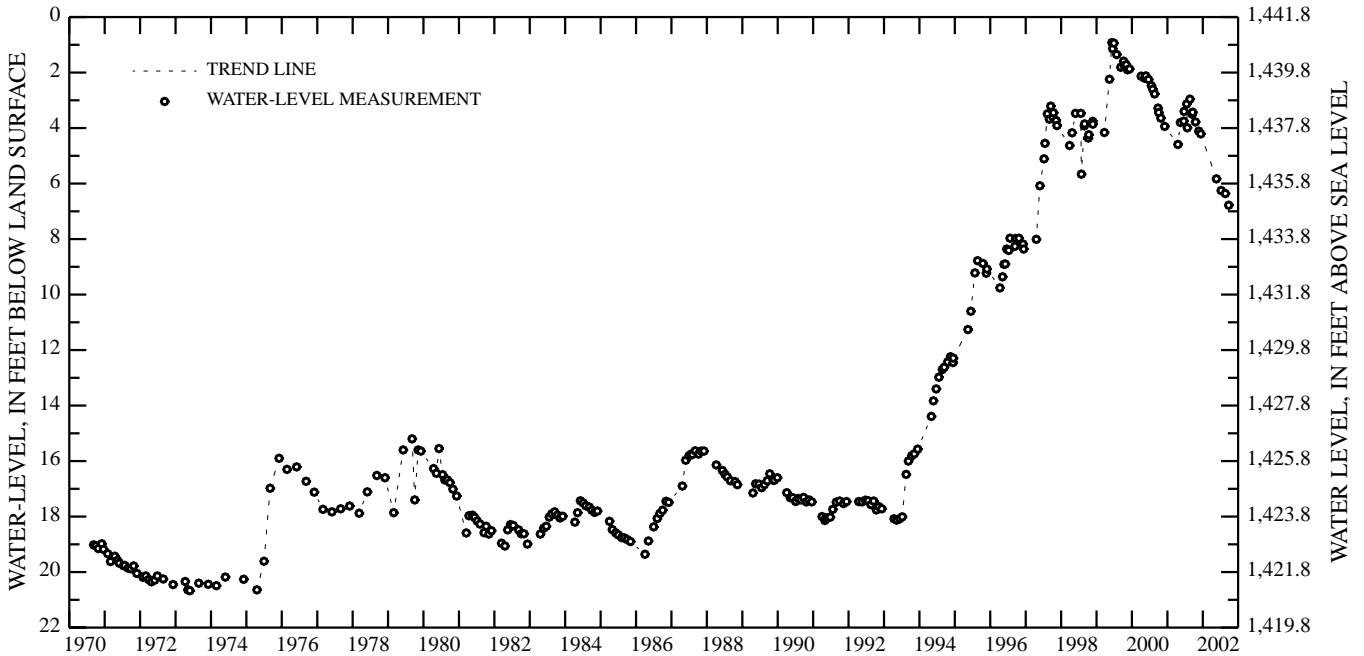
PERIOD OF RECORD.--September 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.92 ft below land-surface datum, June 8, 1999; lowest water level, 20.67 ft below land-surface datum, May 28, 1973.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	3.78	DEC 11	4.21	MAY 21	5.83	JUL 09	6.25	AUG 21	6.36	SEP 25	6.78
NOV 20	4.11										
WATER YEAR 2002		HIGHEST	3.78	OCT 17, 2001	LOWEST	6.78	SEP 25, 2002				

137-062-26DDD



STUTSMAN COUNTY--Continued

465243098284801. Local number, 139-062-02CCC.

LOCATION.--Lat 46°52'43", long 98°28'48", Hydrologic Unit 10160003. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 240 ft, cased with 210 ft of 4-in diameter steel pipe, slotted 195 to 210 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder May 1967 to current year. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for May 1967 to August 1973. From August 1973 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,466.1 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

PERIOD OF RECORD.--May 1967 to current year.

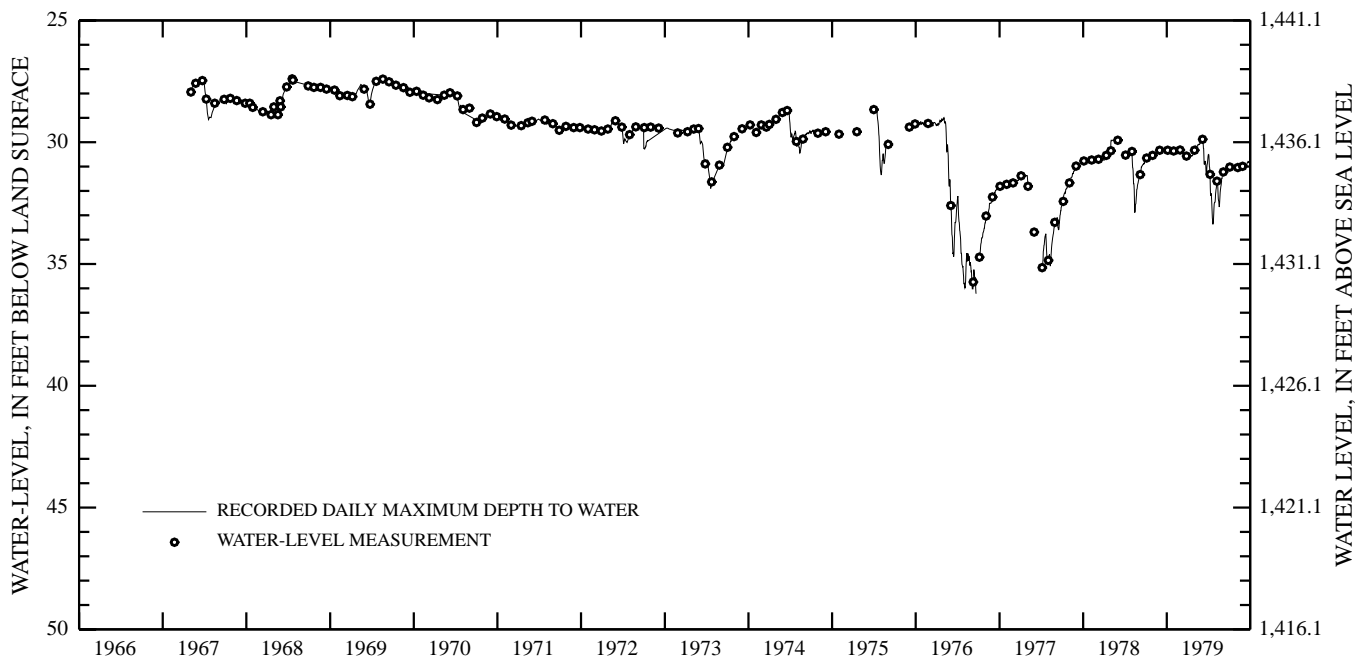
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.40 ft below land-surface datum, July 19, 1968; lowest water level, 45.85 ft below land-surface datum, August 17, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	33.78	33.94	34.13	34.49	34.59	34.52	34.62	34.73	36.55	---	36.39	36.19
10	33.78	33.94	34.17	34.49	34.65	34.50	34.58	34.71	36.92	---	36.38	36.20
15	33.75	33.94	34.17	34.52	34.57	34.46	34.58	34.74	36.68	---	36.14	36.19
20	33.73	34.03	34.27	34.50	34.60	34.49	34.61	34.95	36.73	36.86	36.36	36.16
25	33.74	34.13	34.38	34.50	34.59	34.53	34.63	35.02	36.94	36.51	36.63	36.18
EOM	33.88	34.13	34.46	34.53	34.58	34.53	34.64	35.46	36.90	36.28	36.51	36.21
MAX	33.89	34.13	34.46	34.53	34.65	34.55	34.64	35.46	37.09	37.29	36.65	36.39
MIN	33.68	33.76	34.13	34.47	34.53	34.45	34.53	34.64	35.79	36.28	36.14	36.15

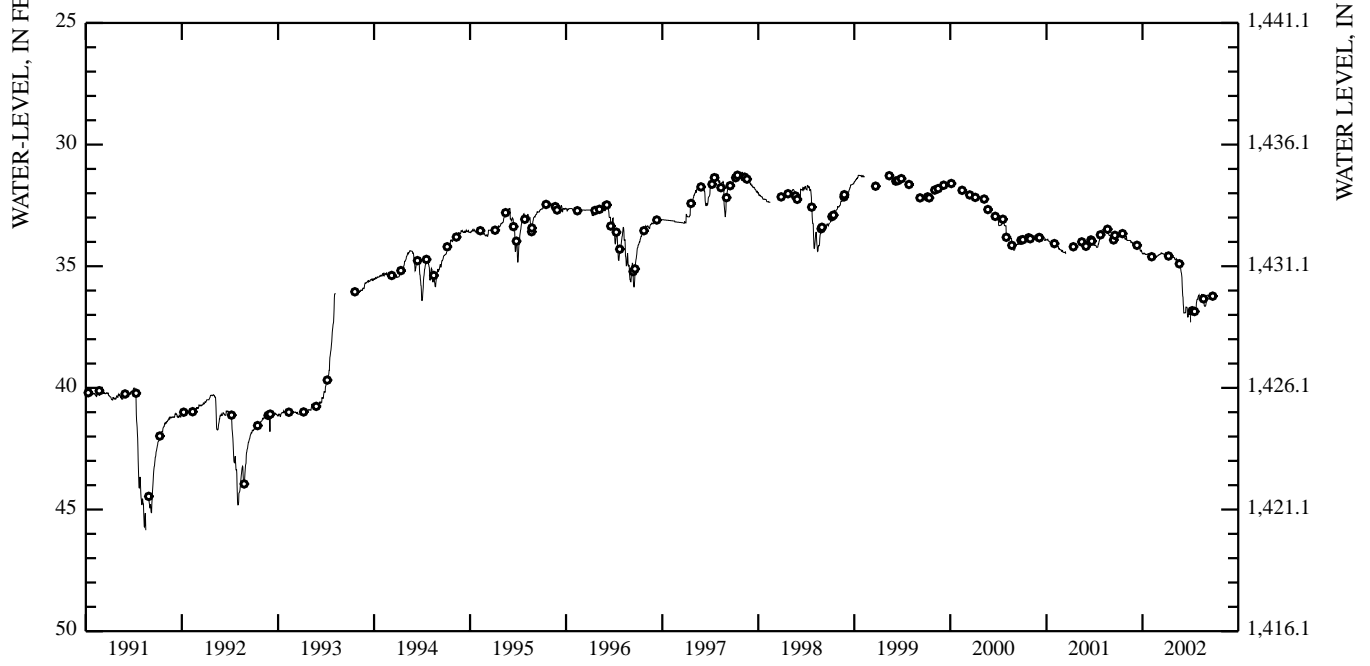
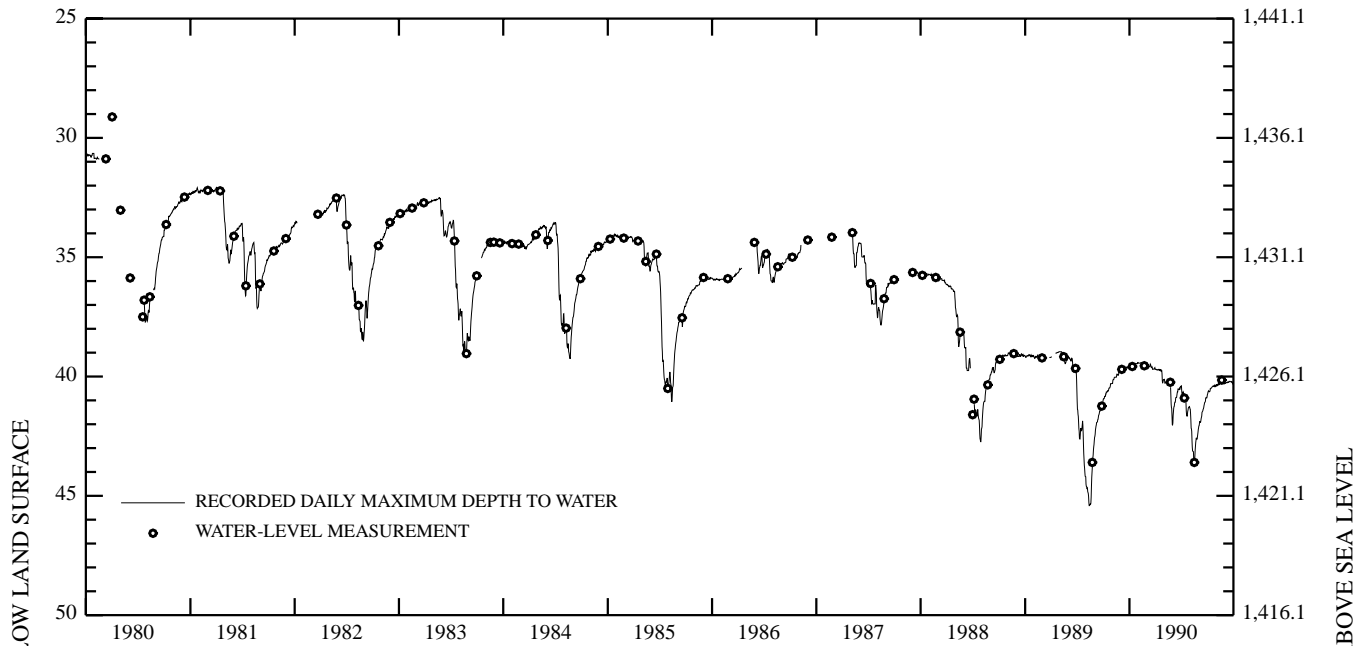
CAL YR 2001 HIGH 33.50 AUG 1 LOW 34.54 MAR 17
WTR YR 2002 HIGH 33.68 OCT 18 LOW 37.29 JUL 3

139-062-02CCC



GROUND-WATER LEVELS
STUTSMAN COUNTY--Continued

139-062-02CCC--Continued



STUTSMAN COUNTY--Continued

465757098274401. Local number, 140-062-02DDD.

LOCATION.--Lat 46°57'57", long 98°27'44", Hydrologic Unit 10160003. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 263 ft, cased with 207 ft of 12-in diameter steel pipe, No. 8 slot screen set 207 to 257 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From July 1984 to current year, daily minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,480 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

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

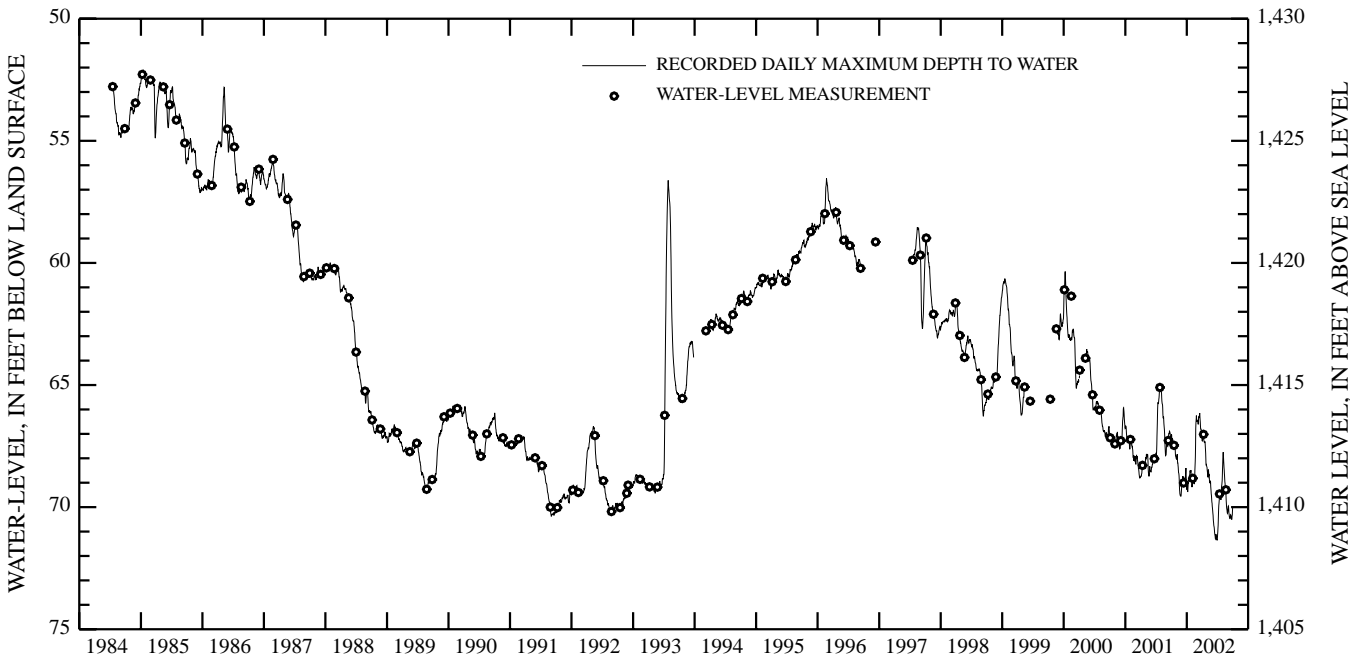
REMARKS.--Well house surrounded by water for part of year. Recorder tape destroyed by rodents.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 52.04 ft below land-surface datum, January 13 and 17, 1985; lowest water level, 71.36 ft below land-surface datum, June 30, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	67.29	67.83	69.10	69.27	68.87	66.43	67.23	68.65	70.26	70.86	67.75	69.95
10	67.36	68.30	68.88	69.03	69.01	66.61	67.05	68.52	70.73	69.93	68.38	70.36
15	67.42	68.64	68.89	68.91	69.04	66.30	67.34	68.85	71.04	69.56	68.98	70.47
20	67.41	69.36	68.96	68.51	68.14	66.32	67.41	68.99	71.30	69.57	69.30	70.35
25	67.78	69.55	68.59	68.48	66.46	66.81	68.23	69.34	71.26	69.33	69.99	70.50
EOM	68.00	69.34	69.18	69.16	66.38	67.17	68.35	69.84	71.36	68.72	70.23	70.03
MAX	68.00	69.55	69.24	69.38	69.18	67.17	68.35	69.84	71.36	71.30	70.25	70.50
MIN	67.02	67.83	68.40	68.48	66.25	66.15	67.05	68.37	69.96	68.72	67.75	69.95
CAL YR 2001	HIGH 64.95 JUL 29		LOW 69.55 NOV 25									
WTR YR 2002	HIGH 66.15 MAR 19		LOW 71.36 JUN 30									

140-062-02DDD



GROUND-WATER LEVELS

TOWNER COUNTY

482908099134601. Local number, 158-066-30BBB.

LOCATION.--Lat 48°29'08", long 99°13'46", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 322 ft, cased with 208 ft of 5-in diameter steel pipe, No. 40 slot screen set 208 to 213 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,481 ft. Measuring point: Top of casing 1.40 ft above land-surface datum.

PERIOD OF RECORD.--June 1980 to current year.

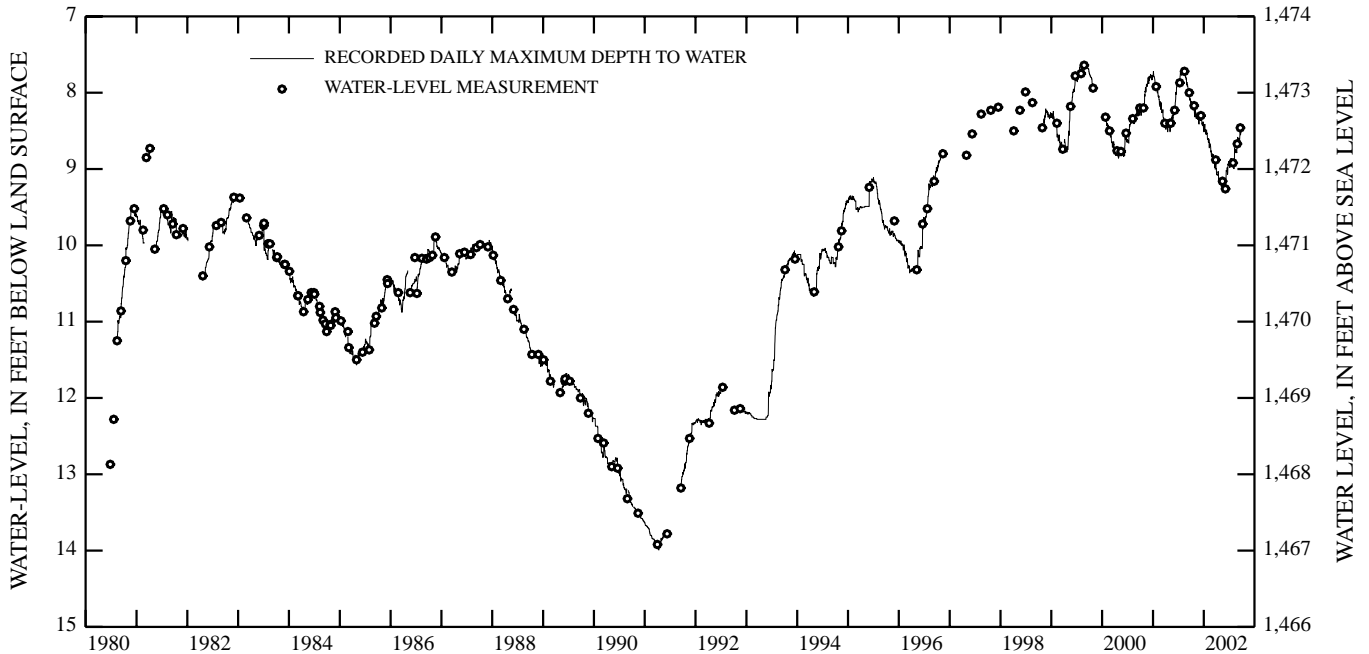
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.60 ft below land-surface datum, August 15-16, 1999; lowest water level, 13.99 ft below land-surface datum, April 11-13, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.16	8.26	8.35	8.46	8.64	8.84	9.08	9.20	9.26	8.94	9.00	8.61
10	8.13	8.32	8.36	8.48	8.72	8.89	9.08	9.16	9.11	8.92	8.72	8.62
15	8.22	8.32	8.35	8.54	8.67	8.88	9.05	9.19	9.02	8.86	8.78	8.63
20	8.21	8.32	8.42	8.49	8.74	8.97	9.18	9.26	9.07	8.86	8.75	8.50
25	8.24	8.39	8.43	8.53	8.83	9.00	9.19	9.21	8.94	8.88	8.78	8.52
EOM	8.20	8.32	8.48	8.60	8.83	9.00	9.16	9.24	8.93	8.92	8.64	8.43
MAX	8.32	8.41	8.48	8.61	8.84	9.00	9.20	9.26	9.28	8.98	9.00	8.63
MIN	8.11	8.21	8.32	8.41	8.60	8.80	8.99	9.13	8.90	8.86	8.64	8.43

CAL YR 2001 HIGH 7.67 AUG 4 LOW 8.51 APR 16
WTR YR 2002 HIGH 8.11 OCT 2 LOW 9.28 JUN 2

158-066-30BBB



TOWNER COUNTY--Continued

484209099174101. Local number, 160-067-10BBB1.

LOCATION.--Lat 48°42'09", long 99°17'41", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 402 ft, cased with 356 ft of 2-in diameter steel pipe, No. 12 slot screen set 356 to 362 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,570 ft. Measuring point: Top of casing 4.00 ft above land-surface datum.

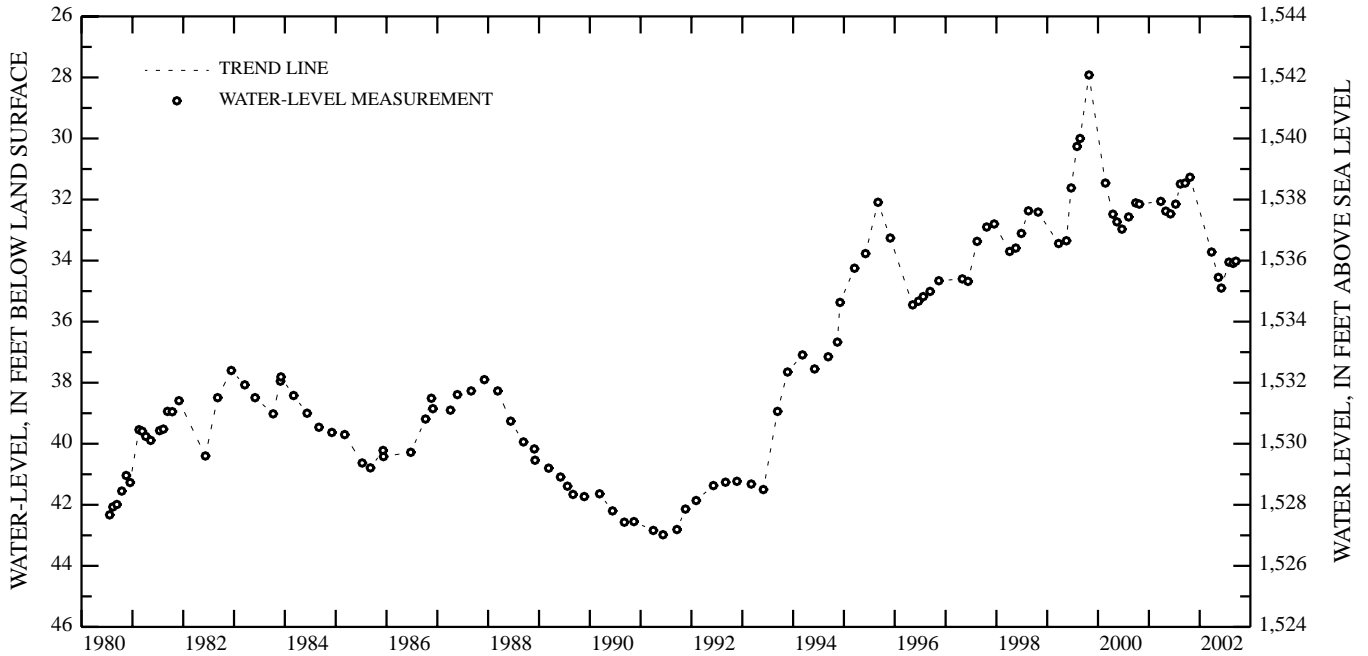
PERIOD OF RECORD.--July 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.92 ft below land-surface datum, October 28, 1999; lowest water level, 42.98 ft below land-surface datum, June 11, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	31.27	MAY 15	34.55	JUN 05	34.90	JUL 30	34.05	AUG 29	34.09	SEP 18	34.02
MAR 27	33.72										
WATER YEAR 2002		HIGHEST	31.27	OCT 23, 2001		LOWEST	34.90	JUN 05, 2002			

160-067-10BBB1



GROUND-WATER LEVELS

TOWNER COUNTY--Continued

484209099174102. Local number, 160-067-10BBB2.

LOCATION.--Lat 48°42'09", long 99°17'41", Hydrologic Unit 09020201. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 62 ft, cased with 57 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 57 to 60 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,570 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

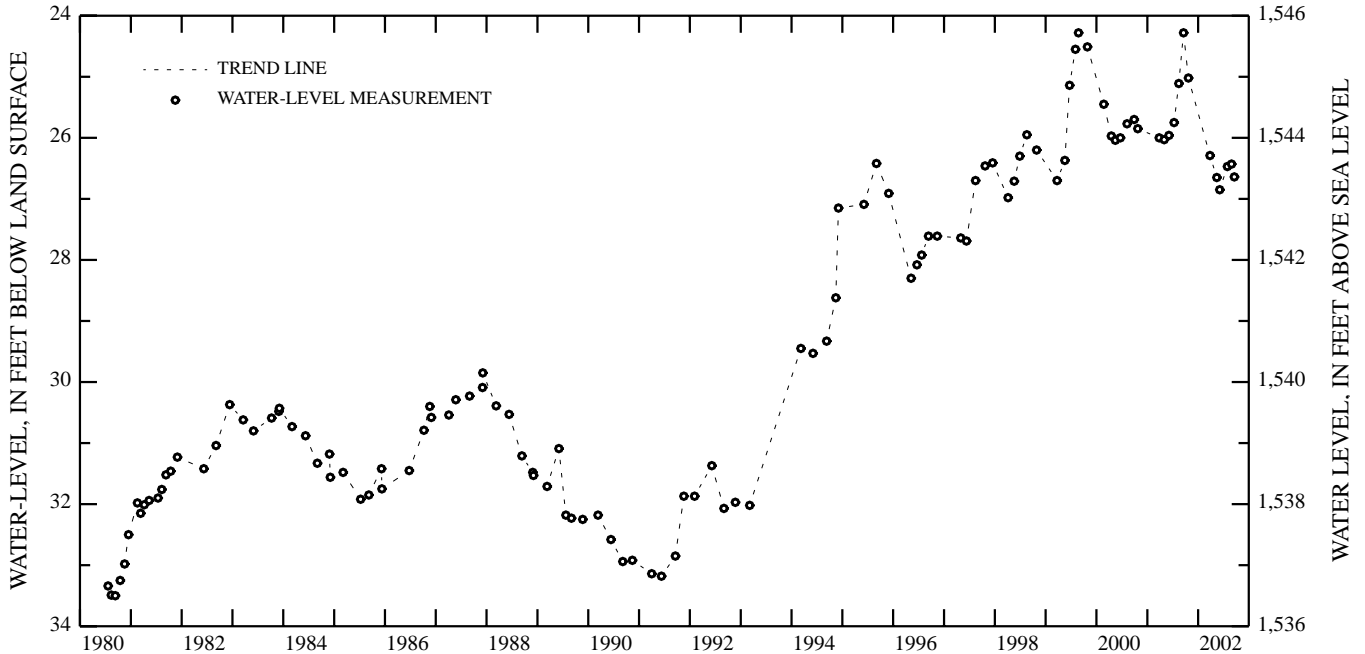
PERIOD OF RECORD.--July 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 24.28 ft below land-surface datum, August 25, 1999, and September 18, 2001; lowest water level, 33.50 ft below land-surface datum, September 11, 1980.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	25.02	MAY 15	26.65	JUN 05	26.85	JUL 30	26.47	AUG 29	26.43	SEP 18	26.64
MAR 27	26.29										
WATER YEAR 2002		HIGHEST	25.02	OCT 23, 2001		LOWEST	26.85	JUN 05, 2002			

160-067-10BBB2



TOWNER COUNTY--Continued

485659099222801. Local number, 163-067-18AAA1.

LOCATION.--Lat 48°56'59", long 99°22'28", Hydrologic Unit 09020313. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 282 ft, cased with 252 ft of 2-in diameter steel pipe, No. 18 slot screen set 252 to 258 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,582 ft. Measuring point: Top of casing 3.30 ft above land-surface datum.

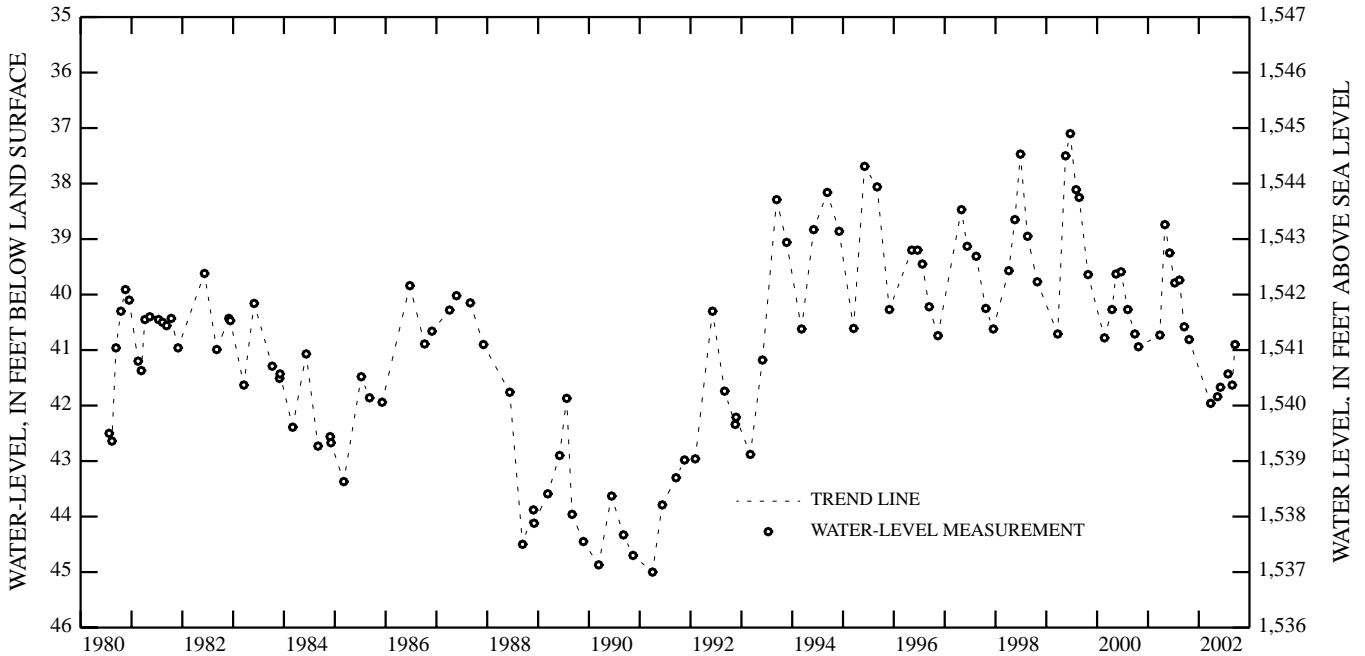
PERIOD OF RECORD.--July 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 37.10 ft below land-surface datum, June 22, 1999; lowest water level, 45.00 ft below land-surface datum, April 3, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	40.81	MAY 15	41.84	JUN 05	44.67	JUL 30	41.43	AUG 29	41.63	SEP 18	40.90
MAR 27	41.96										
WATER YEAR 2002		HIGHEST	40.81	OCT 23, 2001		LOWEST	44.67	JUN 05, 2002			

163-067-18AAA1



GROUND-WATER LEVELS

TOWNER COUNTY--Continued

485659099222802. Local number, 163-067-18AAA2.

LOCATION.--Lat 48°56'59", long 99°22'28", Hydrologic Unit 09020313. Owner: North Dakota State Water Commission.

AQUIFER.--Spiritwood.

WELL CHARACTERISTICS.--Drilled observation well, depth 142 ft, cased with 118 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 118 to 121 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,582 ft. Measuring point: Top of casing 2.80 ft above land-surface datum.

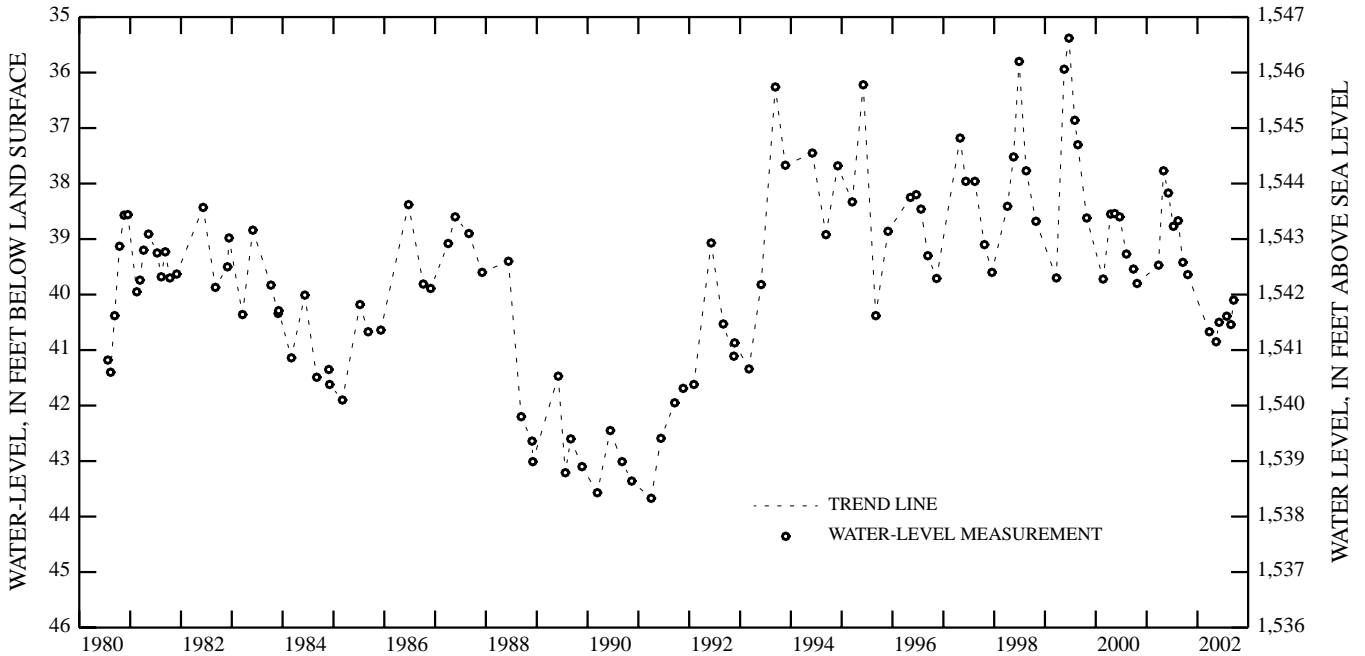
PERIOD OF RECORD.--July 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 35.38 ft below land-surface datum, June 22, 1999; lowest water level, 43.67 ft below land-surface datum, April 3, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	39.64	MAY 15	40.85	JUN 05	40.50	JUL 30	40.39	AUG 29	40.54	SEP 18	40.10
MAR 27	40.67										
WATER YEAR 2002		HIGHEST	39.64	OCT 23, 2001		LOWEST	40.85	MAY 15, 2002			

163-067-18AAA2



WALSH COUNTY

481234097234604. Local number, 155-053-25CDD4.

LOCATION.--Lat 48°12'35", long 97°23'44", Hydrologic Unit 09020308. Owner: U.S. Geological Survey.

AQUIFER.--Glacial Clay.

WELL CHARACTERISTICS.--Drilled observation well, depth 85 ft, cased with 80 ft of 2-in diameter plastic pipe, screen set 80 to 85 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

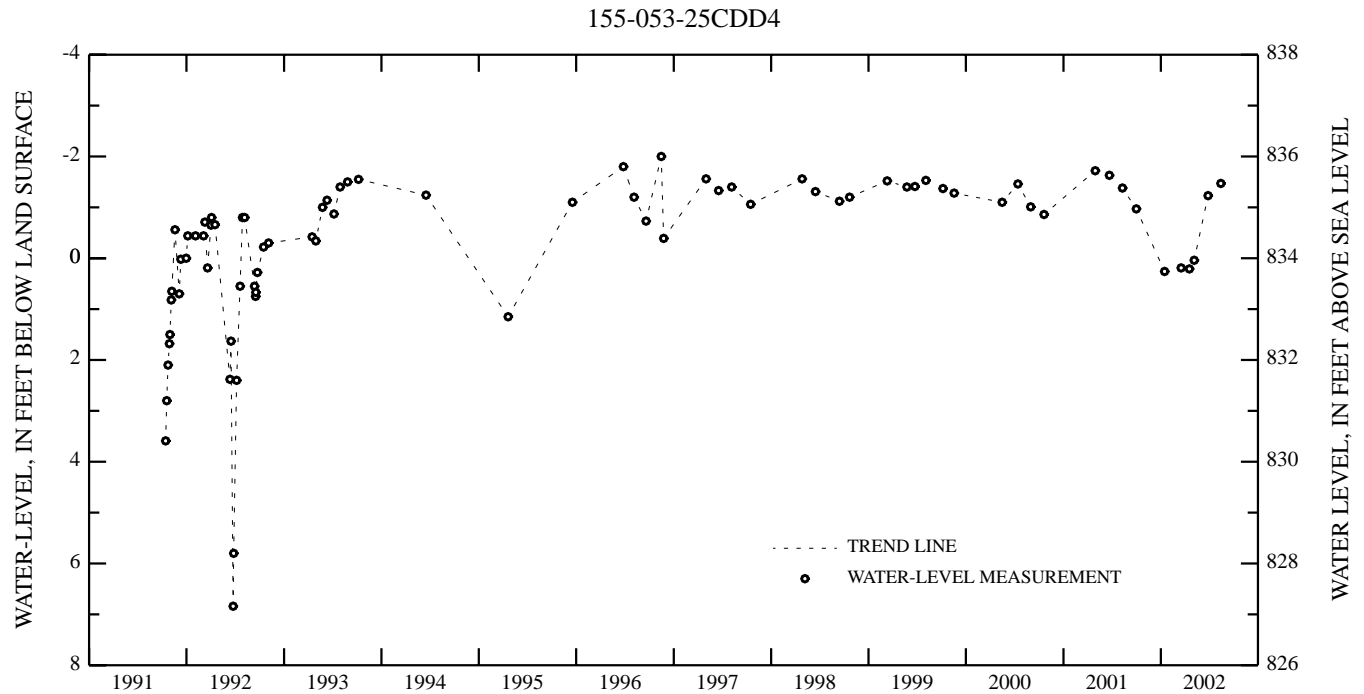
DATUM.--Altitude of land-surface datum is 834 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, -2.00 ft below land-surface datum, Nov. 15, 1996; lowest water level, 6.84 ft below land-surface datum, June 24, 1992.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
(READINGS ABOVE LAND SURFACE INDICATED BY "-")

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	-0.97	MAR 18	0.19	APR 18	0.21	MAY 06	0.04	JUN 27	-1.23	AUG 14	-1.47
JAN 15	0.26										
WATER YEAR 2002		HIGHEST	-1.47	AUG 14, 2002		LOWEST	0.26	JAN 15, 2002			



GROUND-WATER LEVELS

WALSH COUNTY--Continued

481234097234605. Local number, 155-053-25CDD5.

LOCATION.--Lat 48°12'35", long 97°23'44", Hydrologic Unit 09020308. Owner: U.S. Geological Survey.

AQUIFER.--Glacial Clay.

WELL CHARACTERISTICS.--Drilled observation well, depth 25 ft, cased with 20 ft of 2-in diameter plastic pipe, screen set 20 to 25 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 834 ft. Measuring point: Top of casing 2.25 ft above land-surface datum.

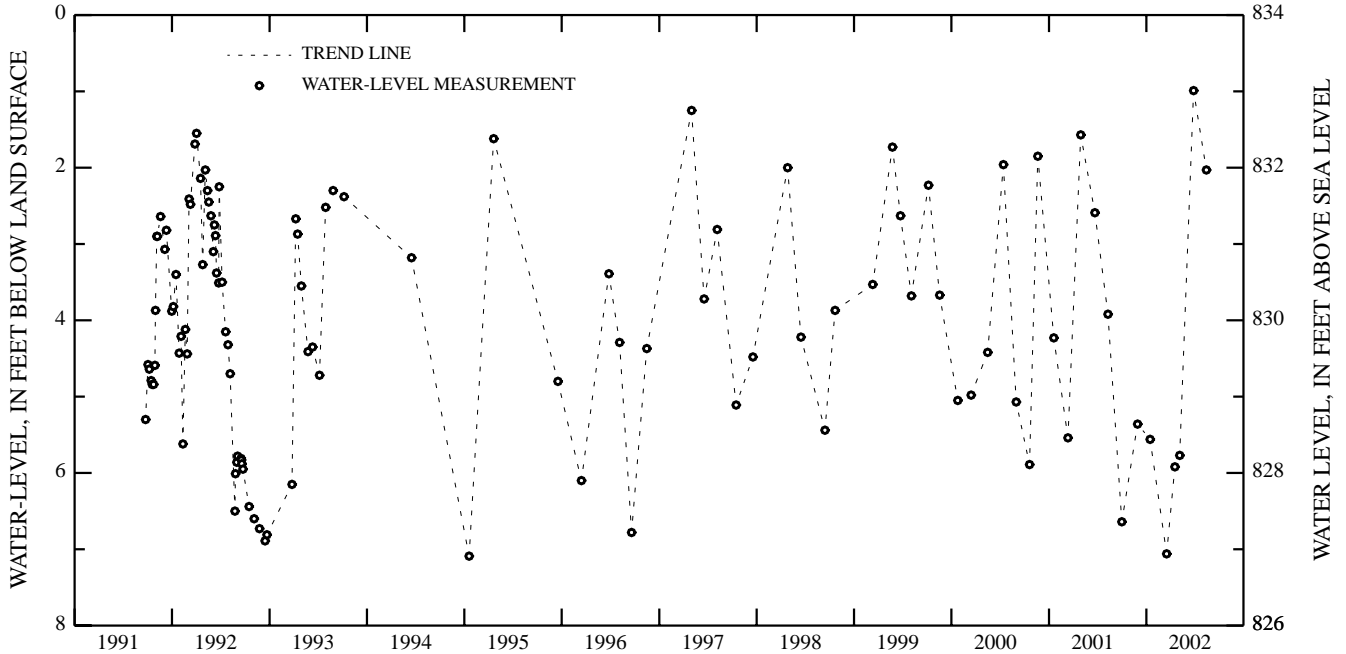
PERIOD OF RECORD.--September 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.99 ft below land-surface datum, June 27, 2002; lowest water level, 7.09 ft below land-surface datum, January 19, 1995.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	6.64	JAN 15	5.56	APR 18	5.92	MAY 06	5.77	JUN 27	0.99	AUG 14	2.03
NOV 29	5.36	MAR 18	7.06								
WATER YEAR 2002		HIGHEST	0.99	JUN 27, 2002		LOWEST	7.06	MAR 18, 2002			

155-053-25CDD5



WALSH COUNTY--Continued

481841097490301. Local number, 156-056-22DDD.

LOCATION.--Lat 48°18'41", long 97°49'03", Hydrologic Unit 09020308. Owner: North Dakota State Water Commission.

AQUIFER.--Fordville.

WELL CHARACTERISTICS.--Drilled observation well, depth 280 ft, cased with 52 ft of 4-in diameter plastic pipe, screen set 52 to 57 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder August 1968 to current year. Only intermittent low water levels, obtained from strip chart recorders, are available from the District office for August 1968 to September 1970. From October 1970 to current year, daily maximum and minimum recorded water levels also are available.

DATUM.--Altitude of land-surface datum is 1,170 ft. Measuring point: Top of casing 1.90 ft above land-surface datum.

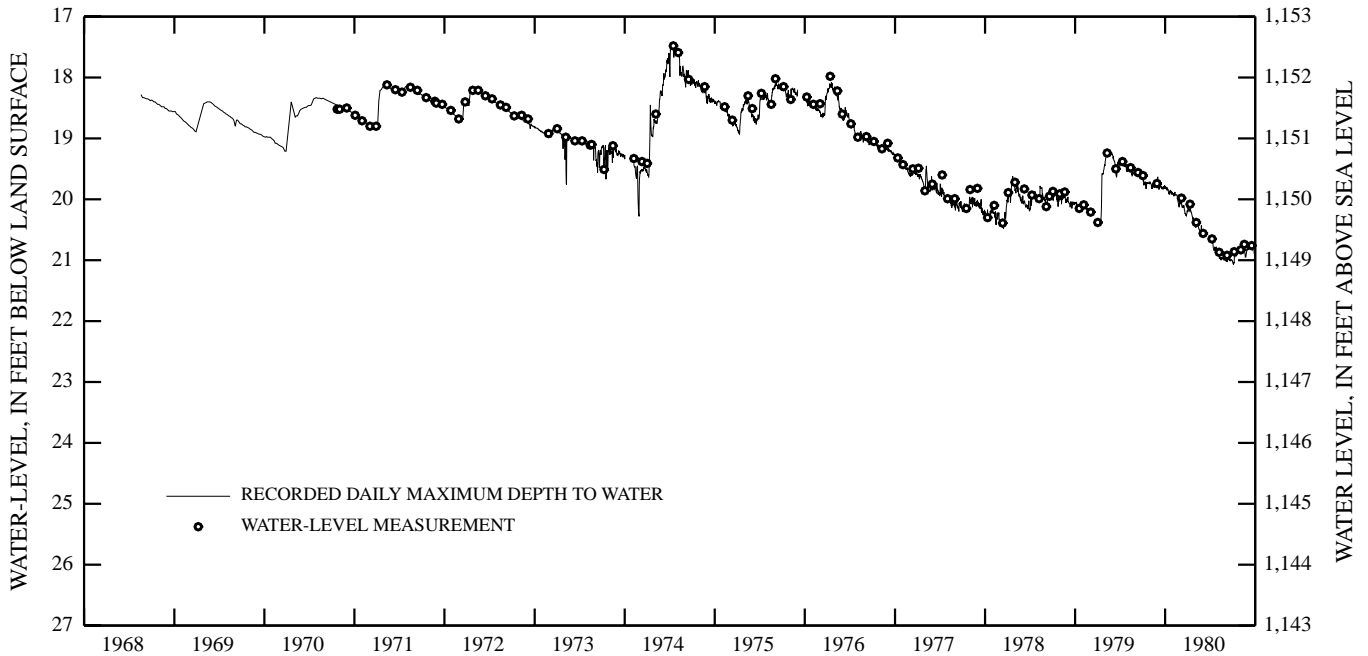
PERIOD OF RECORD.--August 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.35 ft below land-surface datum, July 22, 1974; lowest water level, 24.21 ft below land-surface datum, June 7, 1993.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

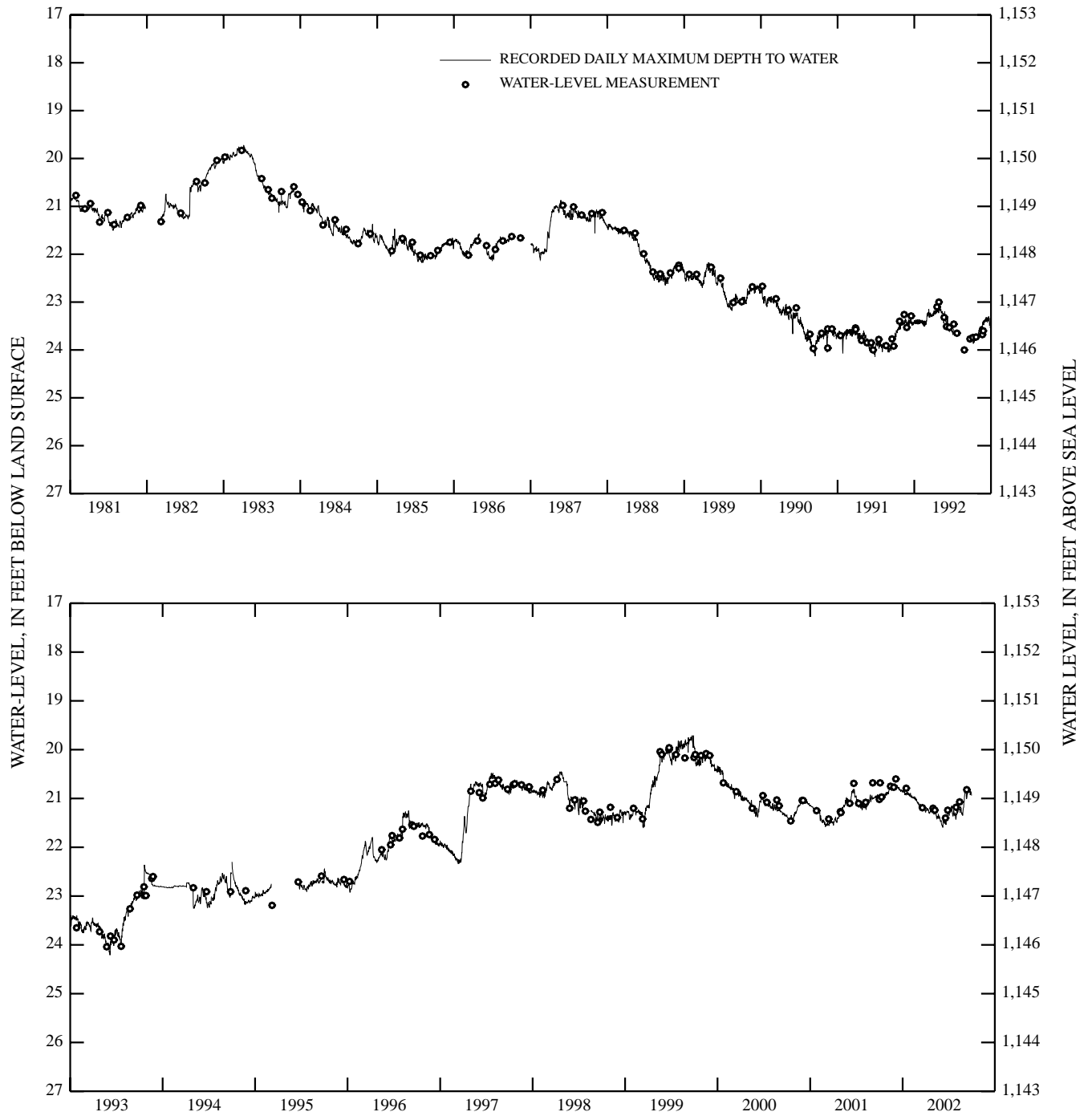
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.96	20.87	20.72	20.86	20.98	21.10	21.24	21.32	21.55	21.25	21.30	20.89
10	20.91	20.81	20.76	20.89	20.99	21.18	21.25	21.24	21.41	21.27	21.20	21.01
15	20.95	20.78	20.78	20.88	20.97	21.14	21.30	21.40	21.51	21.25	21.23	20.86
20	20.94	20.80	20.83	20.87	21.03	21.21	21.26	21.41	21.49	21.34	21.20	20.88
25	20.91	20.79	20.84	20.93	21.04	21.20	21.24	21.40	21.33	21.33	21.31	20.93
EOM	20.87	20.74	20.87	20.91	21.08	21.24	21.27	21.47	21.20	21.41	21.07	20.94
MAX	21.06	20.91	20.87	20.96	21.08	21.24	21.30	21.47	21.59	21.43	21.35	21.07
MIN	20.87	20.71	20.70	20.82	20.90	21.08	21.20	21.22	21.18	21.15	21.07	20.82
CAL YR 2001 HIGH 20.49 DEC 3 LOW 21.58 MAR 2												
WTR YR 2002 HIGH 20.49 DEC 3 LOW 21.59 JUN 8-9												

156-056-22DDD



GROUND-WATER LEVELS
WALSH COUNTY--Continued

156-056-22DDD--Continued



WALSH COUNTY--Continued

482408097443201. Local number, 157-055-21DBC.

LOCATION.--Lat 48°24'08", long 97°44'32", Hydrologic Unit 09020310. Owner: North Dakota State Water Commission.

AQUIFER.--Dakota.

WELL CHARACTERISTICS.--Drilled observation well, depth 496 ft, cased with 491 ft of 4-in diameter steel pipe, screen set 491 to 496 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 975 ft. Measuring point: Top of casing 0.00 ft above land-surface datum.

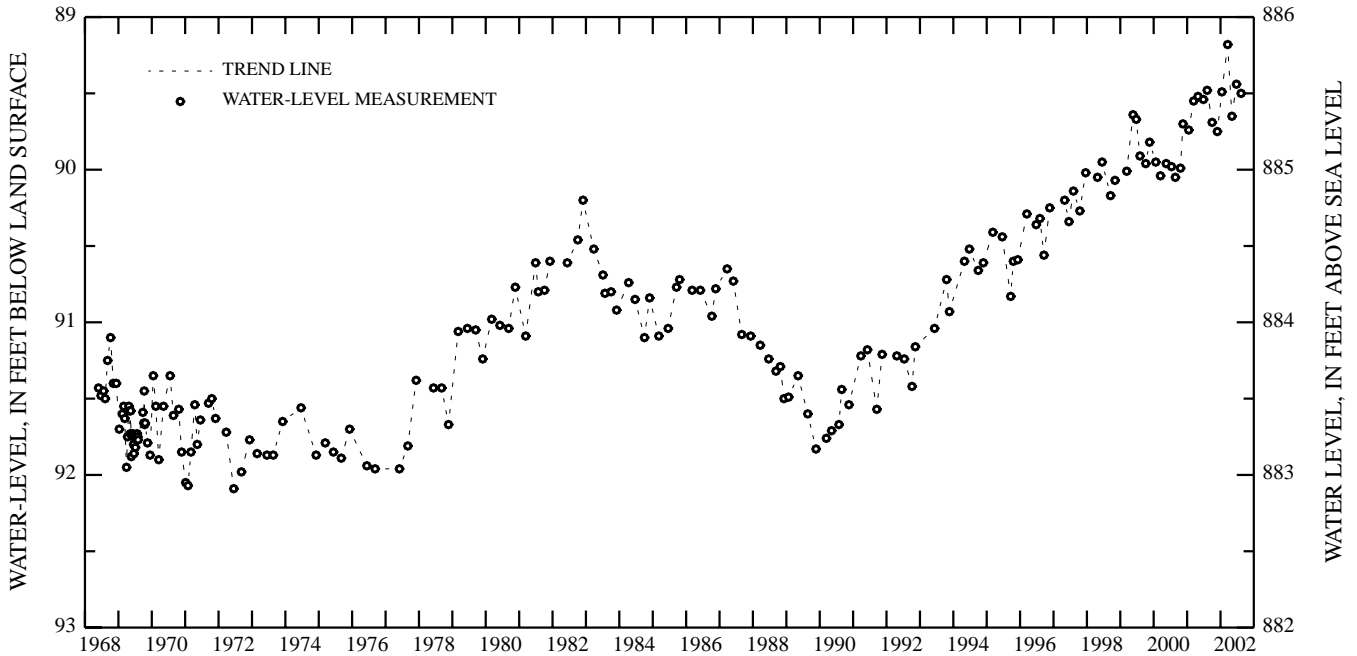
PERIOD OF RECORD.--May 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 89.18 ft below land-surface datum, March 20, 2002; lowest water level, 92.09 ft below land-surface datum, June 15, 1972.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	89.69	JAN 16	89.49	MAR 20	89.18	MAY 06	89.65	JUN 24	89.44	AUG 14	89.50
NOV 27	89.75										
WATER YEAR 2002		HIGHEST	89.18	MAR 20, 2002		LOWEST	89.75	NOV 27, 2001			

157-055-21DBC



GROUND-WATER LEVELS

WALSH COUNTY--Continued

482449098095801. Local number, 157-058-18DDD.

LOCATION.--Lat 48°24'49", long 98°09'58", Hydrologic Unit 09020308. Owner: North Dakota State Water Commission.

AQUIFER.--Pierre Shale.

WELL CHARACTERISTICS.--Drilled observation well, depth 140 ft, cased with 80 ft of 4-in diameter plastic pipe, screen set 80 to 100 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,580 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

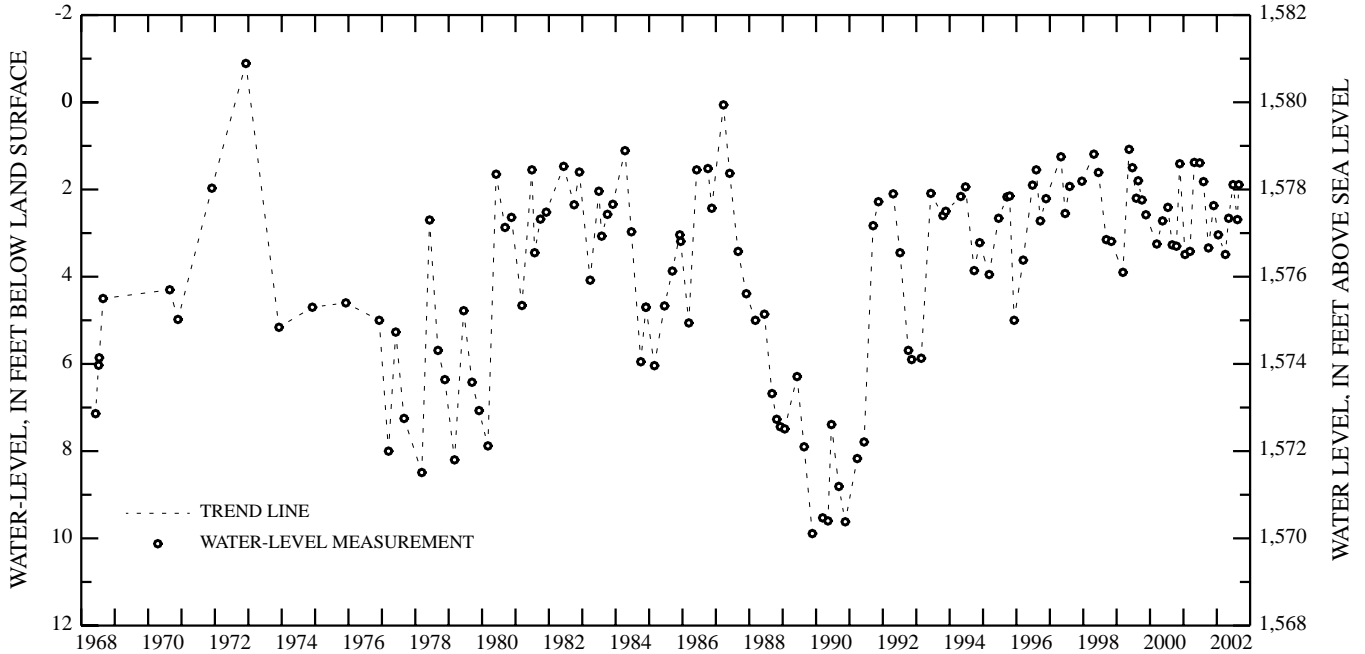
PERIOD OF RECORD.--June 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, -0.89 ft below land-surface datum, December 5, 1972; lowest water level, 9.89 ft below land-surface datum, November 21, 1989.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	3.34	JAN 16	3.04	MAY 10	2.66	JUN 27	1.89	AUG 14	2.69	AUG 29	1.89
NOV 27	2.37	APR 04	3.49								
WATER YEAR 2002		HIGHEST	1.89	JUN 27, 2002		AUG 29, 2002		LOWEST	3.49	APR 04, 2002	

157-058-18DDD



WARD COUNTY

481058101120403. Local number, 154-082-03CDC3.

LOCATION.--Lat 48°10'58", long 101°12'04", Hydrologic Unit 09010001. Owner: North Dakota State Water Commission.

AQUIFER.--Sundre Buried Channel.

WELL CHARACTERISTICS.--Drilled observation well, depth 220 ft, cased with 170 ft of 12-in diameter steel pipe, screen set 170 to 220 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape December 1968 to June 1973. From November 1976 to current year, daily minimum recorded water levels also are available.

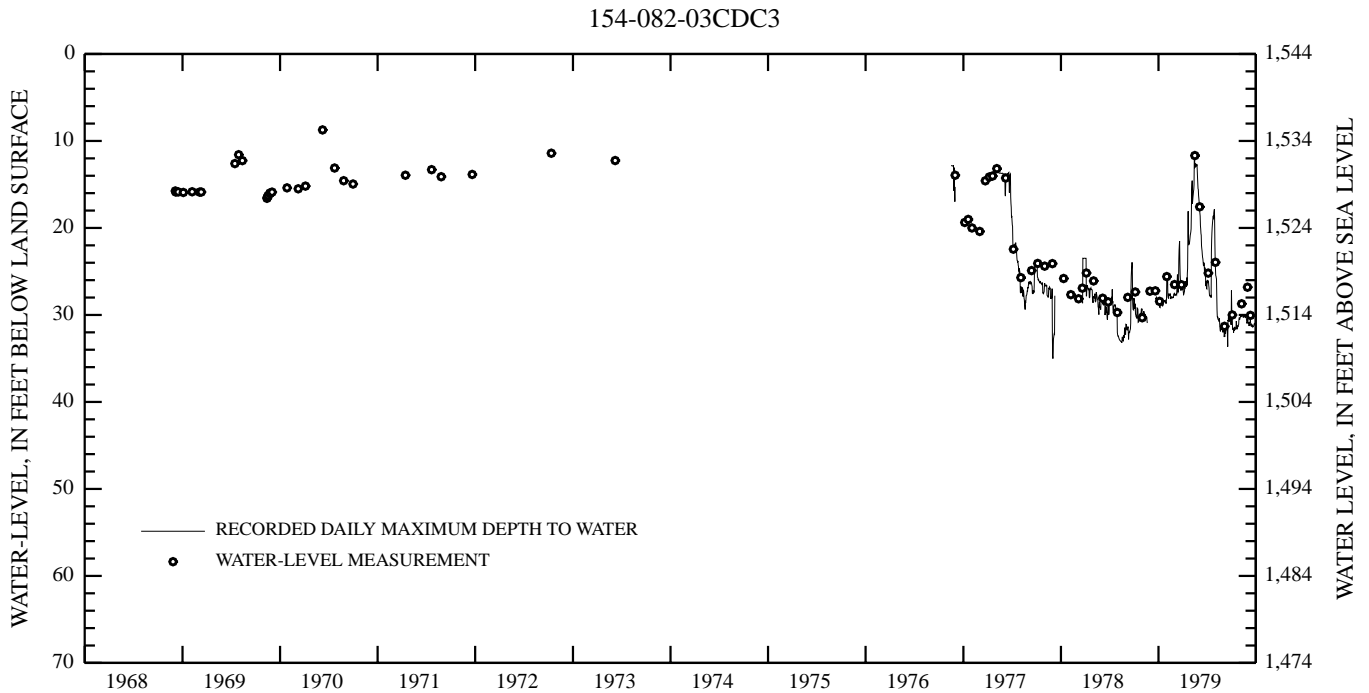
DATUM.--Altitude of land-surface datum is 1,544 ft. Measuring point: Top of casing 1.45 ft above land-surface datum.

PERIOD OF RECORD.--December 1968 to current year.

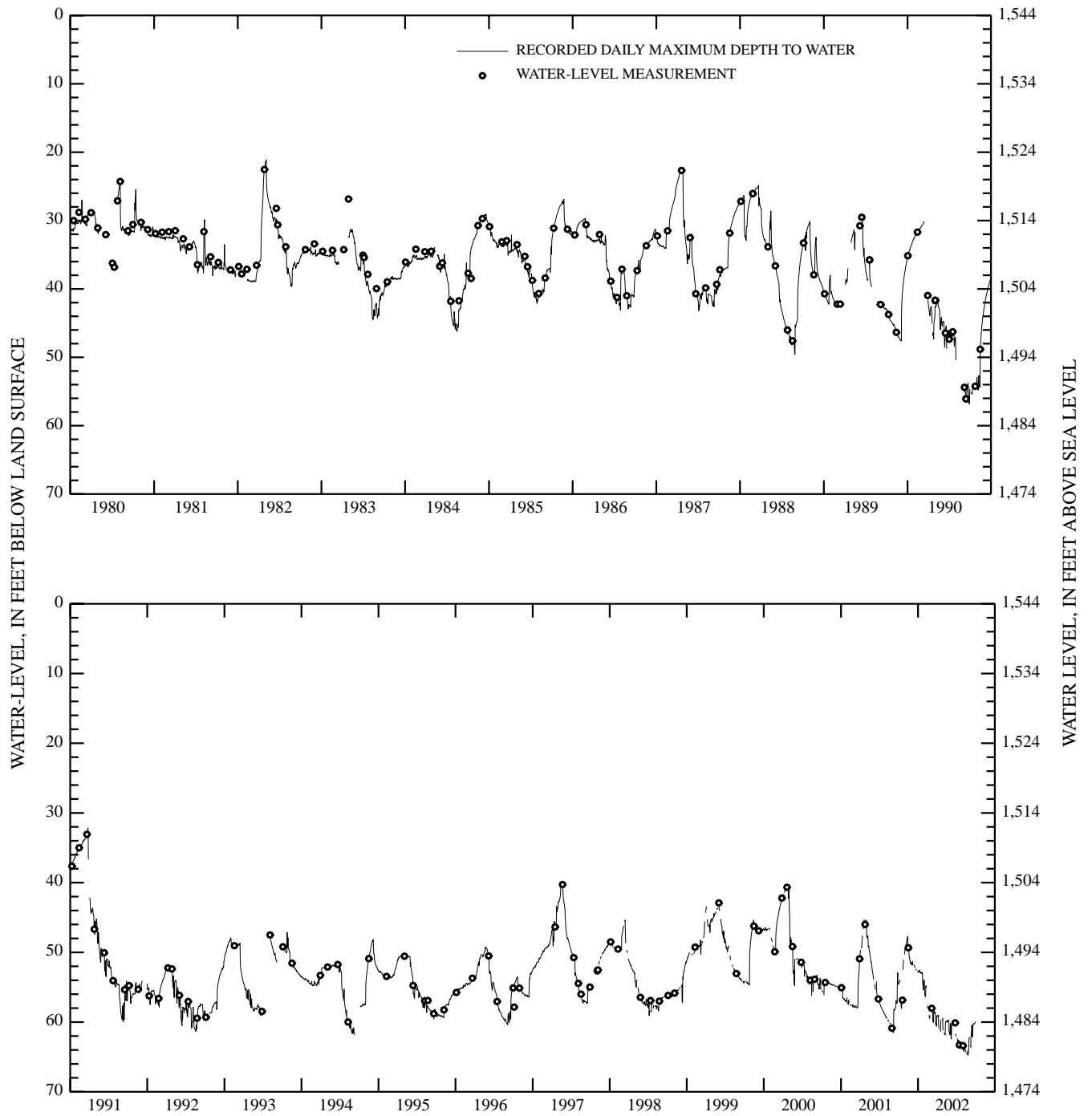
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.73 ft below land-surface datum, June 9, 1970; lowest water level, 64.79 ft below land-surface datum, August 28, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	54.27	48.91	51.82	52.63	56.34	57.93	59.17	61.59	60.19	62.32	64.11	---
10	---	48.19	---	52.79	55.03	58.16	60.78	61.81	60.32	62.67	63.58	62.02
15	58.06	49.27	51.98	52.96	57.80	60.04	---	59.88	---	63.12	64.37	62.12
20	---	50.49	---	52.87	---	58.71	59.77	59.99	60.28	62.86	64.43	60.26
25	51.07	51.37	52.55	54.94	59.48	60.27	59.63	59.79	---	63.19	---	60.25
EOM	49.70	51.50	52.79	54.05	---	59.18	61.21	61.66	61.97	63.25	62.36	59.94
MAX	58.06	51.66	52.79	55.38	59.48	60.62	61.30	61.81	62.45	63.68	64.79	63.58
MIN	49.70	47.72	51.29	52.58	54.81	57.83	58.96	59.71	60.17	62.05	62.36	59.94
CAL YR 2001		HIGH 45.28	APR 21	LOW 61.51	SEP 7							
WTR YR 2002		HIGH 47.72	NOV 13	LOW 64.79	AUG 28							



154-082-03CDC3--Continued



WELLS COUNTY

472329099194401. Local number, 145-068-10BCC.

LOCATION.--Lat 47°23'29", long 99°19'44", Hydrologic Unit 10160002. Owner: North Dakota State Water Commission.

AQUIFER.--Pipestem Creek.

WELL CHARACTERISTICS.--Drilled observation well, depth 52 ft, cased with 25 ft of 1.25-in diameter plastic pipe, No. 12 slot screen set 25 to 27 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,630 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

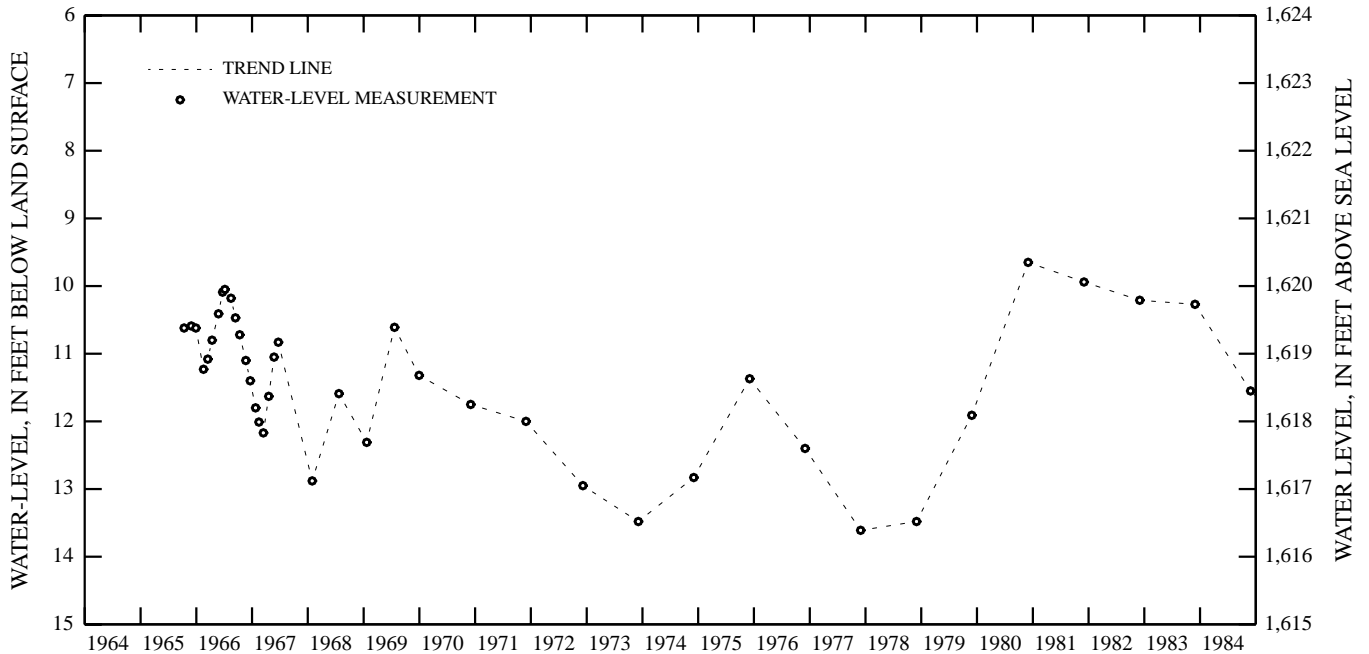
PERIOD OF RECORD.--October 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.94 ft below land-surface datum, May 2, 2001; lowest water level, 13.61 ft below land-surface datum, November 30, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

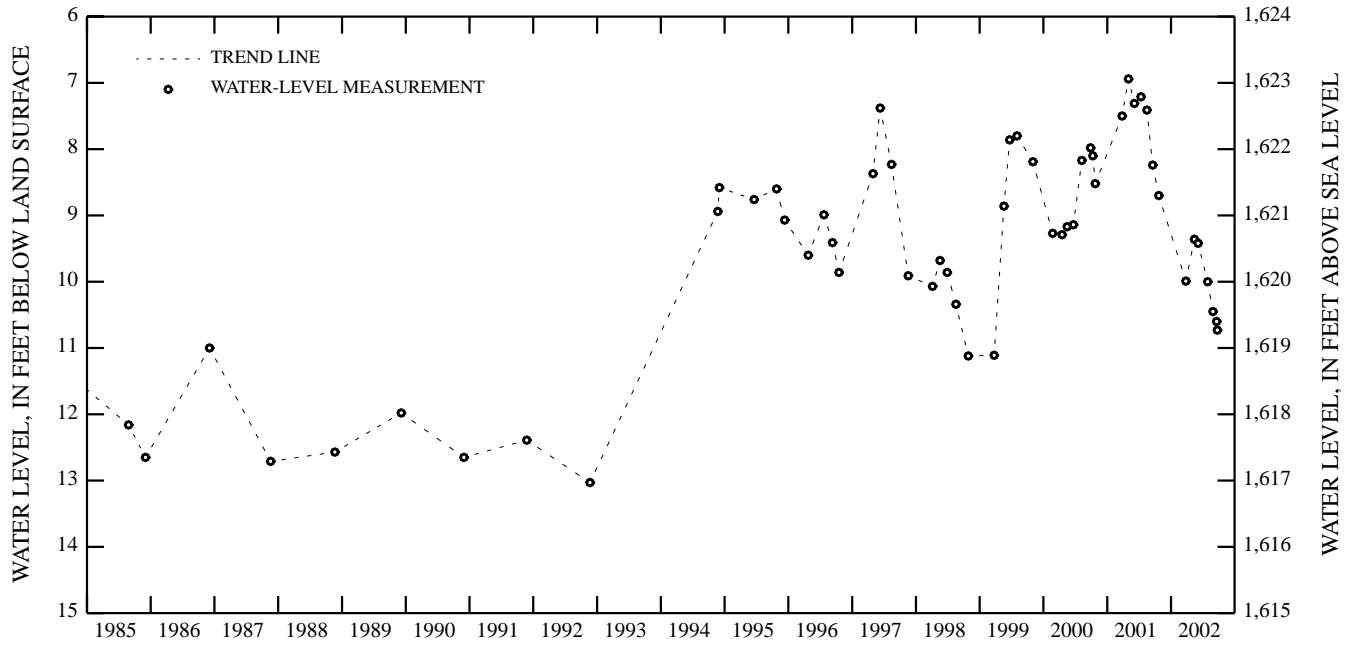
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	8.70	MAY 15	9.36	JUL 30	10.00	AUG 29	10.45	SEP 19	10.60	SEP 23	10.73
MAR 27	9.99	JUN 05	9.42								
WATER YEAR 2002		HIGHEST	8.70	OCT 23, 2001	LOWEST	10.73	SEP 23, 2002				

145-068-10BCC



GROUND-WATER LEVELS
WELLS COUNTY--Continued

145-068-10BCC--Continued



WELLS COUNTY--Continued

474419099371201. Local number, 149-070-09DAA1.

LOCATION.--Lat 47°44'19", long 99°37'12", Hydrologic Unit 10160001. Owner: North Dakota State Water Commission.

AQUIFER.--New Rockford.

WELL CHARACTERISTICS.--Drilled observation well, depth 283 ft, cased with 197 ft of 1.25-in diameter plastic pipe, slotted 177 to 197 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,612.7 ft. Measuring point: Top of casing 2.16 ft above land-surface datum.

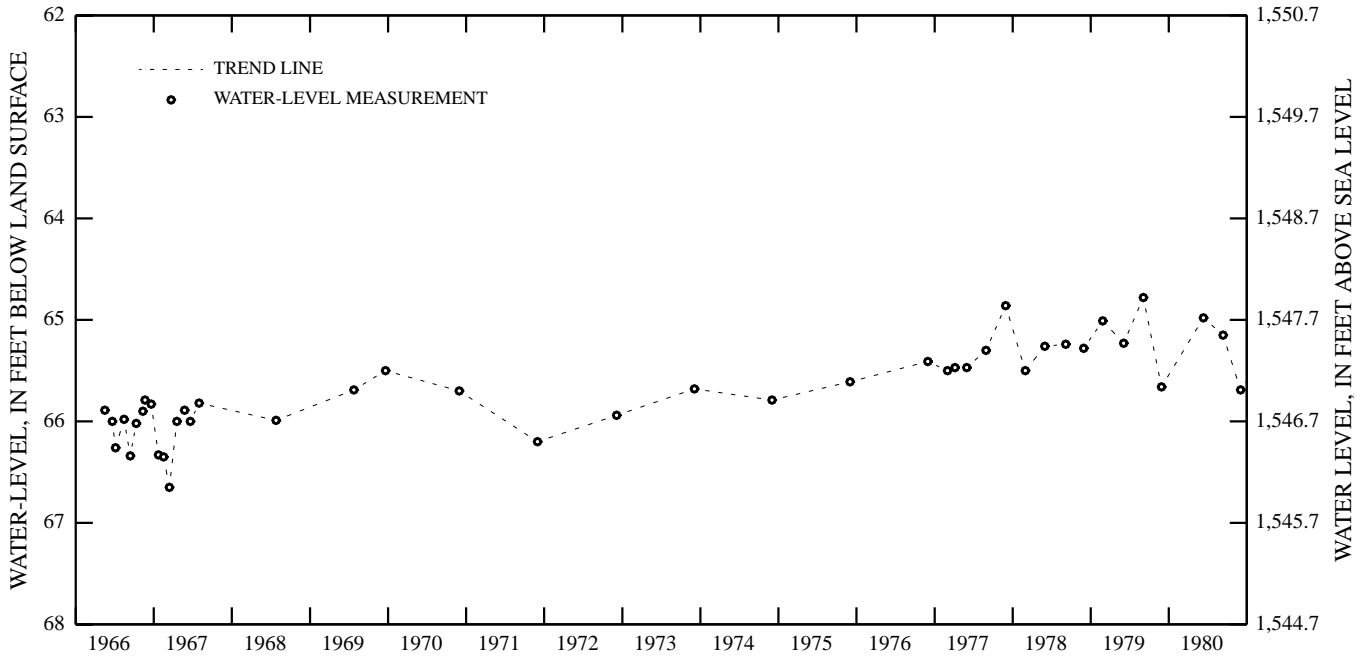
PERIOD OF RECORD.--May 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 62.32 ft below land-surface datum, June 5, 2001; lowest water level, 66.65 ft below land-surface datum, March 15, 1967.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

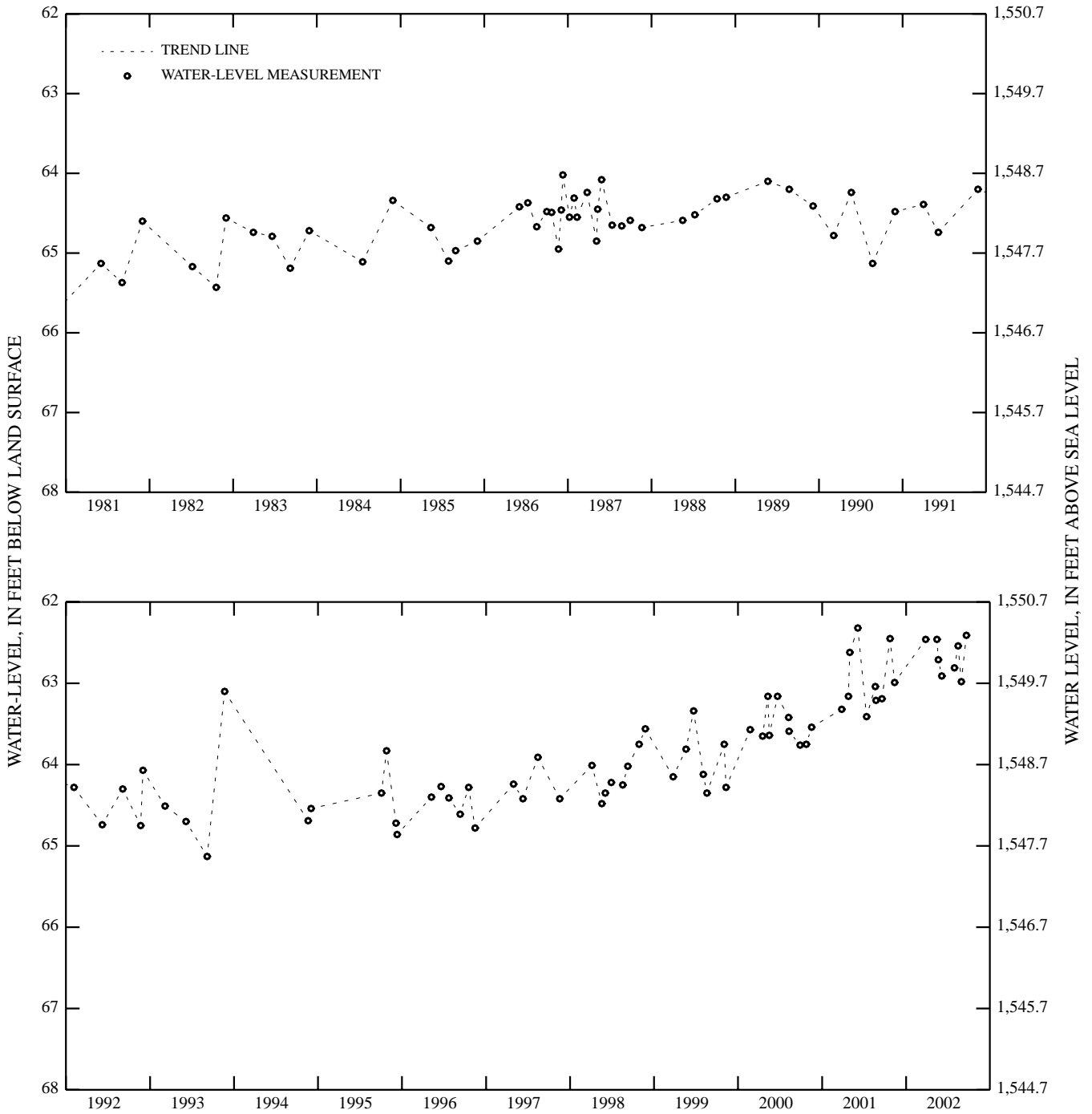
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	62.45	MAR 27	62.46	MAY 21	62.71	JUL 30	62.81	AUG 29	62.98	SEP 20	62.41
NOV 12	62.99	MAY 15	62.46	JUN 05	62.91	AUG 15	62.54				
WATER YEAR 2002		HIGHEST	62.41	SEP 20, 2002		LOWEST	62.99	NOV 12, 2001			

149-070-09DAA1



GROUND-WATER LEVELS
WELLS COUNTY--Continued

149-070-09DAA1--Continued



WILLIAMS COUNTY

481056103024201. Local number, 154-096-08AAA.

LOCATION.--Lat 48°10'56", long 103°02'42", Hydrologic Unit 10110101. Owner: North Dakota State Water Commission.

AQUIFER.--Hofflund.

WELL CHARACTERISTICS.--Drilled observation well, depth 120 ft, cased with 77 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 77 to 83 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

DATUM.--Altitude of land-surface datum is 1,864.95 ft. Measuring point: Top of casing 1.87 ft above land-surface datum.

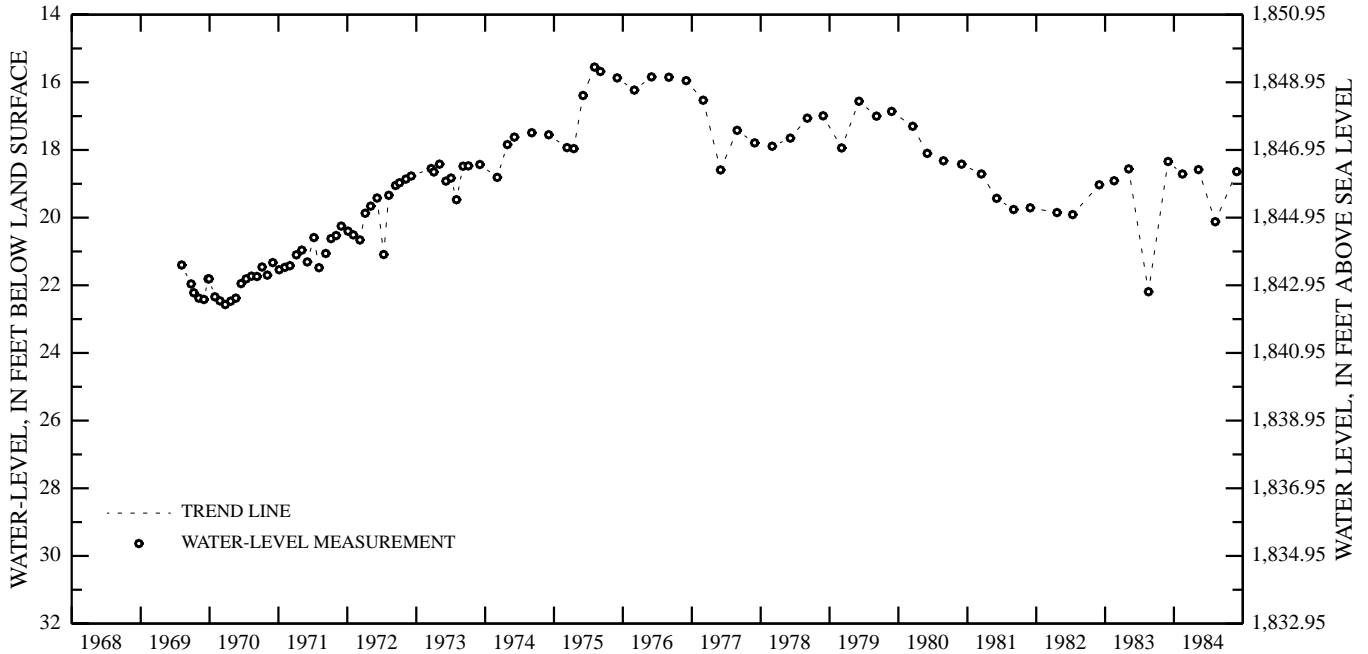
PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.55 ft below land-surface datum, August 4, 1975; lowest water level, 29.69 ft below land-surface datum, May 15, 1993.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

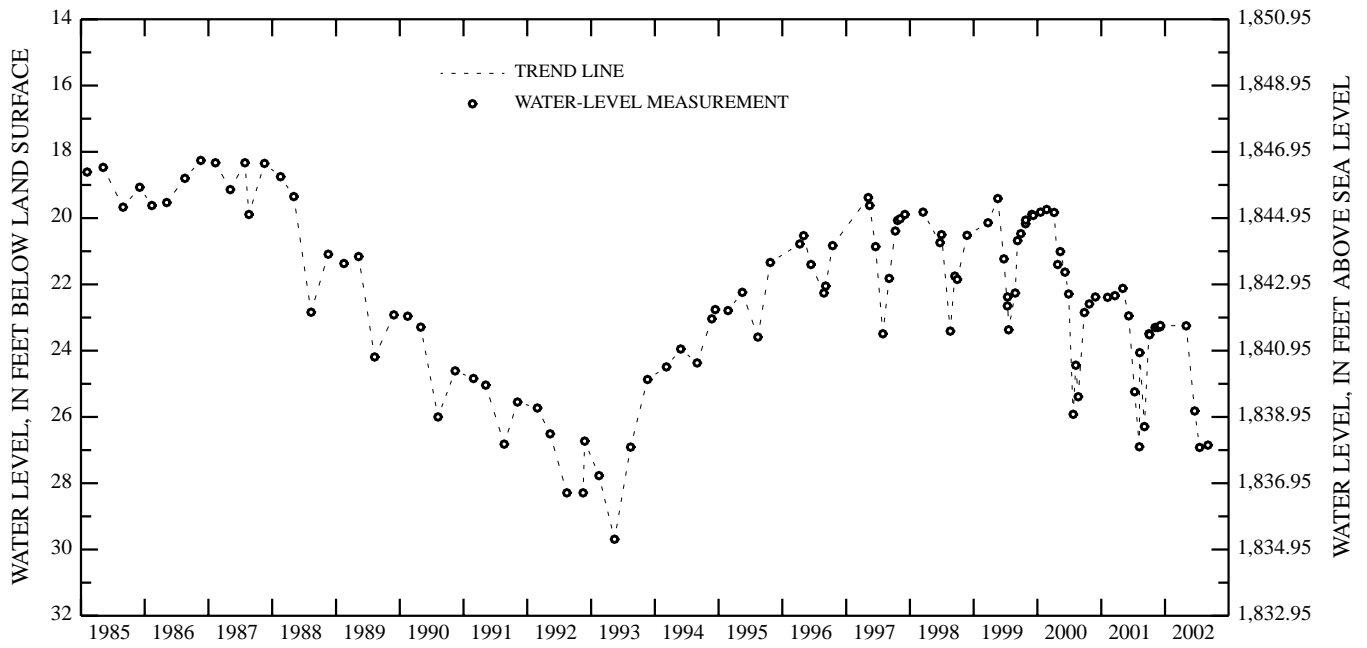
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	23.49	NOV 05	23.30	DEC 04	23.28	MAY 02	23.25	JUL 18	26.92	SEP 04	26.85
OCT 04	23.52	NOV 19	23.30	DEC 05	23.24	JUN 20	25.82				
WATER YEAR 2002		HIGHEST	23.24	DEC 05, 2001		LOWEST	26.92	JUL 18, 2002			

154-096-08AAA



GROUND-WATER LEVELS
WILLIAMS COUNTY--Continued

154-096-08AAA--Continued



WILLIAMS COUNTY--Continued

483016103242801. Local number, 158-099-13DDD.

LOCATION.--Lat 48°30'16", long 103°24'28", Hydrologic Unit 10110102. Owner: North Dakota State Water Commission.

AQUIFER.--Ray.

WELL CHARACTERISTICS.--Drilled observation well, depth 294 ft, cased with 255 ft of 1.25-in diameter plastic pipe, No. 18 slot screen set 255 to 257 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

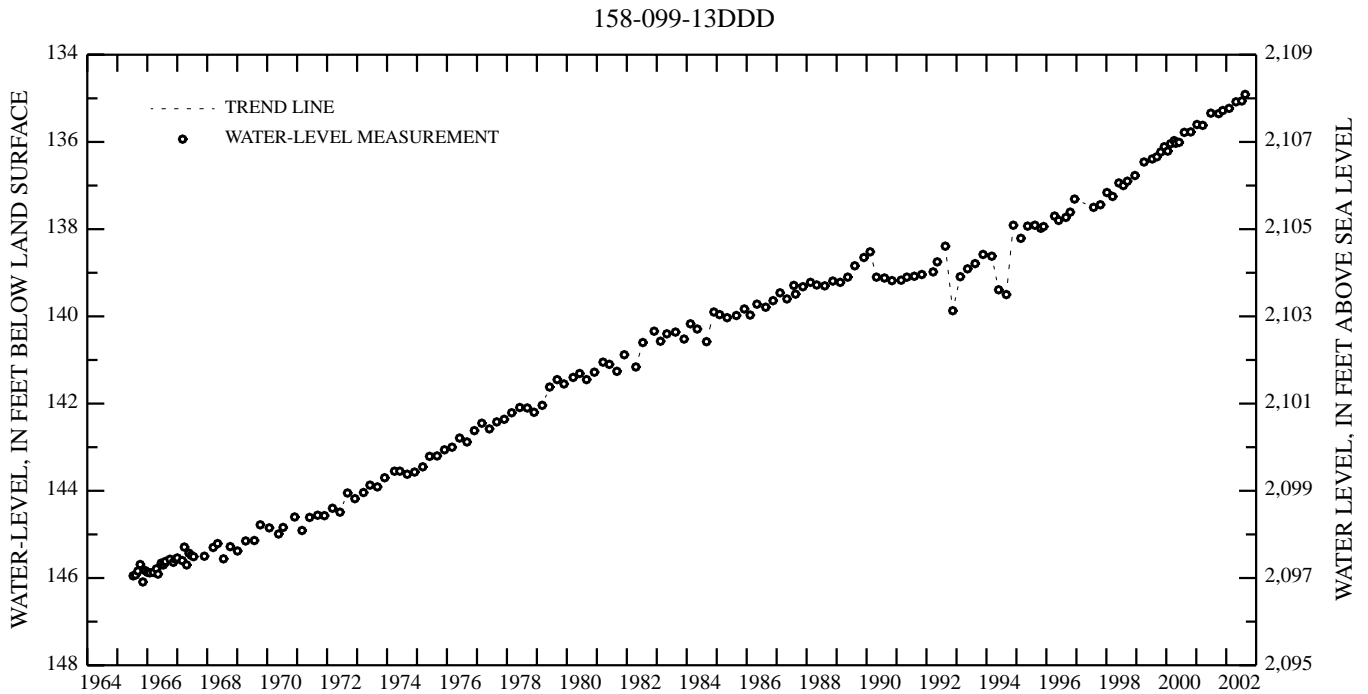
DATUM.--Altitude of land-surface datum is 2,243 ft. Measuring point: Top of casing 1.90 ft above land-surface datum.

PERIOD OF RECORD.--July 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 134.91 ft below land-surface datum, August 19, 2002; lowest water level, 146.09 ft below land-surface datum, November 8, 1965.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	135.35	NOV 19	135.28	FEB 05	135.23	APR 30	135.08	JUL 10	135.06	AUG 19	134.91
WATER YEAR 2002		HIGHEST	134.91	AUG 19, 2002		LOWEST	135.35	OCT 01, 2001			



WILLIAMS COUNTY--Continued

483127103373102. Local number, 158-100-08DAA2.

LOCATION.--Lat 48°31'27", long 103°37'31", Hydrologic Unit 10110102. Owner: North Dakota State Water Commission.

AQUIFER.--Little Muddy.

WELL CHARACTERISTICS.--Drilled observation well, depth 94 ft, cased with 78 ft of 4-in diameter plastic pipe, slotted 68 to 78 ft below land-surface datum.

INSTRUMENTATION.--Water-level recorder. From August 1966 to current year, daily minimum recorded water levels also are available.

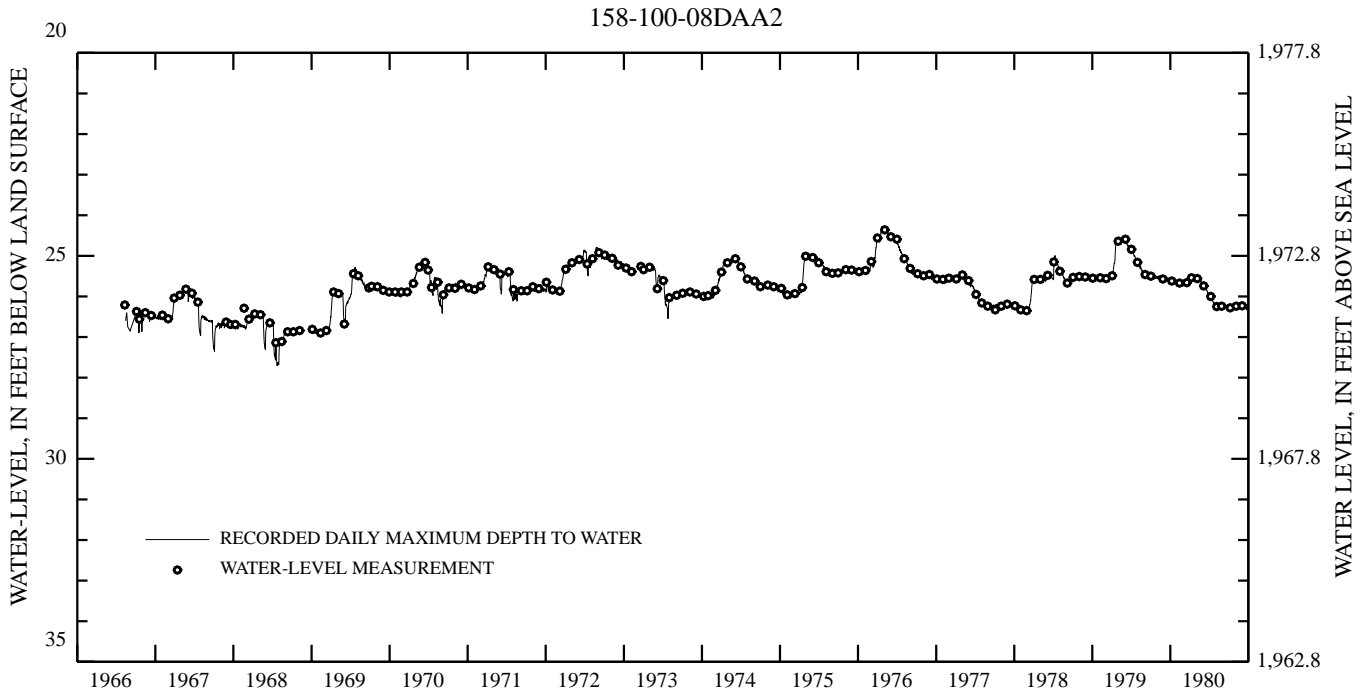
DATUM.--Altitude of land-surface datum is 1,997.8 ft. Measuring point: Top of casing 1.43 ft above land-surface datum.

PERIOD OF RECORD.--August 1966 to current year.

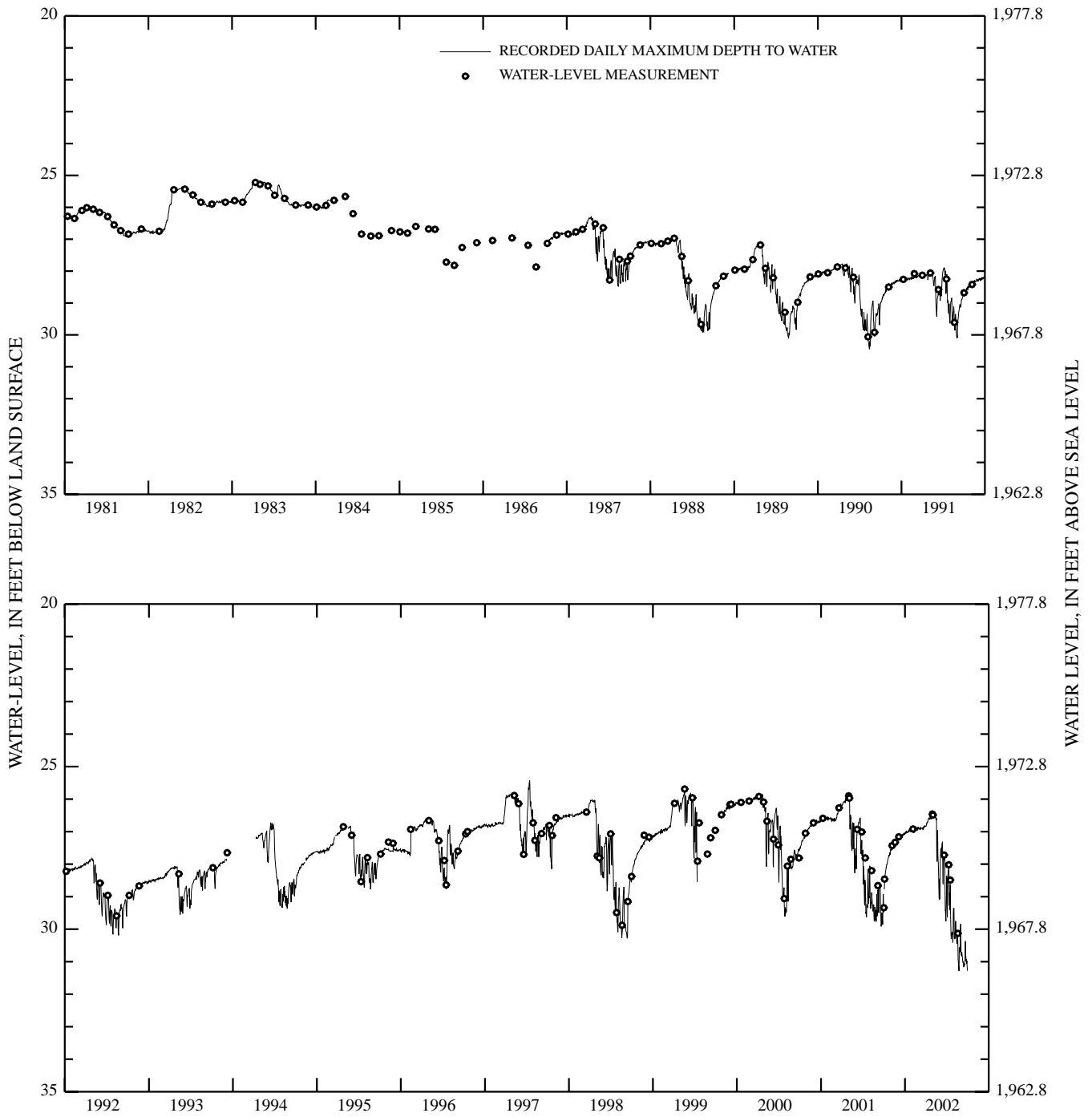
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 24.24 ft below land-surface datum, May 4, 1976; lowest water level, 31.29 ft below land-surface datum, August 24, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.51	27.52	27.20	27.05	26.98	26.92	26.78	26.56	27.65	29.01	30.26	30.71
10	28.17	27.47	27.19	27.03	27.01	26.93	26.70	26.50	27.46	28.02	29.99	31.02
15	28.01	27.38	27.17	27.02	26.94	26.90	26.60	26.61	28.56	29.32	30.45	31.11
20	27.82	27.30	27.15	26.92	26.93	26.94	26.60	27.92	27.82	30.16	30.94	30.41
25	27.75	27.33	27.08	26.96	26.95	26.89	26.61	27.90	29.43	30.08	30.58	30.93
EOM	27.54	27.23	27.06	26.96	26.91	26.83	26.54	28.45	28.99	29.36	29.84	31.28
MAX	28.78	27.58	27.24	27.08	27.04	26.94	26.84	29.08	29.76	30.41	31.29	31.28
MIN	27.54	27.20	27.05	26.92	26.85	26.82	26.53	26.44	27.33	27.96	29.36	30.16
CAL YR 2001	HIGH 25.91	APR 28	LOW 29.91	SEP 19								
WTR YR 2002	HIGH 26.44	MAY 14	LOW 31.29	AUG 24								



158-100-08DAA2--Continued



483700103191501. Local number, 159-098-10AAD.

LOCATION.--Lat 48°37'00", long 103°19'15", Hydrologic Unit 10110102. Owner: North Dakota State Water Commission.

AQUIFER.--West Wildrose.

WELL CHARACTERISTICS.--Drilled observation well, depth 260 ft, cased with 214 ft of 1.25-in diameter plastic pipe, slotted 200 to 214 ft below land-surface datum.

INSTRUMENTATION.--Measured using a steel tape.

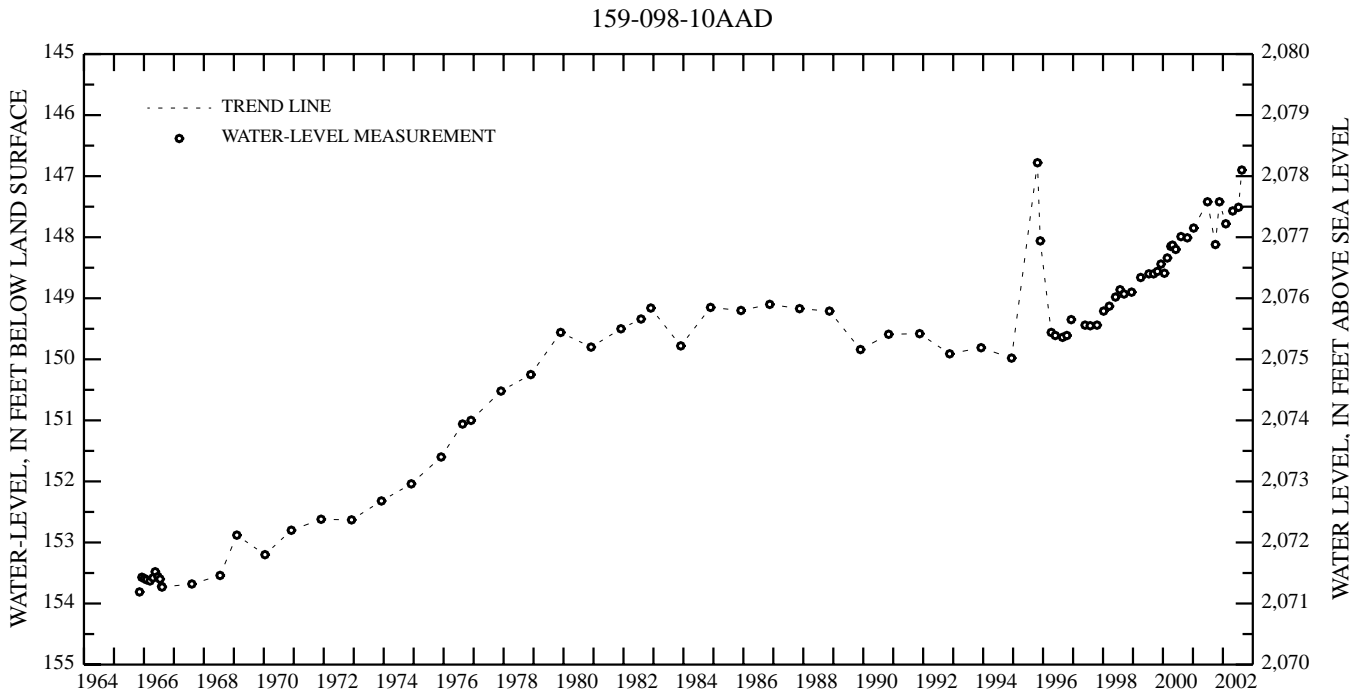
DATUM.--Altitude of land-surface datum is 2,225 ft. Measuring point: Top of casing 3.30 ft below land-surface datum.

PERIOD OF RECORD.--November 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 146.78 ft below land-surface datum, October 25, 1995; lowest water level, 153.81 ft below land-surface datum, November 8, 1965.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	148.12	NOV 19	147.42	FEB 05	147.78	APR 30	147.57	JUL 10	147.51	AUG 19	146.90
WATER YEAR 2002		HIGHEST	146.90	AUG 19, 2002		LOWEST	148.12	OCT 01, 2001			



GROUND-WATER QUALITY

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NETWORK SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

County	Station number	Local ident- ifier	Geo- logic unit	Date	Time	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)
BENSON	475601099264701	151-069-01BBB	112MDCK	10-02-01	1245	103	1330
BENSON	475515099292101	151-069-03CCC	112MDCK	10-02-01	1130	143	1880
BENSON	480958099154801	154-067-15BBB	112SPRD	10-02-01	1600	153	--
BOTTINEAU	483333101135402	159-082-35BBE2	112GLNB	06-18-02	1430	181	2150
CAVALIER	484444098504301	161-063-29BBB	112MNCH	10-03-01	1345	133	1920
DICKEY	460830098224701	131-062-24DDD1	112NRVL	09-25-02	0945	196	1570
DICKEY	460830098224702	131-062-24DDD2	112ELDL	09-25-02	1015	81	1400
DUNN	472144102453402	145-095-22DAD2	112KLDR	06-17-02	1215	160	1450
DUNN	472144102453403	145-095-22DAD3	112KLDR	06-17-02	1300	49	1580
EDDY	473934099032301	148-066-03DDC	112NRKF	09-23-02	1500	218	2300
MCHENRY	480725100373303	154-078-36AAA3	211FXHL	09-17-02	1130	292	4000
MCHENRY	480725100373304	154-078-36AAA4	211HLCK	09-17-02	1215	221	2660
MCHENRY	481948100305901	156-077-13CCB1	112DNBH	09-17-02	1330	126	2340
MCHENRY	481948100305902	156-077-13CCB2	112DNBH	09-17-02	1430	56	460
MCINTOSH	455807099450701	129-072-30BBB	112ZLND	06-13-02	1200	126	817
MCINTOSH	460411099200701	130-069-21BBB1	112SPCK	06-14-02	1030	180	1360
MCINTOSH	460411099200702	130-069-21BBB2	112SPCK	06-14-02	1100	100	1500
MCINTOSH	461446099312802	132-071-14DDD2	112WSHK	06-14-02	1245	41	626
MCKENZIE	474814103104702	150-098-23AAB2	112CRCK	06-17-02	1500	103	--
MCKENZIE	474814103104702	150-098-23AAB2	112CRCK	07-22-02	1900	103	2070
PEMBINA	485425097550502	163-056-29CDD2	112PMBR	10-03-01	1100	25	816
PEMBINA	485425097550502	163-056-29CDD2	112PMBR	05-28-02	1651	25	--
PIERCE	482033099594901	156-073-12CCC	211FXHL	09-17-02	1530	77	--
RAMSEY	480449099002402	153-065-09DDD2	112SPRD	09-24-02	0900	120	950
RAMSEY	480817099013201	154-065-21CCC	112SPRD	09-24-02	1000	133	1560
RENVILLE	484500101294901	161-084-24DDD	211FXHL	06-18-02	1230	488	12700
SHERIDAN	474817100063801	150-074-14CCC	112MRTN	09-23-02	1115	133	1670
STARK	465755102410701	140-095-08AAA	125SNLB	06-17-02	1000	160	1140
TOWNER	484209099174101	160-067-10BBB1	112SPRD	09-18-02	1145	362	2160
TOWNER	484209099174102	160-067-10BBB2	112SPRD	09-18-02	1200	60	1450
TOWNER	485659099222801	163-067-18AAA1	112SPRD	09-08-02	0930	258	3270
WALSH	482449098095801	157-058-18DDD	211PIRR	10-04-01	1330	100	--
WELLS	472329099194401	145-068-10BCC	112PPCK	09-23-02	1330	27	2400

GROUND-WATER QUALITY

NETWORK SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)
151-069-01BBB	10-02-01	1410	7.7	7.7	--	340	252	34.0	61.0	180
151-069-03CCC	10-02-01	1910	8.2	8.2	--	120	456	27.0	12.0	390
154-067-15BBB	10-02-01	2960	7.1	--	--	430	517	110	37.0	530
159-082-35BBB2	06-18-02	2210	7.9	8.1	10.8	220	687	56.0	20.0	400
161-063-29BBB	10-03-01	2010	7.3	--	--	510	590	130	45.0	280
131-062-24DDD1	09-25-02	1600	8.0	8.2	--	330	307	97.0	22.0	210
131-062-24DDD2	09-25-02	1430	8.1	8.0	--	420	349	110	35.0	170
145-095-22DAD2	06-17-02	1480	8.0	8.2	13.0	190	651	44.0	20.0	280
145-095-22DAD3	06-17-02	1600	8.0	8.2	11.3	260	605	53.0	32.0	280
148-066-03DDC	09-23-02	2180	8.2	8.2	--	210	669	56.0	17.0	440
154-078-36AAA3	09-17-02	3740	8.6	8.6	--	31	689	9.00	2.00	860
154-078-36AAA4	09-17-02	2280	8.8	8.6	--	21	741	5.00	2.00	560
156-077-13CCB1	09-17-02	2340	8.4	8.4	10.0	58	449	15.0	5.00	520
156-077-13CCB2	09-17-02	451	8.0	8.0	10.0	230	235	71.0	14.0	7.50
129-072-30BBB	06-13-02	792	8.3	8.2	10.2	230	350	58.0	21.0	93.0
130-069-21BBB1	06-14-02	1330	8.2	8.1	10.5	370	381	89.0	37.0	150
130-069-21BBB2	06-14-02	1480	7.8	7.9	11.3	630	338	160	55.0	110
132-071-14DDD2	06-14-02	634	8.0	8.0	15.5	320	260	91.0	22.0	6.00
150-098-23AAB2	06-17-02	2230	--	8.3	--	110	1010	25.0	11.0	520
150-098-23AAB2	07-22-02	2180	--	8.2	--	110	1010	25.0	11.0	550
163-056-29CDD2	10-03-01	833	8.4	--	--	470	334	130	35.0	14.0
163-056-29CDD2	05-28-02	874	--	7.7	--	470	392	130	36.0	14.0
156-073-12CCC	09-17-02	1340	8.8	8.7	10.0	12	610	3.00	1.00	340
153-065-09DDD2	09-24-02	--	8.2	8.1	--	600	407	120	72.0	140
154-065-21CCC	09-24-02	1660	7.7	7.8	--	770	451	180	79.0	120
161-084-24DDD	06-18-02	12500	7.5	7.8	11.0	270	186	75.0	20.0	2600
150-074-14CCC	09-23-02	1620	8.4	8.2	--	240	281	26.0	43.0	280
140-095-08AAA	06-17-02	1140	7.4	--	--	270	266	150	38.0	44.0
160-067-10BBB1	09-18-02	2040	8.4	--	9.0	690	471	120	94.0	240
160-067-10BBB2	09-18-02	1300	8.2	--	11.0	800	418	190	79.0	28.0
163-067-18AAA1	09-08-02	3250	9.1	--	8.5	290	275	47.0	43.0	670
157-058-18DDD	10-04-01	3280	7.6	7.8	--	570	426	130	60.0	580
145-068-10BCC	09-23-02	2240	8.1	7.7	--	980	331	230	99.0	200

GROUND-WATER QUALITY

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NETWORK SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
151-069-01BBB	10-02-01	52	4	19.0	450	48.0	.10	971	2.0	2700
151-069-03CCC	10-02-01	87	15	11.0	460	86.0	.40	1260	2.0	700
154-067-15BBB	10-02-01	72	11	16.0	880	200	.20	2120	12.0	14000
159-082-35BBB2	06-18-02	79	12	11.0	.4	340	.60	1310	4	50
161-063-29BBB	10-03-01	54	5	14.0	580	26.0	.20	1320	31.0	1700
131-062-24DDD1	09-25-02	56	5	17.0	140	290	.30	992	15.0	200
131-062-24DDD2	09-25-02	46	4	16.0	450	16.0	.20	1030	<1.0	810
145-095-22DAD2	06-17-02	75	9	8.80	200	<.3	.50	944	7.0	130
145-095-22DAD3	06-17-02	69	8	6.10	310	8.9	.60	1050	<1.0	30
148-066-03DDC	09-23-02	81	13	14.0	410	98.0	.20	1440	13.0	150
154-078-36AAA3	09-17-02	98	67	5.30	2.5	900	.50	2210	<1.0	90
154-078-36AAA4	09-17-02	98	53	3.60	6.6	360	.10	1390	3.0	210
156-077-13CCB1	09-17-02	95	30	5.50	3.3	540	.10	1330	13.0	250
156-077-13CCB2	09-17-02	7	.2	1.80	15.0	<.3	.10	237	16.0	1600
129-072-30BBB	06-13-02	45	3	9.50	84.0	9.0	.40	468	<1.0	20
130-069-21BBB1	06-14-02	46	3	13.0	280	48.0	.30	847	2.0	70
130-069-21BBB2	06-14-02	27	2	8.80	470	23.0	.30	1070	<1.0	270
132-071-14DDD2	06-14-02	4	.1	4.30	63.0	9.0	.10	384	<1.0	10
150-098-23AAB2	06-17-02	91	22	6.00	270	<.3	3.70	1420	<1.0	750
150-098-23AAB2	07-22-02	91	23	6.00	270	<.3	3.30	1500	--	820
163-056-29CDD2	10-03-01	6	.3	2.50	95.0	18.0	.30	383	2.0	80
163-056-29CDD2	05-28-02	6	.3	2.20	98.0	17.0	.30	551	--	1100
156-073-12CCC	09-17-02	98	43	3.30	130	28.0	.80	921	1.0	110
153-065-09DDD2	09-24-02	33	2	15.0	430	11.0	.10	1070	4.0	50
154-065-21CCC	09-24-02	25	2	14.0	580	13.0	.10	1270	2.0	2200
161-084-24DDD	06-18-02	95	69	11.0	3.3	3900	.20	7350	<1.0	1400
150-074-14CCC	09-23-02	70	8	12.0	560	27.0	.20	1160	<1.0	80
140-095-08AAA	06-17-02	15	.8	5.00	370	8.8	.10	862	1.0	1400
160-067-10BBB1	09-18-02	42	4	18.0	720	39.0	.10	1510	1.0	100
160-067-10BBB2	09-18-02	7	.4	3.10	410	4.4	.40	944	<1.0	140
163-067-18AAA1	09-08-02	82	82	23.0	1100	280	.20	2320	1.0	90
157-058-18DDD	10-04-01	68	11	20.0	1400	72.0	.20	2580	5.0	50
145-068-10BCC	09-23-02	30	3	11.0	1000	35.0	.10	1900	1.0	160

GROUND-WATER QUALITY

NETWORK SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
151-069-01BBB	10-02-01	180	150	<.10	2	3	230
151-069-03CCC	10-02-01	310	120	<.10	11	4	210
154-067-15BBB	10-02-01	410	270	<.10	5	6	800
159-082-35BBB2	06-18-02	90	40	<.10	16	<1	570
161-063-29BBB	10-03-01	330	170	<.10	6	3	810
131-062-24DDD1	09-25-02	760	140	.20	8	<1	680
131-062-24DDD2	09-25-02	1000	160	.10	10	<1	760
145-095-22DAD2	06-17-02	190	30	<.10	12	<1	670
145-095-22DAD3	06-17-02	240	30	.10	7	1	570
148-066-03DDC	09-23-02	760	140	.10	2	<1	440
154-078-36AAA3	09-17-02	20	130	.10	1	<1	240
154-078-36AAA4	09-17-02	30	90	.10	9	<1	160
156-077-13CCB1	09-17-02	30	80	<.10	50	<1	290
156-077-13CCB2	09-17-02	220	10	.10	4	1	160
129-072-30BBB	06-13-02	950	100	<.10	11	<1	410
130-069-21BBB1	06-14-02	670	150	.10	5	<1	680
130-069-21BBB2	06-14-02	970	150	<.10	4	<1	930
132-071-14DDD2	06-14-02	1200	20	.10	3	<1	410
150-098-23AAB2	06-17-02	30	40	<.10	16	<1	440
150-098-23AAB2	07-22-02	50	--	--	--	--	--
163-056-29CDD2	10-03-01	220	100	<.10	12	3	580
163-056-29CDD2	05-28-02	330	--	--	--	--	--
156-073-12CCC	09-17-02	20	80	<.10	7	<1	110
153-065-09DDD2	09-24-02	150	160	<.10	1	<1	880
154-065-21CCC	09-24-02	370	190	.20	1	<1	1200
161-084-24DDD	06-18-02	70	310	<.10	2	1	2600
150-074-14CCC	09-23-02	70	130	.20	1	<1	580
140-095-08AAA	06-17-02	680	20	<.10	4	<1	990
160-067-10BBB1	09-18-02	250	190	<.10	2	<1	940
160-067-10BBB2	09-18-02	10	100	.10	7	1	720
163-067-18AAA1	09-08-02	60	290	<.10	6	<1	580
157-058-18DDD	10-04-01	1400	150	<.10	2	3	1200
145-068-10BCC	09-23-02	40	100	<.10	<1	2	840

< Less than

GROUND-WATER QUALITY

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SHEYENNE DELTA SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Station number	Local identifier	Date	Time	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	PH WATER WHOLE FIELD (STAND-ARD) (UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD) (UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (00095)
462211097103401	133-052-01BBB1	08-13-02	1000	8.01	15.97	7.4	7.9	297	305
462117097130401	133-052-03CCC1	08-13-02	1200	5.15	12.18	7.6	7.5	484	498
461934097173001	133-053-13DCC1	08-13-02	1345	6.51	11.31	7.3	7.4	1070	1130
462447097142101	134-052-17DDD1	08-13-02	1515	6.72	11.39	7.2	--	--	490
462259097124001	134-052-34BABA	08-26-02	1415	8.85	23.63	7.6	--	--	510
462628097180701	134-053-11AAA1	08-13-02	1650	7.75	16.05	7.3	--	--	433
462356097215001	134-053-21CCC1	08-14-02	1000	6.86	11.55	7.7	--	--	480
462214097215101	134-053-32DDD1	08-14-02	1115	7.04	11.19	7.5	7.7	457	470
462248097185004	134-053-35BDAB4	08-26-02	1230	5.39	13.53	7.6	--	--	430
462651097243901	134-054-01DACB	08-27-02	0845	6.06	21.76	7.6	--	--	480
462627097281001	134-054-04AAA1	08-14-02	1330	8.76	15.43	7.5	7.6	491	515
462627097281001	134-054-04AAA1	08-27-02	0920	--	15.43	--	--	--	--
462540097265501	134-054-14BBB1	08-14-02	1430	6.65	12.08	7.3	7.5	593	627
462355097280701	134-054-27BBB1	08-14-02	1545	6.32	10.79	7.3	7.4	837	891
463124097121101	135-052-10ACDA1	08-15-02	1030	4.51	7.78	6.8	7.0	743	764
462907097142201	135-052-20DDD1	08-15-02	1200	7.15	11.88	7.4	--	--	743
462908097215101	135-053-28BBB1	08-26-02	1530	6.04	11.39	7.4	--	--	680
462828097242301	135-053-30CCBB2	08-27-02	1100	7.91	22.94	7.2	--	--	560
462748097203501	135-053-34CBB1	08-26-02	1500	8.27	11.98	7.6	--	--	370
463147097253701	135-054-01CCC1	08-27-02	1200	5.00	10.51	7.7	7.3	366	380
463419097185001	136-053-26BAB1	08-27-02	1300	6.18	10.66	7.8	7.5	452	470

Local identifier	Date	TEMPER-ATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L) (00935)	SODIUM, DIS-SOLVED (MG/L) (00930)	UNFLTRD TIT 4.5 LAB (MG/L) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L) (00955)
133-052-01BBB1	08-13-02	11.5	40.6	13.7	.23	2.42	152	1.83	.2	23.6
133-052-03CCC1	08-13-02	12.0	60.8	23.0	1.95	12.4	262	1.71	.8	27.2
133-053-13DCC1	08-13-02	12.5	81.9	63.8	5.64	65.4	493	17.3	.4	26.1
134-052-17DDD1	08-13-02	12.0	--	--	--	--	--	--	--	--
134-052-34BABA	08-26-02	11.5	--	--	--	--	--	--	--	--
134-053-11AAA1	08-13-02	13.0	--	--	--	--	--	--	--	--
134-053-21CCC1	08-14-02	12.0	--	--	--	--	--	--	--	--
134-053-32DDD1	08-14-02	13.5	77.2	14.8	.32	3.60	260	1.54	.2	25.2
134-053-35BDAB4	08-26-02	13.5	--	--	--	--	--	--	--	--
134-054-01DACB	08-27-02	11.0	--	--	--	--	--	--	--	--
134-054-04AAA1	08-14-02	12.0	71.4	19.8	1.46	1.67	229	.44	.1	22.8
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	12.7	79.4	26.1	10.5	8.05	322	4.40	.4	27.5
134-054-27BBB1	08-14-02	12.4	109	39.9	3.66	19.8	295	33.0	.2	28.4
135-052-10ACDA1	08-15-02	15.0	105	38.6	2.46	2.75	451	2.28	.2	34.7
135-052-20DDD1	08-15-02	12.5	--	--	--	--	--	--	--	--
135-053-28BBB1	08-26-02	14.5	--	--	--	--	--	--	--	--
135-053-30CCBB2	08-27-02	10.0	--	--	--	--	--	--	--	--
135-053-34CBB1	08-26-02	15.5	--	--	--	--	--	--	--	--
135-054-01CCC1	08-27-02	13.0	59.4	11.8	.43	2.31	188	1.03	.2	26.1
136-053-26BAB1	08-27-02	14.5	75.8	15.6	.20	1.32	208	1.05	.2	16.1

GROUND-WATER QUALITY

SHEYENNE DELTA SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	SULFATE	SOLIDS, RESIDUE AT 180	NITRO- GEN, AMMONIA	NITRO- GEN,AM- MONIA + ORGANIC	NITRO- GEN, NO2+NO3	NITRO- GEN, NITRITE	ORTHO- PHOS- PHATE, DIS-	PHOS- PHORUS TOTAL	IRON, DIS- SOLVED
		DIS- SOLVED (MG/L AS SO4) (00945)	DEG. C SOLVED (MG/L) (70300)	DIS- SOLVED (MG/L AS N) (00608)	TOTAL (MG/L AS N) (00625)	DIS- SOLVED (MG/L AS N) (00631)	DIS- SOLVED (MG/L AS N) (00613)	DIS- SOLVED (MG/L AS P) (00671)	(MG/L AS P) (00665)	(UG/L AS FE) (01046)
133-052-01BBB1	08-13-02	4.0	193	<.04	E.07	1.70	.016	E.01	<.06	<10
133-052-03CCC1	08-13-02	16.6	306	<.04	.12	<.05	<.008	<.02	E.06	1050
133-053-13DCC1	08-13-02	142	739	.05	.42	<.05	<.008	<.02	<.06	499
134-052-17DDD1	08-13-02	--	--	--	--	--	--	--	--	--
134-052-34BABA	08-26-02	--	--	--	--	--	--	--	--	--
134-053-11AAA1	08-13-02	--	--	--	--	--	--	--	--	--
134-053-21CCC1	08-14-02	--	--	--	--	--	--	--	--	--
134-053-32DDD1	08-14-02	3.9	285	<.04	E.09	<.05	<.008	E.01	<.06	12
134-053-35BDAB4	08-26-02	--	--	--	--	--	--	--	--	--
134-054-01DACB	08-27-02	--	--	--	--	--	--	--	--	--
134-054-04AAA1	08-14-02	21.5	315	--	--	--	--	--	--	<10
134-054-04AAA1	08-27-02	--	--	<.04	--	6.13	.028	<.02	--	--
134-054-14BBB1	08-14-02	20.9	384	<.04	.27	<.05	<.008	<.02	E.05	2640
134-054-27BBB1	08-14-02	148	602	.07	.25	<.05	<.008	<.02	E.04	1920
135-052-10ACDA1	08-15-02	.8	490	E.03	1.0	<.05	<.008	.04	E.05	<10
135-052-20DDD1	08-15-02	--	--	--	--	--	--	--	--	--
135-053-28BBB1	08-26-02	--	--	--	--	--	--	--	--	--
135-053-30CCBB2	08-27-02	--	--	--	--	--	--	--	--	--
135-053-34CBB1	08-26-02	--	--	--	--	--	--	--	--	--
135-054-01CCC1	08-27-02	13.4	241	<.04	E.09	<.05	<.008	.08	.09	53
136-053-26BAB1	08-27-02	2.2	275	<.04	.14	E.03	<.008	<.02	<.06	E9
Local ident- i- fier	Date	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	2,4,5-T SURROG WATER FLTRD REC PERCENT (99958)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI- ETHYL ANILINE WAT FLT GF, REC (UG/L) (82660)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO- FURAN WATER FLTRD REC (UG/L) (50295)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)
		133-052-01BBB1	08-13-02	23.4	74.1	<.009	<.02	<.02	<.006	<.006
133-052-03CCC1	08-13-02	625	71.3	<.009	<.02	<.02	<.006	<.006	<2	<.006
133-053-13DCC1	08-13-02	548	43.7	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-052-17DDD1	08-13-02	--	69.4	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-052-34BABA	08-26-02	--	65.9	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-053-11AAA1	08-13-02	--	40.1	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-053-21CCC1	08-14-02	--	71.6	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-053-32DDD1	08-14-02	217	72.8	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-053-35BDAB4	08-26-02	--	--	--	--	--	<.006	--	--	<.006
134-054-01DACB	08-27-02	--	63.3	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-054-04AAA1	08-14-02	310	84.5	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	819	74.8	<.009	<.02	<.02	<.006	<.006	<2	<.006
134-054-27BBB1	08-14-02	645	67.9	<.009	<.02	<.02	<.006	<.006	<2	<.006
135-052-10ACDA1	08-15-02	369	75.8	<.009	<.02	<.02	<.006	<.006	<2	<.006
135-052-20DDD1	08-15-02	--	74.2	<.009	<.02	<.02	<.006	<.006	<2	<.006
135-053-28BBB1	08-26-02	--	60.0	E.021	<.02	<.02	<.006	<.006	<2	<.006
135-053-30CCBB2	08-27-02	--	86.1	<.009	<.02	<.02	<.006	<.006	<2	<.006
135-053-34CBB1	08-26-02	--	64.1	<.009	<.02	<.02	<.006	<.006	<2	<.006
135-054-01CCC1	08-27-02	225	67.1	<.009	<.02	<.02	<.006	<.006	<2	<.006
136-053-26BAB1	08-27-02	20.0	67.0	<.009	.03	<.02	<.006	<.006	<2	<.006

GROUND-WATER QUALITY

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SHEYENNE DELTA SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	ACIFL-	ALA-	ALDI-	ALDICA-	ALDI-	ALPHA BHC DIS-	ATRA-	BARBAN	BENDIO-
		UORFEN WATER, FLTRD, GF 0.7U REC (49315)	CHLOR, WATER, DISS, REC (46342)	CARB SULFONE WAT,FLT GF 0.7U REC (49313)	RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (49314)	CARB, WATER, FLTRD, GF 0.7U REC (49312)		SOLVED (34253)	ZINE, WATER, DISS, REC (39632)	SURROG- ATE WTR FLT SCD 2060, 9060 RE PERCENT (90640)
133-052-01BBB1	08-13-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	108	<.03
133-052-03CCC1	08-13-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	112	<.03
133-053-13DCC1	08-13-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	E139	<.03
134-052-17DDD1	08-13-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	80.4	<.03
134-052-34BABA	08-26-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	93.4	<.03
134-053-11AAA1	08-13-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	88.7	<.03
134-053-21CCC1	08-14-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	106	<.03
134-053-32DDD1	08-14-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	112	<.03
134-053-35BDAB4	08-26-02	--	<.004	--	--	--	<.005	<.007	--	--
134-054-01DACB	08-27-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	102	<.03
134-054-04AAA1	08-14-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	151	<.03
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	122	<.03
134-054-27BBB1	08-14-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	110	<.03
135-052-10ACDA1	08-15-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	E230	<.03
135-052-20DDD1	08-15-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	135	<.03
135-053-28BBB1	08-26-02	<.007	<.004	<.02	<.008	<.04	<.005	E.004	110	<.03
135-053-30CCBB2	08-27-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	118	<.03
135-053-34CBB1	08-26-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	119	<.03
135-054-01CCC1	08-27-02	<.007	<.004	<.02	<.008	<.04	<.005	E.004	106	<.03
136-053-26BAB1	08-27-02	<.007	<.004	<.02	<.008	<.04	<.005	<.007	103	<.03
Local ident- i- fier	Date	BEN-	BEN-	BENTA-	BRO-	BRO-	BUTYL-	CAF-	CAF-	
		FLUR- ALIN WAT FLD 0.7 U GF, REC (82673)	NOMYL WATER FLTRD REC (50300)	SUL- FURON METHYL WAT FLT REC (61693)		ZON, WATER, FLTRD, GF 0.7U REC (38711)	MACIL, WATER, DISS, REC (04029)	MOXYNIL WATER, FLTRD, GF 0.7U REC (49311)	ATE, WATER, DISS, REC (04028)	FEINE, WATER FLTRD REC (50305)
133-052-01BBB1	08-13-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	80.2
133-052-03CCC1	08-13-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	76.1
133-053-13DCC1	08-13-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	E81.5
134-052-17DDD1	08-13-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	85.9
134-052-34BABA	08-26-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	71.4
134-053-11AAA1	08-13-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	.017	80.5
134-053-21CCC1	08-14-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	76.8
134-053-32DDD1	08-14-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	81.4
134-053-35BDAB4	08-26-02	<.010	--	--	--	--	<.002	<.002	--	--
134-054-01DACB	08-27-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	61.1
134-054-04AAA1	08-14-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	E.006	113
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	73.0
134-054-27BBB1	08-14-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	64.8
135-052-10ACDA1	08-15-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	E104
135-052-20DDD1	08-15-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	E.005	76.1
135-053-28BBB1	08-26-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	70.9
135-053-30CCBB2	08-27-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	60.7
135-053-34CBB1	08-26-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	65.3
135-054-01CCC1	08-27-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	76.1
136-053-26BAB1	08-27-02	<.010	<.004	<.02	<.01	<.03	<.02	<.002	<.010	62.6

GROUND-WATER QUALITY

SHEYENNE DELTA SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	CAR- BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO- FURAN, WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORI- MURON, WATER FLTRD (UG/L) (50306)	CHLORO- THALO- NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)
		133-052-01BBB1	08-13-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04
133-052-03CCC1	08-13-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
133-053-13DCC1	08-13-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-052-17DDD1	08-13-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-052-34BABA	08-26-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-053-11AAA1	08-13-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-053-21CCC1	08-14-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-053-32DDD1	08-14-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-053-35BDAB4	08-26-02	--	<.041	--	<.020	--	--	--	<.005	--
134-054-01DACB	08-27-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-054-04AAA1	08-14-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
134-054-27BBB1	08-14-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
135-052-10ACDA1	08-15-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
135-052-20DDD1	08-15-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
135-053-28BBB1	08-26-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
135-053-30CCBB2	08-27-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
135-053-34CBB1	08-26-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
135-054-01CCC1	08-27-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
136-053-26BAB1	08-27-02	<.03	<.041	<.006	<.020	<.02	<.010	<.04	<.005	<.01
Local ident- i- fier	Date	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	CY- CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO- ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO- PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO- PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DIAZ- INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI- AZINON, DIS- SOLVED (UG/L) (39572)
133-052-01BBB1	08-13-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	107	<.005
133-052-03CCC1	08-13-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	108	<.005
133-053-13DCC1	08-13-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	104	<.005
134-052-17DDD1	08-13-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	112	<.005
134-052-34BABA	08-26-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	103	<.005
134-053-11AAA1	08-13-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	107	<.005
134-053-21CCC1	08-14-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	110	<.005
134-053-32DDD1	08-14-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	105	<.005
134-053-35BDAB4	08-26-02	<.018	--	--	<.003	<.006	--	--	110	<.005
134-054-01DACB	08-27-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	104	<.005
134-054-04AAA1	08-14-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	95.5	<.005
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	109	<.005
134-054-27BBB1	08-14-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	107	<.005
135-052-10ACDA1	08-15-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	93.7	<.005
135-052-20DDD1	08-15-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	93.3	<.005
135-053-28BBB1	08-26-02	<.018	<.01	<.01	<.003	E.005	<.01	<.04	110	<.005
135-053-30CCBB2	08-27-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	113	<.005
135-053-34CBB1	08-26-02	<.018	<.01	<.01	<.003	E.004	<.01	<.04	101	<.005
135-054-01CCC1	08-27-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	87.2	<.005
136-053-26BAB1	08-27-02	<.018	<.01	<.01	<.003	<.006	<.01	<.04	95.9	<.005

GROUND-WATER QUALITY

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SHEYENNE DELTA SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	DICAMBA	DICHLOR		DINOSEB	DIPHEN-	DISUL-	DIURON,	EPTC	ETHAL-
		WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	AMID, WATER, DISS, REC (UG/L) (04033)	FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
133-052-01BBB1	08-13-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
133-052-03CCCL1	08-13-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
133-053-13DCC1	08-13-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-052-17DDD1	08-13-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-052-34BABA	08-26-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-053-11AAA1	08-13-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-053-21CCCL1	08-14-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-053-32DDD1	08-14-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-053-35BDAB4	08-26-02	--	--	<.005	--	--	<.02	--	<.002	<.009
134-054-01DACB	08-27-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-054-04AAA1	08-14-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
134-054-27BBB1	08-14-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
135-052-10ACDA1	08-15-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
135-052-20DDD1	08-15-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
135-053-28BBB1	08-26-02	<.01	<.01	<.005	<.01	<.03	<.02	E.01	<.002	<.009
135-053-30CCBB2	08-27-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
135-053-34CBB1	08-26-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
135-054-01CCCL1	08-27-02	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009
136-053-26BAB1	08-27-02	<.01	<.01	<.005	<.01	<.03	<.02	E.01	<.002	<.009
Local ident- i- fier	Date	ETHO-	FEN-	FLUMET-	FLUO-		HCH	HYDROXY	IMAZ-	IMAZE-
		PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	SULAM WATER FLTRD REC (UG/L) (61694)	METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	ATRA- ZINE WATER FLTRD REC (UG/L) (50355)	AQUIN WATER FLTRD REC (UG/L) (50356)	THAPYR WATER FLTRD REC (UG/L) (50407)
133-052-01BBB1	08-13-02	<.005	<.03	<.01	<.03	<.003	95.2	<.008	<.02	<.02
133-052-03CCCL1	08-13-02	<.005	<.03	<.01	<.03	<.003	97.7	<.008	<.02	<.02
133-053-13DCC1	08-13-02	<.005	<.03	<.01	<.03	<.003	89.4	<.008	<.02	<.02
134-052-17DDD1	08-13-02	<.005	<.03	<.01	<.03	<.003	95.1	<.008	<.02	<.02
134-052-34BABA	08-26-02	<.005	<.03	<.01	<.03	<.003	104	<.008	<.02	<.02
134-053-11AAA1	08-13-02	<.005	<.03	<.01	<.03	<.003	96.7	<.008	<.02	<.02
134-053-21CCCL1	08-14-02	<.005	<.03	<.01	<.03	<.003	95.3	<.008	<.02	<.02
134-053-32DDD1	08-14-02	<.005	<.03	<.01	<.03	<.003	94.4	<.008	<.02	<.02
134-053-35BDAB4	08-26-02	<.005	--	--	--	<.003	110	--	--	--
134-054-01DACB	08-27-02	<.005	<.03	<.01	<.03	<.003	106	<.008	<.02	<.02
134-054-04AAA1	08-14-02	<.005	<.03	<.01	<.03	<.003	106	<.008	<.02	<.02
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.005	<.03	<.01	<.03	<.003	94.5	<.008	<.02	<.02
134-054-27BBB1	08-14-02	<.005	<.03	<.01	<.03	<.003	93.2	<.008	<.02	<.02
135-052-10ACDA1	08-15-02	<.005	<.03	<.01	<.03	<.003	101	<.008	<.02	<.02
135-052-20DDD1	08-15-02	<.005	<.03	<.01	<.03	<.003	100	<.008	<.02	<.02
135-053-28BBB1	08-26-02	<.005	<.03	<.01	<.03	<.003	109	<.008	<.02	<.02
135-053-30CCBB2	08-27-02	<.005	<.03	<.01	<.03	<.003	111	<.008	<.02	<.02
135-053-34CBB1	08-26-02	<.005	<.03	<.01	<.03	<.003	104	<.008	<.02	<.02
135-054-01CCCL1	08-27-02	<.005	<.03	<.01	<.03	<.003	95.6	<.008	<.02	<.02
136-053-26BAB1	08-27-02	<.005	<.03	<.01	<.03	<.003	92.6	<.008	<.02	<.02

GROUND-WATER QUALITY

SHEYENNE DELTA SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	IMID- ACLOP- RID WATER	LINDANE DIS- SOLVED	LINURON WATER, FLTRD, GF 0.7U	LIN- URON WATER FLTRD 0.7 U	MALA- THION, DIS- SOLVED	MCPA, WATER, FLTRD, GF 0.7U	MCPB, WATER, FLTRD, GF 0.7U	METAL- AXYL WATER FLTRD	METHIO- CARB, WATER, FLTRD, GF 0.7U
		REC (UG/L) (61695)	REC (UG/L) (39341)	REC (UG/L) (38478)	GF, REC (UG/L) (82666)	GF, REC (UG/L) (39532)	REC (UG/L) (38482)	REC (UG/L) (38487)	REC (UG/L) (50359)	REC (UG/L) (38501)
133-052-01BBB1	08-13-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
133-052-03CCC1	08-13-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
133-053-13DCC1	08-13-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-052-17DDD1	08-13-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-052-34BABA	08-26-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-053-11AAA1	08-13-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-053-21CCC1	08-14-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-053-32DDD1	08-14-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-053-35BDAB4	08-26-02	--	<.004	--	<.035	<.027	--	--	--	--
134-054-01DACB	08-27-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-054-04AAA1	08-14-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
134-054-27BBB1	08-14-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
135-052-10ACDA1	08-15-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
135-052-20DDD1	08-15-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
135-053-28BBB1	08-26-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
135-053-30CCBB2	08-27-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
135-053-34CBB1	08-26-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
135-054-01CCC1	08-27-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
136-053-26BAB1	08-27-02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
Local ident- i- fier	Date	METH- OMYL, WATER, FLTRD, GF 0.7U	METHYL AZIN- PHOS WAT FLT 0.7 U	METHYL PARA- THION WAT FLT 0.7 U	METO- LACHLOR WATER DISSOLV	METRI- BUZIN WATER DISSOLV	MET- SUL- FURON METHYL WAT FLT	MOL- INATE WATER FLTRD 0.7 U	NAPROP- AMIDE WATER FLTRD 0.7 U	NEB- URON, WATER, FLTRD, GF 0.7U
		REC (UG/L) (49296)	GF, REC (UG/L) (82686)	GF, REC (UG/L) (82667)	DISSOLV (UG/L) (39415)	DISSOLV (UG/L) (82630)	REC (UG/L) (61697)	GF, REC (UG/L) (82671)	GF, REC (UG/L) (82684)	REC (UG/L) (49294)
133-052-01BBB1	08-13-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
133-052-03CCC1	08-13-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
133-053-13DCC1	08-13-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-052-17DDD1	08-13-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-052-34BABA	08-26-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-053-11AAA1	08-13-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-053-21CCC1	08-14-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-053-32DDD1	08-14-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-053-35BDAB4	08-26-02	--	<.050	<.006	<.013	<.006	--	<.002	<.007	--
134-054-01DACB	08-27-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-054-04AAA1	08-14-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
134-054-27BBB1	08-14-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
135-052-10ACDA1	08-15-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
135-052-20DDD1	08-15-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
135-053-28BBB1	08-26-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
135-053-30CCBB2	08-27-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
135-053-34CBB1	08-26-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
135-054-01CCC1	08-27-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01
136-053-26BAB1	08-27-02	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01

GROUND-WATER QUALITY

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SHEYENNE DELTA SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	NICOSUL	NORFLUR	ORY-	OXAMYL,	P,P' DDE DISSOLV (UG/L) (34653)	PARA-	PEB-	PENDI-	PER-
		FURON WATER FLTRD REC (UG/L) (50364)	AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	WATER, FLTRD, GF 0.7U REC (UG/L) (38866)		THION, DIS- SOLVED (UG/L) (39542)	ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)
133-052-01BBB1	08-13-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
133-052-03CCC1	08-13-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
133-053-13DCC1	08-13-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-052-17DDD1	08-13-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-052-34BABA	08-26-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-053-11AAA1	08-13-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-053-21CCC1	08-14-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-053-32DDD1	08-14-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-053-35BDAB4	08-26-02	--	--	--	--	<.003	<.010	<.004	<.022	<.006
134-054-01DACB	08-27-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-054-04AAA1	08-14-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
134-054-27BBB1	08-14-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
135-052-10ACDA1	08-15-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
135-052-20DDD1	08-15-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
135-053-28BBB1	08-26-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
135-053-30CCBB2	08-27-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
135-053-34CBB1	08-26-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
135-054-01CCC1	08-27-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
136-053-26BAB1	08-27-02	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006
Local ident- i- fier	Date	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO- PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP- ICONA- ZOLE , WATER FLTRD REC (UG/L) (50471)
133-052-01BBB1	08-13-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
133-052-03CCC1	08-13-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
133-053-13DCC1	08-13-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-052-17DDD1	08-13-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-052-34BABA	08-26-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-053-11AAA1	08-13-02	<.011	.46	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-053-21CCC1	08-14-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-053-32DDD1	08-14-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-053-35BDAB4	08-26-02	<.011	--	<.01	<.004	<.010	<.011	<.02	--	--
134-054-01DACB	08-27-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-054-04AAA1	08-14-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
134-054-27BBB1	08-14-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
135-052-10ACDA1	08-15-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
135-052-20DDD1	08-15-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
135-053-28BBB1	08-26-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
135-053-30CCBB2	08-27-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
135-053-34CBB1	08-26-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
135-054-01CCC1	08-27-02	<.011	<.02	<.01	<.004	<.010	<.011	<.02	<.010	<.02
136-053-26BAB1	08-27-02	<.011	E2.09	<.01	<.004	<.010	<.011	<.02	<.010	<.02

GROUND-WATER QUALITY

SHEYENNE DELTA SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	PRO- POXUR, WATER, FLTRD, GF 0.7U	SIDURON WATER FLTRD	SI- MAZINE, WATER, DISS, REC	SULFO- MET- RURON METHYL WTR FLT	TEBU- THIURON WATER FLTRD	TER- BACIL, WATER, DISS, REC	TER- BACIL WATER FLTRD	TER- BUFOS WATER FLTRD	THIO- BENCARB WATER FLTRD
		REC (UG/L) (38538)	REC (UG/L) (38548)	REC (UG/L) (04035)	REC (UG/L) (50337)	GF, REC (UG/L) (82670)	REC (UG/L) (04032)	GF, REC (UG/L) (82665)	GF, REC (UG/L) (82675)	GF, REC (UG/L) (82681)
133-052-01BBB1	08-13-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
133-052-03CCC1	08-13-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
133-053-13DCC1	08-13-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-052-17DDD1	08-13-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-052-34BABA	08-26-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-053-11AAA1	08-13-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-053-21CCC1	08-14-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-053-32DDD1	08-14-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-053-35BDAB4	08-26-02	--	--	<.005	--	<.02	--	<.034	<.02	<.005
134-054-01DACB	08-27-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-054-04AAA1	08-14-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-054-04AAA1	08-27-02	--	--	--	--	--	--	--	--	--
134-054-14BBB1	08-14-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
134-054-27BBB1	08-14-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
135-052-10ACDA1	08-15-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
135-052-20DDD1	08-15-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
135-053-28BBB1	08-26-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
135-053-30CCBB2	08-27-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
135-053-34CBB1	08-26-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
135-054-01CCC1	08-27-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
136-053-26BAB1	08-27-02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005

Local ident- i- fier	Date	TRIAL- LATE WATER FLTRD	TRI- CLOPYR, WATER, FLTRD	TRI- FLUR- ALIN WAT FLT	UREA 3 4-CHLOR OPHENYL METHYL
		GF, REC (UG/L) (82678)	GF 0.7U REC (UG/L) (49235)	GF, REC (UG/L) (82661)	REC (UG/L) (61692)
133-052-01BBB1	08-13-02	<.002	<.02	<.009	<.02
133-052-03CCC1	08-13-02	<.002	<.02	<.009	<.02
133-053-13DCC1	08-13-02	<.002	<.02	<.009	<.02
134-052-17DDD1	08-13-02	<.002	<.02	<.009	<.02
134-052-34BABA	08-26-02	<.002	<.02	<.009	<.02
134-053-11AAA1	08-13-02	<.002	<.02	<.009	<.02
134-053-21CCC1	08-14-02	<.002	<.02	<.009	<.02
134-053-32DDD1	08-14-02	<.002	<.02	<.009	<.02
134-053-35BDAB4	08-26-02	<.002	--	<.009	--
134-054-01DACB	08-27-02	<.002	<.02	<.009	<.02
134-054-04AAA1	08-14-02	<.002	<.02	<.009	<.02
134-054-04AAA1	08-27-02	--	--	--	--
134-054-14BBB1	08-14-02	<.002	<.02	<.009	<.02
134-054-27BBB1	08-14-02	<.002	<.02	<.009	<.02
135-052-10ACDA1	08-15-02	<.002	<.02	<.009	<.02
135-052-20DDD1	08-15-02	<.002	<.02	<.009	<.02
135-053-28BBB1	08-26-02	<.002	<.02	<.009	<.02
135-053-30CCBB2	08-27-02	<.002	<.02	<.009	<.02
135-053-34CBB1	08-26-02	<.002	<.02	<.009	<.02
135-054-01CCC1	08-27-02	<.002	<.02	<.009	<.02
136-053-26BAB1	08-27-02	<.002	<.02	<.009	<.02

< Less than
E Estimated value

GROUND-WATER QUALITY

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SPIRIT LAKE RESERVATION SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Station number	Local identifier	Date	Time	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	PH WATER WHOLE FIELD (STANDARD) (UNITS) (00400)	PH WATER WHOLE LAB (STANDARD) (UNITS) (00403)	SPE-CIFIC CONDUCTANCE LAB (US/CM) (90095)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)
474714098290201	150-061-29AAA	08-20-02	1330	15.29	70	7.8	7.7	987	1040
474911098375601	150-062-07DDA	08-20-02	1500	9.55	56	7.9	7.5	405	420
474839098352401	150-062-16ADD	08-20-02	1430	11.30	20	8.0	7.6	424	430
474943098402001	150-063-12BBC	08-20-02	1600	5.30	39	7.7	7.5	562	580
474817098304001	150-063-16DDA	08-21-02	1000	26.07	60	7.9	7.7	430	440
475329098351401	151-062-15CCC	08-20-02	1200	6.04	21	8.0	7.6	672	700
475258098375001	151-062-19ADD1	08-20-02	1130	14.89	38	8.0	7.6	630	660
475236098314503	151-062-24DDC3	08-21-02	1130	16.28	23	7.7	7.4	995	1060
475236098455901	151-063-19DDCC	08-20-02	1015	19.68	30	8.1	7.7	430	440
475308098424801	151-063-22CBBB	08-19-02	1630	8.16	15	7.6	7.3	203	220
475212098430701	151-063-29ADDB	08-20-02	0930	18.82	170	7.9	7.6	563	580
475510098515502	151-064-04CCC2	08-19-02	1530	26.55	39	--	7.5	623	645
475509098542502	151-064-06CCC2	08-21-02	0900	27.23	78	7.2	7.5	520	535
475827099061501	152-066-21AAD1	08-19-02	1400	32.04	145	7.4	7.4	1640	1660

Local identifier	Date	TEMPERATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L) (00915)	MAGNESIUM, DIS-SOLVED (MG/L) (00925)	POTASSIUM, DIS-SOLVED (MG/L) (00935)	SODIUM, DIS-SOLVED (MG/L) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L) (90410)	CHLORIDE, DIS-SOLVED (MG/L) (00940)	FLUORIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L) (00955)
150-061-29AAA	08-20-02	11.5	50.8	18.3	8.31	151	447	2.76	.4	35.3
150-062-07DDA	08-20-02	10.5	56.0	16.4	2.28	4.22	224	.80	.1	30.4
150-062-16ADD	08-20-02	--	67.8	16.0	1.16	1.62	232	1.70	E.1	27.3
150-063-12BBC	08-20-02	11.0	76.4	18.6	5.44	14.7	316	2.46	.1	29.8
150-063-16DDA	08-21-02	11.5	56.4	15.1	2.16	13.6	224	1.71	.2	28.9
151-062-15CCC	08-20-02	10.0	94.7	30.0	2.91	5.00	210	10.5	.3	21.4
151-062-19ADD1	08-20-02	10.5	83.5	23.7	3.14	17.2	216	14.1	.2	26.9
151-062-24DDC3	08-21-02	10.0	142	47.7	3.09	5.32	221	68.9	E.1	24.9
151-063-19DDCC	08-20-02	10.0	51.7	15.5	2.84	19.2	184	1.68	.1	26.0
151-063-22CBBB	08-19-02	10.0	26.1	8.46	2.84	2.00	104	2.31	<.1	25.2
151-063-29ADDB	08-20-02	10.0	72.6	16.4	4.59	26.6	289	2.98	.2	28.3
151-064-04CCC2	08-19-02	11.0	95.0	31.5	1.53	1.96	314	2.78	E.1	27.9
151-064-06CCC2	08-21-02	9.2	69.5	14.9	9.00	15.8	266	3.04	.2	39.4
152-066-21AAD	08-19-02	10.5	110	69.9	16.2	140	515	40.5	.2	29.8

Local identifier	Date	SULFATE DIS-SOLVED (MG/L) (00945)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	NITROGEN, AMMONIA DIS-SOLVED (MG/L) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L) (00625)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)	NITROGEN, NITRITE DIS-SOLVED (MG/L) (00613)	ORTHO-PHOSPHATE, DIS-SOLVED (MG/L) (00671)	PHOSPHORUS TOTAL (MG/L) (00665)	IRON, DIS-SOLVED (UG/L) (01046)
150-061-29AAA	08-20-02	144	690	2.10	2.2	<.05	<.008	.42	.46	1180
150-062-07DDA	08-20-02	9.5	262	.16	.26	<.05	<.008	E.01	.10	2720
150-062-16ADD	08-20-02	10.4	279	<.04	.16	1.33	<.008	.05	.13	<10
150-063-12BBC	08-20-02	5.9	348	.71	.83	<.05	<.008	E.01	.18	1500
150-063-16DDA	08-21-02	28.8	277	.12	.18	<.05	<.008	E.01	.08	977
151-062-15CCC	08-20-02	111	470	<.04	.15	6.36	.113	<.02	<.06	<10
151-062-19ADD1	08-20-02	124	442	.08	.19	<.05	<.008	E.01	E.04	537
151-062-24DDC3	08-21-02	93.9	684	<.04	.39	30.8	.032	.04	<.06	<10
151-063-19DDCC	08-20-02	54.9	278	<.04	<.10	.18	<.008	.08	.07	<10
151-063-22CBBB	08-19-02	2.0	133	<.04	<.10	.18	<.008	.10	.09	<10
151-063-29ADDB	08-20-02	46.4	360	.73	.83	<.05	<.008	.08	.08	62
151-064-04CCC2	08-19-02	32.0	396	<.04	<.10	.51	<.008	.02	<.06	<10
151-064-06CCC2	08-21-02	29.4	351	.64	.70	<.05	<.008	.05	.08	320
152-066-21AAD	08-19-02	400	1160	1.29	1.7	<.05	<.008	.07	.25	5060

GROUND-WATER QUALITY

SPIRIT LAKE RESERVATION SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Local ident- i- fier	Date	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
150-061-29AAA	08-20-02	38.4
150-062-07DDA	08-20-02	475
150-062-16ADD	08-20-02	7.8
150-063-12BBC	08-20-02	457
150-063-16DDA	08-21-02	348
151-062-15CCC	08-20-02	446
151-062-19ADD1	08-20-02	536
151-062-24DDC3	08-21-02	114
151-063-19DDCC	08-20-02	9.3
151-063-22CBBB	08-19-02	<2.0
151-063-29ADDB	08-20-02	790
151-064-04CCC2	08-19-02	12.9
151-064-06CCC2	08-21-02	393
152-066-21AAD1	08-19-02	427

< Less than
E Estimated value

A

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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