

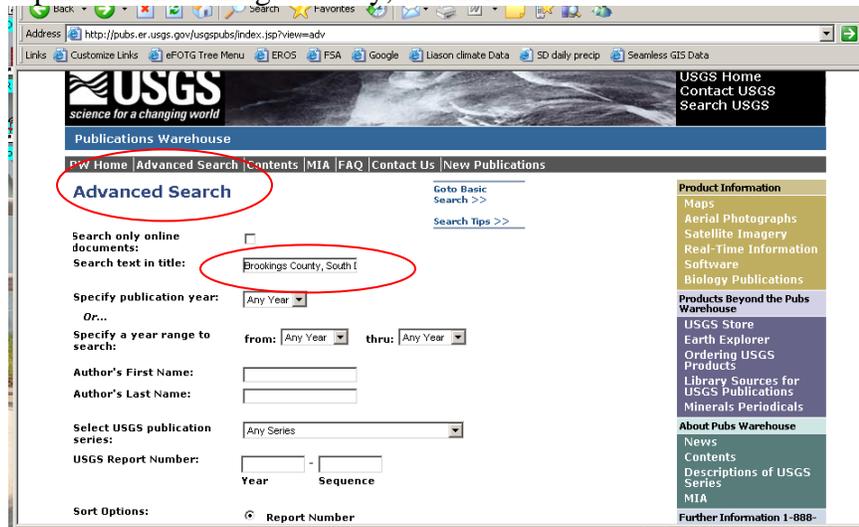
U.S. Geological Survey Publications Now Available on the Web

Many U.S. Geological Survey (USGS) reports are now available for viewing and/or download on the internet at <http://pubs.er.usgs.gov/usgspubs/recentpubs.jsp>. By clicking on this web link display, new publications of the USGS including Circulars, Data Series, Fact Sheets, Open-File Reports, and Scientific Investigations will be listed. For some of these more recent reports, you can view and/or download copies by clicking on **More Info**, **View the document as HTML**, and then right clicking on the pdf file name and saving.

For older publications, the USGS reports can be located doing a basic search by filling in the **Title and/or Author Search** block. If this information is not available, an advanced search can be done by clicking on **Advanced Search** and searching by various parameters such as text in title, publication year, author name, series type (annual report, open-file report, water-resources investigation, fact sheet, report number, etc). To view some of these publications, it may be necessary to have your IT person install the free DJVU viewer.

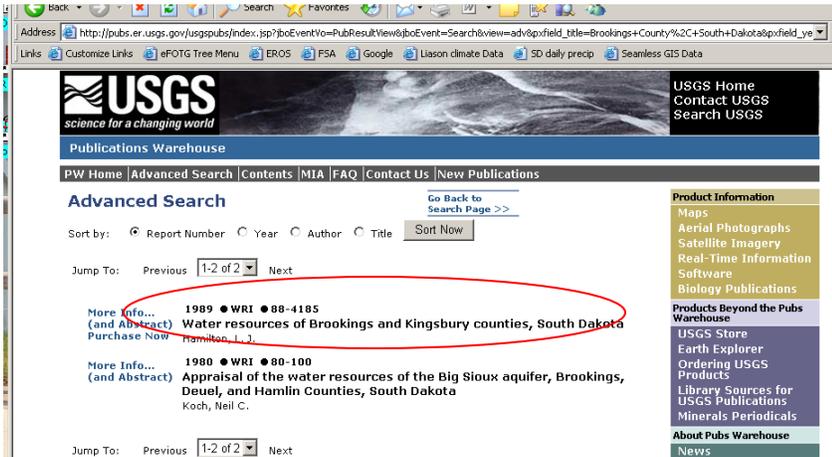
A USGS water-resources investigation report that may provide useful information to the NRCS is the basic county water-resources investigations report. These reports contain information on glacial and bedrock aquifers that can be used for locating wells, viewing the aquifer's water quality, and anticipating high ground water levels. An example of useful water-resources information from this type of report is as follows:

To get information for Brookings County, use **Advanced Search** option to locate applicable USGS reports for Brookings County, South Dakota.

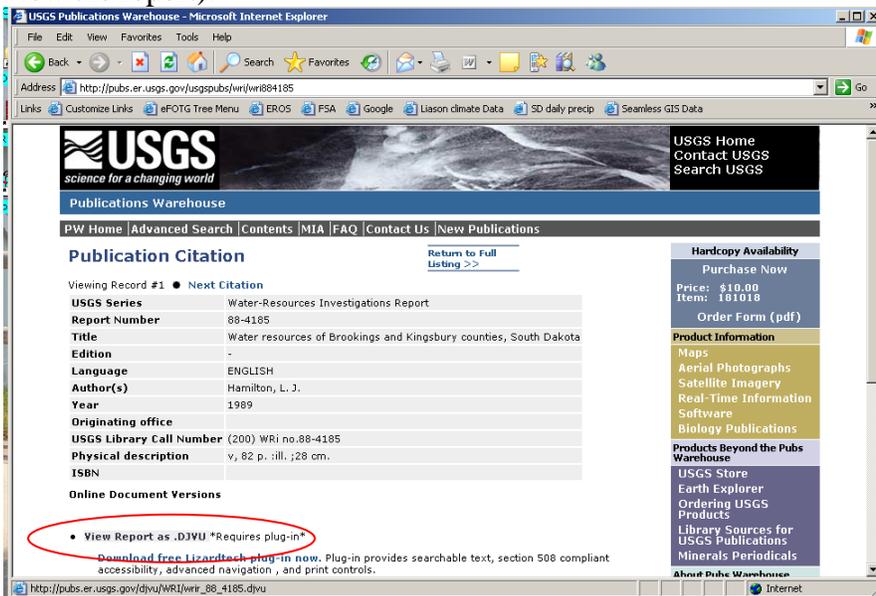


The screenshot shows the USGS Publications Warehouse website. The 'Advanced Search' link is circled in red. The search text 'Brookings County, South D' is entered in the 'Search text in title:' field and is also circled in red. Other search options like 'Specify publication year' and 'Author's First Name' are visible.

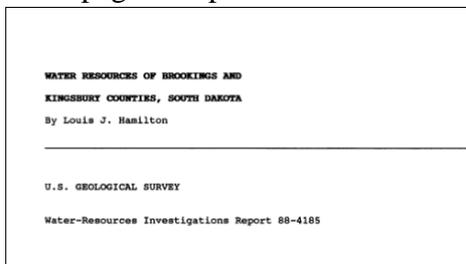
Two USGS publications were located; click on *Water resources of Brookings and Kingsbury counties, South Dakota*



Detailed information for *Water resources of Brookings and Kingsbury counties, South Dakota* is displayed. Click on **View Report as .DJVU** (requires that you have the free DJVU reader installed; this viewer is CCE). Report is then displayed (use **page up** and **page down** buttons on your keyboard to view the report).



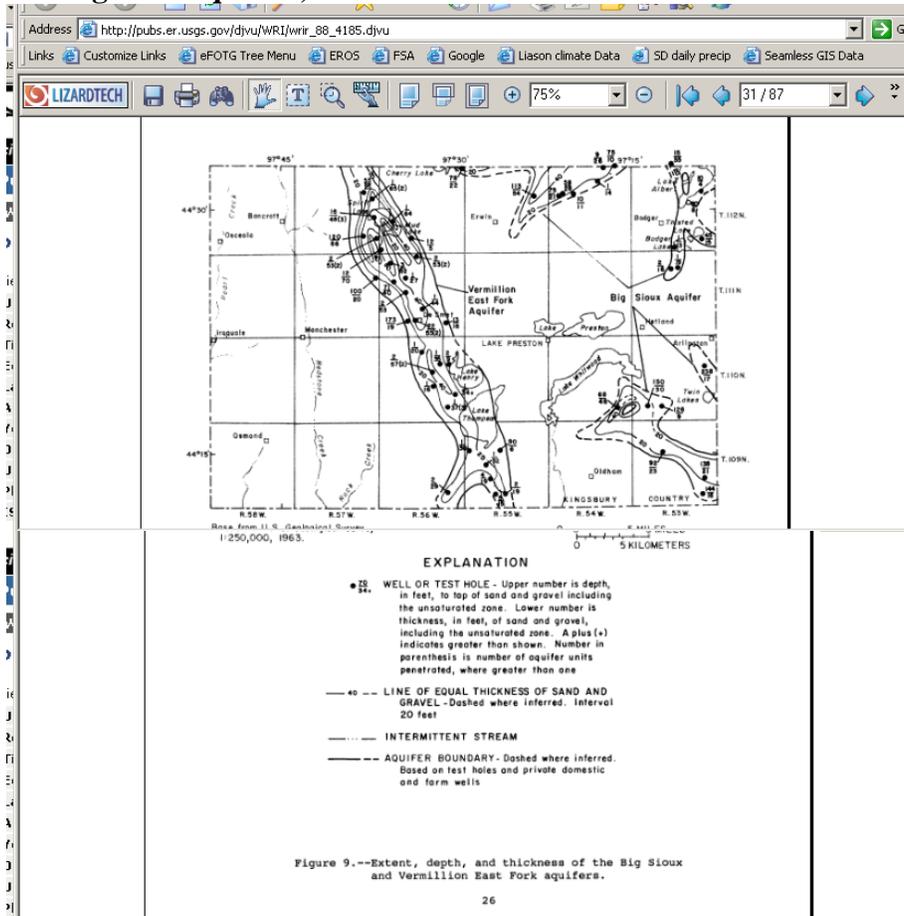
First page of report:



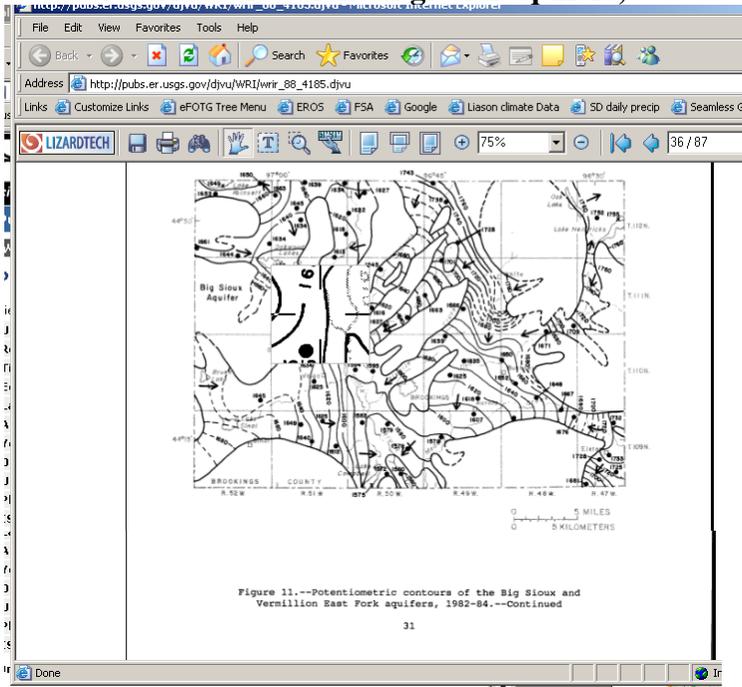
A useful page to display is the table of contents. Note what pages (aquifer maps, water-quality information) have desired aquifer information.

	Page
Abstract	1
Introduction	2
Purpose and scope	2
Need for future study	4
Method of investigation	4
Previous investigations	6
Hydrology	6
Geology of the hydrologic system	6
Surface water	10
Streamflow	10
Lakes, ponds, and marshes	14
Water quality	14
Ground water	16
Glacial aquifers	16
Big Sioux aquifer	25
Extent, depth, and thickness	25
Composition and well yields	25
Water movement	29
Water levels and effects of withdrawals	32
Water quality	36
Vermillion East Fork aquifer	36
Ramona aquifer	40
Rutland aquifer	46
Howard aquifer	47
Altamont aquifer	52
Bedrock aquifers	53
Niobrara aquifer	53
Codell aquifer	53
Dakota aquifer	62

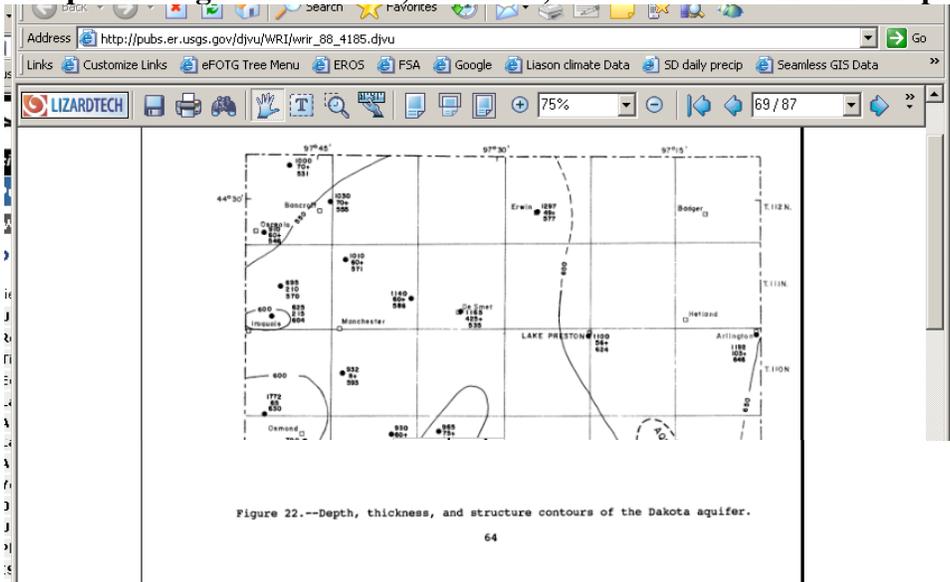
An example of useful information includes: **Extent, depth from ground surface, and thickness map of the glacial aquifers,**



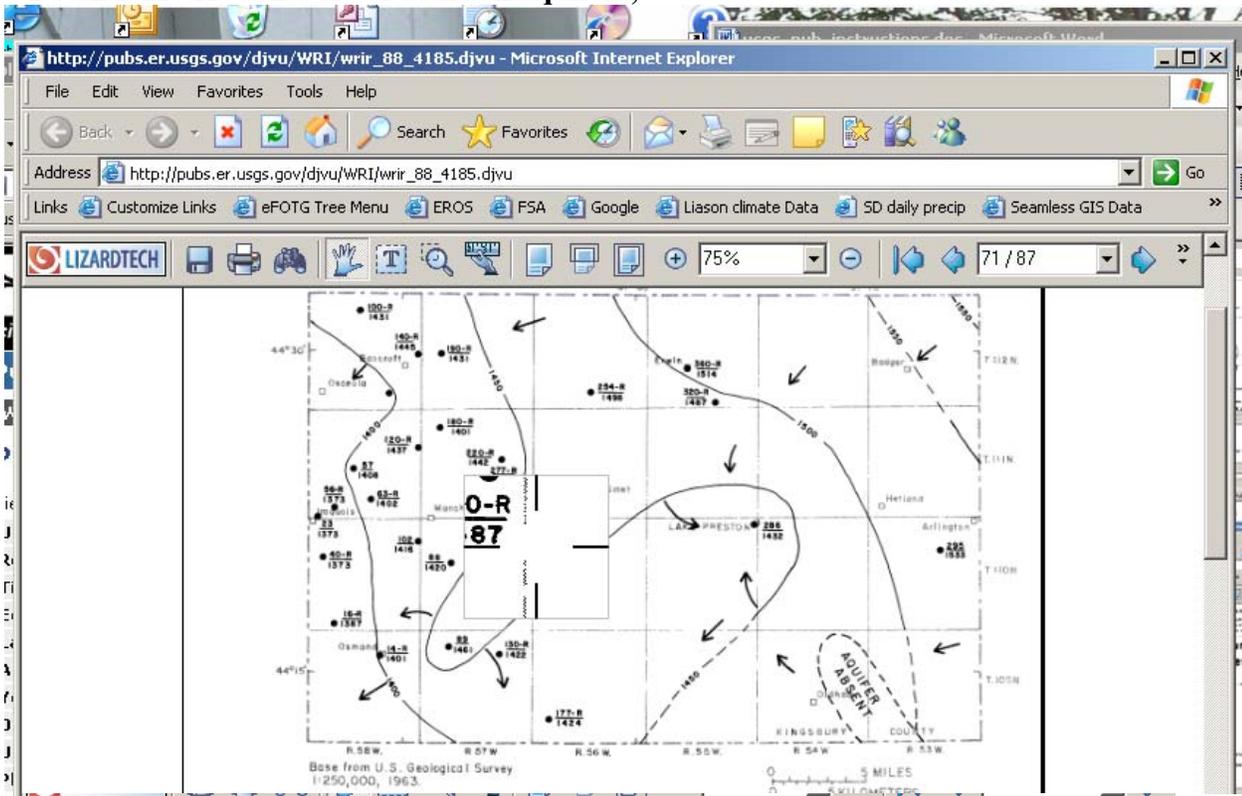
Water-surface elevations of glacial aquifers,



Depth from ground surface, thickness, and structure contours map of bedrock aquifers,



Potentiometric contours of bedrock aquifers,



EXPLANATION

- 1450— POTENTIOMETRIC CONTOUR—Dashed where inferred. Shows altitude at which water would have stood in tightly cased, nondischarging wells in 1974-85. Contour interval 50 feet. Datum is sea level
- 360-R 1514 WELL—Upper number is depth to water, in feet, below land surface. An "R" indicates a reported level. Lower number is altitude of water level, in feet above sea level
- ← GENERAL DIRECTION OF GROUND-WATER MOVEMENT
- AQUIFER BOUNDARY—Dashed where inferred. Based on test holes and private domestic and farm wells

Figure 23.--Potentiometric contours of the Dakota aquifer.

Basic water quality for glacial and bedrock aquifers, and

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Address: http://pubs.er.usgs.gov/djvu/WRI/wrir_88_4185.djvu

Table 6.--Selected chemical analyses of ground water

(Analyses by U.S. Geological Survey Laboratory unless otherwise noted. Limits, where given, are primary (mandatory) and secondary (recommended) limits for concentrations of substances in drinking water as set forth by the U.S. Environmental Protection Agency (1986a, b). Reported in milligrams per liter (mg/L) except as indicated. One milligram per liter is approximately equal to one part per million. One microgram per liter ($\mu\text{g/L}$) is equal to one part per billion. < signifies less than)

Sample number	Well depth (feet)	Location	Date	Silica	Iron ($\mu\text{g/L}$)	Manganese ($\mu\text{g/L}$)	Calcium	Magnesium	Sodium	Potassium	Bicarbonate
Recommended limit (* indicates mandatory limit, from table 7)				--	300	50	--	--	--	--	--
GLACIAL AQUIFERS											
Big Sioux aquifer											
1	65	Brookings, Well #1	5-27-82	--	2,370	640	130	42	16	3.1	320
2	56	Aurora	1-13-83	--	<20	<20	83	34	16	2.0	310
3	36	Bruce	8-24-83	--	20	350	100	37	20	2.5	400
4	30, 55	R.W.S. # Bruce	1-23-85	--	<20	880	81	36	11	2.3	290
5	24	Elkton-North	11-3-82	--	40	40	130	48	18	3.3	350
6	45	Volga	5-24-83	--	190	490	82	29	11	4.7	260
7	150	112N49W30CDDC	7-17-85	27	40	160	110	160	83	16	600
Vermillion East Fork aquifer											
16	135	109N56W26BBBB	7-16-85	29	40	880	310	79	310	41	200
17	150	112N53W23ADDD	7-17-85	28	260	3,900	370	87	120	13	190
Howard aquifer											
18	400	109N53W36CDDD	7-16-85	16	5,800	7,000	410	95	110	13	300
19	316	110N54W 7BCBA	7-17-85	30	1,000	1,900	230	65	94	12	360
Altamont aquifer											
20	617	110N53W 1ACDD	8-2-82	--	1,150	150	97	33	550	16	450
21	586	111N52W18CCCB	7-15-85	29	1,200	120	110	39	490	19	430
BEDROCK AQUIFERS											
Codell aquifer											
22	718	109N52W14CADB	1-23-80	--	1,200	60	48	18	560	14	495
23	780	110N52W13DDDA	7-15-85	8.1	40	30	50	17	530	11	390
24	550	111N57W19DDDD	8-17-85	9.7	160	40	14	5.1	650	6.1	405
Dakota aquifer											
25	1,020	109N54W22CCAC	12-6-79	--	530	<20	9.8	4.1	830	7.2	550
26	950	109N57W22AABA	8-2-80	9.4	460	20	7.5	3.3	770	5.8	360
27	1,240	110N53W10DAAA	7-17-85	2.2	50	10	.4	.3	740	6.1	725
28	1,157	110N55W 1ACDA	5-24-83	--	180	80	8.0	3.2	760	6.5	428
29	855	110N56W 6CBBA	5-24-83	--	280	70	17	4.6	680	7.7	307
30	1,260	111N52W25DDCC	4-27-84	10	120	40	15	5.0	1,200	8.0	585

1 Rural water system (composite of 2 wells).
 2 Nitrate only.
 3 South Dakota Department of Water and Natural Resources, Office of Drinking Water.
 4 Calculated.

Trace elements water quality for glacial and bedrock aquifers.

http://pubs.er.usgs.gov/djvu/WRI/wrir_88_4185.djvu - Microsoft Internet Explorer

Address http://pubs.er.usgs.gov/djvu/WRI/wrir_88_4185.djvu

Links Customize Links eFOTG Tree Menu EROS FSA Google Liason climate Data SD daily precip Seamless GIS Data

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Table 8.--Selected trace elements in ground water
 (Analyses by U.S. South Dakota Department of Water and Natural Resources, Office of Drinking Water, unless otherwise noted. Reported in micrograms per liter (µg/L). One microgram per liter is approximately equal to one part per billion. < signifies less than, -- signifies not determined)

Well Sample number	Well depth (feet)	Location	Date	Aluminum	Arsenic	Barium	Beryllium	Cadmium	Chromium
Recommended Limit (* indicates mandatory limit, from table 7)				--	*50	*1,000	--	*10	*50
GLACIAL AQUIFERS									
Big Sioux aquifer									
1	65	Brookings	¹ 11- 8-83	--	2	<50	--	<1	4
2	56	Aurora	4-23-84	--	1	120	--	<1	<1
3	36	Bruce	3-21-83	--	<1	90	--	<1	2
4	42	Elkton	4-28-83	--	<1	140	--	<1	2
5	28,45	Volga	9- 8-82	--	1	32	--	<1	<1
Vermillion East Fork aquifer									
6	42	De Smet	5- 6-82	--	5	80	--	<1	5
7	45	R.W.S. ³ - De Smet	11- 3-81	--	2	66	--	<1	1
Rutland aquifer									
8	75	109N50W35DDCC	⁴ 8-31-82	<50	--	30	<1	<1	<50
Rutland aquifer									
8	75	109N50W35DDCC	⁴ 8-31-82	<50	--	30	<1	<1	<50
Howard aquifer									
9	350	Hetland	9-23-81	--	2	43	--	1	<1
10	325	Lake Preston	11- 8-80	--	--	--	--	--	--
Altamont aquifer									
11	618	Arlington	8-14-81	--	2	18	--	<1	2
BEDROCK AQUIFERS									
Codell aquifer									
12	720	Sinai	¹ 2- 9-83	--	5	<50	--	<1	<1
Dakota aquifer									
13	1,020	Oldham	¹ 10-21-81	--	7	<5	--	<1	2
14	1,178	Lake Preston	² 4-22-81	--	3	<5	--	<1	<1
15	1,008	Iroquois	² 2-16-83	--	6	<50	--	<1	1

¹Composite sample of several wells.
²From sample collected on another date.
³Rural water system.
⁴U.S. Geological Survey.