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Rural Water Supplies in South Dakota : Dewey County

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Rural Water Supplies in South Dakota

DEWEY County

January, 1940
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RURAL WATER SUPPLIES
IN
SOUTH DAKOTA
DEWEY COUNTY

BY
WALTER V. SEARIGHT
AND
ELMER E. MELEEN

THIS BOOK DOES
NOT CIRCULATE

PREPARED BY THE WORK PROJECTS ADMINISTRATION
AS A REPORT ON THE WELL SURVEY CONDUCTED
AS WORK PROJECTS ADMINISTRATION OFFICIAL PROJ-
ECT 665-74-3-126; SPONSORED BY THE EXTENSION
SERVICE AND THE EXPERIMENT STATION SOUTH DAK-
OTA STATE COLLEGE, IN COOPERATION WITH THE
STATE GEOLOGICAL SURVEY.

JANUARY 1940

FOREWORD

This study was first proposed as a project of the Mineral Resources Committee of the State Planning Board under the direction of the State Geological survey and undertaken as a Work Projects Administration project sponsored by the State Planning Board, and was continued under the Planning Board until that body was abolished July 1, 1939 by the State Legislature. At that time sponsorship was transferred to the South Dakota Agricultural Experiment Station and the State College Extension Service, South Dakota State College. Field work was begun October 1, 1938 and was practically completed by February 15, 1939. Workers were assigned in the several counties under the supervision and direction of the County Agricultural Agents and Field Supervisors who were employed by the Work Projects Administration. Questionnaires were mailed out from the offices of the County Agents and were checked and tabulated in these offices. The material was then forwarded to the central office for final tabulation and analysis under the direction of Elmer E. Meleen and Walter V. Searight.

Particular credit should be given to the individual County Agricultural Agents in the various counties of the state who arranged the contacts with the individuals from whom these data were collected, furnished a large portion of the necessary supplies for field work, and directed the workers engaged in collecting field data. Without this assistance in gathering basic data, this study could not have been conducted. The value of the report is therefore in direct proportion to the accuracy and adequacy of these basic data.

INTRODUCTION

PURPOSE

This report on rural water supplies of South Dakota has been prepared to present data recently made available on the types and the sources of water supply, exclusive of stream, lake and dam waters. The information presented is of importance to evaluate present supplies. It should also prove useful as a basis for further development of supplies where they are needed or become necessary. Further, it is hoped that the facts presented may prove of value in any program of water conservation.

SOURCES OF INFORMATION

Questionnaires were sent to all, or essentially all of the farmers of the state, asking for complete data on farm wells and supplementary supplies, with the exception of the supplies above noted. A most gratifying number returned questionnaires, actually 60.1% average for the entire state. The coverage is probably more than 60.1% since it is likely that many unanswered inquiries were those to farmers who were without wells, the type of supply emphasized in the questionnaires. The data thus obtained were supplemented with information contained in the files of the State Geological Survey, the office of the State Engineer, and reports of the United States Geological Survey. This supplementary information, together with that contained in questionnaires was used in making the well location maps included in this report.

PROCEDURE

All data from the questionnaires were tabulated and analyzed statistically by counties, which were made the areal units of study. Within the county,

Acknowledgments - The authors wish especially to acknowledge and commend the conscientious assistance of Mr. E. L. Woodburn, Supervisor, for careful and painstaking supervision of statistical work. The authors also desire to express appreciation for the constant interest and support of this project by Mr. Bob Butts, Director of Research and Records Projects, South Dakota Work Projects Administration.

supplies were allocated as to kind on county maps. Since shallow waters are the most important source of rural supply in South Dakota, wells 200 feet deep and less were plotted on county maps from which maps indicating depths of wells by 50 foot intervals were made. Springs, shown on the well location map, and cisterns were also tabulated as important supplementary supplies, although the latter do not appear on maps or in the tables in this report.

PRESENTATION OF DATA

For convenience and utility, this report has been divided into sections, each covering one county, and each county section bound separately. Each county report contains the following material wherever possible.

1. Well Location Map: This map shows the location of all wells and springs within the county, so far as information is now available. These have been plotted in such a manner that artesian and shallow wells can be differentiated readily by the reader. Artesian wells, where they occur, are divided into flowing and pumped. Artesian wells showing decreased flow and those reported as controlled are also indicated by symbols. Shallow wells are differentiated as adequate and inadequate, and dry holes as of 1938 are located. Wells from other sources of information other than questionnaires collected by this survey are shown in blue.

2. Shallow Well Map: This map shows, as accurately as possible, in 50 foot intervals, the depths at which shallow supplies are commonly obtained. Where shallow wells are abundant, as indicated by the well location map, the map is as accurate as the information on which it is based, but where such wells are sparsely distributed errors are likely to occur. In many places reports of shallow wells are absent, in which case the area has been left blank.

3. Table of Pumped Wells, from 0 to 200 feet (inclusive) in depth: This table shows minimum, maximum and average depths of wells within the county, as reported in the questionnaires. Tabulations are by townships. The general character of the water, hard, medium, and soft, as reported by farm-

ers, and the number of wells suitable or unsuitable for drinking are shown in this table. Further, the adequacy of supply, as indicated on the questionnaires, and use for irrigation are shown here.

4. Table of Wells greater in depth than 200 feet: Minimum, maximum, and average depths are indicated. Character, reported as hard, medium or soft is tabulated. Adequacy and use for irrigation are shown as in the preceding table.

5. Table of flowing wells; Minimum, maximum, and average depths are shown together with general character and use for irrigation. The volume of flow as reported, and the number of flowing wells reported as equipped with control valves is also included in this table.

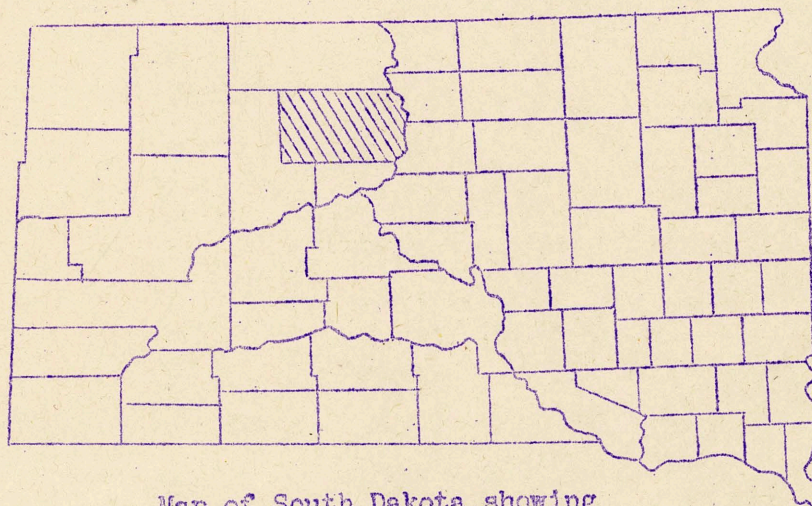
SUMMARY OF STATE SUPPLIES

In the entire state, a total of 48,479 wells were reported in response to questionnaires, returned by 60.1% of the recipients. If those who did not respond have a number of wells in proportion to those who reported, there are approximately 80,000 wells in South Dakota. There are possibly many less than this number since several counties with large numbers of wells returned over 75% of the questionnaires and since many farmers without wells did not reply because they were not requested to do so in the formal questionnaire. Of the wells reported, 16.2% are artesian, including both pumped and flowing wells. Shallow wells are 83.8% of the wells reported. Wells from shallow sources are thus obviously by far the most important means for obtaining water in rural South Dakota.

Important supplementary supplies are cisterns and springs. Roughly, there is more than one cistern to each 40 wells. Many springs are reported, however, in counties with very few wells, so that in some localities they are of considerable importance.

DEWEY COUNTY

Dewey county lies in northwestern South Dakota. It is bounded on the north by Corson county, on the east by Potter and Walworth counties, on the south by Armstrong county, and on the west by Ziebach county.



Map of South Dakota showing location of Dewey county

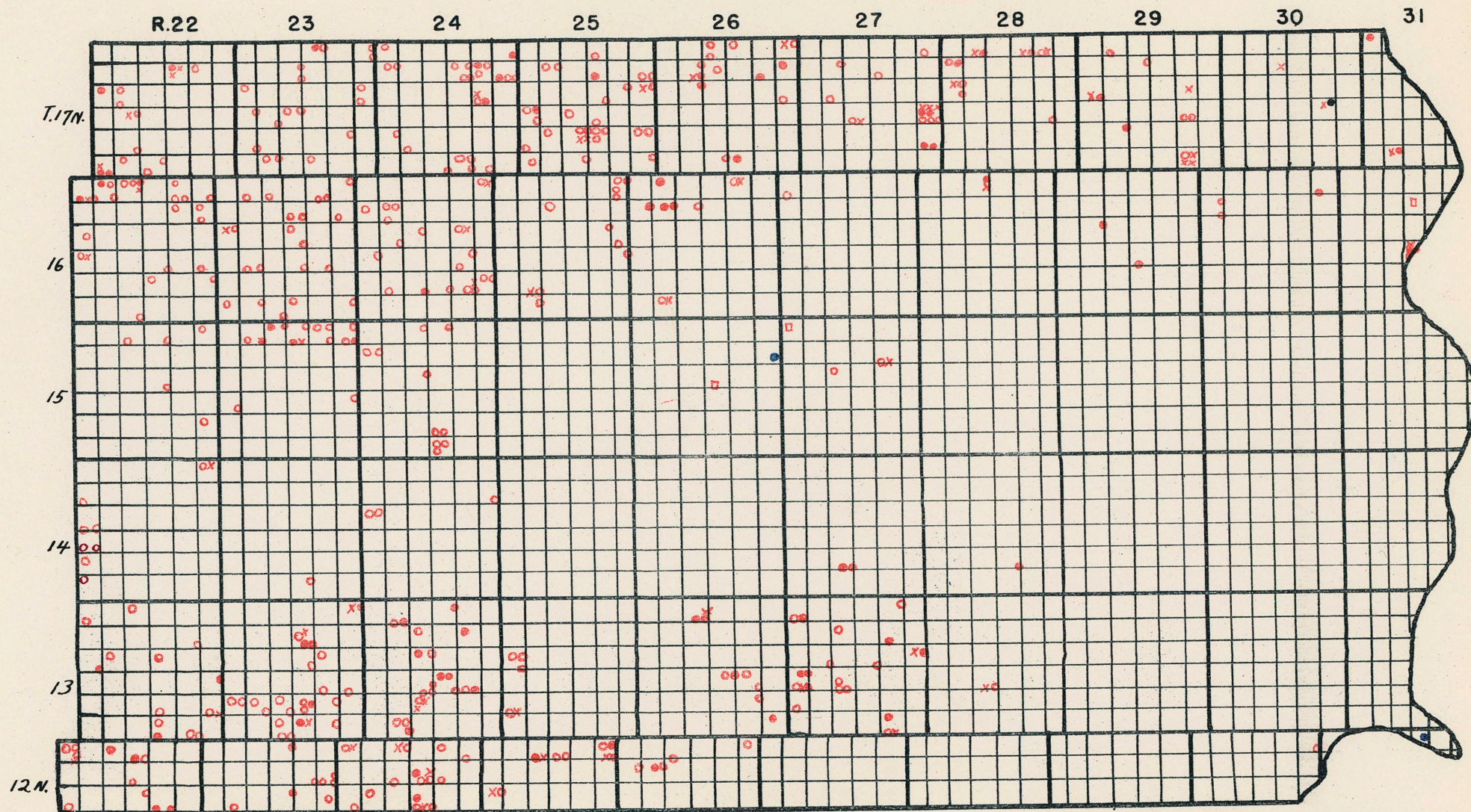
Areas devoted to farm use are not so large as in neighboring counties. However, approximately 37 per cent of the county's 1,220,480 acres is in 777 farm units of 581 acres each, a total of 451,545 acres. The important field crops are spring wheat, corn, oats, hay and barley in the order named. Live-stock is important; sheep and lambs, cattle, horses and mules, and hogs being raised in the order named.*

In order that farm units of this type may be operated successfully, suitable and adequate supplies of underground water must be available at low cost. The supplies required are not great, but they should be widely distributed. The well location map of Dewey county shows, however, that supplies required are not of wide distribution but are restricted to approximately 50 per cent of the county.

On the well location map of Dewey county, as in other counties, all flowing and all deep pumped wells obtaining water from the Dakota-Lakota sandstones are shown in black. Only one such well, however, was reported from the county.

*South Dakota Agricultural Statistics, Annual Report, 1937.

LOCATION OF ARTESIAN AND SHALLOW WELLS IN DEWEY COUNTY



ARTESIAN WELLS

● FLOWING WELLS—DECREASED FLOW

SHALLOW WELLS

- ADEQUATE SUPPLY
- INADEQUATE SUPPLY
- X DRY WELLS
- SPRINGS

● WELLS FROM OTHER SOURCES

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All other wells are shown in red and are called shallow wells regardless of depth. On all other maps, and in tables and text of this report, the term shallow wells is applied to wells of a depth of 200 feet or less, and those more than 200 feet deep are treated as deep wells, including the one artesian flowing well.

Questionnaires were sent to 562 farmers and land owners in Dewey county, to which 57 per cent responded with information on 387 wells, 36 cisterns, and 3 springs throughout the county.

DEPTH AND DISTRIBUTION

Wells are not, in general, widely distributed over the county. No wells were reported from 18 townships (30 per cent of the county), and but one to three wells from 14 townships (23 per cent of the county). Thus, less than 50 per cent of the county reported wells of considerable number necessary to supply water needs of the area. (See well location map.) Water is probably the most important single agricultural problem of Dewey county. Deep pumped and shallow pumped wells comprised the rural water supplies of Dewey county.

Shallow wells: Approximately 96 per cent of all wells reported in Dewey county are shallow pumped less than 200 feet in depth, according to reports. Of the 373 shallow wells reported, 60 per cent ranged from 0 to 50 feet in depth; 25.6 per cent from 50 to 100 feet deep; 7.5 per cent from 100 to 150 feet in depth; and 6.9 per cent from 150 to 200 feet deep. Thus, 85.6 per cent of all shallow wells in the county reported were less than 100 feet in depth. Wells within this depth range comprised approximately 93 per cent of all wells reported from the county.

Shallow wells were reported from each of the 42 townships reporting wells with the exception of Twp.17N.,Rge.30E. In 35 of the 42 townships, shallow wells constituted the only type of well reported. The shallow well map on page 8 shows the depth of shallow wells in different parts of the county which

are reported in use at the present time. Ten townships reported no shallow wells over 50 feet in depth and these have been tabulated below:

Twp.12N.	Rge.26E.	Twp.14N.	Rge.28E.	Twp.16N.	Rge.28E.
12	30	15	27	16	29
14	24	16	27	16	31
		17	31		

Eleven townships reported no shallow wells over 100 feet in depth and a list of these is given below:

Twp.12N.	Rge.24E.	Twp.13N.	Rge.28E.	Twp.16N.	Rge.24E.
13	24	14	27	16	26
13	25	15	23	16	30
13	26	15	24		

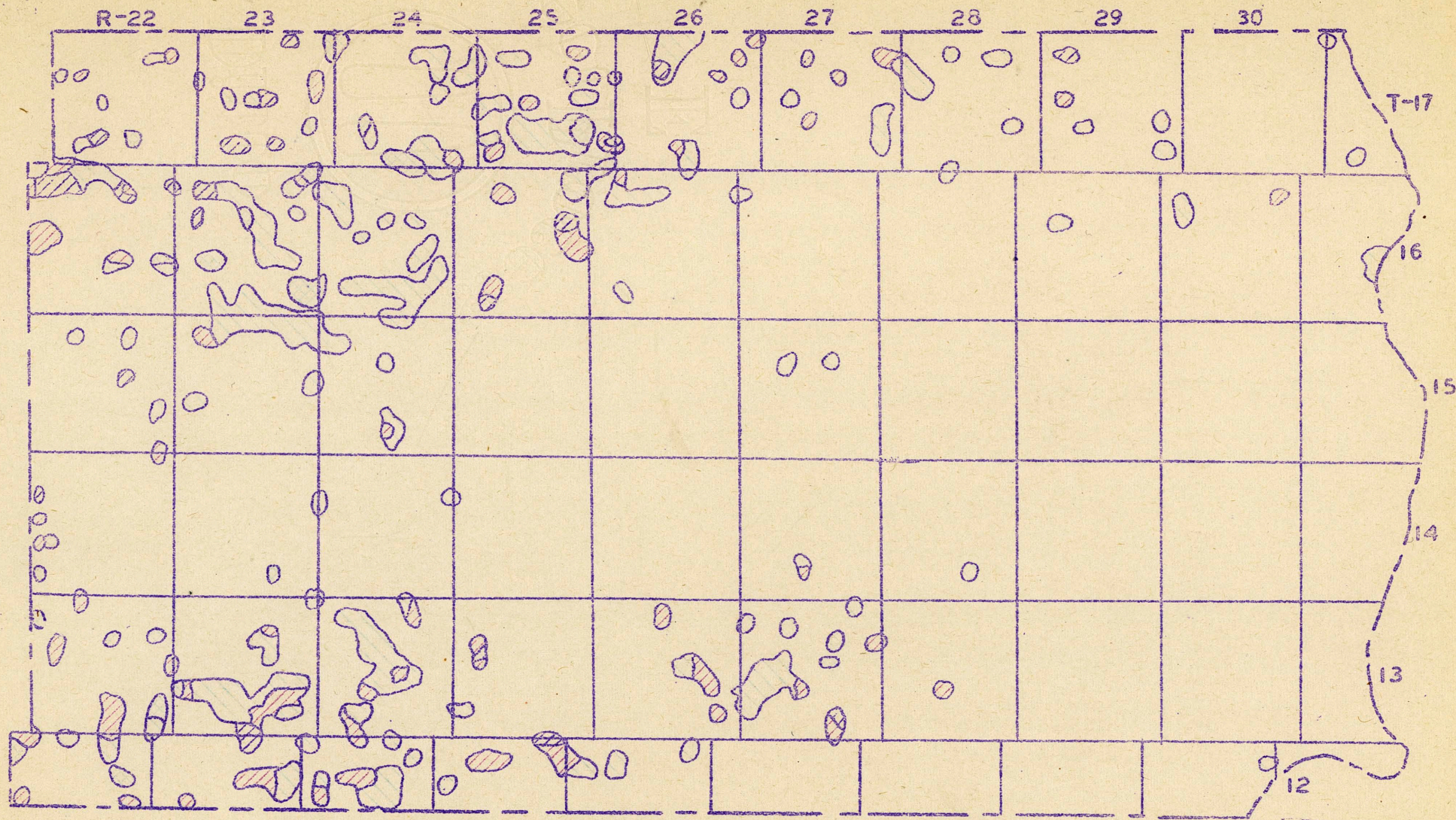
Only 52 (14 per cent) of the shallow wells reported were over 100 feet in depth since in this area little water is available below 100 feet. Five townships reported shallow wells at all 3 depth intervals to 150 feet. These townships were Twp.12N.,Rge.22E., Twp.13N.,Rge.22E., Twp.17N.,Rge.24E., Twp.17N.,Rge.25E., and Twp.17N., Rge.28E. Four townships in the extreme northwestern corner of the county reported wells within all four depth intervals to and including 200 feet as follows: Twp.16N., Rge.22E., Twp.16N., Rge.23E., Twp.17N., Rge.22E., and Twp.17N., Rge.23E. In Twp.13N., Rge.27E., in the south-central part of the county reports were similar to the four townships noted in the northwestern part.

The following tabulation shows the 35 townships of the county from which all wells were reported to be shallow. The total number of wells reported from these townships is shown also:

Twp.	Rge.	Total Wells	Twp.	Rge.	Total Wells
12N.	22E.	11	15N.	22E.	5
12	23	8	15	24	10
12	24	14	15	27	2
12	25	7	16	23	20
12	26	5	16	24	18
12	30	1	16	25	10
13	22	13	16	26	7
13	24	19	16	27	1
13	25	4	16	28	1

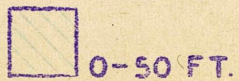
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DEWEY COUNTY

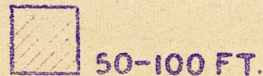


SHALLOW WELLS (0-200 FT)

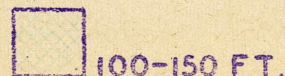
DEPTHS AT WHICH SUPPLIES ARE COMMONLY OBTAINED



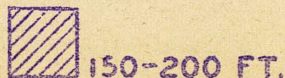
0-50 FT.



50-100 FT.



100-150 FT.



150-200 FT.

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ADMINISTRATION
W.P. 3636



Continued from preceding page.

Twp.	Rge.	Total Wells	Twp.	Rge.	Total Wells
13N.	26E.	8	16N.	29E.	2
13	27	19	16	30	3
13	28	1	16	21	3
14	22	6	17	24	23
14	23	1	17	25	26
14	24	3	17	26	13
14	27	2	17	27	12
14	28	1	17	28	8
			17	31	2

No shallow flowing wells were reported and none are known to occur.

Deep wells: Only 3.6 per cent of all wells reported from the county were deep wells (pumped and flowing). Of the 14 reported, 13 were deep pumped and but one was a deep flowing well. The deep wells were reported from only six townships. The following table shows the location of the deep pumped wells, depths, and number reported, together with the percentages of deep wells to total wells in the township. The one flowing well was reported from Twp.17N., Rge. 30E., at a depth of 1800 feet:

Twp.	Rge.	Depth	Number of Wells	Per cent Deep
13N.	23E.	214 feet	1	4.4
15	23	405	1	7.1
16	22	211-370	4	18.2
17	22	350-365	2	16.6
17	23	202-265	4	21.1
17	29	307	1	14.3

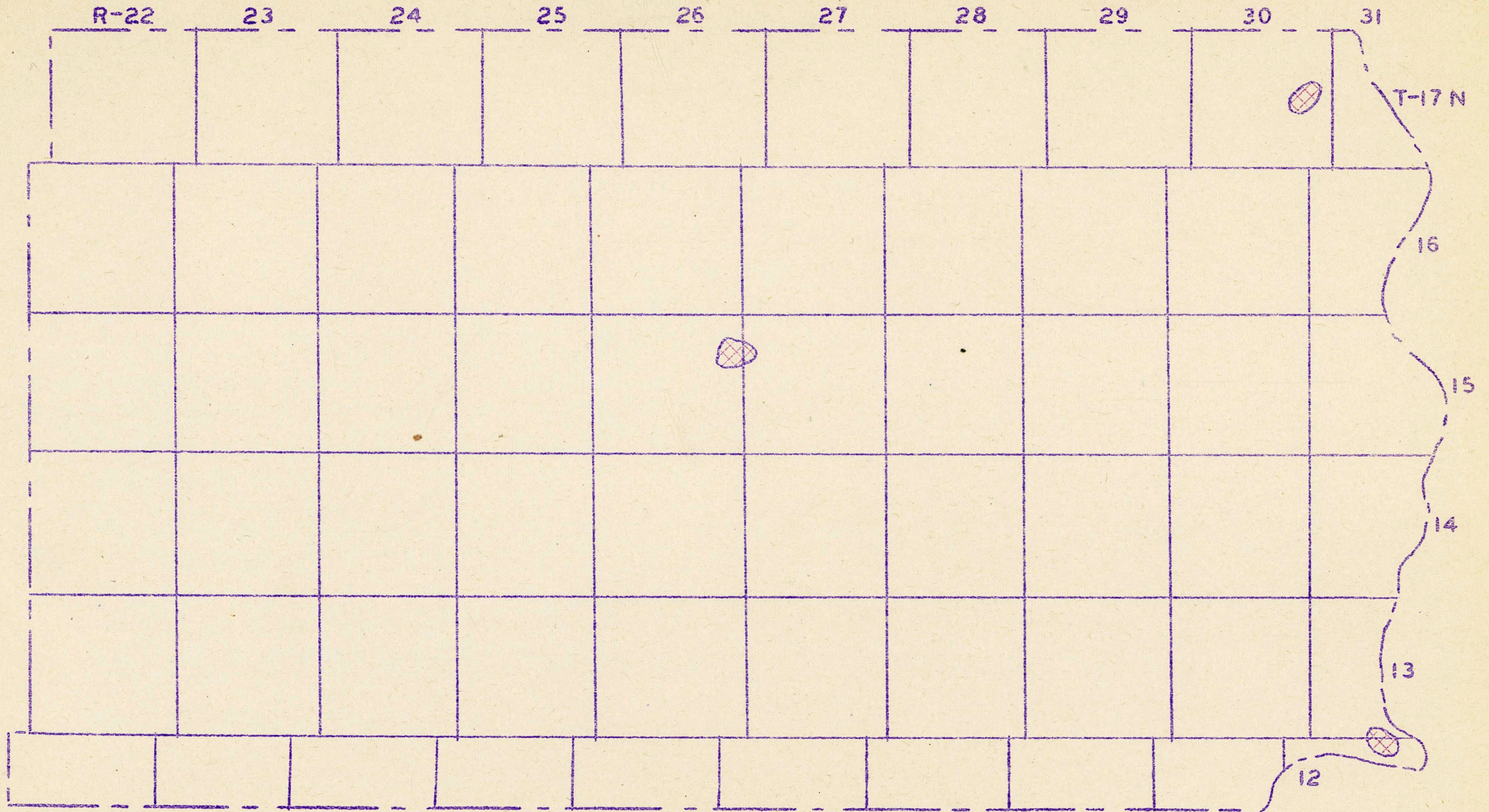
CHARACTER OF WELL WATERS

In order to determine character of waters in the county, users were asked whether they considered their supplies to be hard, moderately hard, or soft. Although chemical analyses of supplies are not commonly available to farmers, usage of this water is probably a fairly good criterion of quality in the absence of adequate laboratory analyses of ground waters.


Well waters in Dewey county were reported to be 29.9 per cent hard, 37 per cent moderately hard, and 33.1 per cent soft, roughly one third in each group.

Among the shallow wells, hard water wells were 30.7 per cent of the totals

DEWEY COUNTY



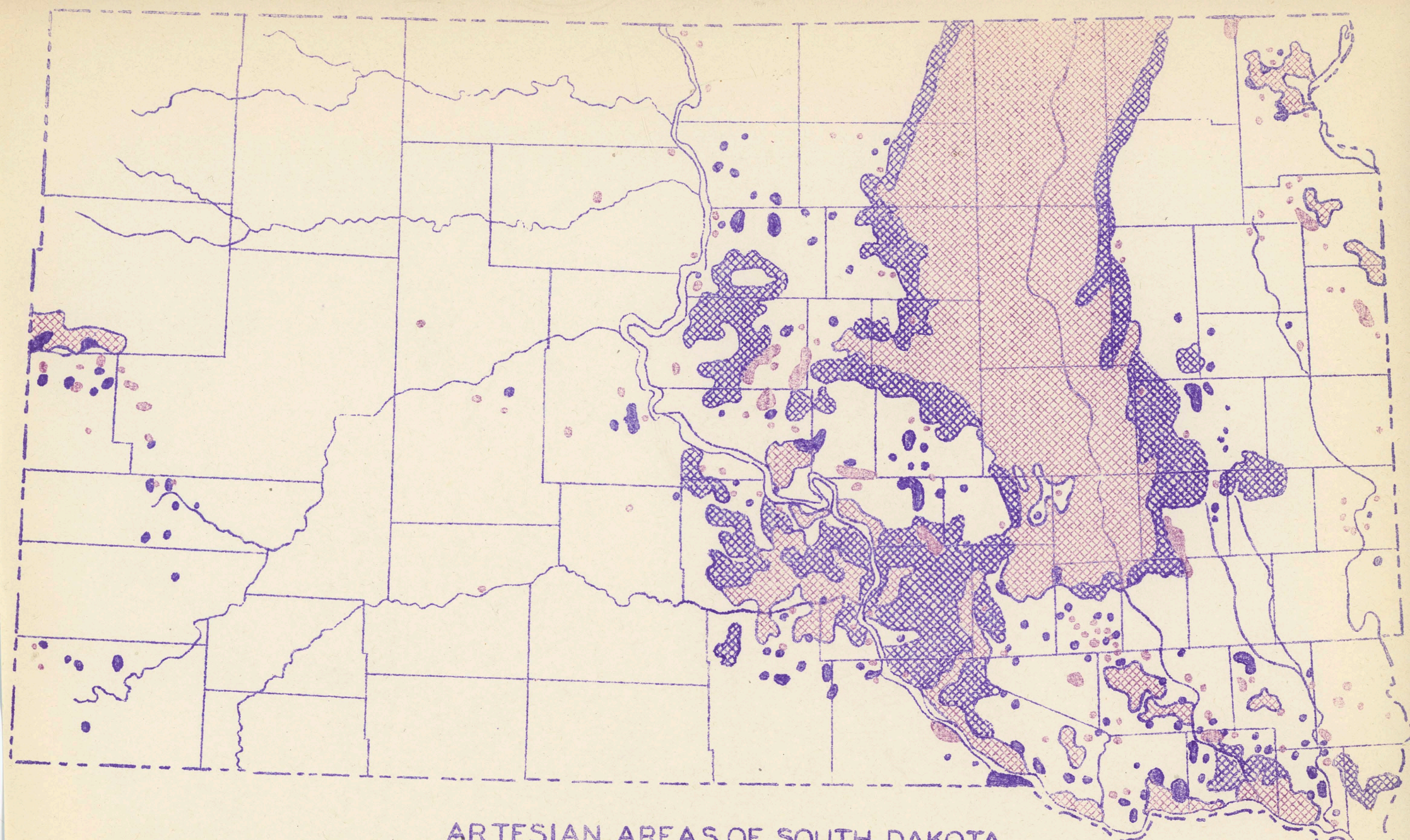
ARTESIAN AREAS 1938

 FLOWING WELLS

PREPARED BY

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O.P. 665-74-3-126 W.P. 3636







ARTESIAN AREAS OF SOUTH DAKOTA

1938

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O.P. 665-74-3-126
WP 3636

  FLOWING WELLS

  PUMPED ARTESIAN WELLS

moderately hard 36 per cent; and soft water wells 31.3 per cent; again approximately one third in each quality group. Approximately 70 per cent of these waters were considered soft or only moderately hard. Two townships reported that all shallow wells produce soft water, namely:

Twp.14N.,Rge.23E., Twp.14N.,Rge.28E.,

Soft waters were most commonly reported from shallow wells in northwestern areas where, in 9 townships, the number of soft water wells exceeded the total number of hard and moderately hard water wells. All wells reported from the following fifteen townships produced hard water:

Twp.12N.,Rge.23E.		Twp.13N.,Rge.28E.		Twp.16N.,Rge.26E.		Twp.16N.,Rge.30E.	
12	25	14	24	16	27	17	28
12	26	14	27	16	28	17	31
12	30	15	27	16	29		

Of the 326 shallow wells reporting as to character, 100 were definitely hard, 124 moderately hard, and 102 definitely soft. No relation between depth and character is apparent from reports.

Approximately 62 per cent of the deep pumped wells were reported soft, a very large percentage. The hard water wells and those which were reported moderately hard were evenly divided with 9 per cent of each group reported. Soft water wells were reported in all excepting one of the six townships reporting deep pumped wells. The depths of the soft water wells are similar, from 211 to 370 feet. The deepest pumped well reported, (405 feet) produced moderately hard water. The only hard water deep pumped well was reported at 365 feet.

Only one (9 per cent) of the deep pumped wells was reported to produce water unsuitable for drinking, with 11 reporting on suitability. This is a soft water well 307 feet deep.

Thus, fifty three (14 per cent) of the 373 shallow wells were reported to furnish water unsuitable for drinking and such wells were reported from 24 townships. Unsatisfactory drinking water does not appear characteristic of any particular area of the county or of any definite depth. In general, approximately one of every seven wells produces water unsuitable for drinking pur-

poses.

The one flowing well located in Twp.17N., Rge.30E., at a depth of 1800 feet, was soft in character but was reported unsuitable for drinking.

Objectionable ingredients in the water are chiefly responsible for the unsatisfactory character of many drinking waters of Dewey county although surface contamination may be responsible in some cases. Injurious ingredients may also be present in some cases. These can be determined only from adequate chemical analyses.

ADEQUACY OF WELL WATERS

In general, supplies reported in Dewey county were considered adequate for present needs but a large proportion, more than one fifth, do not produce sufficient water for current necessities.

Approximately 22 per cent of the county's well waters were reported to be inadequate although thirteen townships reported no cases of inadequacy. These townships are given below:

Twp.12N.	Rge.30E.	Twp.14N.	Rge.23E.	Twp.15N.	Rge.27E.
13	25	14	24	16	23
13	28	15	22	16	25
14	22	15	24	16	27
				17	30

Among the shallow wells less than 50 feet in depth, 22 per cent were reported inadequate; within the 50 to 100 foot depth range an approximate 28 per cent were reported inadequate in all but 14 townships. In Twp.16N., Rge.30E., and Twp.17N., Rge.29E., the only wells reported were inadequate within the 50 to 100 foot depth range and Twp.12N.,Rge.25E., reported five wells within these depths with three inadequate. Twp.17N.,Rge.22E., reported two wells out of three inadequate. From 100 to 150 feet, three (11 per cent) out of 27 wells were inadequate in Twp.13N.,Rge.22E., Twp.13N.,27E., and Twp.17N., Rge.28E. Four (16 per cent) of the wells 150 to 200 feet in depth were inadequate in Twp. 12N.,Rge.23E., Twp.13N.,Rge.27E., and Twp.17N.,Rge.26E. Thus, from wells

50 to 100 feet reported the highest percentage of inadequacy.

Less than 8 per cent. (one well) of the deep pumped wells were reported to be inadequate. This well was reported from Twp.15N., Rge.23E., to be 405 feet. The deep flowing well in Twp.17N., Rge.30E., was reported to be adequate with an average flow of 10 gallons per minute.

IRRIGATION

Forty five shallow wells were reported in use to irrigate $7 \frac{3}{4}$ acres, in plots ranging in size from $\frac{1}{4}$ acre to $1 \frac{3}{8}$ acre. Five deep pumped wells were in use to irrigate $3 \frac{1}{8}$ acres.

SUPPLEMENTARY SUPPLIES

Springs and cisterns apparently are not an important supplementary source of water supply in Dewey county. Only 3 springs were reported, located in Twp. 15N., Rge.26E., Twp.15N., Rge.27E., and Twp.16N., Rge.31E. One spring with an adequate supply (Twp.15N.,Rge.26E.) produced hard water and was used for stock only. Another spring reported soft water,was adequate and used for stock only. A third produced hard water, was used for domestic purposes,and was considered to be inadequate.

Cisterns averaged approximately one to every 9 wells in the county. A total of 36 was reported, of which 18 were used for drinking and cooking and 28 for laundry purposes. The most important use of cisterns in Dewey county, as elsewhere in the state, is as a substitute for hard water supplies unfit for laundry purposes or inadequate, or unsatisfactory for drinking.

The relatively large proportion of soft water wells over a large part of the county renders the use of cisterns unnecessary. The cisterns reported were located in the 20 townships listed on the following page. Three cisterns were reported from Twp.17N.,Rge.30E., where only one well was reported, (a flowing artesian well).

Twp.	Rge.	Number of Cisterns	Twp.	Rge.	Number of Cisterns
12N.	22E.	3	14N.	22E.	1
12	23	1	15	22	1
12	24	1	16	25	2
12	25	3	17	23	2
12	26	1	17	26	5
13	22	1	17	27	2
13	23	2	17	28	1
13	24	1	17	29	1
13	26	2	17	30	3
13	27	2	17	31	1

DEWEY COUNTY

Table 1.

DATA ON PUMPED WELLS FROM 0 TO 200 FEET (INCL.) IN DEPTH

LOCATION		Number of Wells	DEPTH OF WELLS			CHARACTER OF WATER					ADEQUACY OF SUPPLY			
Twp.	Rge.		Min.	Max.	Ave.	Hard	Med.	Soft	Corrode Casing	Unsuitable for Drinking	Adequate	Inadequate	Number used for Irrigation	Approximate Acres Irrigated
12	22	11	22	108	62	3	3	1	2	1	7	4	-	-
12	23	8	22	185	63	2	4	-	-	1	6	2	-	-
12	24	14	14	90	41	8	2	1	7	6	12	2	1	1/8
12	25	7	40	164	81	2	3	-	-	2	4	3	-	-
12	26	5	12	45	31	3	1	-	-	1	4	1	-	-
12	30	1	-	-	16	-	1	-	-	-	1	-	-	-
13	22	13	19	130	75	2	5	3	1	2	10	3	1	1/8
13	23	22	12	165	52	8	4	4	3	5	17	5	1	1/8
13	24	19	14	90	44	8	5	2	2	4	11	8	-	-
13	25	4	10	84	48	-	2	1	-	-	4	-	-	-
13	26	8	48	80	65	3	3	1	1	4	5	3	-	-
13	27	19	15	166	63	10	5	2	5	5	12	7	-	-
13	28	1	-	-	70	1	-	-	-	-	1	-	-	-
14	22	6	65	180	102	1	1	3	-	-	6	-	-	-
14	23	1	-	-	120	-	-	1	-	-	1	-	-	-
14	24	3	10	36	20	2	1	-	-	1	3	-	-	-
14	27	2	15	60	33	1	-	-	-	-	-	2	-	-
14	28	1	-	-	30	-	-	1	-	-	-	1	-	-
15	22	5	20	156	55	-	2	3	-	1	5	-	3	1 1/8
15	23	13	12	80	30	6	3	4	-	-	10	3	1	-
15	24	10	12	78	35	1	3	6	-	-	10	-	-	-
15	27	2	18	26	22	1	1	-	1	2	2	-	-	-
16	22	18	22	195	91	1	5	11	2	1	15	3	4	1/4
16	23	20	20	180	71	4	10	6	3	1	20	-	3	1/2
16	24	18	8	46	27	2	3	11	2	2	17	1	3	1 1/2
16	25	10	20	178	74	-	5	5	-	-	10	-	1	1/8
16	26	7	27	59	38	2	5	-	1	1	3	4	1	1/8
16	27	1	-	-	32	1	-	-	-	-	1	-	-	-
16	28	1	-	-	29	1	-	-	-	-	-	1	-	-
16	29	2	21	35	28	2	-	-	1	1	-	2	-	-
16	30	3	30	54	38	1	1	-	-	1	2	1	-	-
16	31	3	13	25	20	-	-	-	-	1	-	3	-	-

Continued on next page

DEWEY COUNTY

Table 1.

(Cont'd.)

DATA ON PUMPED WELLS FROM 0 TO 200 FEET (INCL.) IN DEPTH

LOCATION		Number of Wells	DEPTH OF WELLS			CHARACTER OF WATER					ADEQUACY OF SUPPLY			
Twp.	Rge.		Min.	Max.	Ave.	Hard	Med.	Soft	Corrode Casing	Unsuitable for Drinking	Adequate	Inadequate	Number used for Irrigation	Approximate Acres Irrigated
17	22	10	20	200	83	3	1	5	-	-	6	4	2	1/4
17	23	15	14	180	99	1	5	8	2	-	14	1	5	1 3/8
17	24	23	16	133	42	-	12	9	-	-	19	4	8	7/8
17	25	26	14	144	46	1	16	8	1	-	24	2	7	5/8
17	26	13	20	170	45	2	6	4	3	1	8	5	2	1/8
17	27	12	12	200	45	9	1	1	3	6	8	4	1	1/4
17	28	8	12	127	44	3	3	-	1	-	5	3	1	1/4
17	29	6	15	190	49	3	2	1	-	2	4	2	-	-
17	31	2	12	40	26	2	-	-	-	-	-	2	-	-
Total		373				100	124	102	41	53	287	86	45	7 3/4

NOTE: No Pumped Wells from 0 to 200 feet in depth reported from the following township and Range, T.17N., R.30E.

DEWEY COUNTY

Table 2.

DATA ON PUMPED WELLS OVER 200 FEET IN DEPTH

LOCATION		Number of Wells	DEPTH OF WELLS			CHARACTER OF WATER					ADEQUACY OF SUPPLY			
Twp.	Rge.		Min.	Max.	Ave.	Hard	Med.	Soft	Corroded Casing	Unsuitable for Drinking	Adequate	Inadequate	Number used for Irrigation	Approximate Acres Irrigated
13	23	1	-	-	214	-	-	1	-	-	1	-	-	-
15	23	1	-	-	405	-	1	-	-	-	-	1	-	-
16	22	4	211	370	258	-	-	3	-	-	4	-	3	1 1/8
17	22	2	350	365	358	1	-	1	-	-	2	-	-	-
17	23	4	202	265	235	-	-	3	-	-	4	-	2	2
17	29	1	-	-	307	-	-	1	-	1	1	-	-	-
Total		13				1	1	9	-	1	12	1	5	3 1/8

NOTE: No Pumped Wells over 200 feet in depth reported from the following townships and ranges: T.12N., R. 22, 23, 24, 25, 26, 27, 28, 29, 30E; T.13N., R. 22, 24, 25, 26, 27, 28E; T.14N., R. 22, 23, 24, 25, 26, 27, 28E; T.15N., R. 22, 24, 27E; T.16N., R. 23, 24, 25, 26, 27, 28, 29, 30, 31E; T.17N., R. 24, 25, 26, 27, 28, 30, 31E;

Table 3.
DATA ON FLOWING WELLS

LOCATION		Number of Wells	DEPTH OF WELLS			CHARACTER OF WATER					ADEQUACY OF SUPPLY					
Twp.	Rge.		Min.	Max.	Ave.	Hard	Med.	Soft	Corroded Casing	Unsuitable for Drinking	Adequate	Inadequate	Number used for Irrigation	Approx. Acres Irrigated	Ave. Gallon Per Min.	Number Controlled
17	30	1	-	-	1800	-	-	1	1	1	1	-	-	10	-	

NOTE: No other Flowing Wells were reported from Dewey County.

DEWEY COUNTY -- WELL NOTES

The following are pertinent remarks quoted from questionnaires returned by farmers and are included opinions of the water situation as expressed by the individual farmers and must be so applied.

- Twp. 12N., Rge. 22E.
NW $\frac{1}{4}$ Sec. 4 22 feet:
"The well on this place has a solid rock bottom, will supply water for only a good sized wash day."
- Twp. 12N., Rge. 25E.
NE $\frac{1}{4}$ Sec. 18 40 feet:
"Wells are good here for about 2 years, then water decreased to 3 or 4 barrels a day."
- Twp. 13N., Rge. 23E.
SE $\frac{1}{4}$ Sec. 15 45 feet: (shale)
"This well seems to have a very good flow, but the water is strong tasting alkali. Do not use for any family use. Less than 1/4 of a mile away we have a large lake bed."
- Twp. 13N., Rge. 24E.
SW $\frac{1}{4}$ Sec. 5 48 feet:
"The only difficulty on getting water on my farm is because they are not deep enough. I have another well on my place but it is about good as dry. It is 40 feet deep and has about 2 feet of water in it."
- Twp. 13N., Rge. 24E.
NW $\frac{1}{4}$ Sec. 28 78 feet: (blue clay)
"Several wells have been dug here which furnished a sufficient supply of water. The one described on other side was fairly good."
- Twp. 13N., Rge. 24E.
NE $\frac{1}{4}$ Sec. 32 41 feet:
"It is difficult to get good drinking water on account of alkali vein. A drilled well is about the only kind to have but the expense is too great. Stock won't drink water out of well until they are thirsty enough to drink anything."
- Twp. 13N., Rge. 25E.
NE $\frac{1}{4}$ Sec. 18 55 feet:
"I have two wells, one 55 ft. deep, 2 ft. hole, 16 ft. casing, pumped by windmill, 8 ft. water, sand blue. Another 10 ft. deep, 4 by 6, no casing, 6 ft. water, steady stream. Blue rock or shale."
- Twp. 14N., Rge. 22E.
NW $\frac{1}{4}$ Sec. 1 75 feet:
"We have tried several wells here but failed to strike water veins."
- Twp. 15N., Rge. 24E.
NE $\frac{1}{4}$ Sec. 3 31 $\frac{1}{2}$ feet:
"Our well is nearly half a mile from where we live, is the very best obtainable in this county, when water can be gotten from under this layer of stone."
- Twp. 15N., Rge. 26E.
SW $\frac{1}{4}$ Sec. 15 Spring:
"I have tested for water on this farm and found it to be all hard and very salty with alkali."

- Twp. 16N., Rge. 22E.,
NW $\frac{1}{4}$ Sec. 19 57 feet:
"Rock encountered in construction and bitter, unpleasant taste with bad odor."
- Twp. 16N., Rge. 28E.,
NE $\frac{1}{4}$ Sec. 4 29 feet:
"The main trouble in constructing a well on my place seems to be finding the water."
- Twp. 16N., Rge. 29E.,
NE $\frac{1}{4}$ Sec. 17 29 feet:
"This well has never been used. Water is very hard and salty, yet this well is in a sandy bottom."
- Twp. 16N., Rge. 31E.,
SW $\frac{1}{4}$ Sec. 22 22 feet:
"I tried for three wells all failed. I have lost stock in river each year due to quicksand, air holes and bad ice. I have trouble with water in spring and fall."
- Twp. 17N., Rge. 23E.,
NW $\frac{1}{4}$ Sec. 34 160 feet:
"Water is outstanding for all purposes."
- Twp. 17N., Rge. 26E.,
Sec. 9 27 feet:
"Wells are easily obtained by boring with a post auger."
- Twp. 17N., Rge. 27E.,
SE $\frac{1}{4}$ Sec. 10 55 feet:
"Hard to find water."
- Twp. 17N., Rge. 27E.,
SW $\frac{1}{4}$ Sec. 27 18 feet: (Gumbo)
"This water is alkali and cannot be used for stock."
- Twp. 17N., Rge. 27E.,
SW $\frac{1}{4}$ Sec. 29 12 feet: (Gumbo)
"This is top ground water. It is fair but still has some alkali."
- Twp. 17N., Rge. 27E.,
SW $\frac{1}{4}$ Sec. 24 28 feet: (Gumbo)
"This water used to be dead and rusty. The stock drank it but didn't do good on it. With reference to the difficulties as to construction wells: During these dry years there were no shallow wells to be found and if there is any lower water we do not know because of the black shale which no one has been able to dig through."
- Twp. 17N., Rge. 27E.,
SW $\frac{1}{4}$ Sec. 25 12 feet:
"It was hard to locate water because of the black shale underground which is hard to dig through. Then the water would be unfit for use."
- Twp. 17N., Rge. 27E.,
SW $\frac{1}{4}$ Sec. 25 20 feet:
"For one thing water was hard to find, the water is alkali and unfit for stock and domestic use."
- Twp. 17N., Rge. 28E.,
SE $\frac{1}{4}$ Sec. 3 14 feet:
"It is almost impossible to find water here. There were several wells drilled on this place but most of them dry. I have drilled three in the last four years, one was dug at 40 ft., one at 65 ft., was so alkali that stock could not drink it. The last well at 14 ft. has just water for household use. When a well is drilled below 15 ft. the alkali begins. Water for the stock comes from the dam. The dry hole and the alkali well have been filled with dirt."

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