U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

PROGRESS REPORT ON THE GEOLOGY AND GROUND-WATER HYDROLOGY OF THE LOWER MISSOURI-SOURIS UNIT
PART I. CROSBY-MOHALL AREA, NORTH DAKOTA

By

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PRELIMINARY DRAFT
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PROGRESS REPORT ON THE GEOLOGY AND GROUND-WATER HYDROLOGY OF THE MISSOURI-SOURIS UNIT
PART I. CROSBY-MOHALL AREA, NORTH DAKOTA

By Gerald A. Waring and George A. LaRocque, Jr.

ABSTRACT

The Crosby-Mohall area covers about 2,700 square miles in the northwestern part of North Dakota. This area is included in the 2,500,000-acre Missouri-Souris and Garrison Diversion irrigation projects, which are important units in the general plans for development of the water resources of the Missouri River Basin. Although the Crosby-Mohall area lies outside the drainage basin of the Missouri River, plans have been made for the irrigation of about 1,000,000 acres (equivalent to 1,560 square miles) of the most suitable land, with water brought by canal from the Missouri River in Montana.

The studies that have been undertaken in the area by the Division of Ground Water of the United States Geological Survey form a part of the investigations which have been initiated by the Survey and several other bureaus of the Department of the Interior, especially the Bureau of Reclamation. The studies on which the present report is based were made during the field seasons of 1945, 1946 and 1947, to obtain information on the occurrence, movement, quantity, and quality of the ground water. The report contains data on the several kinds of water-bearing materials, water analyses, and well logs; the records of fluctuation of water level in about 400 wells; and an inventory of 4,636 wells and test holes.

Later studies for the whole of the Missouri-Souris Unit will supply additional data on ground-water levels and piezometric surfaces, more extensive information on quality of water, a complete inventory of wells, and further geologic information relating to ground-water supplies. Other work that is planned also includes the drilling of additional test holes and the analysis of water samples from representative wells throughout the area.

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INTRODUCTION

LOCATION AND EXTENT OF AREA

Water of the Missouri River, stored in and regulated by the Fort Peck and Garrison Dam reservoirs is to be utilized for irrigation in the proposed Missouri-Souris and Garrison Diversion Units. The project has been divided into three divisions, as follows: (1) Northern division; (2) Missouri River pumping division; (3) Glasgow Bench division. Initially the Northern Division included units in the size shown: Missouri Canal Units, 99,600 acres; Medicine Lake Units, 55,600 acres; Culbertson Unit, 21,400 acres; Crosby-Mohall area 1,000,000 acres; New Rockford area, 55,500 acres; Jamestown area, 22,100 acres, and Oakes area, 31,000 acres. Subsequent authorizations, developments and studies will probably show the feasibility of increasing the irrigable acreage of the Northern Division by about 1,000,000 acres, almost wholly in the vicinity of New Rockford, Jamestown and Oakes. This increased area is to be irrigated by diversion from Garrison Reservoir.

The original Crosby-Mohall area in North Dakota is covered by the present report. This area is adjacent to the northern border of the United States and lies wholly north of the 48th parallel of latitude, between about 100°51' and 103°20' west longitude. This area, covering about 2,700 square miles, is about 130 miles long in a southeast-northwest direction and ranges in width from 15 to 35 miles. The area comprises all of Renville County and parts of Divide, Burke, Bottineau, Ward, and McHenry Counties. (See pl. 1.)

INTRODUCTION

NATURE AND SCOPE OF INVESTIGATION

The investigation upon which the present report is based is one of several being made by the United States Geological Survey as a part of the studies undertaken by the Department of the Interior for the conservation, control, and use of the water resources of the Missouri River Basin. The present study is intended to furnish information on the occurrence, movement, quantity, and quality of ground water in the Missouri-Souris Unit.

A comprehensive report to be prepared after further field, office and laboratory work has been done will cover such factors as fluctuation of the water table and piezometric surfaces, quality of ground water, complete inventory of wells in the area, and further geologic information pertinent to the development of ground-water supplies.

The investigation was begun in September 1945, and the present report is prepared from data collected during the field seasons of 1945, 1946 and 1947. The report includes information on the several kinds of water-bearing materials, complete chemical analyses of water from 94 wells and test holes, partial chemical analyses of water from about 1,200 wells, the logs of 26 wells and 112 test holes, records of measurements of water level in about 400 wells, and an inventory of 4,636 wells.

Further office studies to be completed include the compilation of additional contour maps of the water table and piezometric surfaces; preparation of maps showing the areas suitable for development of satisfactory ground-water supplies; and preparation of maps showing the principal chemical characteristics of the ground water.

INTRODUCTION

ACKNOWLEDGMENTS

The studies that form the basis of the present progress report were begun under the general direction of O. E. Meinzer, Geologist in Charge of the Division of Ground Water (now called the Ground Water Branch) of the United States Geological Survey. On his retirement at the end of November 1946, the general supervision was continued by his successor, A. N. Sayre. Both field and office work were under the direct supervision of George H. Taylor, Regional Engineer, Ground Water Branch. Howard Haworth and Paul C. Tychsen of the same Branch, directed test-hole drilling. Help in connection with this work also was given by P. E. Dennis, geologist of the United States Geological Survey, who was in charge of ground-water studies in North Dakota in cooperation with the State Water Conservation Commission and the State Geological Survey.

During the field seasons much help in the geologic studies was obtained from R. W. Lemke, R. Townsend, and D. M. Larrabee, who were in charge of the geologic mapping for the Geologic Division of the United States Geological Survey. Maps and other pertinent data were obtained from the United States Bureau of Reclamation and the Topographic Division of the United States Geological Survey.

LAND FORMS

The Crosby-Mohall area lies wholly within the drainage basin of the Souris River, locally known by its English equivalent, Mouse River. This river flows southeastward from Canada, then turns northward and joins other drainage to Hudson Bay. Within North Dakota the Souris River drains about 9,250 square miles, its largest tributary being the Riviere des Lacs, which

also flows southeastward from Canada, and joins the Souris a few miles west of Minot.

The eastern and western parts of the Souris River drainage basin in North Dakota are outside the area under discussion in the present report. The central part of the basin includes the Crosby-Mohall area. This covers a gently undulating plain, broken by the deep, narrow valleys of the Souris River and the Riviere des Lacs, and by several deep coulees. The plain is also modified by the shallow courses of minor streams and by small, isolated low knolls and hills.

Many parts of the area are dotted by numerous oval or circular undrained depressions, most of which range from 100 to 300 yards across. These probably have an origin similar to that of the "kettleholes" of other glaciated areas, but are very shallow, generally extending less than 5 feet below the normal level of the plain.

The general surface of the plain slopes gently eastward, from beyond the west border of the State to the wide, flat valley of the Souris River on the east border of the area covered by the present report. Within the area the altitude ranges from nearly 2,000 feet near its northwest border to about 1,500 feet along the Souris River at the southeast end of the area.

DEVELOPMENT AND INDUSTRIES

The Crosby-Mohall area is served by main lines and branches of the Great Northern Railway and the Minneapolis, St. Paul and Sault Ste. Marie Railroad. Both lines pass through Minot, a city of nearly 20,000 in the valley of the Souris River, near the southeast border of the area.

Kenmare, a town of about 2,000, is 50 miles farther northwest, in the valley of the Riviere des Lacs.

Numerous smaller towns on the upland afford supply points for the farmers and shipping points for grain and livestock. The principal towns are Surrey and Granville, east of Minot; Glenburn, Lansford, Mohall, and Tolley, in the east-central part of the area; Loraine and Sherwood, near the northeast border; Northgate and Portal, on the north border; Bowbells, Flaxton, Lignite, Columbus, Larson, and Noonan, in the western part; and Crosby and Ambrose near the west border of the area.

Easy travel between the several towns and throughout nearly the entire area is afforded by roads along the land-section lines. Although only a few of these roads have been hard-surfaced or graveled, many of the dirt roads have been graded. They dry quickly after summer rains, but are muddy and rutted during the thawing period of March and April.

During the period of excess precipitation prior to 1916 the agricultural economy of the area was established and developed. Nearly all the area was homesteaded in 160-acre tracts before 1920. During the subsequent prolonged period of drought, especially during 1934-36, many of the farms were sold or relinquished, and the area lost perhaps three-quarters of its earlier population; meanwhile the farms became consolidated into holdings ranging up to several thousand acres in extent. During the several years of good crops prior to 1948 the lands were farmed profitably with the aid of combined harvesters and other labor-saving machinery.

Nearly all the area is devoted to dry farming, chiefly of wheat. Some rough or stony lands are used for pasture. In the southeastern part much sandy land, which would be subject to erosion by the wind if it were

cultivated, is kept for cattle raising and pasture. Along the valleys of the Riviere des Lacs and the Souris River much fodder is grown, and meadow lands are used extensively for pasture. Meadow lands along the shallow valleys of Cut Bank Creek or Deep River, Sevenmile Creek or Little Deep River, and several smaller stream valleys, are also used for pasture. From these lands much native grass is cut for hay. Therefore, in addition to dry farming considerable dairying is carried on, and beef, cattle, hogs, sheep, turkeys, and chickens are raised for market.

The other principal industry within the area is the strip mining of lignite beds chiefly near Noonan and Lignite in the northwest. A large mine near Bowbells was operated for several years prior to 1942, and many small mines have been worked intermittently along the valley of the Riviere des Lacs.

GEOLOGY AND GROUND-WATER CONDITIONS

By Gerald A. Waring

PREVIOUS STUDIES

Much information on the character of the glacial drift that covers practically the whole area, and on the ground-water supplies, is given in a report by Howard E. Simpson, published in 1929. The drift in the western part of the area was described by William C. Alden in 1932. Somewhat more detailed information on the geology and water supply in the western part was assembled as a thesis by Andrew G. Alpha in 1935. Several reports of the North Dakota Geological Survey contain well logs and other detailed information on certain localities.

The principal lignite deposits have been described in reports of the Federal and State Geological Surveys, and the geology and mineral resources have been studied more recently by members of the Geologic Branch of the Federal Survey. A report on the soils of the eastern part of the area has been issued by the United States Department of Agriculture. In preparing the present report all the publications listed below have been drawn upon.

Alden, William, C., Physiography and glacial geology of eastern Montana and adjacent areas: U. S. Geol. Survey Prof. Paper 174, 133 pp., 1932.

Alpha, Andrew G., Geology and ground-water resources of Burke, Divide, Mountrail, and Williams Counties in North Dakota: Univ. North Dakota, Dept. Geology and Geography, 63 pp., June 1935. (Typewritten: submitted as thesis for Master's degree).

Andrews, David A., Geology and coal resources of the Minot region, North Dakota: U. S. Geol. Survey Bull. 906-B, pp. 43-84, 1939.

Holowaychuk, Nicholas, and Boatright, William C., Erosion and related land use conditions on the Minot area, North Dakota, U. S. Dept. Agriculture, Soil Conservation Service, 37 pp., 1938.

Laird, Wilson M., Selected deep well records: North Dakota Geol. Survey Bull. 12, 31 pp., 1941.

Larrabee, David M., and others, several unpublished quadrangle maps showing engineering geology, scheduled to be issued in 1947.

Lemke, Richard W., and others, several unpublished geologic quadrangle maps and reports on the area, scheduled to be issued in 1947.

Leonard, A. G., Babcock, E. J., and Dove, L. P., The Lignite deposits of North Dakota: North Dakota Geol. Survey Bull. 4, 240 pp., 1925.

Simpson, Howard E., Geology and ground-water resources of North Dakota: U. S. Geol. Survey Water-Supply Paper 598, 312 pp., 1929.

Simpson, Howard E., The artesian waters of North Dakota: North Dakota Geol. Survey Bull. 8, 47 pp., 1935.

Simpson, Howard E., Change in ground-water levels in North Dakota: North Dakota Geol. Survey Bull. 10, 23 pp., 1937.

Detailed topographic maps were not available at the time much of the field work was done, so the county maps of the North Dakota Department of State Highways were used as a base. Study was made primarily of shallow ground-water conditions within the glacial drift, which covers nearly the whole area. Although many wells have been drilled into the underlying bedrock, which consists of shale and sandstone containing several beds of lignite, only scanty information was obtained concerning these deep wells.

Throughout the greater part of the area the surface character of the drift is so uniform that varying ground-water conditions could not be recognized. However, in some places ground-water subdivisions, based on

the geology and topography, could be identified. Several of these subdivisions form numerous small areas scattered throughout the Crosby-Mohall area. In the absence of detailed maps these small areas could not be located accurately or completely, but it is believed that the progress map indicates fairly well the "spotted" character of the shallow ground-water areas. (See pl. 2.) However, it should not be inferred that these shallow ground-water subdivisions are distinct from the shallow drift aquifer discussed later in the report. Except in the instance of a few isolated pot-holes, these ground-water subdivisions are local deposits or concentrations of comparatively highly permeable sands and gravels which are threaded through and intertwined with less permeable materials, the entire complex of deposits comprising the regional shallow drift aquifer.

WATER-BEARING MATERIALS

Silt and Fine Sand

Marshy Areas

Much of the area is drained by creeks in shallow valleys of low gradient. Along these drainage courses are areas where the ground water normally is sufficiently close to the surface that marshes are formed; notably along tributaries of Long Creek near Crosby, Stony Creek west of Bowbells, the upper course of Egg Creek, and other stream courses between that stream and the Souris River. In several districts, especially in the northwest near Bowbells and near Crosby, are large marshes, parts of which are shallow ponds during periods of excess runoff. A large flat area southwest of Lignite contains at least three nearly permanent lakes, bordered by considerable marshy land; and during the summer of 1946 a large marshy de-

pression, bordered by banks 10 to 20 feet high, near the Canadian border northeast of Columbus, was partly covered by water.

In the marshy area the ground-water level is generally 1 or 2 feet below the land surface in early summer, and rarely more than 4 feet during the low-water stage in autumn and winter. The water-bearing materials are silt and fine sand, possibly being chiefly wind-blown material deposited on the clay-loam surface of the drift. As the water is close to the surface and generally saturates a thickness of several feet of material over a considerable area, moderate supplies can be obtained. Such water is generally of low mineral content. However, near some of the ponds the ground water may be highly alkaline. This high alkalinity is attributed to the fact that the ponds do not readily receive water from or discharge water to the regional shallow drift aquifer. Salts from the surrounding soils and the underlying glacial drift have been dissolved by water from surface runoff and water percolating upward by capillary action from the regional shallow drift aquifer, and these salts have then been concentrated in and near the ponds by evaporation.

Meadows Along Minor Streams, and Shallow Undrained Basins

In addition to the marshy areas along the large creeks, many meadow areas are present along the shallow, narrow valleys of minor drainage channels. Nearly all these meadows are used for pasture, and from some of them the natural grass is cut for hay. Within these areas ground water is present generally at depths of less than 15 feet during periods of low ground-water level and may be close to the surface during the early summer.

Meadow lands are common, bordering the principal marshy areas and minor streams. They are especially common on each side of the upper course of the Souris River and in the low plains north of that river in the eastern part of the project. In a few places direct evaporation from the water table in the meadow areas has produced alkaline lands, notably in T. 163 N., Rs. 94 and 96 W.

Almost all the uplands are dotted with shallow circular or oval undrained basins. Most of these are only 100 to 300 yards in diameter, but many are considerably larger. Nearly all are less than 5 feet deep. Although normally too moist to be cultivated in early summer, they are generally dry during the latter part of the growing season. During periods of very excessive runoff, many of these undrained basins overflow and their runoff through chains of such basins is integrated with that of the regional drainage pattern.

In several places on plate 2 minor drainage lines are shown, which really represent rows of small, shallow basins. However, in many places the distinction is so slight between meadow lands of small stream channels and those of chains of basins, that on the map one symbol has been used for both. The larger basins normally collect considerable snow during the winter, and rain during the summer. They therefore become reservoirs of shallow ground-water storage, and furnish domestic supplies of water of low mineral content to shallow wells. The yield is small from fine sand, and the supplies are limited to the amount of rain and snow that has fallen and been stored within each basin. Many wells which tap such supplies become nearly dry during the autumn and winter months.

The principal basins that seem capable of yielding satisfactory domestic

water supplies are shown on plate 2. Detailed mapping may show that the size, shape, and location of many of these basins are inaccurately represented; but the writer believes that the approximate distribution of these small detached ground-water reservoirs is fairly well shown.

Sand and Gravel

Small Mounds and Low Ridges

The plains area in general has a remarkably flat surface. However, in addition to the marshes, meadows, and other shallow depressions that have been described, there are numerous small mounds and low ridges of the type called kames by glacial geologists. Kames are believed to have been formed near the margins of ice sheets, by debris-laden streams which deposited and heaped up the sand and gravel as the water emerged from beneath the ice. Kames are also formed where debris-laden streams, flowing over ice sheets, plunge into pits or caverns beneath the ice, and the consequent ponding of the water causes deposition of the silt, sand, and gravel that it carries.

As the kames lie upon the great sheet of glacial drift somewhat as does the gravel of the outwash channels, next described, they are considered in the present report to form a distinct subdivision of the water-bearing materials. Some of the kames shown on plate 2 seem to be composed almost entirely of silt and fine sand, and wherever good exposures of these materials were seen they showed evidence of bedding due to water action. No eskers (long crooked ridges of sand and gravel deposited by streams of water flowing in channels beneath the ice) were seen, and no drumlins

(mounds of unstratified drift deposited directly by the ice as it melted) were recognized.

In the westernmost part of the area only two low mounds were noted, about 3 miles and 5 miles southeast of Crosby, respectively. The northern one is less than 15 feet high and seems to be composed largely of gravel and cobbles. The southern one lies between two stream channels and is composed in part of cobbles and larger stones. A short distance east of it are extensive deposits of gravel, in which a large pit for road gravel has been opened.

In the area between Shore Creek and the Riviere des Lacs, and extending from the Canadian border on the north nearly to the Altamont moraine on the south, are numerous kames. Most of them rise only 10 to 20 feet above the plain, but locally they are prominent. The axes of the kames trend generally northwest-southeast. Pits for road gravel have been opened in several of them; wells have been dug or bored in several others. These mounds present the rather unusual sight of windmills on high lands instead of in low places; for the farmers have learned that these sandy and gravelly deposits collect and store considerable amounts of water from the local supplies of rain and snow. Many of the gravelly deposits extend for several feet below the surrounding surface level and form reservoirs capable of holding and yielding fairly large amounts of ground water.

Between the Riviere des Lacs and the Souris River comparatively few mounds were seen, and they are increasingly scarce farther east, except for a group of small ones in the northeastern part of T. 158 N., R. 81 W., and several very gravelly ridges near Granville, in T. 155 N., R. 79 W. Several that are farther south trend northwest-southeast and may have an origin re-

lated to nearby moraines. As is true of the shallow basins, detailed topographic mapping may show that the representation of these mounds and ridges on the map is inaccurate and incomplete. However, the general distribution of these features is believed to be fairly correctly shown.

Glacial-outwash Channels

As the glacial ice melted from the gently sloping plain which forms most of the irrigation project, the water ran off through many channels. The shallow courses of most of the present creeks and coulees were developed during that period. In some areas the water spread over the plain through a network of very shallow channels, depositing much gravel and sand as the velocity of flow slackened. These channels are still traceable on the ground, after many years of cultivation, and are easily recognizable in aerial photographs.

Remarkable networks of such bands of outwash have been mapped by R. W. Lemke and others in the Deering, Sawyer, and Velva quadrangles; broader bands which are not so commonly interconnected have been mapped by them in the Bowbells, Flaxton, and Kenmare quadrangles. In many of these bands the sand and gravel do not extend deep enough to be water bearing. Therefore, only those areas which seem capable of yielding considerable amounts of ground water are shown on plate 2.

In most places the depth to water is only 10 or 15 feet, but where the gravel is thicker the water table may be nearly 30 feet below the land surface. Most of the valley of Long Creek contains much gravel, as does that of its main tributary from the south. Along the entrenched valley of the main stream the outwash material has been reworked and low alluvial terraces

have been formed; but along the shallow course of the southern tributary the gravel is distributed rather irregularly, nearly as it was left by the glacial streams. Farther east much outwash gravel is present along the upper course of West Branch of Shore Creek and along the larger creeks in the vicinity of Flaxton and Bowbells.

Near the east border of the irrigation project occasional small areas of outwash gravel thick enough to be water bearing are present along the upper courses of Cut Bank Creek[1] or Deep River, Spring Coulee, and Sevenmile Creek or Little Deep River. Near the southeast border of the area all the main water courses contain much outwash gravel as far east as the places where the streams debouch onto a wide sandy plain.

Main Creek Valleys

Along the main creek valleys the depth to water is generally too great to produce permanent meadows, but considerable amounts of water are present in places where the stream alluvium is sufficiently thick and is sandy or gravelly. In the northwestern part of the area the valley of Long Creek north of Crosby is of this character. In the northeastern part, the valley of Cut Bank Creek or Deep River seems to contain much shallow ground water; farther south there is evidence of much underflow along the valleys of Spring Coulee and of Sevenmile Creek or Little Deep River. Between the latter stream and the Souris River the upper valleys of Egg Creek and two other streams contain much sandy alluvium, which stores considerable water.

The deep, narrow valley of Mackobee Coulee, in T. 158 N., R. 85 W., has considerable underflow which has scarcely been tapped, as there are

1 Another Cut Bank Creek forms the outlet of North Lake, which is east of the limit of the irrigation project.

few residents near its channel. Near the southeast border of the area the valleys of the several creeks that enter the sandy plain contain much alluvium coarse enough to yield fairly large supplies of shallow ground water. The narrow valleys of a creek near Granville, and of two other streams, respectively 2 and 3 miles east of that town, are quite sandy and gravelly and are capable of yielding much water from depths of less than 30 feet.

Terraces and Slopes Bordering the Valleys of the Riviere des Lacs and the Souris River

In the northern part of the area the slopes that border the valleys of the Riviere des Lacs and the Souris River rise nearly 200 feet to the upland plains, but gradually become lower eastward, so that the upland is only about 50 feet above the valley of the Souris River on the southeast border of the area.

Prominent terraces are present on several portions of the valley sides. They are especially well developed on both sides of the Souris River Valley in and near the southwestern part of T. 158 N., R. 84 W., and also near the point where the highway west of Mohall crosses the river in T. 161 N., R. 86 W. Farther upstream prominent terraces are present on the west side of the valley in T. 162 N., R. 86 W. In these places terraces at four or five heights can be followed for distances of 2 or 3 miles.

Terraces are not prominent along the upper valley of the Riviere des Lacs, but remnants of terraces 30, 60, and 100 feet above Upper Lake[2] on

2 The three principal lakes in the valley of Riviere des Lacs are locally known as Lower des Lacs Lake, Middle des Lacs Lake, and Upper des Lacs Lake; but these redundant French-English names have not been officially approved by the U. S. Board of Geographic Names.

the Riviere des Lacs in Tps. 161 and 162 N., R. 88 W., have been mapped by R. W. Lemke and his assistants; more extensive terraces are present at elevations of 50 feet and 60 to 65 feet above the lake, along both sides of the valley, for about 3 miles southward from the Canadian border. Farther south an area of uneven slopes several miles long on the west side of the valley in T. 162 N., R. 88 W., may contain remnants of several terraces.

A layer of gravel and cobbles several feet thick underlies all the terraces and in many places it is water bearing. On the valley sides in localities where terraces are not well-developed, gravel generally overlies the finer deposits of glacial drift. Ground water drains rather rapidly down the terraces and slopes to the valley bottoms, however, and only small supplies are available for wells on the terraces at depths ranging from 30 to 50 feet.

A few small springs have been reported along the borders of the two river valleys. During the periods of melting snow, and of summer rains, numerous temporary springs appear on the slopes and valley borders. Throughout the growing season most of the ravines contain green bushes and other vegetation which show that there is considerable shallow ground water moving down these drainage courses. The total precipitation in the region is so low, however, that few perennial springs of discharge greater than 1 or 2 gallons a minute are present.

River Alluvium

The valley floors of the Riviere des Lacs and the Souris River are flat-bottomed and of fairly uniform width, each being about half a mile wide at the Canadian border and not much wider near their junction. Farther downstream the valley of the Souris widens to nearly 1½ miles near Minot, then decreases to less than a mile near Velva, but opens onto a wide plain about 12 miles farther downstream. Large parts of the upper courses of each river valley are occupied by shallow lakes whose water levels are controlled by dams of the United States Fish and Wildlife Service.

Each valley is floored with thick deposits of sandy and gravelly

alluvium, which overlies less well bedded deposits that may be largely of glacial drift. The uppermost deposits contain much ground water and supply many dug and bored wells. The lakes of the upstream portions probably furnish, by infiltration, large amounts of water to the alluvium in the valley lands for several miles downstream.

Ground water from the deeper deposits has been developed in only a few places. The municipal supply at Minot is obtained from several drilled wells tapping coarse gravel at depths of about 100 to 150 feet. The municipal supply at Kenmare also is obtained from drilled wells, and other wells have been drilled in the valley fill. It seems probable that the ground-water supplies in the river valleys are the largest available in the area.

Lake Deposits

On the southeast border of the irrigation project the undulating plains give way to a flat sandy plain, which is believed to have been part of the bed of a former lake, known as glacial Lake Souris. This has been described by Andrews[3], who noted deltas and beaches of low stages of the lake at altitudes between 1,560 and 1,620 feet. During its highest stage the lake level was higher than most of the undulating plain; but at that time this plain was probably covered by ice, as little or no evidence of lake deposits was found during detailed mapping by the Geologic Branch of the United States Geological Survey.

The sandy lands are subject to drifting by the wind, if cultivated; so they are used mainly for pasturing beef and dairy cattle. In these lands

3 Andrews, David A., Geology and coal resources of the Minot region, North Dakota: U. S. Geol. Survey Bull. 906-B, pp. 65-67 and fig. 14, 1939.

ample water for domestic and farm use is obtained from dug or bored wells, or drive-point wells, at depths of less than 20 feet. The water is found in fine sand, in which it is usually difficult to keep a dug or bored well open. For this reason drive-point wells with fine screens are generally used. The yield is comparatively small, generally less than 10 gallons a minute, pumped by hand or by small windmill.

Glacial Drift

Bouldery Areas

On the uplands certain areas or bands were noted which are more stony and bouldery than is most of the land surface. These areas may indicate minor recessional moraines, at places where local fronts or lobes of the glacial ice sheet remained nearly stationary for long periods and deposited unusual amounts of coarse material, along with much clay and silt. As contrasted with two large recessional moraines near the southeast border of the project, these boulder bands are not marked by ridges and knolls, and are not in areas of gravelly or sandy soil. They seem to be areas of poor ground-water conditions.

Two of the very bouldery bands are along creek valleys, and one is on the north border of the valley of Riviere des Lacs, but the other bouldery areas are not indicated by the topography. They are not sharply defined, and the outlines of several bouldery areas shown on plate 2 are only tentative.

Throughout the farming lands the small stones that were originally scattered over the surface generally have been collected into piles, chiefly near the borders of the fields. Nearly all the boulders have also been hauled to the borders of the fields, close to the section-line roads. Many

stones and boulders that were encountered in grading the roads and digging drainage ditches now line the roadsides. Nearly all such coarse material from each land section therefore may now be easily seen. Most of the stone piles are indicated on the quadrangle maps prepared by the Geologic Branch of the United States Geological Survey, with estimates of the amounts possibly available as riprap material.

Practically all the boulders and stones are of very hard, unweathered rock. Apparently all the weathered or soft blocks were crushed to small fragments by the ice; only the hardest ones persisted as stones and boulders. Many of these have a coating of calcium carbonate about one-fortieth to one-tenth of an inch thick, deposited as caliche on their under sides.

Parts of the surface of some boulders are planed and scratched, presumably by being dragged over the drift beneath the ice. On few boulders small parts of the surfaces are polished, as if by water carrying silt and fine sand[4].

During the course of the field work, notes were made on the distribution of boulders 4 feet or larger in greatest dimension, because the areas where such large boulders are present in considerable numbers seemed to be underlain principally by clayey and silty material, where supplies of shallow ground water probably cannot be easily developed. Information which was recorded concerning the distribution and size of the boulders is shown on plate 3.

4 The writer does not favor the local opinion that these rock surfaces have been polished by buffalo or cattle, because many of the polished surfaces are on tops of boulders that are exposed only a few inches above the land surface. A recent account of chemical tests made on polished boulders in New Mexico (in a nonglaciated area), tending to show that the polishing was done by cattle, also does not seem to the writer to be convincing; as the boulders may have been polished by other means and later rubbed by the animals. (See Lang, W. B., The polished rocks of Cornudas Mountain, New Mexico: Science, vol. 105, No. 2716, p. 65, Jan. 17, 1947.)

Although only the larger boulders were noted, they are generally in localities where smaller boulders are also common.

In some parts of the area not all the section lines were traversed, so doubtless many boulders were not recorded. Tall weeds in late summer obscured some roadsides and probably hid some boulders. However, the writer believes that the map shows the distribution of at least three-quarters to seven-eighths of the boulders 4 feet or larger in their greatest dimension that are present on the land surface.

About 88 percent of the total number observed are 4.0 to 5.9 feet in length; 9½ percent are 6.0 to 7.9 feet, and the remaining 2½ percent measured 8.0 feet or greater. The largest boulder observed is of granite, 17 by 11 by 5 feet in dimensions above ground, in sec. 35, T. 163 N., R. 91 W. Only 11 others were seen of length greater than 10 feet.

The number of boulders of a given size or size-group increases greatly with a decrease in the size of the boulders. The rate of change is factorial, and is so nearly uniform that when the numbers recorded for different size-groups are plotted on semilogarithmic paper, they lie nearly along a straight line. From the figures obtained, several estimates were made, based on different series of size-groups, of the number of boulders 2 feet or greater in largest dimension that might be available as heavy riprap material. Although the total number is large, the estimates based on the measured boulders indicate that, within the 2,600 square miles examined, the number of boulders which are 2 feet or greater in diameter or length averages only about 20 to the square mile.

In some localities the boulders are definitely concentrated. In these places, notably along Shore Creek in Tps. 163 and 164 N., R. 94 W., and along a wide creek channel in T. 163 N., R. 91 W., and elsewhere in the Flaxton

area, they may be available for collection at reasonable cost. In several places where the boulders are plentiful along the borders of graded roads, they may also be available at reasonable cost; notably along the north border of T. 156 N., R. 82 W., and along several section-line roads in T. 156 N., R. 81 W. Some of the boulder bands conform to the northwest-southeast trend of drainage and are probably at right angles to the direction of movement of the ice sheet that carried them.

About 92 percent of the boulders that were noted are of granite, gneiss, or schist. Only eight boulders of diorite or more basic igneous rock were seen, four of which are in the bouldery valley of the creek that flows northeast past Flaxton, two are in the valley of the Souris River, and the other two are respectively half a mile northeast of, and 7 miles south of, the town of Tolley. About 6 percent of the total number of boulders are of very hard, dense gray limestone, and some of these contain fragments of crinoid stems, and other fossils. The remaining 2 percent are chiefly of hard pink to white fine-grained siliceous sandstone.

The proportions of boulders of basic igneous rocks and of limestone and sandstone are less than were noted by Todd[5] in the Aberdeen-Redfield area of South Dakota. He found the larger number of boulders to be of compact medium-grained granite, but estimated that 5 percent are of greenstone, diorite, and diabase, and 10 to 15 percent are of fine-grained sedimentary rocks.

In the Crosby-Mohall area the great majority of the granitic boulders are of gray coarse to medium-grained rock, but about 20 boulders of brown coarse grained hornblende granite were noted, all of which are in the east half of

5 Todd, J. E., U. S. Geol. Survey Geol. Atlas, Aberdeen-Redfield folio (No. 165), p. 5, 1909.

the area, in the central main boulder band.

About 50 large and many small boulders of very hard hornblende-biotite gneiss, which has a characteristic pitted surface, form a wide band that extends for several miles southeastward from Sherwood. Comparatively few boulders of other kinds of rock are in evidence in this district and only three boulders of the distinctive variety of gneiss were noted outside the Sherwood area, at widely scattered points, in sec. 35, T. 163 N., R. 87 W.; sec. 18, T. 161 N., R. 90 W.; and sec. 12, T. 159 N., R. 88 W., respectively.

Several groups of large limestone boulders are present in the northwestern part of the project, notably in very bouldery bands along Shore Creek and the main creek near Flaxton. Another group is in the southern part of T. 161 N., R. 86 W. However, most of the limestone boulders are along the south border of the area, chiefly in T. 159 N., R. 88 W. Numerous other limestone boulders help to mark a suggestive boulder band that extends, with interruptions, from near Velva in the southeast, to Crosby in the northwest. The largest limestone boulder that was seen is a rudely rectangular block about 13 by 8 by 6 feet in size, uncovered a few feet below the surface in a strip coal mine in sec. 2, T. 162 N., R. 95 W.

Only 32 large boulders of siliceous sandstone were noted, five being in the extreme western part of the area. They are distributed along a band that contains several smaller sandstone boulders and suggests a boulder train. In T. 163 N., R. 88 W., and T. 162 N., R. 87 W., seven others are along a nearly straight line that suggests another boulder band, this one extending south-southeast, more nearly in accord with the trend of the minor moraines. The other large siliceous sandstone boulders are widely scattered throughout the east half of the area, without definite pattern

of distribution.

In addition to the fine-grained siliceous sandstone boulders, seven large boulders to the east, south, and southwest of Lignite, where bedrock is close to the surface, are of medium-grained calcareous sandstone of the Fort Union formation. Although these boulders presumably are from the bedrock immediately underlying the drift, they are fairly well rounded, like most other boulders both large and small, and hence they may have traveled from considerable distances farther north.

The principal bouldery areas within which the drift seems to be of clay loam, and therefore unfavorable for the development of ground water, are tentatively shown on plate 2.

In Tps. 163 and 164 N., R. 94 W., the valley of Shore Creek is entrenched 20 to 30 feet below the normal surface. On its bottom and sides are many large boulders, but few boulders were seen on the adjacent plain. The reason for their concentration in the stream valley is not apparent, but the glacial drift there may contain an unusual number of large boulders, some of which have been exposed by erosion of the stream valley. It does not seem possible that the small stream could have concentrated such large boulders, nor has evidence been obtained that such large boulders are generally present throughout the thickness of the drift.

There is remarkable concentration of boulders in the Flaxton area along the very shallow valley of the main creek, especially for about 2 miles west of the town. Much of this land is, accordingly, used only for pasture. A minor concentration is present near the mouth of the same creek, on the west side of the valley of the Riviere des Lacs, but no unusual number of boulders is present in the river valley. Farther south boulders are concentrated on the uplands bordering each side of the river valley, in the southeastern part of T. 163 N., R. 89 W., and the southwestern and southeastern parts of T. 163 N., R. 88 W.

Several bouldery areas are along the south border of the plains, near localities where bedrock is close to the land surface, notably in T. 161 N., Rs. 90 and 91 W., and in T. 162 N., Rs. 92 and 93 W. Although these areas are about 2 miles north of the bluffs that mark the north side of the Altamont moraine, they may represent remnants of a minor moraine near that great one. Bouldery areas in T. 163 N., Rs. 84 and 85 W., near Sherwood,

in T. 162 N., Rs. 83 and 84 W., near Loraine, seem to be in localities of loamy soil that contains more clay than does the silty loam that covers the greater part of these areas.

Six bouldery areas along the east side of the valley of the Souris River in Tps. 160 and 161 N., R. 85 W., and T. 162 N., R. 86 W., and also a small area near Tolley are shown on plate 2. Larger areas in this district are stony and loamy, and probably not favorable for the development of shallow ground water. Farther south, on uplands bordering the valley of the Souris River, unusual boulder concentrations were noted in areas of silty clay loam in secs. 1 and 8, T. 159 N., R. 85 W.

In and near Lansford are several large boulders, and a number border the road about 1 mile northwest of town. A shallow water hole in that vicinity collects a supply for cattle, but the soil seems to be too tight to afford much water. On the south sides of the valleys of Spring Coulee, Sevenmile Creek or Little Deep River, and Egg Creek, where these streams are crossed by U. S. Highway 83 in Tps. 159 and 158 N., R. 82 W., numerous boulders are present in fields which are used partly for pasture. These concentrations on the south margins of the stream valleys may suggest minor moraines and may mark areas where the soil is tight.

At least a dozen bouldery areas are present in T. 157 N., R. 83 W., and thence southeastward to the southeast corner of T. 156 N., R. 80 W. Although the boulders do not lie in a well-defined band, they suggest the presence of a minor moraine and indicate localities where ground water is not plentiful. Although the soil of nearly all this district is of silty loam, it seems to contain more clay in the bouldery areas.

A notable concentration of boulders is crossed by U. S. Highway 2, about

1 to 2 miles east of Minot. The western part of this area seems to form a terrace along the Souris River Valley, but the eastern part rises to slopes which grade through cobbly to gravelly material that may form a recessional moraine. Ground water is at shallow depths below the lower and more bouldery parts but water supplies could be more easily obtained from wells in bottom lands near the river. On the upland near the border of bluffs along the north side of the Souris River Valley, about 2 miles north of Sawyer, many boulders have been removed from the fields and from the graded roadway. This bouldery area is near the northwest flank of a prominent gravelly hill which may be an outlier of a recessional moraine that borders the river valley farther east.

Undifferentiated Drift

By far the greater part of the irrigation project is underlain by glacial drift, composed of a heterogenerous mixture of clay, silt, sand, gravel, stones, and boulders. These materials were deposited directly by the ice without being assorted into layers by running water, and they constitute a formation known as ground moraine or till. Throughout most of the area this drift is probably 50 to 100 feet thick. In some places along the south border of the area it is thinner; in other places the drift is more than 200 feet thick. However, it was not found practical to subdivide the material into units based on differing ground-water possibilities.

Some lands are a little more undulating than others, some are more stony or more clayey, and in some localities the soil is lighter-colored than in the rest of the area. However, such surface characteristics do not seem to indicate distinctive differences in the underlying shallow ground-

water conditions.

Soil survey maps are available for four counties[6], parts of which are within the irrigation project. These maps show nearly the entire area as loam soil, with very minor bands of clayey, silty, or sandy loam along the principal creeks. Except in the bouldery areas, which have been tentatively differentiated on plate 2, the soil in this district, therefore, does not seem to indicate definitely the shallow water-bearing possibilities in the underlying material.

Bedrock

Beds of the Fort Union formation of early Tertiary (Paleocene) age immediately underlie the glacial drift throughout the western and southern parts, of the area. It is of fresh-water origin and consists, for the most part, of light ash-gray clays, shale, sand, and numerous lignite beds. In the western part of the project area along the south border of the uplands, the glacial drift is in some places very thin or absent and the Fort Union formation is exposed in ravines and roadside ditches. Between Noonan and Bowbells lignite beds of commercial value have been found at sufficiently shallow depths to be worked by strip mining. Lignite beds have also been mined, though generally on a non-commercial basis, where the Fort Union formation is exposed in narrow bands along both sides of the valley of the Riviere des Lacs from a point a few miles above Kenmare to the junction of the Riviere des Lacs with the Souris River.

6 Holowaychuk, Nicholas, and Boatright, W. C., Erosion and related land use conditions on the Minot area, North Dakota, U. S. Dept. Agri., Soil Cons. Service, 37 pp., 1938. (Includes maps of Bottineau, McHenry, Renville, and Ward counties, on scale of 2 miles to the inch, showing erosion, land use, slope, and soil type.)

Outcrops of the Cannonball formation, also of early Tertiary (Paleocene) age, were discovered by R. W. Brown and R. W. Lemke of the U. S. Geological Survey in road cuts about 1½ miles east of Sawyer and 2½ miles east of Velva. These exposures, together with the quality of the water produced from bedrock aquifers, indicate that the Cannonball formation underlies the glacial drift throughout the eastern part of the area.

Serious consideration should also be given to the possibility that the Hell Creek formation and Fox Hills sandstone of Upper Cretaceous age, also may underlie portions of the area and may be potentially productive aquifers in scattered areas.

Numerous wells have been drilled into the bedrock, to depths generally of 150 to 700 feet. These wells obtain water from sandy or lignitic beds and yield larger supplies than can generally be obtained from wells in the glacial drift in the same localities. The deep water in many places contains large amounts of mineral matter and commonly may be used only as a water supply for livestock. In a few areas this deep water is under sufficient artesian head to supply flowing wells of small discharge. Along both river valleys the bedrock has no great value as a water-bearing material because larger supplies of shallow ground water are available from the valley alluvium.

HYDROLOGY

By George A. LaRocque, Jr.

PRECIPITATION AND RUNOFF

The Crosby-Mohall area is on the eastern fringe of the semihumid Northern Great Plains and has their characteristic rigorous winter climate of severe winds and extremely low temperatures, but little snowfall. Summer rains are frequent but of short duration and storms of near cloudburst proportions are not uncommon. As in so many other semihumid areas, annual precipitation varies from about 40 percent to about 200 percent of the average. Precipitation is not uniform throughout the area (see fig. 1).

The writer believes that there is a wider range in the various conditions controlling the amount of precipitation in areas having a average precipitation of less than 20 inches than in areas having an average precipitation greater than 30 inches. If this is the case, then in the areas of low precipitation the numerical average of precipitation data gives too much weight to the extreme departures from average precipitation. Further, it is pointed out that these extreme departures are generally the result of wide variations in the frequency and intensity of storms of cloudburst proportions. For comparative purposes it is believed that the base precipitation figure to be used should more correctly be the annual precipitation that frequency of occurrence shows may be expected. For the 73-year record for Bismarck (see fig. 2) the numerical average is 16.37 inches, but the expected annual precipitation is 16.02 inches based on frequency of occurrence (see fig. 3). In figure 4 the writer has referred, proportionately, the shorter term averages of Bottineau, Crosby, Minot and Mohall, to the longer term expectancy of Bismarck.

Examination of the long-term precipitation records for the stations of Bismarck, Bottineau, Crosby, Minot and Mohall shows that protracted periods of

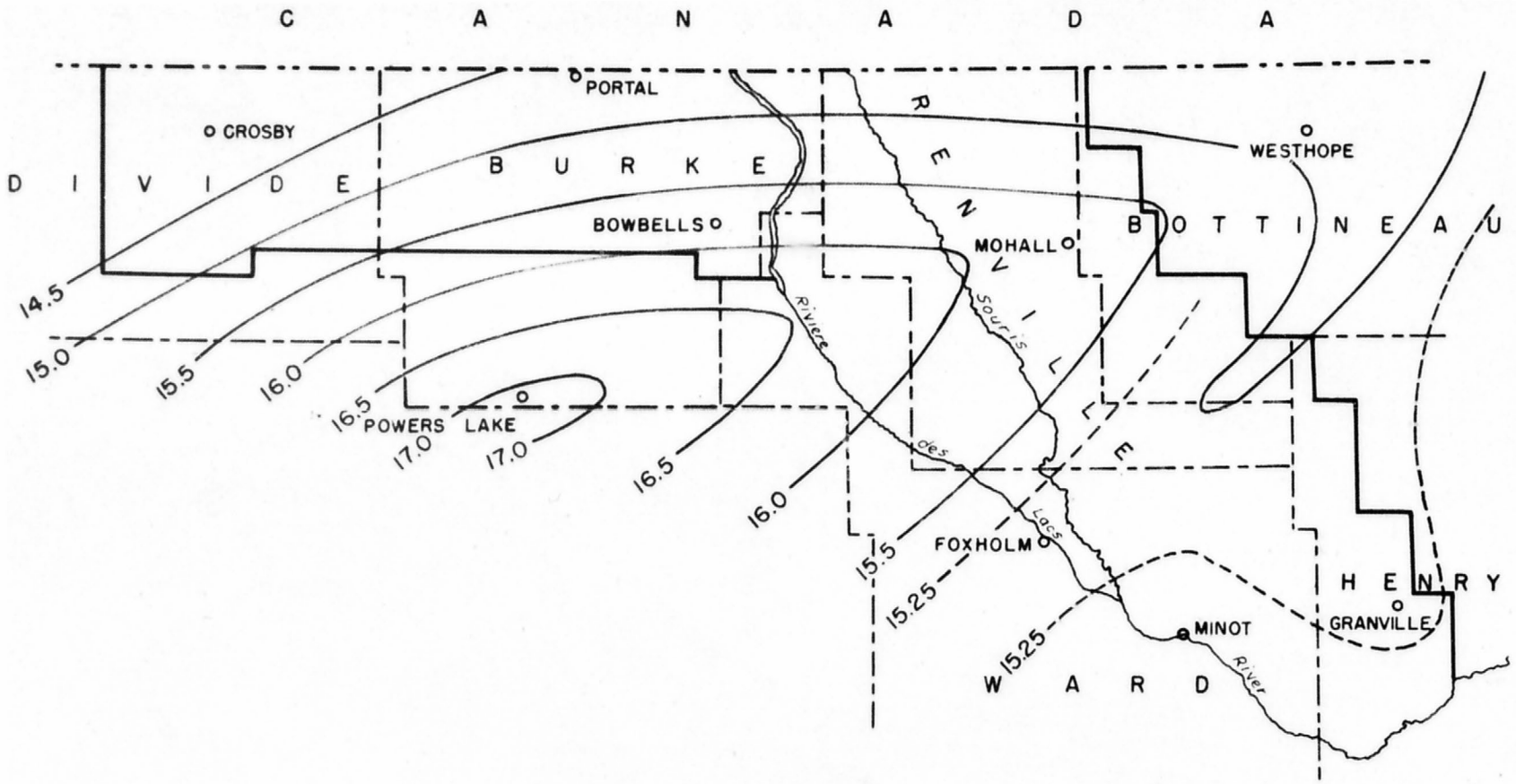

Figure 1. — Map of the Crosby–Mohall area, North Dakota, showing average annual precipitation, in inches, 1907–1945

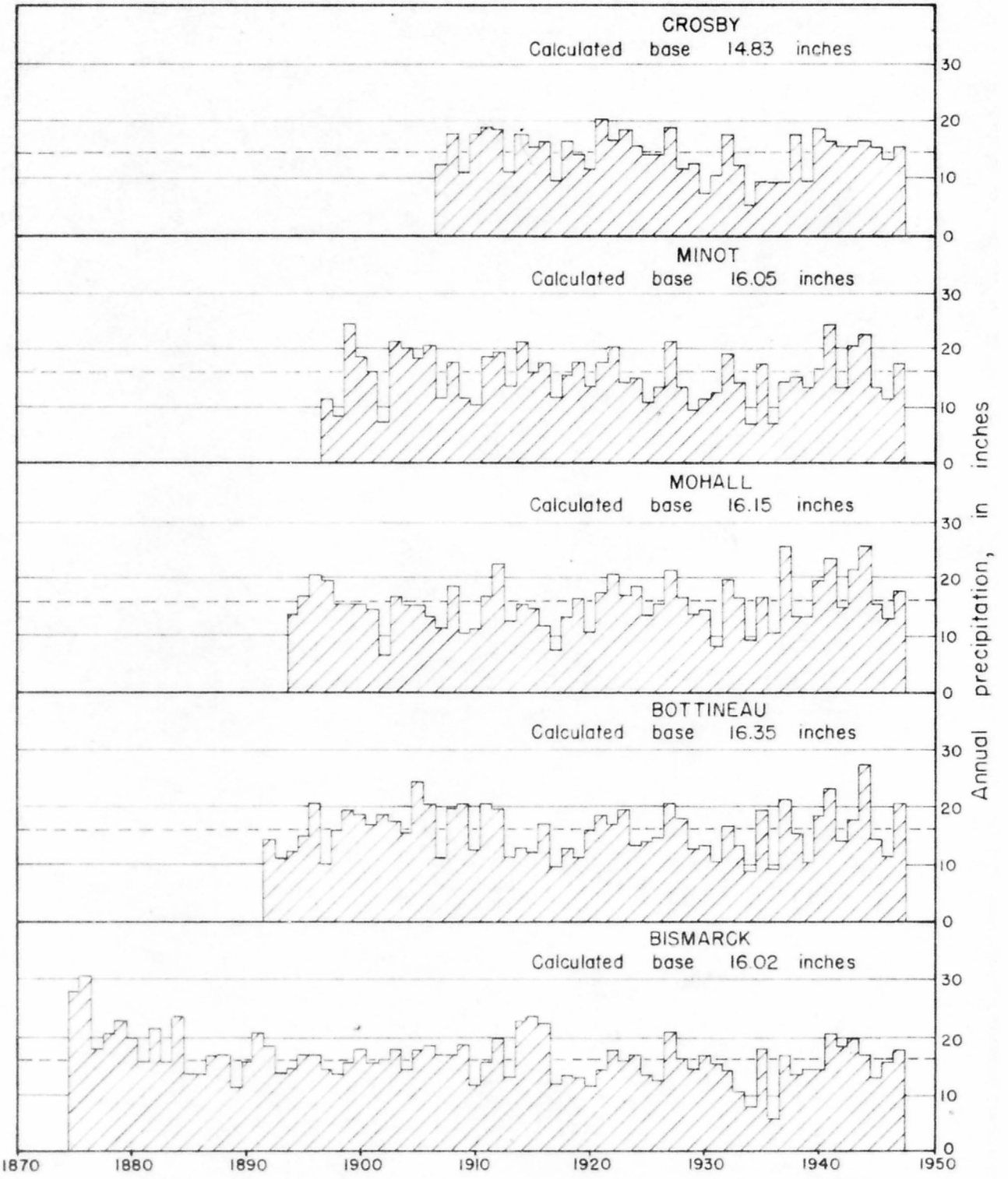

Figure 2.— Precipitation at five stations in North Dakota, 1875–1947.

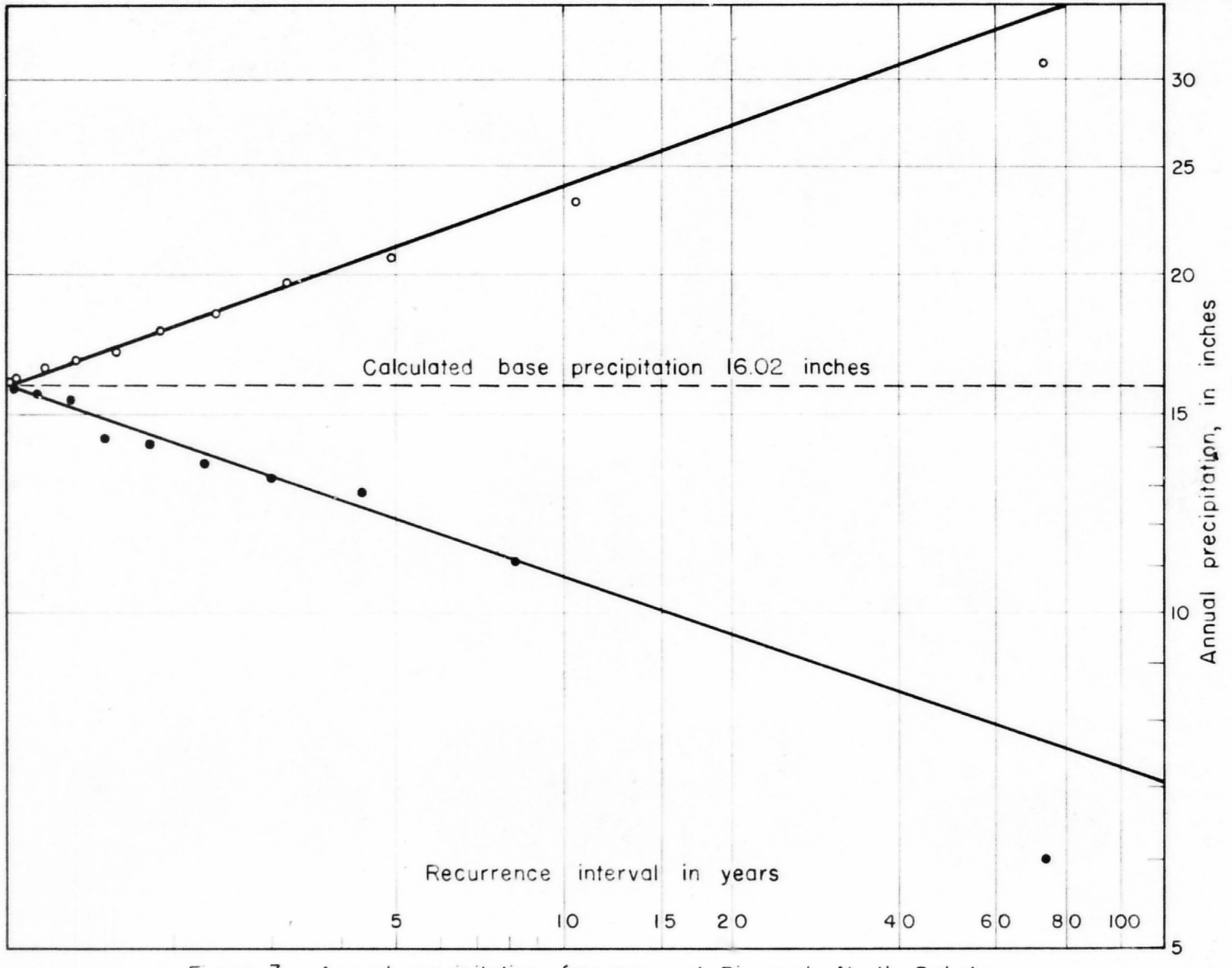

Figure 3.– Annual precipitation frequency at Bismarck, North Dakota.

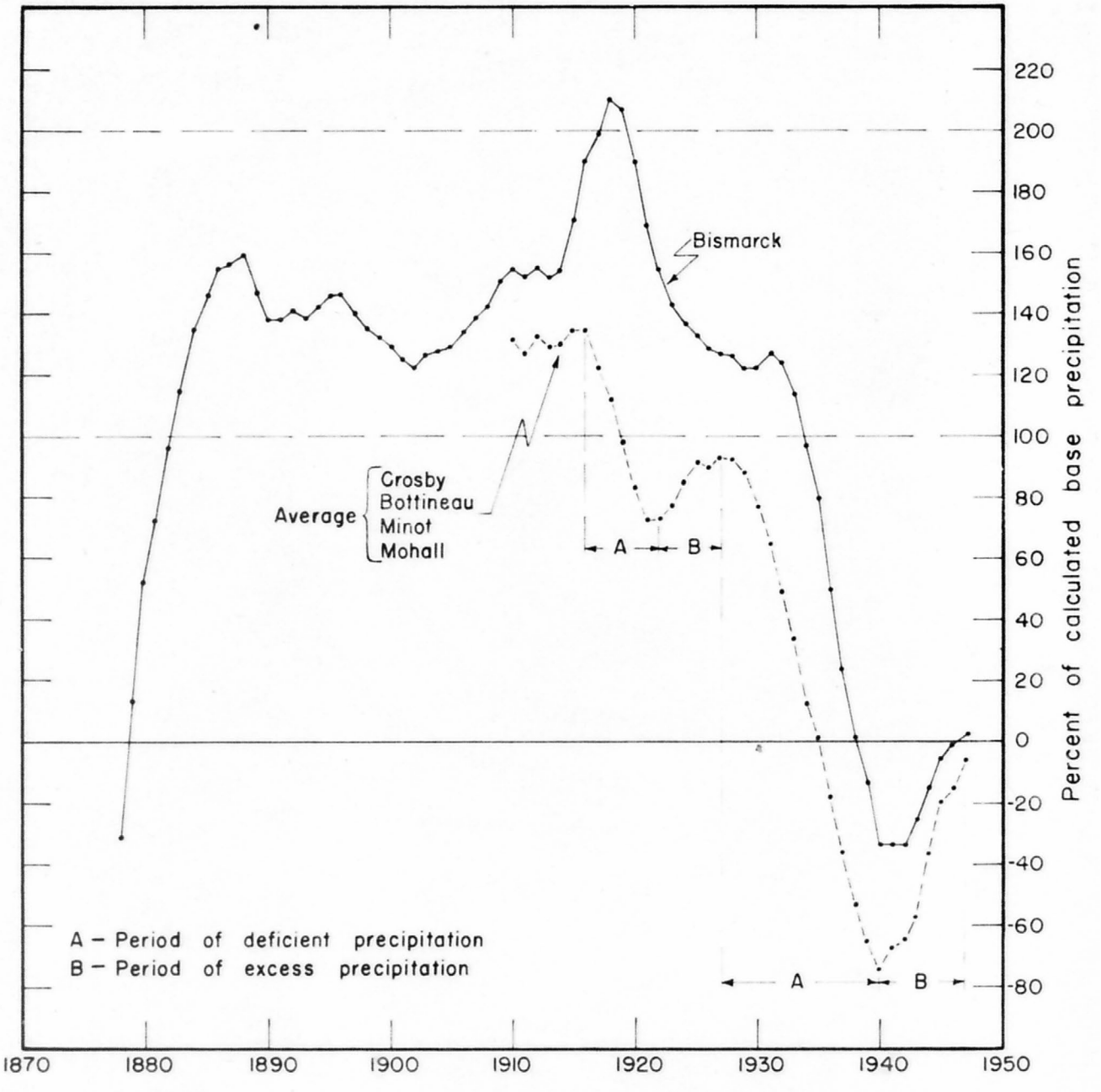

Figure 4.– Graph showing cumulative departure from calculated base precipitation, smoothed by 5-year averages, at five stations in North Dakota, 1875 to 1947.

drought are not uncommon. (See figures 2 and 4.) Many references are made to the drought period of the 1930's, but from inspection of figures 2 and 4 it can be seen that the drought period actually began about 1916, with but a slight break during the period 1922-1927.

The years of excess rainfall are presumed not to be proportionately large factors in maintaining or raising ground-water levels for (1) the total precipitation of a year generally comes from storms of relatively short duration, not uncommonly of cloudburst proportions, rather than from several successive days of rainfall; and (2) there are large areas of poorly assorted mixtures of clay, silt, and boulders, and these materials do not absorb or transmit water freely. For these reasons it is presumed that the amount and duration of the periods of rise in ground water are largely dependent upon the amount of seasonal snow cover.

In cooperation with the International Joint Commission, Federal Fish and Wildlife Service (and its predecessors), and the State of North Dakota, the United States Geological Survey has maintained records of stream flow at several stations on the Souris River and its tributaries since 1903. The early records are incomplete, but the following table gives the annual discharge recorded at three stations on the Souris River.

Table 1.--Annual discharge in acre-feet at three stations on the Souris River, North Dakota
[From U. S. Geol. Survey Water-Supply Paper 875, p. 356, and later river-discharge records]

Year ending Sept. 30	Souris River near Sherwood	Souris River near Minot[1]	Souris River near Westhope
1908		63,200	
1915		6,400	
1916		247,000	
1917		130,000	
1918		43,200	
1919		92,000	
1921		48,200	
1922		130,000	
1923		236,000	
1924		49,370	
1925		201,400	
1926		39,960	
1927		315,600	
1928		216,000	
1930	2/51,000	60,000	
1931	2/ 5,790	940	
1932		5,600	
1933	2/55,200	61,800	
1934		19,820	
1935	8,780	6,410	
1936	48,070	17,700	2,613
1937	1,130	939	110
1938	35,810	12,520	956
1939	70,250	35,200	873
1940	1,904	12,060	1,196
1941	35,550	10,020	2,712
1942	63,480	7,911	46,190
1943	207,410	227,900	300,800
1944	44,500	68,540	158,000
3/ 1945	10,200	38,880	103,800
3/ 1946	56,480	17,570	29,080

1/ Compilation of three stations at and near Minot.
2/ Record for year incomplete.
3/ Tentative records, subject to revision.

Occurrence of Ground Water

Bedrock Formations

It is known that the Fort Union formation immediately underlies the Pleistocene deposits in much of the western and southern parts of the Crosby-Mohall area. The Cannonball formation is exposed in road cuts in the vicinity of Velva on the southeastern border of the area, and according to geologists of the Geologic Division there is an exposure that may be Cannonball in the vicinity of Grano in the center of the eastern portion of the Crosby-Mohall area. Additional indication that the Cannonball formation underlies the Pleistocene deposits in much of the eastern part of the area is the widespread distribution of ground water containing chlorides ranging from 1,000 to 4,000 parts per million. Some consideration should also be given to the possibility that the Hell Creek formation and Fox Hills sandstone are producing aquifers within the Crosby-Mohall area.

Owing to the lack of positive proof that ground water in the bedrock aquifers of the Crosby-Mohall area is produced from one or another bedrock formation, the bedrock aquifers have so far been designated by the letters A, B, C, and D. This designation of bedrock aquifers is based on the quality of the contained ground water and on the factors of pressure head and depth of well.

Owing to the lack of vertical control for the Crosby-Mohall area, it has been possible to compile maps showing the extent of the bedrock aquifers and contours of the piezometric surface of the water contained in them for only the western portion of the area. (See pl. 4 and 5.) These maps show that the recharge areas for bedrock aquifers A, B, C, and D must lie to the south and southwest in the area overlain by the Pleistocene Altamont moraine. The maps further

show that in some places these aquifers quite probably discharge to aquifers of the glacial drift, while in other areas of contact, the discharge of water to the drift aquifers may be negligible. At the present time the Topographic Branch of the Geological Survey is engaged in mapping the whole of the Crosby-Mohall area, and on receipt of adequate topographic maps it will be possible to compile maps similar to Plates 4 and 5 for the east part of the area. It is believed that those features which now seem to be anomalous will become part of a clear but somewhat complex picture when maps covering the entire area have been compiled.

Within the whole of the Crosby-Mohall area, the water of the bedrock aquifers is under pressure. In some localities this pressure head is sufficient to produce flowing wells, and in a few small localities there is sufficient gas pressure to lift the ground water to the land surface. Plate 6 shows, for the Crosby-Mohall area, the five artesian areas as outlined by Simpson in his report on the ground-water resources of North Dakota. In addition the map shows the outline of the areas for two later periods. The change in the boundaries of the Crosby artesian area is due mostly to the later availability of more complete data, but in Antler and Souris River areas there has been a progressive decrease in the flowing well areas because of the decline of the gas pressures which originally lifted the water to the land surface.

Glacial Drift and Alluvium

Aquifers of the glacial drift and of the alluvium are here considered to fall into five general groups, namely: (1) sands and gravels deposited in channels developed during preglacial times; (2) sands and gravels at the base of the drift in buried outwash channels of the first glacial stage; (3) sands and gravels deposited in channels developed during one or more interglacial stages; (4) surface glacial deposits; and (5) alluvial deposits of the present stream channels. It is emphasized at this point that the buried-channel deposits in glacial materials do not necessarily represent entrenchments in a glacial till surface or in the underlying bedrock surface, but more generally are bodies of relatively high permeability which have a recognizable extent and thickness, and which are threaded through and intertwined with less permeable materials. These channels and the contiguous fine-grained sands have been found to be scattered throughout the entire Crosby-Mohall area at three depths, at least, and they will later be referred to as the shallow, medium-depth, and deep drift aquifers. These aquifers are separated by glacial till which generally has a very low permeability. The most productive drift wells in the area are those which tap an aquifer where one or more of these channels are present; however, sufficient quantities of ground water for stock and domestic purposes may be produced from the contiguous fine-grained sands.

Deep drift aquifer.--So far in the investigation it has not been possible to develop a satisfactory method for determining whether or not aquifers deposited in channels developed in the bedrock surface are of preglacial, glacial, or interglacial age. The existence of low-lying valleys or a system of entrenchments has been shown by a thorough study of available well logs, test-hole logs, reported depths to bedrock, and the

quality of the ground water. Plate 7 shows the existence of a channel in the vicinity of Crosby that is 400 feet to 500 feet deep. This channel may possibly be an ancient outlet of the Yellowstone River to Hudson Bay, or it may be a buried outwash channel of the earliest periods of glaciation, or a combination of these two suppositions, in any case the writer only points to the existence of a channel and its relation to the occurrence of ground water. This channel, in its deeper portions, has been filled with layers of gravel, sand and sandy clays which are in turn overlain by layers of clay mixtures of low permeability.

Water in the deep drift aquifer is nearly everywhere under pressure head which in some localities, is sufficient to produce flowing wells. (See pl. 8.)

In the western portion of the Crosby-Mohall area recharge of the deep drift aquifer is believed to be largely from the south and southwest in that area overlain by the Altamont Moraine, though in some portions of the area the deep drift aquifer receives water that has been discharged from the various bedrock aquifers with which it is in contact. There seems to be some discharge of water from the deep drift aquifer to those streams whose valley is deeply enough entrenched below the normal land surface to intercept the aquifer. Also, within the extent of the western portion of the Crosby-Mohall area, there are areas where the glacial till, which normally separates the medium-depth and deep drift aquifers, does not have a sufficiently low permeability to prevent the upward or downward movement of the ground water, the controlling factors being the relative pressure head of the two aquifers and the permeability of the glacial till.

Medium-depth Drift Aquifer.--Only in the western portion of the Crosby-Mohall area have general studies of the medium-depth drift aquifer been completed.

In the western portion of the area, there is little to distinquish the medium-depth drift aquifer from the shallow or deep drift aquifers, other than its relative position, for the aquifer is not everywhere confined, and neither is its pressure head or water table always above or always below that of either the shallow or the deep drift aquifers. (See pl. 9.) The medium-depth drift aquifer is quite similar to the deep drift aquifer in that it seems to consist of channels of relatively highly permeable materials with recognizable extent and thickness threaded through and intertwined with an extensive deposit of fine-grained water-bearing sand.

Studies to date seem to indicate that the recharge area for the medium-depth drift aquifer in the west part of the Crosby-Mohall area may in part be the area overlain by the Altamont Moraine. Elsewhere, parts of the new existing outwash channels seem sufficiently deep for the medium-depth drift aquifer to be recharged at times from the surface runoff in these channels; at other times the medium-depth drift aquifer may discharge to or receive water from the shallow drift aquifer in the vicinity of the outwash channels. It is believed that the proposed Souris canal will be the source of some recharge to the medium-depth drift aquifer and that some recharge of the aquifer may occur as the result of the application of irrigation waters. Whether or not recharge from these last two mentioned sources may become detrimental or not is dependent upon the effectiveness of the glacial till immediately overlying the medium-depth drift aquifer as a confining bed, and the transmission capacity of the shallow drift aquifer.

Shallow Drift Aquifer.--The shallow drift aquifer is similar to the medium-depth and deep drift aquifers in that it likewise seems to be an integration of bodies of highly permeable materials threaded through and intertwined with extensive deposit of fine-grained water-bearing sand. Thus, the sands and gravels of the kames, eskers, outwash channels, pot holes, sandy deposits in the vicinity of glacial Lake Souris, and alluvium of the minor streams, along with the extensive deposits of fine-grained sand are here all considered to comprise the shallow drift aquifer, which seems to underlie the whole of the Crosby-Mohall area. That the water-bearing properties of the surface features are seemingly integrated with those of the regional sandy deposit is shown in plate 10. From data available, it has so far been impossible for the writer to demonstrate that the ground water found within kames and outwash channels is wholly isolated from that of the regional shallow drift aquifer.

Recharge of the shallow drift aquifer seems to occur almost wholly in the pot hole areas and from surface runoff in the outwash channels. At present the maximum recharge occurs in the spring from the runoff resultant of the melting of the winter snow cover. With the application of irrigation water to the area, there will be many changes in the recharge-discharge cycle of the shallow drift aquifer. This change in the cycle will be the result of the overflow of excessively applied irrigation water reaching the pot holes and outwash channels, and though the ground moraine, which includes the normal soils of the area, may be a poorly assorted mixture of clay, silt and boulders, there will probably be some percolation of the applied irrigation water to the shallow drift aquifer. Whether or not these additions of water to the shallow drift aquifer will be detrimental

to the area is dependent upon the nearness of the water table to the land surface before irrigation begins and on the transmissibility of the shallow drift aquifer. If the water table is close below the surface and the transmissibility of the aquifer is low, drainage measures will have to be undertaken before the application of irrigation water or soon thereafter.

Fluctuations of Water Level

The fluctuation of the water level in a well reflects two possible changes in hydrologic conditions, the first being a change in the amount of water stored in the water-bearing bed, the second being a change in hydraulic conditions. The fluctuation of the water level in wells that tap unconfined water-bearing beds is due chiefly to changes in amount of storage, owing to the relation between intermittent recharge from precipitation or stream flow and continuous though varying discharge through drainage into watercourses and through evaporation and transpiration. The fluctuations in wells tapping confined water-bearing beds are due almost wholly to changes in the hydraulic conditions, and the changes in storage involved are much smaller than those in unconfined beds. The fluctuations may be caused by pressure relief due to pumping in adjacent wells, change in head in the recharge area, change in barometric pressure, deformation of the confining beds due to changes in load, and change of conditions in the discharge area of the aquifer.

In the Crosby-Mohall area the most common causes of fluctuation of water level are, for unconfined or water-table conditions, change in storage in the water-bearing beds tapped by shallow wells; and for confined

or artesian conditions, change in head in the recharge area, change in barometric pressure in wells tapping the deep confined water-bearing beds, and change in load in shallow locally confined water-bearing beds; as for example, those due to changes in the depth of water in streams flowing above the aquifers.

In September and October of 1945 about 400 observation wells were established by G. A. Waring, but by November 1947 only about 225 of these wells were still being measured. The reduction in the number of observation wells being measured can be attributed to changes in construction or condition of certain wells rendering them no longer suitable for observation purposes, determination from the depth and type of construction that water level measurements are not representative of water-level fluctuations of any one aquifer, and demonstration that the fluctuations are duplicated in adjacent wells more suitable for continued use as observation wells. Table 2 shows the range in fluctuation in the observation wells of the Crosby-Mohall area. The table shows that there was a small average decrease in saturated materials in the shallow drift aquifer during the year ending November 1946 and a very appreciable increase in saturated material for the year ending November 1947.

In 1935 the United States Geological Survey, in cooperation with interested agencies or political subdivisions of the State of North Dakota, began a program of periodic measurement of the fluctuations of water levels in selected wells in North Dakota. Of these wells 11 are included in the area covered by the present report. The water-level fluctuations in six wells for the period 1937 to 1947 are shown in plate 11.

Table 2.--Net water-level fluctuations in observation wells in Crosby-Mohall Area, North Dakota, for year ending November 1946, for year ending November 1947, and for two-year period ending November 1947.

[+, rise; -, decline]

Aquifer	Year ending November 1946				Year ending November 1947				Two-year period ending November 1947			
	Number of wells	Average net change (feet)	Maximum rise (feet)	Maximum decline (feet)	Number of wells	Average net change (feet)	Maximum rise (feet)	Maximum decline (feet)	Number of wells	Average net change (feet)	Maximum rise (feet)	Maximum decline (feet)
Shallow drift	97	-0.25	+ 4.08	- 4.84	92	+1.45	+ 8.75	-3.93	121	+1.28	+10.62	-3.84
Medium-depth drift	54	+1.31	+16.79	-11.15	53	+1.16	+11.91	-3.99	65	+3.01	+24.45	-9.47
Deep drift	13	- .45	+ 5.38	- 6.08	14	+1.08	+3.55	-3.48	14	- .53	+ 2.06	-9.56
Bedrock	4	+ .10	+ .27	- .14	4	-1.03	+ .33	-4.12	5	-1.22	+ .60	-4.08

Quality of Ground Water

The complete analyses of samples of water from 94 wells or test holes, and 2 samples of the Souris River water are given in tables 10 to 15. Partial analyses of water from about 1,200 wells or test holes, 98 to 99 percent of which withdraw water from a bedrock aquifer, are given in tables 16 to 21. These partial analyses and 51 of the complete analyses were made of samples taken during the 1947 field season with the thought in mind that criteria indicating the relationship between the complete or partial chemical analysis and the bedrock aquifer could be established. Incomplete studies indicate that excellent distinquishing factors do exist. An additional 50 samples for complete analyses will be collected during the 1948 field season, and with the data from these 50 samples to reinforce critical points on the relationship curves, it will be possible to present nearly complete maps of the location, extent and piezometric head of the several bedrock aquifers in the Crosby-Mohall area.

Typical complete analyses are graphically shown in figure 5. The 1,200 partial analyses indicate that chlorides range from 0.0 ppm to 4,330 ppm; total bicarbonates range from 35 ppm to 2,400 ppm; and the conductivity ranges from 13.1×10^{-5} to $1,230 \times 10^{-5}$.

A complete discussion of the qualities of the ground waters will be given in a revised edition or supplement to this report.

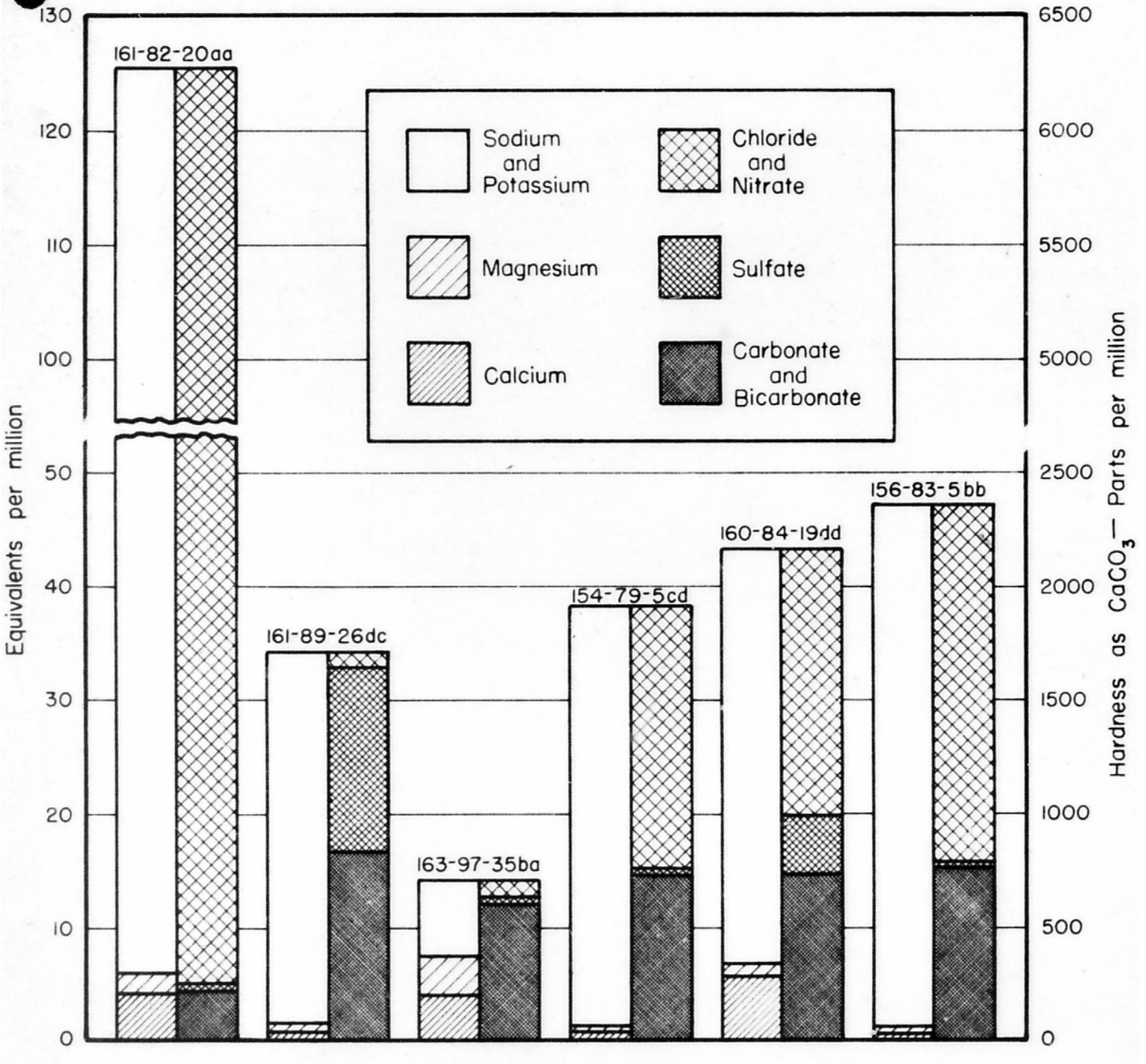

Figure 5.– Graph showing principal mineral constituents of ground water from six typical wells tapping bedrock aquifers, Crosby-Mohall area, North Dakota

Logs of wells and test holes

Information on the thickness and character of the glacial drift and the character of the underlying bedrock in the Crosby-Mohall area is given in the logs of 26 wells and 112 test holes in tables 22 to 27. Further collection of data on drilled wells, and the sinking of numerous other test holes, will supply much additional information on ground-water conditions throughout the area. A more complete discussion of the data from test drilling will be given in a later edition of this report or as a supplemental report.

Well Inventory

The hydrologic field work planned for this investigation includes the inventory of all wells, both existing wells and abandoned or filled wells

for which some record is available. The area to be covered by the inventory is somewhat larger than that for which irrigation is planned, as data on the larger area are required to make the comprehensive study of all factors influencing the occurrence and movement of the ground water.

The areas for which ground-water investigations are planned are shown on Plate 1. The well inventory of the original Crosby-Mohall area has been completed, but subsequent changes in the proposed project area show that considerable additional area must now be covered by the inventory. Data for the additional area will be presented in a revised edition of or supplement to this report, as will also data for areas adjacent to the Souris Canal from Grenora Pumping Plant to Crosby Reservoir.

The status of the well inventory at the end of 1947 is shown in table 3. The basic data on the 4,636 wells inventoried to date are given in tables 28 to 33.

Table 3.--Status of well inventory at end of 1947

County	Number of townships and parts of townships		Number of wells	
	Inventory completed	Inventory incomplete or not started	Inventoried	To be inventoried (estimated)
Bottineau	9	21	375	725
Burke	26	0	991	0
Divide	17	5	560	250
McHenry	15	24	605	900
Renville	28	0	1,184	0
Ward	21	0	921	0
Williams	0	6	0	350
Totals	116	56	4,636	2,225

Table 4.--Water-level measurements in wells in Bottineau County, North Dakota

159-81-6ba. H. L. Diamond. Dug well, 10.5 feet deep. Measuring point, top of wood curbing at orange paint mark, 2.8 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 9, 1945	9.10	July 30, 1946	8.30	July 9, 1947	6.59
May 9, 1946	7.73	Nov. 15	9.11	Oct. 31	8.25

159-81-11da. H. M. Clark. Dug well, 11 feet deep. Measuring point, north side base of pump, 2.0 feet above the land surface.

Water level, in feet below measuring point

Oct. 9, 1945	7.70	July 30, 1946	8.68	Apr. 1, 1947	7.10
May 9, 1946	8.06	Nov. 16	8.59		

159-81-19dc. Alfred Nelson. Dug well, 12.8 feet deep. Measuring point, top east side of wooden curb, 0.5 foot above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	10.25	July 30, 1946	10.28	July 9, 1947	9.56
May 9, 1946	9.82	Nov. 15	11.19	Oct. 31	10.55

159-81-23dd. C. Kjomaas. Dug well, 11.7 feet deep. Measuring point, top southeast side of wooden curb, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	10.05	July 30, 1946	9.25	Apr. 1, 1947	a/5.70
May 9, 1946	6.58	Nov. 16	7.54		

159-81-27ab. Carl Kjomaas. Dug well, 12.9 feet deep. Measuring point, top north side of 2-inch wooden cover, 1.2 feet above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	11.20	Nov. 16, 1946	10.10	July 9, 1947	1.32
May 9, 1946	5.45	May 22, 1947 b/1		Nov. 12	7.81
July 30	8.24				

159-81-34cd. . Dug well. Measuring point, top north side of wooden curb, 0.6 foot above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	13.75	July 30, 1946	13.65	July 9, 1947	13.71
May 9, 1946	13.27	Nov. 16	14.25	Nov. 12	14.65

a/ Measurements discontinued.
b/ Well surrounded by ponded water.

Table 4.--Water-level measurements in wells in Bottineau County, North Dakota--Continued.

159-82-1aa. H. L. Diamond. Dug well, 15.5 feet deep. Measuring point, top of wooden cover, through hole at south side of base of pump, 1.5 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 9, 1945	10.22	July 30, 1946	6.91	July 9, 1947	5.10
May 9, 1946	6.22	Nov. 16	8.51	Oct. 31	8.04

159-82-5ab. F. R. States. Dug well, 15 feet deep. Measuring point, top of wooden cover, through crack on north side of base of pump, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 9, 1945	11.10	July 30, 1946	7.22	Mar. 28, 1947a/b/	0.90
May 7, 1946	5.62	Nov. 15	6.91		

159-82-5bb. . Dug well, 6.7 feet deep. Measuring point, top of 2-inch wooden cover, through 3-inch hole, 2.0 feet above land surface

Water level, in feet below measuring point

Oct. 3, 1945	4.90	May 7, 1946	4.22	July 30, 1946	a/4.40

159-82-13ab. John H. Olliges. Dug well, 14 feet deep. Measuring point, top of wooden cover at south edge of pump base, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	11.80	Nov. 16, 1946	12.65	July 7, 1947	8.47
May 7, 1946	11.18	Apr. 1, 1947	10.91	Oct. 31	11.61
July 30	12.10				

159-82-16aa. . Dug well, 9.5 feet deep. Measuring point, top of 1-inch wooden cover, at center of well, 1.7 feet above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	8.05	July 30, 1946	7.99	Apr. 1, 1947 a/c/	5.04
May 7, 1946	7.36	Nov. 16	7.97		

159-82-18aa. . Dug well, 12.0 feet deep. Measuring point, base of pump, at west side, 2.5 feet above land surface.

Water level, in feet below measuring point

Oct. 3, 1945	8.50	Nov. 16, 1946	8.64	July 11, 1947	6.92
May 7, 1946	7.98	Mar. 28, 1947	c/8.60	Oct. 31	8.49
July 30	8.20				

a/ Measurements discontinued.
b/ Well surrounded by ponded water.
c/ Top of ice.

Table 4.--Water-level measurements in wells in Bottineau County, North Dakota--Continued.

159-83-6cc. A. Holberg. Dug well, 15.5 feet deep. Measuring point, top of 2-inch wooden cover at north side of pump base 2.6 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 2, 1945	8.15	July 30, 1946	8.25	Mar. 26, 1947	b/7.70
May 9, 1946	7.23	Nov. 20	a/8.78		

159-83-9aa. Martinison Estate. Dug well, 16.1 feet deep. Measuring point, top north side of casing, 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 7, 1945	7.45	July 30, 1946	6.95	July 11, 1947	5.38
May 9, 1946	5.93	Nov. 20	8.19	Oct. 31	7.31

159-83-11cc. H. Helming. Dug well, 15 feet deep. Measuring point, top south side of tile casing, 2.5 feet above land surface.

Water level, in feet below measuring point

Oct. 7, 1945	10.65	Nov. 20, 1946	9.80	July 11, 1947	6.64
May 9, 1946	7.37	Mar. 26, 1947	10.10	Oct. 31	8.36
July 30	8.13				

159-83-17cd. Donald Zeitz. Dug well, 11.0 feet deep. Measuring point, top of 2-inch wooden cover at west side of pump base, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 7, 1945	9.65	July 30, 1946	8.42	July 11, 1947	8.11
May 9, 1946	8.15	Nov. 20	8.72	Oct. 31	9.46

159-83-24dd. . Dug well, 9.3 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 1.4 feet above land surface.

Water level, in feet below measuring point

Oct. 8, 1945	8.60	Nov. 20, 1946	8.99	July 9, 1947	8.43
May 7, 1946	8.49	Mar. 28, 1947	8.40	Oct. 31	8.78
July 30	8.75				

159-83-34aa. J. Fauther. Dug well. Measuring point, top of 2-inch wooden cover, through crack at north side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 7, 1945	10.40	July 30, 1946	7.67	Nov. 20, 1946	b/9.1
May 9, 1946	6.64				

a/ Top of ice.
b/ Measurements discontinued.

Table 4.--Water-level measurements in wells in Bottineau County, North Dakota--Continued.

160-82-21ab. R. B. Middaugh. Dug well, 10 feet deep. Measuring point, top of casing at northwest corner of well, 1.2 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 9, 1945	7.95	May 7, 1946	a/7.22		

160-82-27cc. Aksel Sagsveen. Dug and driven well, 18 feet deep. Measuring point, top of wooden cover, through crack at south side of pump base, 0.9 foot above land surface.

Water level, in feet below measuring point

Oct. 9, 1945	6.80	July 30, 1946	9.30	Nov. 15, 1946	a/7.02
May 7, 1946	8.63				

160-82-34dd. . Dug well. Measuring point, top north side of concrete casing, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 9, 1945	9.80	Nov. 15, 1946	10.59	July 9, 1947	8.33
May 7, 1946	9.37	Apr. 1, 1947	9.40	Oct. 31	10.96
July 30	b/10.80				

160-83-17aa. J. H. Gibbs. Bored well, 11.6 feet deep. Measuring point, top east side of galvanized iron casing, 3.0 feet above land surface.

Water level, in feet below measuring point

Oct. 7, 1945	11.40	Nov. 20, 1946	Dry	July 11, 1947	8.97
May 8, 1946	8.66	Mar. 26, 1947	Dry	Oct. 31	11.0
July 30	10.30				

160-83-26bb. Floyd Baker. Bored well, 60.1 feet deep. Measuring point, top southeast corner of casing, 1.7 feet above land surface.

Water level, in feet below Measuring point

Oct. 8, 1945	19.05	July 30, 1946	17.45	July 11, 1947	17.51
May 7, 1946	18.17	Nov. 20	17.59	Oct. 31	17.12

160-83-32dd. C. H. Aus. Dug well, 12.9 feet deep. Measuring point, top north side of wooden casing, 2.6 feet above land surface.

Water level, in feet below measuring point

Oct. 7, 1945	5.15	July 30, 1946	5.80	Mar. 26, 1947	a/2.00
May 8, 1946	3.46	Nov. 20	c/5.92		

a/ Measurements discontinued.
b/ Pump had been operating.
c/ Top of ice.

Table 4.--Water-level measurements in wells in Bottineau County, North Dakota--Continued.

160-83-34dd. . Dug well. Measuring point, top of pump, 4.5 feet above surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 8, 1945	9.10	May 8, 1946	a/9.05		

160-83-35bc. . Dug well, 7.7 feet deep. Measuring point, top north side of 2-inch wooden cover, 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 7, 1945	6.20	July 30, 1946	6.15	Nov. 20, 1946a/b/	6.24
May 8, 1946	5.77				

161-83-7bd. Smith. Dug well, 10.6 feet deep. Measuring point, top of 2-inch wooden cover, 1.5 feet above land surface, 1595 feet above mean sea level datum.

Water level, in feet below measuring point

Oct. 3, 1945	9.05	May 8, 1946	7.42	July 31, 1946	a/9.03

161-83-22ba. . Drilled well. Measuring point, top north side of casing, 0.5 foot above land surface, 1593 feet above mean sea level datum.

Water level, in feet below measuring point

Oct. 7, 1945	c/25	May 8, 1946	24.18	July 31, 1946a/c/	29

161-83-32dd. . Dug well, 12.5 feet deep. Measuring point, top south side of wooden cover, 3.0 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	8.40	July 30, 1946	9.00	Oct. 28, 1947	10.40
May 8, 1946	4.35				

162-83-8cc. Roy Brackelsburg. Dug well, 15 feet deep. Measuring point, top of 2-inch wooden cover on north side of pump base, 2.0 feet above land surface, 1569.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Oct. 3, 1945	6.50	July 31, 1946	6.35	Oct. 28, 1947	6.02
May 8, 1946	5.26	2, 1947	4.22		

a/ Measurements discontinued.
b/ Top of ice.
c/ Pump operating.

Table 4.--Water-level measurements in wells in Bottineau County, North Dakota--Continued.

162-83-21aa. . Dug well. Measuring point, top of wooden cover at east side of pump base, 2.2 feet above land surface.

Water level, in feet below measuring point					
Date	Water level	Date	Water level	Date	Water level
Oct. 3, 1945	4.82	July 31, 1946	5.45	July 2, 1947	3.52
May 8, 1946	4.34	Nov. 20	a/5.28	Oct. 28	4.97

a/ Top of ice.

Table 5.--Water-level measurements in wells in Burke County, North Dakota

161-89-1bc. Bowbells Golf Club. Bored well. Measuring point, top west side of casing, 2.3 feet above land surface, 1,934.3 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.23, 1945	9.85	July 8, 1946	9.66	Sept. 30, 1946	11.29
June 3, 1946	9.25	22	9.49	Oct. 20	11.12
18	9.42	Aug. 2	9.53	July 11, 1947	6.65
July 1	9.39	8	9.95	Nov. 4	8.42

161-89-5dd2. . Drilled well, 27.5 feet deep. Measuring point, top south side of casing, 2.0 feet above land surface.

Water level, in feet below measuring point

Sept.14, 1945	26.35	Aug. 1, 1946	26.24	July 7, 1947	25.36
Apr. 10, 1946	26.35	12	26.26	Nov. 4	26.50
July 12	26.14	Oct. 22	26.07		

161-89-14cd1. . Dug well, 12 feet deep. Measuring point, top east side of casing, 0.7 foot above land surface.

Water level, in feet below measuring point

July 15, 1946	12.24	July 7, 1947	5.26	Nov. 4, 1947	12.96
Oct. 23	11.92				

161-89-18cc1. . Dug well. Measuring point, top of wooden cover, at west side of pump, 1.2 feet above land surface.

Water level, in feet below measuring point

Sept.14, 1945	16.30	Aug. 12, 1946	12.19	July 7, 1947	6.84
July 12, 1946	10.94	Oct. 23	16.02	Nov. 4	8.08

161-89-20aa. . Drilled well, 96.0 feet deep. Measuring point, top west side of 5-inch casing, 1.1 feet above land surface.

Water level, in feet below measuring point

Sept.14, 1945	26.68	Aug. 12, 1946	26.45	July 7, 1947	25.82
Apr. 10, 1946	26.16	Oct. 22	26.36	Nov. 4	25.88
July 12	26.38	Apr. 22, 1947	26.22		

161-89-24bb. Olson Bros. Drilled well. Measuring point, top south side of 6-inch casing, 1.3 feet above land surface.

Water level, in feet below measuring point

July 15, 1946	62.32	Oct. 23, 1946	60.09	Nov. 4, 1947	56.54
Aug. 1	63.31	July 7, 1947	55.97		

Table 5.--Water-level measurements in wells in Burke County, South Dakota--Con.

161-89-27dd. . Drilled well. Measuring point, top east side of casing, 1.1 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
July 13, 1946	83.43	Oct. 23, 1946	82.73	Nov. 4, 1947	79.48
Aug. 1	82.93	July 7, 1947	79.73		

161-89-28dd. E. Lindquist. Dug well. Measuring point, top west side of wooden casing, 2.0 feet above land surface, 1,984.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.14, 1945	17.28	Aug. 12, 1946	16.74	Apr. 22, 1947	a/18.64
July 13, 1946	16.38	Oct. 22	17.55		

161-89-29cc. Frank Leichtman. Dug well. Measuring point, top side south of hinged 1-inch wooden cover, 1.8 feet above land surface.

Water level, in feet below measuring point

Sept.14, 1945	19.75	Oct. 22, 1946	19.47	Apr. 22, 1947	a/19.99
July 12, 1946	19.37				

161-90-12da. P. and L. Hanson. Dug well, 13.0 feet deep. Measuring point, top southeast corner of 2x4 upright, 3.4 feet above land surface, 1,966.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.14, 1945	9.75	Aug. 12, 1946	7.71	Apr. 22, 1947	a/b/3.22
July 12, 1946	7.10	Oct. 23	9.75		

161-90-18dc. . Dug well, 14.7 feet deep. Measuring point, top west side of 2-inch wooden cover, 0.3 foot above land surface, 2,015.3 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.15, 1945	12.12	Aug. 7, 1946	11.78	July 9, 1947	10.21
Apr. 10, 1946	11.65	Oct. 18	12.43	Nov. 4	9.44
July 9	11.62	Apr. 22, 1947	11.26		

161-90-23bc. John Crest. Bored well. Measuring point, top south side of wooden cover, 0.4 foot above land surface, 1,997.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.15, 1945	30.40	Aug. 12, 1946	30.33	Apr. 22, 1947	a/30.38
July 11, 1946	30.27	Oct. 23	30.65		

a/ Measurements discontinued.
b/ Water in nearby creek.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

161-90-34dd. T. H. Thompson. Dug well. Measuring point, top of 2-inch wooden cover, 1.0 feet above land surface, 2,054.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.15, 1945	14.65	Oct. 23, 1946	14.65	July 7, 1947	11.61
Apr. 10, 1946	14.44	Apr. 22, 1947	16.05	Nov. 4	12.00

161-91-11dd. Paul Christianson. Drilled well. Measuring point, top west side of 5-inch casing, 0.7 foot above land surface, 1,994.7 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.15, 1945	1.42	June 13, 1946	0.47	Oct. 18, 1946	1.01
Apr. 10, 1946	0.88	Aug. 7	0.97	Apr. 22, 1947	a/0.87

161-92-10aa. Lee Eaton. Bored well, 70 feet deep. Measuring point, top north side of wooden cover, 2.0 feet above land surface, 2,082.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. , 1945	11.15	Aug. 7, 1946	10.07	Oct. 18, 1946	a/9.03
June 5, 1946	9.50				

161-92-12dd1. Maude Beard. Bored well, 54.4 feet deep. Measuring point, top east side of wooden casing, 0.7 foot above land surface, 2,087.7 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.15, 1945	20.53	Aug. 7, 1946	22.08	July 9, 1947	21.36
Apr. 10, 1946	23.47	Oct. 18	30.03	Nov. 5	18.12
June 7	21.25	Apr. 22, 1947	29.99		

161-92-12dd2. Maude Beard. Bored well, 61.5 feet deep. Measuring point, top east side of wooden casing, 1.7 feet above land surface, 2,088.7 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.15, 1945	29.90	Aug. 7, 1946	b/40.38	Apr. 22, 1947	29.49
Apr. 10, 1946	30.97	Oct. 18	33.63	July 9	34.22
June 7	41.58				

162-88-25bb. . Drilled well, 200 feet deep. Measuring point, hole in north side of pump base, 2.2 feet above land surface, 1,874.2 feet above mean sea-level datum.

Water level, in feet below measuring point

July 26, 1946	74.02	Oct. 23, 1946	a/73.88		

a/ Measurements discontinued.
b/ Pump had been operating.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

162-88-31cc. R. F. Dodge. Dug well, 10 feet deep. Measuring point, top south side of 2-inch wooden cover, 2.9 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.18, 1945	6.35	July 8, 1946	4.80	Sept.30, 1946	7.62
June 3, 1946	a/3.59	22	4.45	Oct. 23	6.80
18	5.94	Aug. 2	4.44	Nov. 4, 1947	a/3.33
July 1	4.62	8	6.60		

162-89-1bb. Raymond Swenson. Dug well, 15.5 feet deep. Measuring point, top east side of wooden cover, 1.5 feet above land surface.

Water level, in feet below measuring point

Sept.18, 1945	12.22	Aug. 8, 1946	b/13.11	July 7, 1947	6.00
July 23, 1946	12.32	Oct. 22	17.06	Nov. 4	11.10

162-89-4cd. . Dug well, 7.0 feet deep. Measuring point, top south side of 2-inch wooden cover, 1.7 feet above land surface.

Water level, in feet below measuring point

Sept.18, 1945	5.95	July 8, 1946	4.62	Aug. 8, 1946	4.61
June 3, 1946	3.41	22	4.59	Oct. 22	5.39
18	3.75	Aug. 2	4.56	Nov. 4, 1947	3.67
July 1	4.39				

162-89-5aa2. Smith. Dug well, 42 feet deep. Measuring point, top of wooden cover, at south side, 1.0 foot above land surface.

Water level, in feet below measuring point

Sept.17, 1945	33.25	Aug. 9, 1946	32.05	Apr. 18, 1947	30.99
June 3, 1946	Dry	Oct. 22	31.64	July 7	c/29.56

a/ Water standing in nearby ponds.
b/ Pump had been operating.
c/ Measurements discontinued.

Table 4.--Water-level measurements in wells in Burke County, North Dakota (Continued).

162-89-5dd2. Mrs. P. M. Peterson. Depth, 394 feet; diameter, 3 inches. Measuring point: top of casing, 2.5 feet above land surface. Not used. Water level, 1937-1945 from published or unpublished U. S. Geological Survey records.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 11, 1937	72.96	Aug. 20, 1938	72.85	June 24, 1939	72.62
30	73.15	27	72.92	July 1	72.62
Nov. 6	73.13	Sept. 3	72.76	8	72.67
13	73.13	10	73.02	15	72.75
20	73.13	17	73.12	22	72.79
27	73.13	24	73.08	29	72.81
Dec. 4	73.10	Oct. 1	73.10	Aug. 5	72.85
11	73.13	8	73.10	12	72.79
18	73.10	15	73.10	19	72.77
25	73.02	22	73.04	26	72.79
Jan. 1, 1938	73.13	29	73.04	Sept. 2	72.85
8	73.00	Nov. 5	72.85	9	72.85
15	73.00	12	72.85	16	72.88
22	72.92	19	72.88	23	72.90
29	72.92	26	72.88	30	72.94
Feb. 5	72.88	Dec. 3	72.85	Oct. 7	72.85
12	72.88	10	72.88	14	72.98
19	72.83	17	72.88	21	72.98
26	72.85	24	72.89	28	73.00
Mar. 5	72.81	31	72.85	Nov. 4	73.10
12	72.81	Jan. 7, 1939	72.85	11	73.04
19	72.81	14	72.81	18	73.04
26	72.82	21	72.85	25	73.05
Apr. 2	72.79	28	72.85	Dec. 2	73.06
9	72.81	Feb. 4	72.79	9	73.04
16	72.85	11	72.77	16	73.04
23	72.85	18	72.73	23	73.04
30	72.83	26	72.67	30	73.04
May 7	72.75	Mar. 4	72.71	Jan. 6, 1940	73.04
14	72.76	11	72.67	13	73.05
21	72.69	18	72.65	20	73.05
28	72.68	25	72.65	27	73.01
June 4	72.73	Apr. 1	72.66	Feb. 3	73.02
11	72.77	8	72.68	10	73.00
18	72.81	15	72.73	17	73.00
25	72.85	22	72.71	24	73.01
July 2	72.73	29	72.71	Mar. 2	73.00
9	72.67	May 6	72.69	9	72.96
16	72.75	13	72.69	16	72.96
23	72.79	20	72.73	23	72.96
29	72.89	27	72.75	30	72.92
30	72.90	June 3	72.74	Apr. 6	72.90
Aug. 6	72.96	10	72.77	13	72.86
13	72.85	17	72.69	20	72.87

Table 4.--Water-level measurements in wells in Burke County, North Dakota (Continued)

162-89-5dd2.--Continued.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Apr. 27, 1940	72.85	Mar. 1, 1941	72.89	Jan. 3, 1942	72.58
May 4	72.89	8	72.89	10	72.58
11	72.71	15	72.89	17	72.58
18	72.50	22	72.50	24	72.58
23	72.51	29	72.85	31	72.58
25	72.51	Apr. 5	72.75	Feb. 7	72.58
June 1	72.57	12	72.75	14	72.57
8	72.57	19	72.75	24	72.56
15	72.57	26	72.76	28	72.56
22	72.64	May 3	72.60	Mar. 7	72.54
29	72.72	10	72.58	14	72.55
July 6	72.79	17	72.58	21	72.52
13	72.83	24	72.60	28	72.51
20	72.85	31	72.54	Apr. 4	72.49
27	72.79	June 7	72.36	11	72.49
Aug. 3	72.72	14	72.19	18	72.47
10	72.76	21	72.08	25	72.46
17	72.75	28	72.25	May 2	72.46
24	72.77	July 5	72.27	10	72.47
31	72.83	12	72.38	18	72.47
Sept. 7	72.88	19	72.44	25	72.51
14	72.90	26	72.55	30	72.50
21	72.93	Aug. 2	72.60	June 5	72.48
28	72.96	9	72.65	13	72.49
Oct. 5	72.96	16	72.62	20	72.50
12	73.00	23	72.79	27	72.47
19	73.00	30	72.69	July 4	72.46
26	73.01	Sept. 6	72.62	11	72.50
Nov. 2	73.00	13	72.63	18	72.54
9	72.93	20	72.60	25	72.60
16	73.00	27	72.61	Aug. 1	72.64
23	73.00	Oct. 4	72.61	8	72.67
30	73.00	11	72.61	16	72.60
Dec. 7	73.04	18	72.60	17	72.60
14	72.98	25	72.62	22	72.63
21	72.97	25	72.63	29	72.63
28	72.96	Nov. 1	72.62	Sept. 5	72.68
Jan. 4, 1941	72.94	10	72.64	14	72.71
11	72.94	15	72.64	19	72.72
18	72.94	22	72.59	26	72.73
25	72.93	29	72.60	Oct. 3	72.75
Feb. 1	72.93	Dec. 6	72.60	12	72.77
8	72.90	13	72.60	17	72.76
15	72.89	20	72.59	24	72.79
22	72.90	27	72.59	31	72.79

Table 4.--Water-level measurements in wells in Burke County, North Dakota (Continued)

162-89-5dd2.--Continued.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Nov. 7, 1942	72.79	Apr. 12, 1943	72.67	Aug. 28, 1943	72.72
14	72.79	17	72.59	Sept. 4	72.75
21	72.75	26	72.59	11	72.75
28	72.81	May 3	72.53	18	72.83
Dec. 5	72.81	10	72.54	30	72.92
12	72.81	15	72.52	July 11, 1944	71.93
19	72.81	22	72.51	May 23, 1945	72.68
26	72.80	June 1	72.46	Nov. 10	72.90
Jan. 4, 1943	72.79	5	72.48	June 18, 1946	72.91
9	72.78	12	72.21	July 1	72.91
18	72.77	19	72.19	8	72.93
23	72.77	26	72.23	22	72.74
30	72.73	July 5	72.28	Aug. 2	72.82
Feb. 6	72.72	10	72.29	Sept. 19	73.07
13	72.72	19	72.36	30	73.10
20	72.70	24	72.43	Oct. 23	73.07
27	72.69	Aug. 2	72.49	Nov. 2	73.04
Mar. 6	72.69	7	72.55	Apr. 18, 1947	72.72
13	72.68	14	72.60	July 7	72.25
27	72.56	21	72.75	Nov. 4	72.84
Apr. 5	72.55				

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

162-89-11bb. . Dug well, 25 feet deep. Measuring point, top of wooden cover, 0.1 foot above land surface.

Water level, in feet below measuring point					
Date	Water level	Date	Water level	Date	Water level
July 29, 1946	9.08	Apr. 8, 1947a/b/	1.97		

162-89-17aa. Frank Schultz. Dug well, 10.5 feet deep. Measuring point, top south side of wooden cover, 1.5 feet above land surface, 1,918.6 feet above mean sea-level datum.

Water level, in feet below measuring point					
Sept.17, 1945	7.42	July 8, 1946	6.43	Oct. 22, 1946	7.63
June 6, 1946	5.66	22	6.27	Apr. 18, 1947	c/2.73
18	5.82	Aug. 2	6.31	July 7	2.88
July 1	6.10	Sept. 30	9.05	Nov. 4	5.35

162-89-18cc. . Drilled well. Measuring point, hole in pump, 2.6 feet above land surface, 1,841.8 feet above mean sea-level datum.

Water level, in feet below measuring point					
Sept.21, 1945	7.25	July 16, 1946	5.00	Apr. 18, 1947	a/5.18

162-89-22cc. Frank Dyer. Drilled well. Measuring point, top north side of casing, through hole in pump, 0.4 foot above land surface.

Water level, in feet below measuring point					
Sept.18, 1945	55.18	Oct. 22, 1946	54.91	July 7, 1947	54.49
July 30, 1946	55.03	Apr. 18, 1947	54.93	Nov. 4	54.48

162-89-25ab. A. Smith. Drilled well. Measuring point, top west side of casing, 1.3 feet above land surface, 1,920.3 feet above mean sea-level datum.

Water level, in feet below measuring point					
July 24, 1946	103.03	Oct. 22, 1946a/	102.66		

162-89-32dc. . Drilled well. Measuring point, base of pump, at east edge, 1.0 feet above land surface.

Water level, in feet below measuring point					
Sept.19, 1945	24.75	July 9, 1946	26.00	Oct. 22, 1946	40.00
June 6, 1946	26.41	Aug. 2	26.22	July 7, 1947	27.25
July 2	d/30.27	12	26.51	Nov. 4	27.80

162-90-5ab. . Dug and drilled well. Measuring point, top west side of 2-inch wooden cover, 0.8 foot above land surface.

Water level, in feet below measuring point					
Sept.15, 1945	10.28	Aug. 9, 1946	9.35	Apr. 24, 1947	a/9.64
June 3, 1946	8.45	Oct. 18	10.07		

a/ Measurements discontinued.
b/ Well surrounded by ponded water.
c/ Water standing in nearby pond.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

162-90-5cc. . Dug well, 19.7 feet deep. Measuring point, top east side of 2-inch wooden cover, 0.6 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.19, 1945	9.55	July 2, 1946	10.28	Oct. 18, 1946	9.55
June 14, 1946	10.31	Aug. 9	9.89	Apr. 24, 1947	a/11.93

162-90-6ad. Flaxton Cemetary. Dug well. Measuring point, top south side of wooden cover, 0.2 foot above land surface.

Water level, in feet below measuring point

Sept.19, 1945	8.25	Aug. 9, 1946	8.15	Oct. 18, 1946	a/8.00
July 2, 1946	8.16				

162-90-6ba. . Dug well. Measuring point, top south side of wooden cover, 0.8 foot above land surface.

Water level, in feet below measuring point

Sept.15, 1945	11.55	July 22, 1946	8.24	Oct. 17, 1946	9.91
June 3, 1946	6.58	Aug. 2	8.59	Apr. 24, 1947	5.79
18	6.86	8	8.91	July 8	3.45
July 1	7.60	Sept.30	10.54	Nov. 5	6.32
8	8.37				

162-90-24aa. C. Peterson. Drilled well. Measuring point, top south side of casing, 0.5 foot above land surface, 1,947.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.21, 1945	4.90	Aug. 12, 1946	5.02	Apr. 18, 1947	a/b/2.07
July 16, 1946	2.60				

162-90-27dcl. Alfred Jensen. Dug well, 20 feet deep. Measuring point, top north side of 2-inch wooden cover, 1.8 feet above land surface.

Water level, in feet below measuring point

Sept.19, 1945	11.85	July 2, 1946	10.36	July 7, 1947	4.95
Apr. 10, 1946	11.34	Aug. 7	11.22	Nov. 4	8.84

162-90-30cd. Gale and Hallay. Drilled well. Measuring point, top south side of 6-inch casing, 0.5 foot above land surface, 1,967.5 feet above sea-level datum.

Water level, in feet below measuring point

Sept.19, 1945	21.50	June 13, 1946	21.68	Oct. 18, 1946	a/Dry

a/ Measurements discontinued.
b/ Top of ice.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

162-91-3dd. Carl Kollburt. Dug well, 18.5 feet deep. Measuring point, top east side of 1-inch wooden cover, 1.3 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.15, 1945	14.23	Oct. 17, 1946	14.14	July 8, 1947	6.05
June 13, 1946	14.05	Apr. 24, 1947	4.83	Nov. 4	18.07
Aug. 12	14.29				

162-91-5cd. . Dug well. Measuring point, top south side of wooden cover, 0.4 foot above land surface, 1,960.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.15, 1945	24.53	Aug. 12, 1946	24.06	Apr. 24, 1947	a/24.40
June 10, 1946	23.83	Oct. 17	24.00		

162-91-20cc. J. Fritsch. Bored well. Measuring point, top of 2-inch wooden cover, 1.3 feet above land surface.

Water level, in feet below measuring point

Sept.21, 1945	12.35	Aug. 7, 1946	11.83	July 9, 1947	10.16
Apr. 10, 1946	12.10	Oct. 18	12.70	Nov. 5	10.87
June 7	11.50	Apr. 22, 1947	12.64		

162-91-23dc. Martin Peterson. Bored well, 30 feet deep. Measuring point, top west side of wooden cover, 0.5 foot above land surface, 1,940.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.19, 1945	18.35	June 13, 1946	11.80	Oct. 18, 1946	14.50
Apr. 10, 1946	13.23	Aug. 7	12.36	Apr. 22, 1947	a/14.44

162-91-30aa. Frank Ronnie. Bored well. Measuring point, top north side of wooden cover, 3.0 feet above land surface.

Water level, in feet below measuring point

Sept.21, 1945	15.15	Oct. 18, 1946	13.54	July 9, 1947	13.22
June 7, 1946	15.41	Apr. 22, 1947	16.82	Nov. 5	13.26
Aug. 7	15.53				

162-92-24cc. M. E. Glaspey. Dug well, 14 feet deep. Measuring point, top southwest side of wooden cover, 0.9 foot above land surface, 1,944.9 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.15, 1945	10.37	Aug. 7, 1946		July 9, 1947	6.53
Apr. 10, 1946	8.41	Oct. 18	10.52	Nov. 5	7.63
June 5	8.41	Apr. 22, 1947	7.70		

a/ Measurements discontinued.

Tabel 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

162-92-27ab. . Bored well. Measuring point, top south side of 1-inch wooden cover, 0.2 foot above land surface, 1,947.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.21, 1945	11.15	Aug. 7, 1946	10.53	July 9, 1947	8.80
Apr. 10, 1946	10.60	Oct. 18	11.21	Nov. 5	9.35
June 5	10.41	Apr. 22, 1947	11.19		

162-92-30aa. Swen Reistad. Bored well, 18 feet deep. Measuring point, top east side of wooden casing, 1,962 feet above mean sea-level datum.

Water level, in feet below measuring point

June 4, 1946	12.75	Oct. 18, 1946	a/11.82		

162-93-6aa. . Bored well. Measuring point until 10/16/46 is top north side of 2-inch wooden cover, 1.0 foot above land surface. Measuring point after 10/16/46 is top north side of casing, 0.4 foot above land surface, and 0.6 foot below previous measuring point.

Water level, in feet below measuring point

Sept.11, 1945	9.85	July 8, 1946	9.97	Oct. 16, 1946	9.74
Apr. 10, 1946	7.91	22	8.85	Apr. 24, 1947	6.88
May 28	10.50	Aug. 2	9.82	July 8	3.30
June 3	10.61	8	11.24	Nov. 5	7.91
July 1	9.82				

162-93-7ddl. Henry Jacoby. Dug well. Measuring point, top of 2-inch wooden cover, 1.5 feet above land surface.

Water level, in feet below measuring point

Sept.11, 1945	13.60	May 28, 1946	10.40	Oct. 16, 1946	10.08
Apr. 10, 1946	10.37	Aug. 8	11.72	Apr. 25, 1947	a/9.60

162-93-10cc. . Bored well, 39.2 feet deep. Measuring point, top southwest side of 2-inch wooden cover, 0.9 feet above land surface, 1,945.9 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.21, 1945	19.75	Aug. 8, 1946	19.79	July 9, 1947	19.33
Apr. 10, 1946	19.79	Apr. 25, 1947	19.70	Nov. 5	19.52
May 28	19.00				

a/ Measurements discontinued.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

162-93-22dc. Bored well, 36.6 feet deep. Measuring point, top south side of tile casing, at land surface, 1,988 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept. 21, 1945	9.80	Aug. 8, 1946	9.93	July 9, 1947	9.11
Apr. 10, 1946	9.41	Oct. 18	10.05	Nov. 5	9.52
May 28	9.09	Apr. 25, 1947	9.79		

162-94-2ba1. Anton Boen. Dug well, 20 feet deep. Measuring point, top north side of 2-inch wooden cover, 0.8 feet above land surface, 1,926.8 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 11, 1945	14.87	July 8, 1946	12.98	Apr. 25, 1947	12.44
Apr. 10, 1946	11.11	Aug. 8	18.02	July 8	11.42
June 3	10.09	Oct. 1	16.07	Nov. 6	11.53
July 1	13.61	16	12.76		

162-94-2ba2. Anton Boen. Bored well, 65 feet deep. Measuring point, top north side of 2-inch wooden cover, 1.0 foot above land surface, 1,928.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 11, 1945	29.92	July 8, 1946	13.04	Oct. 16, 1946	13.13
Apr. 10, 1946	13.56	Aug. 8	13.40	July 8, 1947	11.89
June 3	12.00	Oct. 1	13.53	Nov. 6	11.50
July 1	13.32				

163-88-2dd1. W. B. Hazelton. Bored well, 45 feet deep. Measuring point, top south siee of wooden casing, 0.9 foot above land surface, 1,841.9 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 24, 1945	12.75	Aug. 8, 1946	12.38	Oct. 23, 1946	a/14.57
July 26, 1946	11.38				

163-88-2dd2. W. B. Hazelton. Dug well, 35 feet deep. Measuring point, top east side of 2-inch wooden cover, 0.5 foot above land surface, 1,845.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 24, 1945	12.30	Aug. 8, 1946	13.37	July 7, 1947	4.36
July 26, 1946	11.64	Oct. 23	21.11		

a/ Measurements discontinued.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

163-88-19dc2. Gust T. Swenson. Dug well, 14 feet deep. Measuring point, top northwest side of 2-inch wooden cover, 0.8 foot above land surface, 1,874.8 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.18, 1945	9.46	Aug. 7, 1946	9.56	July 7, 1947	3.83
July 23, 1946	9.03	Oct. 22	12.43	Nov. 4	9.75

163-89-7dd. . Drilled well. Measuring point, bolt hole at top east side of pump, 3.1 feet above land surface, 1,907.1 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.17, 1945	a/11.15	Oct. 22, 1946	b/11.12		

163-89-8dd. Floyd Swenson. Drilled well. Measuring point, top west side of casing, 1.2 feet above land surface, 1,903.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.17, 1945	48.43	Oct. 22, 1946	49.08	July 7, 1947	49.64
July 18, 1946	50.52	Apr. 18, 1947	47.97	Nov. 4	50.99
Aug. 8	49.45				

163-89-10dc. J. L. Guerdett. Dug well, 12.5 feet deep. Measuring point, top north side of wooden cover, 1.5 feet above land surface, 1,892.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.17, 1945	8.38	Oct. 22, 1946	8.09	July 7, 1947	6.82
July 18, 1946	8.05	Apr. 18, 1947	6.68	Nov. 4	7.69
Aug. 8	8.37				

163-89-31ad. Mrs. R. Adenz. Dug well, 10 feet deep. Measuring point, top north side of wooden cover, 0.5 foot above land surface, 1,911.9 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 21, 1945	7.00	July 17, 1946	5.63	Oct. 22, 1946	b/6.90

163-90-18dd. Robert Nelson. Dug well. Measuring point, top south side of wooden cover, 0.5 foot above land surface.

Water level, in feet below measuring point

Sept.16, 1945	10.40	June 26, 1946	13.59	Aug. 12, 1946	b/c/13.37

a/ Water standing in pump.
b/ Measurements discontinued.
c/ Pump operating.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

163-90-22ccl. . Bored well. Measuring point, top east side of wooden cover, 1.2 feet above land surface, 1,913.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.21, 1945	34.15	Aug. 12, 1946	33.93	July 11, 1947	30.24
June 27, 1946	33.40	Oct. 22	33.96	Nov. 4	32.03

163-90-30da. Flaxton Fair Grounds. Bored well. Measuring point, top north side of wooden cover, 0.2 foot above land surface.

Water level, in feet below measuring point

Sept.21, 1945	11.27	Aug. 8, 1946	10.70	Apr. 24, 1947	a/b/7.03
June 26, 1946	12.00	Oct. 17	12.80		

163-90-35dc. W. Huff. Dug well. Measuring point, top east side of wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Sept.16, 1945	19.25	July 22, 1946	19.47	Oct. 22, 1946	19.67
June 6, 1946	19.41	Aug. 2	19.49	Apr. 18, 1947	19.94
18	19.44	9	19.48	July 8	16.46
July 1	19.45	Sept.30	19.65	Nov. 5	16.82
8	19.42				

163-91-4ddl. Floyd M. Swenson. Dug well, 20.3 feet deep. Measuring point, top south side of tile casing, 0.2 feet above land surface.

Water level, in feet below measuring point

Sept.16, 1945	19.05	Aug. 9, 1946	c/18.70	Apr. 24, 1947	a/18.70
June 25, 1946	18.68	Oct. 17	18.54		

163-91-6ba. M. Valintine. Dug well. Measuring point, concrete cover at north side of base of pump, 1.0 feet above land surface, 1,956.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.12, 1945	12.22	Oct. 17, 1946	11.39	July 8, 1947	6.28
June 21, 1946	10.30	Apr. 24, 1947	10.21	Nov. 5	10.12
Aug. 9	11.10				

163-91-20bal. Oliver Salmon. Drilled well. Measuring point, top of concrete casing, at land surface, 1,951 feet above land surface.

Water level, in feet below measuring point

Sept.16, 1945	13.30	Oct. 15, 1946	14.07	July 8, 1947	13.76
June 25, 1946	13.97	Apr. 24, 1947	15.53	Nov. 5	11.93
Aug. 12	13.85				

a/ Measurements discontinued.
b/ Water standing in nearby drainage ditch.
c/ Pump had been operating.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

163-91-24ad. Bird. Dug well, 18 feet deep. Measuring point, top north side of wooden cover, 2.6 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.16, 1945	10.15	Aug. 9, 1946	9.62	Apr. 24, 1947	a/8.67
June 26, 1946	8.28				

163-91-25ad. Nels Baerke. Dug well. Measuring point, top south side of 2-inch wooden cover, 1.7 feet above land surface.

Water level, in feet below measuring point

Sept.16, 1945	14.02	Aug. 9, 1946	26.93	Nov. 5, 1947	b/24.19
June 26, 1946	26.60	July 8, 1947	18.55		

163-91-35cd. T. Foshal. Drilled well. Measuring point, top east side of 5-inch casing, 1.5 feet above land surface.

Water level, in feet below measuring point

Sept.15, 1945	14.15	July 22, 1946	12.49	Oct. 17, 1946	11.44
June 3, 1946	12.66	Aug. 2	12.51	Apr. 24, 1947	12.54
18	12.57	12	12.53	July 8	12.10
July 1	12.51	Oct. 1	12.66	Nov. 5	11.51
8	12.51				

163-92-5ba. K. E. Roite. Bored well. Measuring point, top east side of wooden cover, 3.0 feet above land surface, 1,955.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.12, 1945	27.35	Aug. 9, 1946	27.28	Nov. 5, 1947	23.97
June 18, 1946	27.30	July 8, 1947	23.95		

163-92-9ccl. Samuel Nickey. Bored well, 35 feet deep. Measuring point, top north side of wooden cover, 0.8 feet above land surface, 1,928.8 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.13, 1945	16.70	Aug. 12, 1946	b/18.47	July 8, 1947	16.60
June 18, 1946	18.69	Oct. 17	18.60	Nov. 5	15.60

163-92-12ccl. E. Engstrom. Dug well, 16 feet deep. Measuring point, top of wooden cover, 1.0 foot above land surface, 1,939.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.13, 1945	11.55	Oct. 17, 1946	12.76	July 8, 1947	8.25
June 21, 1946	10.25	Apr. 24, 1947	12.48	Nov. 5	10.50
Aug. 12	10.51				

a/ Measurements discontinued.
b/ Pump had been operating.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

163-92-24aa. . Drilled well. Measuring point, top east side of 3-inch casing, at land surface, 1,943 feet above land surface.

Water level, in feet below measuring point					
Sept.12, 1945	34.55	Aug. 12, 1946	34.09	Apr. 24, 1947	a/33.59
June 21, 1946	33.89	Oct. 16	33.72		

163-92-24da. Robert Bley. Dug well. Measuring point, top south side of 2-inch wooden cover, 0.6 foot above land surface, 1,929.3 feet above mean sea-level datum.

Water level, in feet below measuring point					
Sept.12, 1945	7.55	Aug. 12, 1946	8.53	Apr. 24, 1947	a/10.98
June 21, 1946	8.38	Oct. 16	9.32		

163-92-32dd. H. A. Pierse. Dug well. Measuring point, top south side of 2-inch wooden cover, 0.9 foot above land surface, 1,944.9 feet above mean sea-level datum.

Water level, in feet below measuring point					
Sept.12, 1945	12.90	July 8, 1946	10.69	Oct. 16, 1946	11.07
June 3, 1946	11.00	22	10.70	July 8, 1947	8.51
20	10.75	Aug. 12	11.01	Nov. 6	10.91
July 1	11.49	Oct. 1	11.08		

163-92-35dd. F. C. Falck. Bored well, 35 feet deep. Measuring point, bolt hole at east side of pump, 2.0 feet above land surface, 1,955.0 feet above mean sea-level datum.

Water level, in feet below measuring point					
Sept.12, 1945	17.05	July 22, 1946	15.68	Oct. 17, 1946	16.01
June 3, 1946	14.42	Aug. 2	15.41	Apr. 24, 1947	15.49
July 1	16.22	12	15.41	July 8	10.77
8	15.38	Oct. 1	15.60	Nov. 5	14.18

163-93-3bb. Sdelle Brock. Dug well. Measuring point, top east side of 2-inch wooden cover, 1.6 feet above land surface, 1,910.6 feet above mean sea-level datum.

Water level, in feet below measuring point					
Sept.12, 1946	9.36	Aug. 9, 1946	9.27	Apr. 24, 1947	a/7.93
May 24, 1946	10.10	Oct. 16	9.82		

163-93-5bbl. Carl M. Johnson. Bored well. Measuring point, top north side of tile casing, 0.6 foot above land surface, 1,901.6 feet above mean sea-level datum.

Water level, in feet below measuring point					
May 23, 1946	26.04	Oct. 16, 1946	a/30.44		

a/ Measurements discontinued.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

163-93-8cb. Henry Tyndall. Bored well. Measuring point, hole in southwest side of pump, 2.0 feet above land surface, 1,915.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
May 15, 1946	25.51	July 8, 1947	23.11	Nov. 5, 1947	22.59
Oct. 16	24.51				

163-93-13bd. Archie Curtis. Bored well, 30 feet deep. Measuring point, top west side of wooden cover, 1.2 feet above land surface, 1,922.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.13, 1945	15.35	Aug. 9, 1946	14.33	July 8, 1947	14.43
May 27, 1946	14.50	Oct. 17	15.61	Nov. 5	15.20

163-93-15bal. J. Stompro. Bored well, 50 feet deep. Measuring point, top south side of 2-inch wooden cover, 0.7 foot above land surface, 1,916.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.13, 1945	32.55	Aug. 9, 1946	29.66	July 8, 1947	21.98
May 24, 1946	30.20	Oct. 16	29.14	Nov. 5	23.60

163-93-24cd. Earl Bronin. Bored well. Measuring point, top east side of 2-inch wooden cover, 1.7 feet above land surface, 1,928.7 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.11, 1945	33.80	Aug. 12, 1946	31.50	Apr. 24, 1947	a/33.01
May 27, 1946	32.00				

163-93-28ab. George Wanamaker. Drilled well. Measuring point, top north side of 2-inch wooden cover, 0.3 foot above land surface, 1,928.3 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.11, 1945	17.55	Aug. 8, 1946	17.01	Apr. 24, 1947	a/16.23
May 24, 1946	17.40				

a/ Measurements discontinued.

Table 4.--Water-level measurements in wells in Burke County, North Dakota (Continued).

163-93-34cc2. Depth, 22 feet; diameter, 18 inches. Measuring point: (1) top of wood curb, 1.0 foot above land surface, used May 27, 1946; (2) top of recorder shelter floor, 0.2 foot above MP-1, used from Sept. 12, 1946; altitude of MP-2, 1936.2 feet above sea-level datum. Not used.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
May 27, 1946	16.00	Nov. 2, 1946	15.94	June 10, 1947	15.63
Sept. 12	15.90	8	16.00	17	15.61
19	15.89	15	16.00	24	15.18
26	15.89	21	16.06	July 1	14.43
Oct. 3	15.88	May 2, 1947	16.43	8	14.20
14	15.92	20	15.93	22	14.07
21	15.91	27	15.82	Aug. 27	14.14
24	15.90	June 2	15.72	Oct. 4	14.17
				Nov. 6	14.39

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Con.

163-94-2cd. Conrad Burg. Bored well, 17 feet deep. Measuring point, top west side of tile casing, 1.0 foot above land surface, 1,906.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Apr. 9, 1946	12.70	Aug. 8, 1946	12.72	Apr. 25, 1947	a/11.63

163-94-6bb. . Drilled well, 73.0 feet deep. Measuring point, top north side of casing, 0.7 foot above land surface.

Water level, in feet below measuring point

Sept.10, 1945	71.80	May 16, 1946	72.00	July 8, 1947	73.48
Apr. 9, 1946	71.70	Apr. 25, 1947	71.81	Nov. 6	71.65

163-94-10cd1. A. B. Peterson. Bored well, 46 feet deep. Measuring point, top south side of tile casing, at land surface, 1,908.8 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.10, 1945	24.25	Aug. 8, 1946	b/28.91	July 8, 1947	22.02
Apr. 9, 1946	25.68	Oct. 16	23.31	Nov. 6	20.98
May 21	24.00	Apr. 25, 1947	23.89		

163-94-28ad1. Martin Tandberg. Dug well, 25 feet deep. Measuring point, top north side of wooden cover, 3.7 feet above land surface.

Water level, in feet below measuring point

Sept.10, 1945	10.95	May 21, 1946	10.00	Oct. 16, 1946	14.35
Apr. 10, 1946	13.02	Aug. 8	14.01	Apr. 25, 1947	a/14.07

163-94-31dc. A. F. Shefstad. Bored well, 25 feet deep. Measuring point, top west side of wooden cover, 2.0 feet above land surface.

Water level, in feet below measuring point

Sept.11, 1945	14.90	Aug. 8, 1946	13.80	Apr. 25, 1947	13.49
Apr. 10, 1946	13.73	Oct. 1	13.98	July 8	13.71
June 6	13.75	16	14.02	Nov. 6	13.55

164-89-32bc. Great Northern Railroad. Drilled well. Measuring point, top west side of pump base, through bolt hole, 1.0 feet above land surface, 1,860.9 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.17, 1945	58.45	Oct. 22, 1946	58.41	July 7, 1947	58.07
July 18, 1946	58.40	Apr. 18, 1947	58.28	Nov. 4	62.53

a/ Measurements discontinued.
b/ Pump had been operating.

Table 5.--Water-level measurements in wells in Burke County, North Dakota--Continued.

164-91-35dd. Mrs. M. Lanthern. Dug well. Measuring point, top north side of wooden cover, 0.7 feet above land surface.

Water level, in feet below measuring point					
Date	Water level	Date	Water level	Date	Water level
Sept. 16, 1945	22.10	Oct. 17, 1946	19.31	July 8, 1947	a/4.22
June 25, 1946	21.80	Apr. 24, 1947	20.08	Nov. 5	9.05
Aug. 8	22.73				

164-92-34dcl. John Ruppert. Dug well. Measuring point, top of 2-inch wooden cover, 1.0 foot above land surface, 1,962.0 feet above mean sea-level datum.

Water level, in feet below measuring point					
Sept.12, 1945	8.78	Aug. 9, 1946	9.07	Apr. 24, 1947	b/6.31
June 20, 1946	9.71	Oct. 17	10.80		

164-92-36ac. Walter S. Weimers, Bored well. Measuring point, top south side of wooden cover, 0.2 feet above land surface, 1,950.2 feet above mean sea-level datum.

Water level, in feet below measuring point			
Sept.12, 1945	9.55	Aug. 8, 1946	b/9.84

164-93-35dc. O. J. M. Olsen. Dug well, 27 feet deep. Measuring point, top of 2-inch wooden cover, 1.1 feet above land surface.

Water level, in feet below measuring point					
Sept.12, 1945	23.27	Aug. 9, 1946	22.62	July 8, 1947	20.95
Apr. 9, 1946	23.78	Apr. 24, 1947	23.10	Nov. 5	21.67
May 24	22.00				

a/ Water from nearby pond draining into well.
b/ Measurements discontinued.

Table 6.--Water-level measurements in wells in Divide County, North Dakota

162-97-6dal. Adolf Carlson. Depth, 25 feet; diameter, 18 inches. Measuring point: (1) top of iron curb, 0.5 foot above land surface, used Sept. 9, 1945 to Aug. 30, 1946; (2) top of recorder shelter floor, 0.31 foot above MP-1 used from August 31, 1946; altitude MP-2, 1,951.8 feet above sea-level datum. Not used.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept. 9, 1945	18.20	July 18, 1946	17.17	Aug. 30, 1946	17.86
Apr. 8, 1946	16.41				

162-97-6dal.--Continued.

Daily noon water level, in feet below measuring point

Day	1946 Sept.	Oct.	Nov.	Dec.
1		18.57	18.54	18.41
2		18.56	18.54	18.41
3		18.56	18.54	18.41
4		18.56	18.53	18.41
5		18.56	18.52	18.41
6		18.56	18.51	18.41
7		18.56	18.50	18.40
8		18.55	18.49	18.40
9		18.54	18.48	18.40
10		18.53	18.48	18.40
11	18.35	18.50	18.47	18.39
12	18.37	18.48	18.47	18.39
13	18.39	18.47	18.46	18.39
14	18.41	18.45	18.45	18.39
15	18.43	18.43	18.43	18.39
16	18.44	18.40	18.43	18.39
17	18.47	18.37	18.43	18.39
18	18.49	18.34	18.43	18.39
19	18.50	18.32	18.43	18.40
20	18.51	18.31	18.43	18.40
21	18.52	18.29	18.43	18.40
22	18.53	18.27	18.43	18.41
23	18.54	18.62	18.42	18.42
24	18.55	18.65	18.42	18.43
25	18.56	18.63	18.41	18.44
26	18.56	18.63	18.41	18.45
27	18.56	18.62	18.41	18.45
28	18.57	18.60	18.41	18.45
29	18.58	18.58	18.41	18.45
30	18.58	18.57	18.41	18.45
31		18.56		18.45

Day	1947 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.46			18.35	13.10	14.50	14.61	16.51	15.62	16.51	16.82	16.90
2	18.46			18.36	13.07	14.54	14.64	16.57	15.65	16.52	16.81	16.91
3	18.47			18.37	13.07	14.56	14.66	16.64	15.72	16.52	16.80	16.92
4	18.49			18.37	13.10	14.61	14.73	16.72	15.77	16.54	16.78	16.93
5	18.51			18.37	13.11	14.67	14.81	16.77	15.82	16.57	16.77	16.93
6	18.52			18.37	13.15	14.72	14.87	16.79	15.89	16.60	16.78	16.91
7	18.53			18.37	13.15	14.76	14.94	16.74	15.94	16.64	16.76	16.92
8	18.54		(1)	18.35	13.20	14.79	14.99	16.64	15.97	16.65	16.76	16.92
9				18.29	13.21	14.79	15.07	16.55	16.03	16.65	16.78	16.93
10				18.21	13.26	14.79	15.13	16.50	16.04	16.65	16.78	16.94
11				18.10	13.32	14.80	15.17	16.46	16.10	16.65	16.80	16.95
12				17.92	13.41	14.80	15.24	16.43	16.15	16.66	16.82	16.97
13				17.62	13.45	14.81	15.31	16.35	16.17	16.68	16.82	16.97
14		(1)		17.16	13.51	14.82	15.38	16.09	16.20	16.69	16.83	16.96
15				16.75	13.58	14.87	15.43	15.81	16.25	16.70	16.85	16.99
16				16.36	13.62	14.91	15.50	15.56	16.27	16.71	16.87	17.01
17				15.91	13.67	14.96	15.58	15.40	16.30	16.71	16.90	17.02
18	(1)			15.49	13.74	14.99	15.65	15.27	16.32	16.73	16.90	17.02
19				15.06	13.80	15.03	15.70	15.22	16.32	16.76	16.91	17.04
20				14.66	13.85	15.05	15.76	15.19	16.32	16.76	16.91	17.06
21				14.30	13.87	15.09	15.82	15.11	16.33	16.77	16.91	17.08
22				13.95	13.97	14.99	15.87	15.12	16.35	16.80	16.91	17.08
23				13.69	14.02	14.84	15.92	15.20	16.35	16.82	16.88	17.10
24			19.22	13.51	14.07	14.74	15.98	15.26	16.39	16.82	16.87	17.11
25			19.22	13.37	14.10	14.64	16.05	15.32	16.41	16.82	16.87	17.13
26			18.18	13.23	14.16	14.59	16.13	15.32	16.43	16.81	16.88	17.13
27			17.82	13.17	14.22	14.55	16.19	15.38	16.43	16.79	16.89	17.13
28			18.01	13.06	14.28	14.55	16.25	15.42	16.45	16.79	16.90	17.15
29			18.15	13.04	14.31	14.58	16.31	15.45	16.50	16.78	16.91	17.14
30			18.24	13.06	14.33	14.58	16.39	15.51	16.50	16.79	16.90	(1)
31			18.31		14.40		16.46	15.57		16.81		(1)

(1) Recorder not operating.

Table 6.--Water-level measurements in wells in Divide County, North Dakota--Con.

162-97-12ad. Edwin Skar. Bored well, 30 feet deep. Measuring point, top west side of wooden cover, 0.6 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept. 8, 1945	24.80	Aug. 30, 1946	24.01	July 11, 1947	19.62
Apr. 8, 1946	23.61	Oct. 15	24.25	Nov. 6	21.06
July 18	24.10				

162-97-12da. Edwin Skar. Bored well. Measuring point, top south side of wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Sept. 8, 1945	7.60	Aug. 30, 1946	7.82	July 11, 1947	4.78
July 18, 1946	3.44	Oct. 15	7.60	Nov. 6	6.45

162-97-12dd. . Bored well. Measuring point, top south side of wooden cover, 0.1 foot above land surface.

Water level, in feet below measuring point

Sept. 8, 1945	8.05	Aug. 30, 1946	9.05	Oct. 15, 1946	a/8.07
Apr. 8, 1946	3.32				

162-97-14cdl. Olaf Wenstead. Bored well, 26 feet deep. Measuring point, base of pump, at south side, 2.1 feet above land surface.

Water level, in feet below measuring point

Sept. 8, 1945	10.28	Oct. 15, 1946	11.76	Apr. 28, 1947	a/11.14
Aug. 30, 1946	9.96				

162-97-15bb. M. B. Bothun. Bored well, 50 feet deep. Measuring point, base of pump, at north side, 2.0 feet above land surface.

Water level, in feet below measuring point

Sept. 8, 1945	20.65	July 18, 1946	b/20.32	Oct. 15, 1946	20.06
Apr. 8, 1946	19.39	Aug. 30	20.26	Apr. 28, 1947	a/19.54

162-97-16dd. Public School. Bored well. Measuring point, top south side of 2-inch wooden cover, 1.1 feet above land surface.

Water level, in feet below measuring point

Sept. 8, 1945	22.75	Aug. 30, 1946	21.33	Oct. 15, 1946	a/21.54

162-97-18aa. . Bored well. Measuring point, top south side of 2-inch wooden cover, 1.1 feet above land surface.

Water level, in feet below measuring point

Sept. 9, 1945	26.15	Aug. 30, 1946	25.70	July 11, 1947	25.96
Apr. 8, 1946	25.85	Oct. 15	25.80	Nov. 6	25.91
July 18	25.69	Apr. 28, 1947	25.89		

a/ Measurements discontinued.
b/ Pump had been operating.

Table 6.--Water-level measurements in wells in Divide County, North Dakota--Con.

162-97-21bb. Ole Bakken. Bored well. Measuring point, top south side of 2-inch wooden cover, 1.3 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept. 8, 1945	18.15	Aug. 30, 1946	17.82	July 11, 1947	17.45
Apr. 8, 1946	17.92	Oct. 15	18.31	Nov. 6	17.84
July 18	17.88				

163-95-3cc. Henry Minne. Bored well, 60 feet deep. Measuring point, top south side of 2-inch wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Sept.10, 1945	21.30	July 19, 1946	35.55	Oct. 15, 1946	b/31.74
Apr. 9, 1946	a/37.71				

163-95-8bb. . Dug well. Measuring point, top north side of 2-inch wooden cover, 0.7 foot above land surface.

Water level, in feet below measuring point

Sept. 9, 1945	16.75	Aug. 29, 1946	14.89	July 8, 1947	14.24
Apr. 9, 1946	14.96	Oct. 15	14.80	Nov. 6	14.17
July 19	14.75	Apr. 25, 1947	14.96		

163-95-17ba. Orrin Lien. Bored well, 35.0 feet deep. Measuring point, top west side of wood casing, 1.9 feet above land surface.

Water level, in feet below measuring point

Sept. 9, 1945	21.30	Aug. 29, 1946	22.10	July 8, 1947	19.26
Apr. 9, 1946	21.14	Oct. 15	20.46	Nov. 6	19.72
July 19	20.64	Apr. 25, 1947	20.46		

163-95-20cc. . Dug well. Measuring point, top west side of 2-inch wooden cover, 1.5 feet above land surface.

Water level, in feet below measuring point

Sept. 9, 1945	8.15	Aug. 29, 1946	7.43	Apr. 25, 1947	5.86
Apr. 9, 1946	5.74	Oct. 10	6.63	July 8	a/6.10
July 19	a/10.73	15	6.61	Nov. 6	5.98

163-95-32cc. . Drilled well. Measuring point, top south side of 2-inch wooden cover, 1.5 feet above land surface.

Water level, in feet below measuring point

Sept.11, 1945	27.50	Aug. 29, 1946	27.55	Apr. 25, 1947	27.45
Apr. 9, 1946	27.54	Oct. 10	27.65	July 8	27.13
July 19	27.35	15	27.60	Nov. 6	26.99

a/ Pump had been operating.
b/ Measurements discontinued.

Table 6.--Water-level measurements in wells in Divide County, North Dakota--Con.

163-96-5cc. Carl Gudvangen. Bored well, 50 feet deep. Measuring point, top west side of 2-inch wooden cover, 0.6 foot above land surface, 1895.6 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.11, 1945	28.65	Oct. 15, 1946	28.64	July 9, 1947	28.45
July 19, 1946	28.98	Apr. 28, 1947	28.27	Nov. 6	28.37
Aug. 29	28.86				

163-96-29ad. Clem V. Brady. Drilled well. Measuring point, top south side of 2-inch wooden cover, 0.4 foot above land surface, 1916.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Apr. 28, 1947	25.04	July 9, 1947	25.75	Nov. 6, 1947	25.84

162-96-29dc. L. J. Brady. Dug well. Measuring point, top south side of 2-inch wooden cover, 1.4 feet above land surface, 1928.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 8, 1945	27.45	Aug. 29, 1946	25.13	July 9, 1947	20.02
Apr. 8, 1946	21.12	Oct. 16	22.70	Nov. 6	a/21.91
July 19	22.70				

163-97-5cc. . Drilled well. Measuring point, top of 4-inch casing, 3.0 feet above land surface, 1929.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 8, 1945	9.70	May 8, 1946	9.64	Aug. 29, 1946	9.65
Apr. 9, 1946	9.65	July 19	9.65	Oct. 15	b/9.65

163-97-19adl. S. S. Semingson. Bored well, 38.0 feet deep. Measuring point, top of 2-inch wooden cover, 2.0 feet above land surface, 1973.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 8, 1945	33.00	Aug. 29, 1946	32.16	Oct. 15, 1946	b/30.85
May 8, 1946	31.15				

a/ Pump operating.
b/ Measurements discontinued.

Table 6.--Water level measurements in wells in Divide County, North Dakota--Con.

163-97-21bc. William Mitchell. Bored well. Measuring point, top of 2-inch wooden cover, 1.8 feet above land surface, 1933.8 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept. 8, 1945	15.40	Aug. 29, 1946	12.32	July 9, 1947	7.51
Apr. 8, 1946	a/12.94	Oct. 15	12.52	Nov. 6	10.09
July 19	11.08	Apr. 28, 1947	a/ 9.73		

163-97-22cdl. J. M. Johnson. Depth, 28.6 feet, diameter, 24 inches. Measuring point: top of south side of casing, 2.2 feet above land surface, 1937.2 feet above mean sea-level datum.

Water level, in feet below measuring point

May 4, 1938	11.86	Dec. 25, 1938	17.12	Oct. 8, 1939	17.89
7	11.62	Jan. 1, 1939	17.14	15	17.79
14	12.40	8	16.56	22	17.76
21	13.55	15	17.42	29	18.25
28	13.72	22	17.31	Nov. 5	17.45
June 4	13.19	29	17.34	12	17.08
11	13.55	Feb. 5	17.36	19	16.75
18	17.07	Apr. 2	10.15	26	16.60
25	16.54	9	13.00	Dec. 3	16.56
July 2	14.84	16	13.44	10	16.57
9	12.90	23	12.70	17	16.53
16	10.59	30	12.80	24	16.55
23	10.04	May 7	11.21	31	16.57
29	10.48	14	12.08	Jan. 7, 1940	16.52
30	10.50	21	13.23	14	16.54
Aug. 6	10.41	28	14.42	21	16.57
13	11.09	June 4	13.60	28	16.60
21	11.16	11	14.24	Feb. 4	16.80
28	11.51	18	14.52	11	16.94
Sept. 4	12.79	25	14.69	18	16.79
11	14.15	July 2	16.69	25	16.78
18	14.52	9	16.30	Mar. 3	16.75
25	14.77	16	18.47	10	16.74
Oct. 2	16.64	23	18.16	17	16.73
9	15.04	30	18.29	24	16.72
23	15.41	Aug. 6	21.07	31	16.85
30	16.56	13	20.92	Apr. 7	16.97
Nov. 6	15.85	20	19.44	14	16.99
13	16.01	27	24.92	21	16.93
20	15.90	Sept. 3	24.00	28	17.01
27	16.67	10	22.02	May 5	16.97
Dec. 4	16.18	17	21.82	12	17.92
11	16.96	24	21.73	19	17.38
18	17.12	Oct. 1	18.44	23	17.17

a/ Water standing in nearby pond.

Table 6.--Water-level measurements in wells in Divide County, North Dakota --Con.

163-97-22ad1.--Continued.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
May 26, 1940	17.14	Sept.29, 1940	17.24	Feb. 2, 1941	17.79
June 2.	16.78	Oct. 6	17.17	9	17.86
9	16.74	13	17.18	16	17.88
16	16.74	20	17.19	23	17.90
23	16.62	27	17.40	Mar. 2	17.93
30	16.62	Nov. 3	17.45	Apr. 6	9.13
July 7	16.67	10	17.47	Oct. 25	17.57
14	16.67	17	17.52	Aug. 15, 1942	14.69
21	16.68	24	17.55	May 28, 1943	17.44
28	16.72	Dec. 1	17.58	July 12, 1944	7.10
Aug. 4	16.79	8	17.60	May 23, 1945	15.71
11	17.12	15	17.61	Nov. 11	15.35
18	17.03	22	17.63	June 6, 1946	11.34
25	16.99	29	17.66	Sept.19	13.17
Sept. 1	17.09	Jan. 5, 1941	17.67	Apr. 28, 1947	10.34
8	17.10	12	17.70	July 9	11.05
15	17.15	19	17.73	Oct. 6	11.66
22	17.18	25	17.76	Nov. 6	12.29

Table 6.--Water-level measurements in wells in Divide County, North Dakota--Con.

163-97-23dc. R. Gjovig. Dug well, 31 feet deep. Measuring point, top of wooden cover, 1.7 feet above land surface, 1936.7 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.11, 1945	26.30	July 19, 1946	a/25.06	Oct. 15, 1946	21.82
Apr. 9, 1946	18.02	Aug. 29	25.63	Apr. 28, 1947	b/18.48

163-97-27ccl. Frank Winhofer. Bored well. Measuring point, top of 18-inch tile casing, 0.9 foot above land surface, 1957.9 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 8, 1945	11.85	July 19, 1946	11.50	Oct. 16, 1946	11.84
Apr. 8, 1946	12.95	Aug. 29	11.57	Apr. 28, 1947	b/13.12

163-97-33dd. T. Granrud. Bored well. Measuring point until 7/19/47 is top of wooden cover, 0.75 foot above land surface, 1985.75 feet above mean sea-level datum. Measuring point after 7/19/46 is top of 18-inch wood casing, 0.65 foot above land surface, and 0.10 foot below previous measuring point, 1985.65 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 8, 1945	19.15	Oct. 16, 1946	13.60	July 9, 1947	9.00
July 19, 1946	17.60	Apr. 28, 1947	13.44	Nov. 6	10.84
Aug. 29	11.15				

164-95-34dd. . Drilled well, Measuring point, top east side of 6-inch casing, 1.4 feet above land surface.

Water level, in feet below measuring point

Sept.10, 1945	58.87	Oct. 15, 1946	58.87	July 8, 1947	59.14
Apr. 9, 1946	58.65	Apr. 25, 1947	58.64	Nov. 6	58.57
Aug. 29	58.92				

a/ Pump had been operating.
b/ Measurements discontinued.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota

153-80-6dc. J. N. Early. Dug well, 68.6 feet deep. Measuring point, top east side of 2-inch wooden cover, 0.7 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 21, 1945	66.95	Nov. 14, 1946	67.92	May 19, 1947	a/65.97

153-80-11aa. . Dug well, 32.6 feet deep. Measuring point, top of 2-inch wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 21, 1945	15.30	Nov. 14, 1946	16.49	July 7, 1947	21.00
Mar. 24, 1946	14.54	May 19, 1947	15.11	Nov. 19	17.09
Aug. 7	14.79				

154-78-5bbl. R. R. Senger. Drilled well. Measuring point, base of pump, 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 27, 1945	29.45	Nov. 17, 1946	24.07	May 19, 1947	a/19.37
Aug. 6, 1946	27.93				

154-79-2dal. . Bored well, 58.8 feet deep. Measuring point, top of tile casing, 1.2 feet above land surface.

Water level, in feet below measuring point

Oct. 20, 1945	44.10	Nov. 14, 1946	45.15	May 19, 1947	a/43.27
Aug. 6, 1946	45.20				

154-79-12dc. Antone Ell. Bored well. Measuring point, top west side of tile casing, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 20, 1945	67.98	Nov. 14, 1946	70.10	May 19, 1947	a/69.77

154-79-18ad. P. A. Johnson. Dug well, 34.7 feet deep. Measuring point, top of wooden cover, 1.7 feet above land surface.

Water level, in feet below measuring point

Oct. 21, 1945	22.55	Aug. 6, 1946	21.93	July 7, 1947	20.12
May 24, 1946	25.55	Nov. 14	21.08	Nov. 19	19.84

a/ Measurements discontinued.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Con

154-79-26bc. Emil Julson. Dug well, 34 feet deep. Measuring point, top of 2-inch wooden cover, 0.2 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 20, 1945	32.30	May 19, 1947	30.98	Nov. 19, 1947	31.07
Aug. 6, 1946	30.93	July 7	30.94		

154-79-30dd. Lars Wold. Bored well, 60 feet deep. Measuring point, top of wooden cover, 2.0 feet above land surface.

Water level, in feet below measuring point

Oct. 21, 1945	35.85	Nov. 14, 1946	35.36	July 7, 1947	34.89
Mar. 24, 1946	35.65	May 19, 1947	35.64	Nov. 19	35.12
Aug. 6	35.31				

154-79-31bb. A. K. Fadness. Dug well, 46 feet deep. Measuring point, top of wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 21, 1945	38.75	Nov. 14, 1946	37.39	May 19, 1947	a/36.57
Aug. 6, 1946	37.26				

154-80-14dc1. Albert Jensen. Dug well. Measuring point, top north side of wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 22, 1945	41.70	Nov. 14, 1946	30.96	July 7, 1947	23.72
Mar. 24, 1946	37.15	May 19, 1947	26.03	Nov. 19	31.91
Aug. 6, [illegible]	35.37				

154-80-14dc2. Albert Jensen. Bored well, 12.8 feet deep. Measuring point, top of 6-inch casing, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 22, 1945	9.75	Aug. 6, 1946	9.49	Nov. 19, 1947	9.57
Mar. 24, 1946	4.65	July 7, 1947	6.71		

154-80-17bc1. W. E. Morey. Bored well, 45.3 feet deep. Measuring point, top of wooden cover, 0.1 foot above land surface.

Water level, in feet below measuring point

Oct. 22, 1945	9.10	Nov. 14, 1946	9.50	July 7, 1947	8.72
Aug. 6, 1946	9.26	May 19, 1947	11.91	Nov. 19	10.83

a/ Measurements discontinued.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Con.

154-80-21cb. Mons Hystad. Bored well, 34.7 feet deep. Measuring point, top of wooden cover, 0.3 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 22, 1945	14.05	Nov. 14, 1946	12.88	July 7, 1947	14.98
Mar. 24, 1946	14.64	May 19, 1947	14.87	Nov. 19	15.49
Aug. 6	12.37				

154-80-22dd. . Bored well, 82.5 feet deep. Measuring point, top of wooden cover, 1.8 feet above land surface.

Water level, in feet below measuring point

Oct. 22, 1945	41.75	Nov. 14, 1946	42.04	July 7, 1947	42.11
Mar. 24, 1946	42.50	May 19, 1947	41.98	Nov. 19	41.91
Aug. 6	42.09				

154-80-25aa. . Dug well, 40.5 feet deep. Measuring point, top of wooden cover, 0.4 foot above land surface.

Water level, in feet below measuring point

Oct. 22, 1945	33.17	Nov. 14, 1946	32.56	May 19, 1947	a/33.10
Aug. 6, 1946	42.36				

154-80-34dd. Harold Hammer. Bored well, 37 feet deep. Measuring point, top of wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 27, 1945	13.10	Nov. 14, 1946	15.35	July 7, 1947	14.66
Mar. 24, 1946	14.31	May 19, 1947	15.66	Nov. 19	14.06
Aug. 6	15.88				

155-78-31cb. R. R. Senger. Dug well, 35 feet deep. Measuring point, top of tile casing, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 27, 1945	24.40	Nov. 17, 1946	22.99	July 7, 1947	a/26.97
Aug. 2, 1946	22.65	May 19, 1947	22.89	Nov. 19	23.28

155-79-2dc2. . Dug well, 26.0 feet deep. Measuring point until 10/20/45 is outer east side edge of concrete casing, 0.9 foot above land surface. Measuring point after 10/20/45 is top of 2-inch wooden cover, 0.1 foot below previous measuring point and 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 20, 1945	14.20	Nov. 17, 1946	13.16	July 7, 1947	10.31
Aug. 2, 1946	11.62	May 19, 1947	12.21	Nov. 19	12.42

a/ Pump had been operating.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Con.

155-79-3cc. . Driven well, 12 feet deep. Measuring point, top south side of horizontal brace of windmill tower, 1.0 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 19, 1945	7.00	Nov. 17, 1946	5.20	May 19, 1947	a/4.28

155-79-14bc. C. J. McCabe. Bored well, 18.2 feet deep. Measuring point, top of tile casing, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 20, 1945	10.55	Nov. 17, 1946	10.02	July 7, 1947	7.28
Mar. 25, 1946	9.54	May 19, 1947	7.91	Nov. 19	9.58
Aug. 2	9.80				

155-79-19bb. . Bored well, 30.7 feet deep. Measuring point, top of tile casing, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 20, 1945	6.85	Nov. 17, 1946	8.06	July 7, 1947	6.73
Mar. 25, 1946	7.76	May 19, 1947	8.53	Nov. 19	8.17
Aug. 6	7.05				

155-79-25da. Clair Brown. Bored well, 39.4 feet deep. Measuring point, top of wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 27, 1945	9.40	May 19, 1947	8.81	Nov. 19, 1947	9.48
Aug. 2, 1946	9.82	July 7	7.64		

155-79-27dc. H. H. Drabanet. Dug well, 30 feet deep. Measuring point, top of wooden cover, 2.3 feet above land surface.

Water level, in feet below measuring point

Oct. 21, 1945	23.45	Nov. 17, 1946	22.31	May 19, 1947	a/22.67
Aug. 6, 1946	22.32				

155-80-9aa. O. M. Ottem. Dug well, 20 feet deep. Measuring point, top of wooden cover, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 23, 1945	7.40	Nov. 18, 1946	13.44	May 16, 1947	a/10.98
Aug. 6, 1946	13.85				

a/ Measurements discontinued.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Co

155-80-17bc. . Dug well. Measuring point, top of concrete casing, 3.3 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 23, 1945	8.55	Nov. 18, 1946	9.12	May 16, 1947	a/6.33
Aug. 6, 1946	8.90				

155-80-18bb. N. Fimreile. Bored well, 39 feet deep. Measuring point, top of wooden cover, 0.3 foot above land surface.

Water level, in feet below measuring point

Oct. 23, 1945	26.00	May 16, 1947	23.02	July 7, 1947	22.97
Aug. 6, 1946	22.55				

155-80-20aa. E. F. Buffhan. Drilled well. Measuring point, top of casing, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 20, 1945	33.82	Aug. 6, 1946	36.55	July 7, 1947	28.32
Mar. 25, 1946	33.50	May 16, 1947	33.78		

155-80-29da. W. H. Wagner. Dug well, 10 feet deep. Measuring point, top of wooden cover, 0.2 foot above land surface.

Water level, in feet below measuring point

Oct. 22, 1945	6.95	Aug. 6, 1946	7.25	July 7, 1947	5.87
Mar. 25, 1946	5.60	May 16, 1947	5.07	Nov. 19	7.93

156-79-23cc. Ralph Covell. Dug well, 10.3 feet deep. Measuring point, top of tile casing, 2.0 feet above land surface.

Water level, in feet below measuring point

Oct. 23, 1945	9.10	Aug. 2, 1946	8.75	July 9, 1947	7.82
Mar. 25, 1946	8.95	Nov. 18	10.44		

156-79-29ad. C. L. Rollman. Dug well, 7.6 feet deep. Measuring point, top of wooden cover, 1.5 feet below land surface.

Water level, in feet below measuring point

Oct. 23, 1945	6.00	Aug. 2, 1946	6.45	May 23, 1947	a/4.57
Mar. 25, 1946	2.70	Nov. 18	5.75		

a/ Measurements discontinued.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Con

156-79-29cdl. B. Wierowski. Dug well, 23.4 feet deep. Measuring point, top of wooden cover, 0.5 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 23, 1945	23.40	Nov. 18, 1946	21.18	May 23, 1947	a/21.27

156-80-1bc. R. C. Peterson. Dug well, 12 feet deep. Measuring point, top of iron casing, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 24, 1945	9.10	Nov. 18, 1946	6.15	July 9, 1947	8.37
Aug. 2, 1946	10.05	May 23, 1947	8.94		

156-80-14aa. J. A. Lund. Dug well, 9.2 feet deep. Measuring point, base of pump, level with land surface.

Water level, in feet below measuring point

Oct. 24, 1945	7.30	May 23, 1947	5.20	Nov. 20, 1947	7.42
Aug. 2, 1946	6.92	July 9	5.73		

156-80-16cd. . Bored well. Measuring point until 10/25/45 is top of 6-inch timber, 0.5 foot above land surface. Measuring point after 10/25/46 is base of pump.

Water level, in feet below measuring point

Oct. 25, 1945	19.77	Nov. 18, 1946	20.78	July 9, 1947	13.73
Aug. 2, 1946	b/18.45	May 23, 1947	20.61	Nov. 20	21.13

156-80-26bb. . Dug well, 8.8 feet deep. Measuring point, top of casing, 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 25, 1945	6.90	Aug. 2, 1946	7.25	Nov. 16, 1946	a/7.15

156-80-27cc. George Erlandson. Bored well, 54.0 feet deep. Measuring point, base of pump, 2.1 feet above land surface.

Water level, in feet below measuring point

Oct. 23, 1945	17.15	Nov. 18, 1946	21.98	May 23, 1947	a/21.58
Aug. 2, 1946	25.20				

156-80-36ba. . Dug well. Measuring point, top of concrete casing, 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 23, 1945	8.60	Aug. 2, 1946	a/8.40		

a/ Measurements discontinued.
b/ Pump operating.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Con

157-79-28ba. B. Jerguson. Dug well, 11.5 feet deep. Measuring point, top of brick curbing, 0.5 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 24, 1945	10.00	Mar. 25, 1946	10.95	Aug. 1, 1946	a/10.00

157-79-28ddl. B. Pillup. Dug well, 12.3 feet deep. Measuring point, top of wooden cover, 0.1 foot above land surface.

Water level, in feet below measuring point

Oct. 24, 1945	7.93	Nov. 18, 1946	8.68	July 9, 1947	7.21
Aug. 1, 1946	7.91	May 23, 1947	7.93		

157-80-6aa. . Dug well, 9.3 feet deep. Measuring point, top of wheel rim, 2.0 feet above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	7.20	Sept. 17, 1946	8.29	July 9, 1947	6.49
Mar. 25, 1946	6.25	Nov. 16	8.04	Nov. 13	8.15
Aug. 1	7.78	May 22, 1947	6.36		

157-80-7da. Muriel Hanson. Dug well, 15 feet deep. Measuring point, top of wooden cover, 2.2 feet above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	9.20	Aug. 1, 1946	10.11	Nov. 16, 1946	10.21
Mar. 25, 1946	9.33	Sept. 17	10.66	May 22, 1947	a/9.76

157-80-8dc. . Dug well, 12.2 feet deep. Measuring point, top of casing, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 25, 1945	9.80	Sept. 16, 1946	10.60	May 22, 1947	a/9.52
Aug. 1, 1946	10.10	Nov. 18	10.73		

157-80-14aa. . Drilled well. Measuring point, top of casing, 1.8 feet above land surface.

Water level, in feet below measuring point

Oct. 25, 1945	19.95	Sept. 18, 1946	21.10	July 9, 1947	19.82
Mar. 25, 1946	19.07	Nov. 18	20.04	Nov. 18	19.24
Aug. 1	21.55	May 23	19.36		

a/ Measurements discontinued.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Con.

157-80-30aa. Town of Deering. Dug well, 18.9 feet deep. Measuring point, top of manhole cover, 7.8 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 19, 1945	13.70	Sept.18, 1946	14.77	July 9, 1947	11.93
Mar. 25, 1946	12.14	Nov. 16	15.34	Nov. 18	a/14.21
Aug. 1	14.22	Mar. 22, 1947	12.91		

157-80-34bb. Dug well, 8.3 feet deep. Measuring point, top of iron casing, 0.2 foot above land surface.

Water level, in feet below measuring point

Oct. 25, 1945	5.65	Nov. 18, 1946	5.38	May 23, 1947	b/5.98
Aug. 1, 1946	6.22				

158-80-9ab. J. Sommers. Dug well, 12 feet deep. Measuring point, top of wooden casing, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	8.45	Nov. 1, 1946	8.99	May 22, 1947	b/7.80
Aug. 1, 1946	8.46				

158-80-11cc. Louis Stroebel. Dug well. Measuring point, top of wooden cover, 0.5 foot above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	18.10	Aug. 1, 1946	18.05	Nov. 15, 1946	b/18.57

158-80-19aa. R. L. Clapper. Dug well, 13.9 feet deep. Measuring point, top of wooden cover, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	8.95	Sept.20, 1946	9.72	July 9, 1947	7.79
Mar. 25, 1946	8.20	Nov. 16	9.38	Nov. 12	9.63
Aug. 1	8.98	May 22, 1947	7.72		

158-80-24bb. George Switzer. Dug well. Measuring point, top of wooden cover, 0.1 foot above land surface.

Depth to water, in feet below measuring point

Oct. 26, 1945	15.30	Sept.25, 1946	15.64	July 9, 1947	14.46
Aug. 1, 1946	14.91	Nov. 16	15.99		

a/ Pump had been operating.
b/ Measurements discontinued.

Table 7.--Water-level measurements in wells in McHenry County, North Dakota--Con

158-80-27adl. T. E. Grilley. Dug well, 12 feet deep. Measuring point, top of casing, level with land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 25, 1945	6.75	Sept.25, 1946	7.30	Nov. 16, 1946	a/7.28
Aug. 1, 1946	6.55				

159-80-22dc. Oscar A. Johnson. Bored well. Measuring point, top of wooden casing, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	21.45	Nov. 16, 1946	21.94	July 9, 1947	20.81
Aug. 1, 1946	23.01	Apr. 1, 1947	21.78	Nov. 12	21.58

159-80-33ad. Stanley Kitzman. Dug well, 15.8 feet deep. Measuring point, top of casing, 0.6 foot above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	9.85	Sept.24, 1946	12.98	Nov. 16, 1946	a/13.95
Aug. 1 , 1946	10.15				

159-80-35da. J. E. Neuman. Bored well. Measuring point, top of wooden cover, 0.4 foot above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	19.45	Aug. 1, 1946	19.30	July 9, 1947	18.67
Mar. 25, 1946	18.20	Sept.25	19.38		

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota

158-81-11cc. North Dakota State Highway Department. Dug well, 10.3 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 3.5 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 10, 1945	6.70	July 22, 1946	7.38	May 22, 1947	b/c/2.50
May 10, 1946	3.87	Nov. 20	a/8.85		

158-81-11dd. Dug well, 9.1 feet deep. Measuring point, top east side of 2-inch wooden cover, 2.0 feet above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	8.18	Nov. 19, 1946	7.16	July 9, 1947	5.07
May 10, 1946	8.15	May 21, 1947	4.87	Nov. 12	8.97
July 22	7.56				

158-81-17ba. Ludwig Alstadt. Dug well, 15 feet deep. Measuring point, top of wooden cover near south side of pump base, 0.6 foot above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	10.65	July 22, 1946	10.80	May 22, 1947	c/10.63
May 10, 1946	10.15	Nov. 20	11.45		

158-81-18cc. E. L. Kochel. Dug well, 7 feet deep. Measuring point, top north side of wooden cover 3.4 feet above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	7.25	Aug. 23, 1946	7.42	May 22, 1947	c/6.75
May 10, 1946	6.35	Nov. 19	d/7.58		

158-81-21ba. Dug well, 8.2 feet deep. Measuring point top south side of wooden curb, 3.0 feet above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	6.65	Nov. 20, 1946	a/7.05	July 9, 1947	5.91
May 10, 1946	5.63	May 22	6.21	Nov. 12	a/7.00
July 22	6.69				

a/ Top of ice.
b/ Estimated well surrounded by ponded water.
c/ Measurements discontinued.
d/ Pump had been operating.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

158-81-25cc. Dug well, 10.1 feet deep. Measuring point, top south side of wooden curb 2.0 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 11, 1945	7.22	May 10, 1946	6.73	July 22, 1946	a/7.44

158-81-30dd. C. E. Colcord. Drilled well, 212 feet deep. Measuring point, base of pump 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	37.45	July 23, 1946	37.45	May 22, 1947	a/36.53
May 10, 1946	36.30	Nov. 19	36.62		

158-82-1bb. Amanda Kunkel. Dug well, 9.6 feet deep. Measuring point, top east side of wooden cover 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 10, 1945	6.95	Nov. 16, 1946	8.11	July 9, 1947	5.86
May 9, 1946	5.12	May 22, 1947	5.19	Oct. 31	7.84
July 23	6.80				

158-82-7cc. J. T. Phillips. Dug well, 12 feet deep. Measuring point, top of 2-inch wooden cover at west side of pump base, 1.7 feet above land surface.

Water level, in feet below measuring point

Oct. 12, 1945	6.65	Nov. 20, 1946	6.38	July 11, 1947	5.01
May 10, 1946	4.95	May 21, 1947	4.74	Oct. 31	6.96

158-82-15ab. Dug well, 8.9 feet deep. Measuring point, top southeast side of 2-inch wooden cover, level with land surface.

Water level, in feet below measuring point

Oct. 11, 1945	6.15	Nov. 20, 1946	b/6.71	July 9, 1947	1.56
May 10, 1946	3.95	May 21, 1947	c/ .82	Oct. 31	6.09
July 23	5.25				

158-82-28cd. M. B. Talley. Dug well, 34.5 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 12, 1945	22.23	Nov. 20, 1946	20.49	July 9, 1947	20.96
May 10, 1946	16.35	May 21, 1947	18.91	Nov. 13	22.22
July 23	21.29				

a/ Measurements discontinued.
b/ Top of ice.
c/ Well surrounded by ponded water.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

158-82-32abl. W. B. Talley. Dug well, 11.0 feet deep. Measuring point, top of 2-inch wooden cover, at east side of pump base, 0.6 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 12, 1945	10.60	July 23, 1946	8.88	May 21, 1947	a/5.42
May 10, 1946	6.67	Nov. 20	Dry		

158-83-3ddl. Claude Bradley. Dug well, 8.1 feet deep. Measuring point, top of 2-inch wooden cover 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 12, 1945	6.15	Nov. 20, 1946	a/6.98	July 11, 1947	4.59
May 10, 1946	4.85	May 21, 1947	4.62	Oct. 31	5.46
July 23	5.84				

158-83-14ba. Drilled well. Measuring point, hole in casing below base of pump, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 12, 1945	51.70	July 23, 1946	51+	May 21, 1947	b/51.74
May 10, 1946	51.45	Nov. 20	51.74		

158-83-15bal. Charles Rutledge. Dug well, 12.4 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 12, 1945	10.00	July 23, 1946	8.57	May 21, 1947	b/7.20
May 10, 1946	5.43				

158-83-17cb. Dug well, 12.0 feet deep. Measuring point, top of wooden cover at north side of pump base, 0.3 foot above land surface.

Water level, in feet below measuring point

Oct. 12, 1945	7.77	July 23, 1946	8.11	May 21, 1947	b/3.62
May 10, 1946	4.15				

158-83-18cb. Herman Ketter. Dug well, 13.0 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 6, 1945	8.45	July 23, 1946	7.75	May 21, 1947	b/7.52
May 10, 1946	6.68				

a/ Top of ice.
b/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

158-83-20cc. Dug well, 18.4 feet deep. Measuring point, top of 2-inch wooden cover at west side of pump base, 0.5 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 12, 1945	8.05	July 23, 1946	7.20	July 8, 1947	5.23
May 10, 1946	5.68	May 19, 1947	5.61	Oct. 31	8.15

158-83-22cc. Dug well, 16.3 feet deep. Measuring point, top of wooden cover at east side of pump base, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 12, 1945	8.52	July 23, 1946	7.60	July 8, 1947	5.27
May 10, 1946	6.80	May 21, 1947	5.02	Oct. 31	8.08

158-83-22dd. Louis Larson. Dug well, 10.1 feet deep. Measuring point, top of south side of sheet iron curb, level with land surface.

Water level, in feet below measuring point

Oct. 12, 1945	8.20	July 23, 1946	7.89	May 21, 1947	a/8.42
May 10, 1946	6.9[illegible]				

158-83-3ab. John Dufner. Bored well, 55 feet deep. Measuring point, top of wooden cover at south side of pump base, 2.0 feet above land surface.

Water level, in feet below measuring point

Oct. 6, 1945	41.00	July 23, 1946	35.02	Oct. 31, 1947	32.99
May 16, 1946	32.08	11, 1947	32.53		

158-84-12aa. Carl Nelson. Dug well, 10.0 feet deep. Measuring point, top north side of wooden curb, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 6, 1945	8.05	July 23, 1946	5.33	Apr. 14, 1947	a/2.77
May 10, 1946	3.03				

158-84-13cd. George Phillips. Bored well. Measuring point, top of wooden cover at north side of pump base, 2.8 feet above land surface.

Water level, in feet below measuring point

Oct. 6, 1945	8.75	May 10, 1946	4.48	July 23, 1946	a/6.86

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

158-84-35dd. H. J. Linnards. Bored well, 52 feet deep. Measuring point, top south side of corrugated iron curb 0.5 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1945	23.95	July 15, 1946	22.68	July 8, 1947	20.71
May 28, 1946	21.42	Apr. 17, 1947	20.56	Nov. 11	21.15

158-85-27aa. Dug well, 34.5 feet deep. Measuring point, top west side of wooden curb, 2.5 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	14.75	July 29, 1946	11.65	July 12, 1947	13.71
May 28, 1946	13.95	Apr. 14, 1947	14.15	Nov. 11	12.75

158-85-27bb. Dug well. Measuring point, top of wooden cover, at north side of pump base 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	10.25	July 29, 1946	10.61	Apr. 14, 1947	a/11.32
May 28, 1946	8.95				

158-85-28bb. Dug well, 18.4 feet deep. Measuring point, top northeast corner of wooden curb 2.2 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	12.80	July 29, 1946	14.00	July 12, 1947	8.37
May 28, 1946	9.63	Apr. 14, 1947	9.33	Nov. 11	11.02

158-86-8dc. Bored well, 11.7 feet deep. Measuring point until 7/29/46 is base of pump 0.5 foot above land surface. Measuring point after 7/29/46 is top of pump 2.92 feet above previous measuring point, 3.4 feet above land surface.

Water level, in feet below measuring point

Oct. 4, 1945	8.95	July 29, 1946	6.79	Nov. 7, 1947	8.27
May 25, 1946	6.15	12, 1947	5.88		

158-86-10bc. Leo Pollak. Dug well, 14.5 feet deep. Measuring point east side of sheet iron casing, 1.1 feet above land surface.

Water level, in feet below measuring point

Oct. 4, 1945	11.90	May 25, 1946	b/1.10	July 29, 1946	a/9.16

a/ Measurements discontinued.
b/ Well surrounded by ponded water.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

158-86-16dd. White Ash School. Dug well. Measuring point, top of pump 3.5 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 4, 1945	14.70	July 29, 1946	13.20	July 12, 1947	10.57
May 25, 1946	10.30	Apr. 14, 1947	14.69	Nov. 7	12.80

158-86-24da. Dug well, 11.5 feet deep. Measuring point, top northeast side of wooden curb level with land surface.

Water level, in feet below measuring point

Oct. 5, 1945	9.03	July 29, 1946	9.70	Nov. 7, 1947	9.04
May 28, 1946	6.05	12, 1947	6.20		

159-84-1dd. Dug well, 14.5 feet deep. Measuring point top of 2-inch wooden cover at south side of pump base, 2.5 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	10.90	July 23, 1946	12.95	Apr. 8, 1947a/b/	14.27
May 14, 1946	12.27				

159-84-5dc. John French. Bored well, 32.2 feet deep. Measuring point, top of wooden cover at north side of pump base, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	13.05	May 14, 1946	13.17	July 23, 1946b/	12.95

159-84-10aa. V. J. Lemke. Dug well, 12 feet deep. Measuring point, top southwest side of corrugated iron curb, 0.4 foot above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	7.90	July 23, 1946	6.78	Apr. 8, 1947	b/4.18
May 14, 1946	5.45				

159-84-10cd. J. O. Bolander. Dug well, 12 feet deep. Measuring point, top of wooden cover at south side of pump base, 0.5 foot above land surface.

Water level, in feet below measuring point

Oct. 6, 1945	7.65	July 23, 1946	6.80	Oct. 31, 1947	7.65
May 14, 1946	6.40	11, 1947	6.02		

a/ Pump had been operating.
b/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

159-84-19ab. M. J. Veikley. Dug well, 23.3 feet deep. Measuring point, top north side of wooden curb, 2.3 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1945	22.30	May 16, 1946	18.20	July 23, 1946	a/9.98

159-84-20ab. Dug well, 15.5 feet deep. Measuring point until 7/11/47 is base of pump 1.3 feet above land surface. Measuring point after 7/11/47 is top of wooden casing 0.5 foot below previous measuring point, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 6, 1945	11.70	July 23, 1946	10.62	Oct. 31, 1947	11.23
May 16, 1946	8.58	11, 1947	10.37		

159-85-7bcl. Ralph Johnson. Bored well. Measuring point, top of wooden cover at west side of pump base, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	17.60	July 29, 1946	12.23	July 11, 1947	4.74
May 25, 1946	6.40	Apr. 8, 1947	14.20	Nov. 11	8.98

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

159-85-8dc. Dug well, 49.6 feet deep. Measuring point, top of 2-inch wooden cover, 1.8 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 5, 1945	10.50	July 29, 1946	8.05	Nov. 11, 1947	9.66
May 25, 1946	7.82	11, 1947	4.22		

159-85-9dd. Dug well. Measuring point, top of wooden cover at north side of pump base, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	22.90	July 29, 1946	15.82	Apr. 8, 1947 a/	17.89
May 25, 1946	21.46				

159-85-12aa1. J. p. Lundberg. Dug well, 14 feet deep. Measuring point, top of wooden cover at west side of pump base, 0.3 foot above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	10.45	July 23, 1946	8.70	July 11, 1947	4.98
May 14, 1946	7.24	Apr. 8, 1947	13.00	Oct. 31	11.16

159-85-12bb. Town of Grano. Dug well, 20 feet deep. Measuring point, top of wooden cover at east side of pump base, 1.2 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	13.15	July 23, 1946	11.30	Apr. 8, 1947 a/	11.68
May 14, 1946	10.35				

159-85-21aa1. Bored well, 33.1 feet deep. Measuring point, top of wooden cover at south side of pump base, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	19.55	July 29, 1946	19.17	July 11, 1947	18.41
May 25, 1946	19.77	Apr. 8, 1947	19.81	Nov. 11	17.01

159-85-21aa2. Bored well, 35 feet deep. Measuring point, top of wooden cover at south side of pump base, 0.3 foot above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	18.98	July 29, 1946	18.07	July 11, 1947	19.42
May 25, 1946	18.87	Apr. 8, 1947	19.11	Nov. 11	15.92

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

159-85-30bc. O. Bue. Dug well, 22 feet deep. Measuring point, top of wooden cover at south side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 5, 1945	15.67	July 29, 1946	13.86	July 11, 1947	10.11
May 28, 1946	13.84	Apr. 14, 1947	15.41	Nov. 7	14.12

159-85-34cc. Conrad Skophamer. Dug well, 30 feet deep. Measuring point, top of wooden cover at west side of pump base, 1.3 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	13.85	July 29, 1946	13.30	July 11, 1947	10.38
May 28, 1946	13.25	Apr. 14, 1947	14.34	Nov. 11	13.20

159-86-17cc. Marna Jergensen. Dug well, 20 feet deep. Measuring point, top of pump, 4.0 feet above land surface.

Water level, in feet below measuring point

Oct. 4, 1945	12.70	May 25, 1946	a/9.43		

159-86-22bc. J. Boltz. Dug well, 15 feet deep. Measuring point, at east side of base of pump, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 4, 1945	8.55	May 25, 1946	a/7.15		

159-86-31aal. R. G. Chaffin. Dug well, 14.6 feet deep. Measuring point, top of wooden cover at northeast side of pump base, 1.6 feet abov land surface.

Water level, in feet below measuring point

Oct. 4, 1945	8.75	July 29, 1946	5.82	Nov. 7, 1947	7.72
May 25, 1946	b/1.60	12, 1947	b/1.80		

160-84-7cd. Marston Fitzgerald. Dug well, 7 feet deep. Measuring point, top of wooden cover at south side of pump base, 3.0 feet above land surface.

Water level, in feet below measuring point

Oct. 8, 1945	7.48	May 14, 1946	7.07	July 24, 1946	a/b/7.6

a/ Pump had been operating.
b/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

160-84-13aa. Drilled well, 265 feet deep. Measuring point, base of pump, 1.0 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 2, 1945	45.05	May 8, 1946	46.90	July 24, 1946	a/45.26

160-84-21aa1. Lee Miller. Dug well, 10 feet deep. Measuring point, top of wooden cover at east side of pump base, 0.5 foot above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	6.70	July 24, 1946	6.23	Oct. 31, 1947	6.00
May 14, 1946	5.48	11, 1947	3.86		

160-84-21aa2. Lee Miller. Dug well, 10 feet deep. Measuring point, top of wooden cover at south side of pump base, 0.8 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	6.35	July 24, 1946	6.20	July 11, 1947	7.12
May 14, 1946	5.42				

160-84-24ab. Roy Otto. Dug well, 15.0 feet deep. Measuring point, top of wooden cover at east side of pump base, 1.4 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	9.15	July 24, 1946	9.18	Apr. 8, 1947	a/7.38
May 8, 1946	8.18				

160-84-27cc. Dug well, 11.9 feet deep. Measuring point, top of 2-inch wooden cover at east side of pump base, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	8.40	July 24, 1946	8.00	Apr. 8, 1947	a/6.41
May 14, 1946	7.67				

160-84-30cc. Dug well. Measuring point, base of pump at west side, 0.5 foot above land surface.

Water level, in feet below measuring point

Oct. 8, 1945	17.95	May 14, 1946	14.21	July 24, 1946	a/13.36

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

160-84-33aa. F. Mikleberry. Dug well, 14.4 feet deep. Measuring point, top of 1-inch wooden cover at southwest side of pump base, 1.9 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 2, 1945	10.70	July 24, 1946	9.46	Apr. 8, 1947	a/b/4.93
May 14, 1946	7.62				

160-85-9cc. Dug well, 18 feet deep. Measuring point, top of wooden cover at south side of pump base, 0.6 foot above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	10.85	July 24, 1946	8.95	Nov. 11, 1947	9.06
May 14, 1946	7.85	11, 1947	4.68		

160-85-12cc. R. S. Wright. Dug well, 25 feet deep. Measuring point, top of wooden cover at south side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	20.40	May 14, 1946	7.60	July 24, 1946	a/14.95

160-85-18da. Dug well, 13.4 feet deep. Measuring point, top south side of corrugated iron curb, 1.5 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	8.20	May 14, 1946	4.12	July 24, 1946	a/6.64

160-85-20bb. Dug well, 14.6 feet deep. Measuring point, top of wooden cover, near south side of pump base, 0.8 foot above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	14.15	July 24, 1946	8.83	Apr. 8, 1947	a/7.76
May 14, 1946	9.51				

160-85-23cdl. Harold Leavitt. Bored well, 51.9 feet deep. Measuring point, top of wooden curb, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 2, 1945	10.95	May 14, 1946	5.92	July 24, 1946	a/8.64

a/ Measurements discontinued.
b/ Top of ice.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

160-85-31bb. C. A. Larson. Bored well. Measuring point, top of 2-inch wooden cover at north side of pump base, 0.2 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 5, 1945	60.40	July 29, 1946	41.28	July 11, 1947	a/37.36
May 25, 1946	48.48	Apr. 15, 1947	46.72	Nov. 11	35.95

160-86-7bb. Dug well. Measuring point, top northeast corner of wooden curb 2.3 feet above land surface, 1843.3 feet above mean sea-level datum.

Water level, in feet below measuring point

Oct. 26, 1945	11.65	July 16, 1946	9.30	Apr. 11, 1947	c/6.42
May 25, 1946	7.35	Nov. 21	b/11.30		

160-86-8bcl. John Dillinger. Dug well, 25.0 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 0.2 foot above land surface, 1862.2 feet above mean sea level datum.

Water level, in feet below measuring point

Oct. 4, 1945	17.55	July 29, 1946	18.11	Apr. 11, 1947	c/17.78
May 25, 1946	18.23				

160-86-11bcl. Lester Seibert. Bored well. Measuring point, top west side of wooden cover, 1.7 feet above land surface.

Water level, in feet below measuring point

Oct. 5, 1945	13.55	July 29, 1946	9.75	Nov. 7, 1947	11.96
May 25, 1946	7.15	11, 1947	6.17		

160-86-11cc. Bored well. Measuring point, base of pump at north side, 3.0 feet above land surface.

Water level, in feet below measuring point

Oct. 4, 1945	15.80	July 29, 1946	15.41	Apr. 15, 1947	c/11.34
May 25, 1946	12.23				

160-86-22dc. C. M. Fink. Bored well, 30 feet deep. Measuring point, top of 2-inch wooden cover at west side of pump base, 1.4 feet above land surface.

Water level, in feet below measuring point

Oct. 4, 1945	12.85	July 29, 1946	12.52	July 11, 1947	10.29
May 25, 1946	9.85	Apr. 15, 1947	11.02	Nov. 7	11.92

a/Pump had been operating.
b/ Top of ice.
c/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

161-82-2aa. A. O. Gilseth. Dug well, 12 feet deep. Measuring point top of 2-inch wooden cover at south side of pump base, 3.0 feet above land surface, and 1614.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.29, 1945	9.15	July 26, 1946	9.07	Mar. 25, 1947	a/8.60
May 13, 1946	9.10				

161-84-6cb. Dug well. Measuring point, top of wooden curb at west side of pump base, 1.2 feet above land surface, and 1688.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.28, 1945	9.38	July 26, 1946	8.00	Oct. 29, 1947	7.92
May 13, 1946	5.23	11, 1947	3.61		

161-84-13cd1. F. Paris. Depth, 13.2 feet; diameter, 18 inches. Measuring point: (1) top inside lip of tile casing, level with land surface, used July 19, 1940 to Oct. 24, 1946; (2) top of recorder shelter floor, 1.06 feet above MP-1; used Oct. 24, 1946 to May 21, 1947; (3) top of changed recorder shelter floor, 0.94 foot above MP-2, 2.00 feet above MP-1. All measurements given below are with reference to MP-3.

Water level, in feet below measuring point

July 19, 1940	13.64	Aug. 16, 1942	9.11	Oct. 10, 1945	10.64
Nov. 13	11.24	May 29, 1943	8.55	May 29, 1946	10.32
Apr. 21, 1941	14.22	July 11, 1944	4.64	Sept.26	11.65
Oct. 27	9.08	Oct. 19	7.39		

Table 8.--Water-level measurements in wells in Renville County, North Dakota--(Continued)

161-84-13cd1.--Continued.

Daily noon water level, in feet below measuring point, 1946-47

	1946			1947						
Day	Oct.	Nov.	Dec.	May	June	July	Aug.	Sept.	Oct.	Nov.
1		11.47	11.37		10.11	7.93	8.84	9.83	10.47	10.64
2		11.47	11.31	(b)	10.11	7.87	8.92	9.87	10.44	10.61
3		11.48	11.32	9.99	10.09	7.82	9.00	9.94	10.42	10.60
4		11.49	11.30	10.00	10.08	7.86	9.07	9.98	10.43	10.59
5		11.46	11.31	10.01	10.09	7.87	9.16	(b)	10.43	10.60
6		11.42	11.28	10.02	10.10	7.89	9.25	10.12	10.47	(b)
7		11.41	11.29	10.01	10.11	7.92	9.27	10.16	10.51	10.61
8		11.42	11.29	10.03	(b)	7.94	9.22	10.18	10.51	10.61
9		11.41	11.30	10.00	(b)	7.97	9.26	10.25	10.49	10.63
10		11.40	11.30	10.00c	10.07	8.00	9.25	10.25	10.49	10.65
11		11.38	11.26	9.98	10.11	8.06	9.24	10.30	10.46	10.64
12		11.37	11.33	10.00	10.12		9.25	10.33	10.50	10.66
13		11.36	11.36	10.00	10.11		9.24	10.36	10.50	10.64
14		11.35	11.37	9.99	10.11		9.26	(b)	10.53	10.64
15		11.34	11.35	10.00	10.12		9.26	(b)	10.54	10.64
16		11.38	11.34	10.00	10.12	(d)	9.25	10.47	10.52	10.67
17		11.40	(b)	9.99	10.13		9.29	10.50	10.52	10.68
18		11.35		9.98	10.15		9.30	10.51	10.55	10.67
19		11.37		9.99	10.16		9.32	10.49	10.57	10.69
20		11.36		9.98	10.15		9.37	10.46	10.58	10.69
21		11.35		9.97	10.13	8.32	9.37	10.51	10.58	10.69
22		11.36		9.99	10.09	8.30	9.40	10.54	10.60	
23		11.32		9.99	10.00	8.32	9.47c	10.52	10.62	(b)
24	a11.53	11.32		10.00	9.69	8.36	9.54		10.62	
25	11.50	11.32		9.98	9.25	8.42	9.56		10.63	
26	11.52	11.31		9.99	8.85	8.49	9.55	(e)	10.61	
27	11.55	11.34		10.00	8.52	8.54	9.61		10.60	
28	11.52	11.34		10.01	8.28	8.58	9.65		10.61	
29	11.49	11.34		9.98	8.14	8.70	9.67		10.59	
30	11.48	11.33		10.05	8.02	8.78	9.74	10.49	10.59	(b)
31	11.47			10.07		8.82	9.77		10.63	

a Recorder installed.
b Recorder not operating.
c Noon water level generally maximum for day. Water level in well affected by pumping in distant well or wells.
d Minimum depth to water, 8.11; maximum depth to water, 8.49
e Minimum depth to water, 10.46; maximum depth to water, 10.55.

Table 8.--Water-level measurements in wells in Reville County, North Dakota--Continued.

161-84-17ddl. A. R. Jones, Oil and Operating Co. No. 1. Dug well. Measuring point, top of 12x12-inch timber on south side of well level with land surface, and 1659.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.30, 1945	16.90	July 25, 1946	16+	Oct. 29, 1947	8.93
May 13, 1946	12.65	2, 1947	4.53		

161-84-24ab. J. Dighten Taylor. Depth, 15.2 feet; diameter, 48 inches. Measuring point; top of brick curb, 0.2 foot above land surface. Domestic water supply.

Water level, in feet below measuring point

July 19, 1940	11.04	May 29, 1943	8.82	May 29, 1946	9.35
Nov. 13	11.85	July 11, 1944	3.65	Sept.26	11.87
Apr. 21, 1941	11.38	Nov. 10	7.43	Oct. 6, 1947	10.92
Aug. 16, 1942	8.95	Oct. 7, 1945	10.82		

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

161-84-28bc. Dug well, 9.2 feet deep. Measuring point, until 7/25/46 is base of pump, level with land surface. Measuring point after 7/25/46 is top northwest side of wooden curb, 2.0 feet below land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1945	5.30	July 25, 1946	5.10	Oct. 29, 1947	4.75

161-84-36ba. R. Nelson Dug well, 14 feet deep. Measuring point, top of wooden cover at north side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Oct. 6, 1945	7.75	May 22, 1946	6.13	July 25, 1946	a/6.80

161-85-4cd. Dug well, 13.3 feet deep. Measuring point, top of wooden cover at west side of pump base, 1.7 feet above land surface.

Water level, in feet below measuring point

Oct. 1, 1945	7.55	July 26, 1946	5.41	Oct. 25, 1946	a/8.32
May 22, 1946	2.92				

161-85-5bc. Dug well. Measuring point, top of pump, 4.5 feet above land surface, 1765.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Oct. 1, 1945	12.55	Oct. 25, 1946	12.62	July 2, 1947	9.53
May 22, 1946	10.66	Apr. 15, 1947	12.65	Oct. 29	10.95
July 26	11.79				

161-85-13cc. Bored well, 18.5 feet deep. Measuring point, top east side of 24-inch tile casing 1.2 feet above land surface, 1727.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.23, 1945	11.20	July 25, 1946	10.12	Mar. 25, 1947	a/11.90
May 22, 1946	7.72	Oct. 25	11.73		

161-85-14cc. Bored well, 12.7 feet deep. Measuring point, top east side of 9-inch corrugated iron casing, 2.1 feet above land surface.

Water level, in feet below measuring point

Sept.23, 1945	Dry	May 22, 1946	6.37	July 25, 1946	a/10.58

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, N
Dakota.--Continued.

161-85-18dc. Drilled well. Measuring point, top of 4-inch casing collar, 1.3 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.23, 1945	12.85	May 22, 1946	12.91	July 25, 1946	a/13.05

161-85-20aa. R. G. McDonald. Drilled well. Measuring point, top of pump, 4.2 feet above land surface, 1760.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Aug. 14, 1937	87.19	July 27, 1938	87.16	Mar. 25, 1939	86.81
Dec. 4	77.24	30	87.31	Apr. 1	86.79
11	77.46	Aug. 6	87.38	13	87.06
18	77.55	13	87.16	25	86.96
24	77.65	20	87.04	May 2	87.02
Jan. 1, 1938	77.70	27	86.98	11	87.10
8	77.88	Sept. 3, 1938	87.29	19	87.00
15	78.03	10	87.48	June 5	86.98
22	78.21	17	87.35	18	86.91
29	78.41	24	87.29	Sept. 23	87.32
Feb. 5	78.58	Oct. 1	87.23	30	87.32
12	78.66	8	87.02	Oct. 7	87.28
19	78.83	15	87.39	14	87.26
26	78.90	22	87.27	21	87.25
Mar. 5	78.71	29	87.21	28	87.27
12	78.58	Nov. 5	87.15	Nov. 4	87.28
19	78.41	12	87.24	11	87.30
26	78.51	19	87.38	18	87.32
Apr. 2	78.22	26	87.21	25	87.33
9	78.65	Dec. 5	87.15	Dec. 2	87.34
16	79.24	10	87.10	9	87.36
23	79.77	17	87.04	16	87.38
30	80.40	24	87.15	23	87.39
May 7	80.38	31	87.05	30	87.39
14	81.30	Jan. 7, 1939	87.06	Jan. 6, 1940	87.40
21	81.73	14	87.04	13	87.39
28	82.04	21	87.03	20	87.38
June 4	82.38	28	87.01	27	87.41
11	82.30	Feb. 4	87.04	Feb. 3	87.34
18	82.23	11	87.02	10	87.48
25	82.67	18	86.99	17	87.49
July 2	84.12	25	86.90	24	87.50
9	84.77	Mar. 4	86.88	Mar. 2	87.50
16	85.12	11	86.85	9	87.51
23	85.58	18	86.86	16	87.49

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

161-85-20aa.--Continued.

Water level, in feet below measuring point					
Date	Water level	Date	Water level	Date	Water level
Mar. 20, 1940	87.47	Jan. 4, 1941	87.59	Nov. 1, 1941	87.46
21	87.51	11	87.68	8	87.46
22	87.56	18	87.67	15	87.45
23	87.60	25	87.69	22	87.40
30	87.61	Feb. 1	87.66	29	87.38
Apr. 6	87.51	8	87.68	Dec. 6	87.40
13	87.46	15	87.62	13	87.43
20	87.44	22	87.62	20	87.39
27	87.43	Mar. 1	87.66	27	87.40
May 4	87.42	8	87.62	Jan. 3, 1942	87.43
11	87.41	15	87.70	10	87.50
18	87.35	22	87.67	17	87.43
25	87.35	29	87.63	24	87.46
June 1	87.33	Apr. 5	87.59	31	87.42
8	87.32	12	87.54	Feb. 7	87.43
15	87.32	19	87.44	14	87.46
22	87.48	21	87.49	21	87.47
29	87.43	26	87.50	28	87.46
July 6	87.53	May 3	87.43	Mar. 7	87.34
13	87.55	10	87.48	14	87.37
20	87.58	17	87.43	21	87.37
27	87.45	24	87.50	28	87.38
Aug. 3	87.56	31	87.42	Apr. 4	87.29
10	87.58	June 7	87.35	11	87.34
17	87.61	14	87.35	18	87.27
24	87.72	21	87.29	25	87.23
31	87.60	28	87.33	May 2	87.35
Sept. 7	87.71	July 5	87.43	9	87.31
14	87.70	12	87.42	16	87.34
21	87.72	19	87.50	23	87.36
30	87.73	26	87.53	30	87.30
Oct. 5	87.62	Aug. 2	87.62	June 6	87.34
12	87.70	9	87.69	13	87.35
19	87.73	16	87.70	20	87.34
26	87.67	23	87.69	27	87.32
Nov. 2	87.70	30	87.63	July 3	87.36
9	87.71	Sept. 6	87.50	11	87.35
16	87.75	13	87.46	18	87.45
23	87.73	20	87.40	25	87.43
30	87.75	27	87.35	Aug. 1	87.25
Dec. 7	87.64	Oct. 5	87.42	8	87.42
14	87.73	11	87.40	15	87.36
21	87.67	18	87.47	22	87.46
28	87.62	25	87.48	29	87.47

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

161-85-20aa.--Continued.

Water level, in feet below measuring point					
Date	Water level	Date	Water level	Date	Water level
Sept. 5, 1942	87.44	Aug. 7, 1943	87.08	Dec. 2, 1944	87.12
12	87.51	14	87.09	9	87.13
19	87.50	28	87.19	30	87.16
26	87.56	Sept. 4	87.20	Jan. 15, 1945	87.07
Oct. 3	87.56	11	87.35	20	87.06
10	87.57	18	87.21	29	87.08
17	87.63	Oct. 2	87.33	Feb. 5	87.08
26	87.63	16	87.28	18	87.14
Nov. 2	87.53	23	87.29	Mar. 5	87.09
9	87.54	Nov. 6	87.30	10	87.10
14	87.47	Dec. 4	87.24	17	87.09
Dec. 5	87.46	14	87.25	24	87.06
12	87.47	24	87.25	31	87.05
19	87.57	Jan. 10, 1944	87.27	Apr. 14	87.03
26	87.58	16	87.28	June 2	86.93
Jan. 2, 1943	87.57	22	87.27	16	86.92
9	87.58	29	87.27	23	86.93
20	87.59	Feb. 12	87.26	July 7	86.92
23	87.59	19	87.28	14	87.06
Feb. 6	87.57	26	87.29	21	87.04
13	87.52	Mar. 11	87.30	Aug. 4	87.05
20	87.50	18	87.22	11	87.04
27	87.50	27	87.20	25	87.09
Mar. 6	87.49	Apr. 1	87.18	Sept. 1	87.10
20	87.39	8	87.18	15	87.22
27	87.38	15	87.18	29	87.32
Apr. 3	87.32	May 13	87.11	Oct. 27	87.31
10	87.31	20	87.07	Nov. 10	87.33
17	87.26	27	87.10	24	87.18
24	87.26	June 3	86.97	Dec. 3	87.17
May 1	87.18	10	86.96	8	87.17
8	87.17	24	86.72	15	87.17
22	87.15	July 1	86.68	29	87.17
29	87.15	15	87.69	May 29, 1946	87.03
June 5	87.02	Aug. 5	86.97	Sept. 26	87.24
12	87.03	14	86.98	Oct. 25	87.07
19	87.04	19	87.03	Nov. 2	87.14
29	87.06	Sept. 2	87.03	30	87.15
July 3	87.07	16	86.99	Apr. 9, 1947	86.93
10	86.98	30	87.01	July 2	86.69
17	86.99	Nov. 4	87.10	Oct. 6	86.99
24	87.00	14	87.11	29	86.95
30	87.07	20	87.13		

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

161-85-34ccl. Harry Klatt. Bored well, 24 feet deep. Measuring point, top of wooden cover at west side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1945	13.15	Oct. 25, 1946	16.09	July 2, 1947	7.92
May 22, 1946	14.03	Apr. 15, 1947	17.87	Oct. 29	12.30
July 25	12.42				

161-86-15cc. Dug well, 10.7 feet deep. Measuring point, top of 2-inch plank on iron curb at south side, 3.0 feet above land surface, 1821.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 23, 1945	9.15	July 25, 1946	8.05	Oct. 3, 1947	4.34
May 28, 1946	3.32	Oct. 25	10.70		

161-86-28dd. N. Johnson. Dug well, 20 feet deep. Measuring point, top of wooden cover at south side of pump base, 0.9 foot above land surface.

Water level, in feet below measuring point

Oct. 26, 1945	15.18	Oct. 25, 1945	14.10	July 3, 1947	4.72
May 28, 1946	9.15	Apr. 9, 1947	13.02	Nov. 7	19.97
July 25	11.65				

161-86-33aa. Dug well, 16.3 feet deep. Measuring point, top of 2-inch wooden cover at east side of pump base, 1.6 feet above land surface.

Water level, in feet below measuring point

Oct. 4, 1945	15.70	July 25, 1946	7.23	Nov. 7, 1947	5.08
May 28, 1946	4.58	Oct. 25	13.83		

161-87-1aa. William Clifford. Dug well, 7.5 feet deep. Measuring point, top northwest corner of wooden curb 1.0 foot above land surface, 1847.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept. 30, 1945	Dry	July 25, 1946	5.10	Oct. 24, 1946	a/Caved
May 29, 1946	1.00				

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

161-87-17dc. Albert Brown. Bored well, 18 feet deep. Measuring point, top west side of wooden curb, 1.5 feet above land surface, 1874.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.23, 1945	9.80	July 25, 1946	8.95	July 3, 1947	3.25
May 29, 1946	7.65	Oct. 24	10.25	Nov. 3	7.43

161-87-24ab. Bored well. Measuring point, top of wooden cover at east side of pump base, 1.0 foot above land surface, 1847.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.23, 1945	16.05	July 25, 1946	9.90	Oct. 24, 1946	a/14.31
May 29, 1946	8.15				

161-87-29cc. P. Peterson. Dug well. Measuring point, top of wooden cover at east side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Sept.26, 1945	13.10	July 25, 1946	11.33	Apr. 11, 1947	a/b/9.52
May 29, 1946	11.28	Oct. 24	12.40		

161-87-33bc. John Faulkner. Dug well. Measuring point, top south side of iron curb, 1.5 feet above land surface.

Water level, in feet below measuring point

Sept.26, 1945	12.30	July 25, 1946	11.80	Apr. 11, 1947	a/14.83
May 2, 1946	9.83	Oct. 24	12.87		

162-84-2aa. Dug well, 11.8 feet deep. Measuring point, top south side of concrete curb, 2.5 feet above land surface.

Water level, in feet below measuring point

Oct. 1, 1945	8.95	May 13, 1946	8.10	July 26, 1946	a/8.59

162-84-2da. G. Lohse. Dug well, 9 feet deep. Measuring point, top north side of concrete curb, 1.0 feet above land surface.

Water level, in feet below measuring point

Oct. 1, 1945	8.15	May 13, 1946	5.45	July 26, 1946	a/7.05

162-84-9cd. Dug well, 19.1 feet deep. Measuring point, top of 2-inch wooden cover 1.0 foot above land surface, 1637.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.29, 1945	14.55	July 26, 1946	14.21	July 2, 1947	5.06
May 13, 1946	13.57	Apr. 7, 1947	16.19	Oct. 28	11.07

a/ Measurements discontinued.
b/ Receives some drainage from surrounding area.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

162-84-9da1. Dug well, 7.0 feet deep. Measuring point, top of 2 x 8-inch girder near pump, 1.0 foot above land surface, 1614.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.28, 1945	4.35	May 13, 1946	1.23	July 26, 1946	a/4.41

162-84-9da2. Dug well. Measuring point, top of 2-inch plank at base of door in wooden curb, 1.2 feet above land surface, 1616.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.28, 1945	8.90	July 26, 1946	8.43	Apr. 7, 1947	a/2.29
May 13, 1946	5.18				

162-84-10cd. Dug well. Measuring point, top of wooden cover at south base of pump, 0.5 foot above land surface, 1621.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.28, 1945	7.78	July 26, 1946	9.13	July 2, 1947	3.65
May 13, 1946	6.77	Apr. 7, 1947	b/1.96	Oct. 28	6.38

162-84-32ddl. Alfred Newstrom. Dug well, 15 feet deep. Measuring point, top of wooden cover at east side of pump base, 0.5 foot above land surface, 1660.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Oct. 8, 1945	8.50	May 22, 1946	6.25	July 26, 1946	a/6.89

162-85-8dd. Dug well, 16.4 feet deep. Measuring point, top of 2-inch wooden cover at west side of pump base, 1.2 feet above land surface, 1712.2 feet above mean sea-level datum.

Water level, in feet below measuring point

Oct. 1, 1945	7.55	July 26, 1946	6.28	July 2, 1947	1.63
May 17, 1946	2.64	Oct. 25	7.71	Oct. 29	6.23

162-85-13aa. Dug well. Measuring point, top of 2-inch wooden cover, at north side of pump base, 2.0 feet above land surface, 1670.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.28, 1945	10.90	July 26, 1946	10.10	Mar. 26,1947	a/c/13.00
May 13, 1946	7.73	Oct. 25	13.55		

a/ Measurements discontinued.
b/ Water standing in nearby pond.
c/ Top of ice.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

162-85-21ab. Dug well, 20 feet deep. Measuring point, top of 2-inch wooden cover, 0.2 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 1, 1945	9.10	July 26, 1946	8.70	July 2, 1947	5.02
May 22, 1946	8.57	Oct. 25	8.63	Oct. 29	6.65

162-86-13abl. August Bahl. Bored well, 15 feet deep. Measuring point, top north side of corrugated iron casing, 1.4 feet above land surface, 1766.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.29, 1945	10.65	July 26, 1946	9.70	July 2, 1947	2.91
May 17, 1946	7.54	Oct. 25	12.41	Oct. 29	8.08

162-87-2bb. W. S. Cook. Dug well. Measuring point, top of 2-inch wooden cover at west side of pump base, 0.6 foot above land surface, 1803.6 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.30, 1945	21.95	July 25, 1946	14.15	July 3, 1947	11.72
May 30, 1946	14.85	Oct. 24	14.72	Nov. 3	11.85

162-87-15ad. George Fristad. Dug well, 11.6 feet deep. Measuring point, top southeast corner of wooden curb, 1.0 foot above land surface, 1841.0 feet above mean sea level datum.

Water level, in feet below measuring point

Sept.30, 1945	10.30	July 25, 1946	5.99	Oct. 24, 1946	a/9.30
May 30, 1946	2.70				

162-87-17aa. Dug well, 30.4 feet deep. Measuring point, top of 2-imch wooden cover, at north side of pump base, 1.5 feet above land surface, 1850.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.24, 1945	21.30	Oct. 24, 1946	16.71	July 3, 1947	8.09
May 30, 1946	17.98	Apr. 17, 1947	13.37	Nov. 3	12.99
July 25	15.22				

162-87-28aa. Drilled well. Measuring point, top of pump 4.4 feet above land surface, 1841.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.30, 1945	27.78	Oct. 24, 1946	27.40	July 3, 1947	26.38
May 30, 1946	27.55	Apr. 17, 1947	26.87	Nov. 3	26.25
July 25	27.55				

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

162-87-29ddl. Hans Scott. Bored well, 30 feet deep. Measuring point, top of 2-inch wooden cover at east side of pump base.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.24, 1945	10.68	May 30, 1946	11.33	July 25, 1946	a/11.40

162-87-29dd2. Hans Scott. Dug well, 20 feet deep. Measuring point, top of wooden cover at west side of pump base, 1.0 foot above land surface, 1860.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.24, 1945	11.80	Oct. 24, 1946	14.66	July 3, 1947	4.38
May 30, 1946	8.52	Apr. 17, 1947	10.47	Nov. 3	7.91
July 25	13.05				

162-87-33bb. Dug well, 18.5 feet deep. Measuring point, top of 2-inch wooden cover, at south side of pump base, 1.4 feet above land surface, 1858.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.24, 1945	14.20	July 25, 1946	12.10	Oct. 24, 1946	a/b/Caved
May 30, 1946	9.45				

162-87-35ad. Drilled well. Measuring point, base of 1½-inch hole in side of pump 3.4 feet above land surface, 1854.4 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.30, 1945	18.85	Oct. 24, 1946	19.93	July 3, 1947	22.82
May 29, 1946	19.70	Apr. 17, 1947	23.05	Nov. 3	23.41
July 25	20.40				

163-84-4cd. Mrs. K. O. Holte. Dug well, 13 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 1.2 feet above land surface.

Water level, in feet below measuring point

Sept.28, 1945	8.36	May 13, 1946	7.16	July 24, 1946	a/8.00

163-84-5dc. Harry Sorenson. Dug well, 12 feet deep. Measuring point, top of wooden cover at north side of pump base, 2.0 feet above land surface.

Water level, in feet below measuring point

Sept. 28, 1945	9.15	May 13, 1946	7.68	July 24, 1946	a/8.50

a/ Measurements discontinued.
b/ Dry at 12.00 feet.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

163-84-7bb. Dug well. Measuring point, top of wooden cover at southwest side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.28, 1945	7.70	July 24, 1946	7.40	Oct. 28, 1947	7.14
May 13, 1946	6.95	2, 1947	4.47		

163-84-11bb. Drilled well. Measuring point, top north side of 3-inch iron casing, 1.8 feet above land surface.

Water level, in feet below measuring point

Sept.28, 1945	18.20	July 24, 1946	17.85	July 2, 1947	16.26
May 13, 1946	17.72	Mar. 26, 1947	17.60	Oct. 29	15.16

163-84-15bb1. Willard Wigness. Dug well, 8 feet deep. Measuring point, base of pump on east side, 1.5 feet above land surface.

Water level, in feet below measuring point

Sept.28, 1945	5.10	July 24, 1946	5.11	July 2, 1947	3.47
May 13, 1946	4.17				

163-84-15bb2. Eden Valley School. Dug well, 6.0 feet deep. Measuring point, top of 2-inch wooden cover, at north side of pump base, 5.0 feet below land surface.

Water level, in feet below measuring point

Sept.28, 1945	1.75	July 24, 1946	1.75	Mar. 26, 1947	a/2.70

163-84-25bb. Hayes Stewart. Dug well, 11.2 feet deep. Measuring point, top of 2 x 6-inch plank at southeast corner of wooden curb, 3.3 feet above land surface.

Water level, in feet below measuring point

Sept.28, 1945	8.35	May 13, 1946	a/7.40		

163-84-29ab. Dug well, 10.4 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 2.0 feet above land surface.

Water level, in feet below measuring point

Sept.28, 1945	8.10	July 26, 1946	7.98	Apr. 7, 1947	a/7.93
May 13, 1946	8.12				

163-84-30ab. Dug well. Measuring point, top of 2-inch wooden cover, 4.7 feet above land surface.

Water level, in feet below measuring point

Oct. 1, 1945	12.40	May 13, 1946	11.28	July 26, 1946	a/12.06

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

163-85-1aa. Dug well. Measuring point, top of wooden cover at south side of pump base, 1.5 feet above land surface.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.28, 1945	13.45	Oct. 25, 1946	14.02	July 2, 1947	12.26
May 13, 1946	12.65	Mar. 26, 1947	14.55	Oct. 29	13.45
July 23	13.02				

163-85-3cc. Dug well, 27.6 feet deep. Measuring point, top of 1-inch wooden cover at west side of pump base, 1.7 feet above land surface.

Water level, in feet below measuring point

Sept.29, 1945	16.95	July 24, 1946	13.60	July 2, 1947	8.07
May 17, 1946	15.90	Oct. 25	13.38		

163-85-5cd. George Eitz. Dug well, 19.3 feet deep. Measuring point, top of 2-inch wooden cover at west side of pump base, 1.5 feet above land surface, 1699.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.29, 1945	12.25	Oct. 25, 1946	14.10	July 2, 1947	12.05
May 17, 1946	14.95	Apr. 7, 1947	11.36	Oct. 29	15.26
July 24	15.41				

163-85-13cc. Gilbert Gahn. Dug well, 12 feet deep. Measuring point, top of wooden cover, 2.3 feet above land surface.

Water level, in feet below measuring point

Sept.29, 1945	8.00	July 24, 1946	9.18	Oct. 25, 1946	a/9.86
May 17, 1946	8.35				

163-85-13da. Drilled well. Measuring point, base of pump, 0.5 foot above land surface.

Water level, in feet below measuring point

Sept.28, 1945	12.70	May 13, 1946	11.90	Oct. 25, 1946	a/11.78

163-85-15dd. Dug well. Measuring point, top of 2-inch wooden cover at north side of pump base, 0.5 foot above land surface.

Water level, in feet below measuring point

Sept.29, 1945	11.80	July 24, 1946	10.11	July 2, 1947	3.77
May 17, 1946	8.05	Oct. 25	9.96	Oct. 29	9.74

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Renville County, North Dakota--Continued.

163-85-31aa. Dug well. Measuring point, top of 2-inch wooden cover at north side of pump base, 2.0 feet above land surface, 1718.0 feet above mean sea level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 1, 1945	10.75	July 26, 1946	6.88	July 2, 1947	2.03
May 17, 1946	4.37	Oct. 25	10.74	Oct. 29	a/8.80

163-85-35bb. Dug well. Measuring point, top of wooden cover at east side of pump base, 2.0 feet above land surface.

Water level, in feet below measuring point

Oct. 1, 1945	10.50	Oct. 25, 1946	11.20	July 2, 1947	8.29
May 17, 1946	9.46	Apr. 7, 1947	8.50	Oct. 29	10.17
July 26	10.45				

163-85-36aa. Dug well. Measuring point, top of wooden cover at north side of pump base, 1.0 foot above land surface.

Water level, in feet below measuring point

Sept.28, 1945	8.55	July 26, 1946	7.29	July 2, 1947	2.89
May 13, 1946	7.45	Mar. 26, 1947	7.30	Oct. 29	6.05

163-86-4bc. Verl McDermitt. Dug well, 12.5 feet deep. Measuring point, top east side of corrugated iron casing 2.0 feet above land surface, 1768.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.29, 1945	9.32	July 25, 1946	7.98	Apr. 17, 1947	a/3.46
May 17, 1946	4.98	Oct. 25	9.45		

163-86-9aa. Dug well. Measuring point, top of 2-inch wooden cover at west side of pump base, 2.8 feet above land surface, 1762.8 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.29, 1945	13.70	July 25, 1946	13.73	July 2, 1947	11.31
May 17, 1946	13.24	Oct. 25	13.80	Oct. 29	11.73

163-86-33dd. Mrs. N. H. Tvetan. Dug well, 18 feet deep. Measuring point, top of 2-inch wooden cover at south side of pump base, 1.0 foot above land surface, 1751.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.29, 1945	12.65	July 26, 1946	12.56	July 2, 1947	7.72
May 17, 1946	11.06	Oct. 25	13.27	Oct. 29	11.55

a/ Measurements discontinued.

Table 8.--Water-level measurements in wells in Ronville County, North Dakota--Continued.

163-87-5dc. Dug well, 14.5 feet deep. Measuring point, base of pump 2.5 feet above land surface, 1813.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.24, 1945	7.05	July 25, 1946	7.29	July 3, 1947	a/1.97
May 30, 1946	5.95	Oct. 24	7.67	Nov. 3	6.07

163-87-9bc. Dug well, 10.2 feet deep. Measuring point, top of wooden cover at north side of pump base, 1.0 foot above land surface, 1805.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.24, 1945	6.65	July 25, 1946	6.10	July 3, 1947	a/1.83
May 30, 1946	4.62	Oct. 24	6.46	Nov. 3	5.25

163-87-28bc. Dug well. Measuring point, top north side of broken pump, 2.0 feet above land surface, 1842.0 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.24, 1945	15.62	July 25, 1946	14.71	Apr. 17, 1947	b/8.46
May 30, 1946	13.70	Oct. 24	15.25		

163-87-28cc. Dug well, 46.9 feet deep. Measuring point, base of pump, 0.5 foot above land surface, 1845.5 feet above mean sea-level datum.

Water level, in feet below measuring point

Sept.24, 1945	15.13	July 25, 1946	15.60	Apr. 17, 1947	b/13.75
May 30, 1946	14.42	Oct. 24	15.67		

a/ Water standing at same level in nearby ponds.
b/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota.

154-81-2aa. Depth, 50 feet; diameter, 18 inches. Measuring point, top of casing, 0.8 foot above land surface. Stock water supply. Water level in feet below measuring point: Oct. 17, 1946, 13.65; July 11, 1946, 13.41; Nov. 12, 1946, 13.53; May 16, 1947, 15.28 a/.

154-81-6ba. J. B. Withers. Depth, 50 feet; diameter 16 inches. Measuring point, hub of iron pulley-wheel, level with land surface. Not used.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 18, 1945	12.70	July 11, 1946	10.45	May 16, 1947	12.41
Mar. 23, 1946	11.40	Nov. 13	12.80		a/

154-81-8ad. E. C. Grasby. Depth, 38.2 feet; diameter 48 inches. Measuring point, top of wooden cover at south side of pump base, 0.5 foot above land surface. Domestic and stock water supply.

Water level in feet below measuring point

Oct. 18, 1945	23.30	Nov. 12, 1946	22.54	July 7, 1947	23.45
Mar. 23, 1946	22.23	May 16, 1947	23.09	Nov. 14	22.59
July 11	21.05				

154-81-11cc. A. J. Kittleson. Depth, 50 feet; diameter, 18 inches. Measuring point, top of wooden cover at north side of pump base, 0.6 foot above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Oct. 17, 1945	26.65	Nov. 11, 1946	37.80	July 7, 1947	35.45
July 11, 1946	22.24	May 19, 1947	37.02	Nov. 14	36.12

154-81-13bb. Depth, 48.1 feet; diameter, 18 inches. Measuring point, top of 2-inch wood cover, 1.2 feet above land surface. Not used.

Water level, in feet below measuring point

Oct. 17, 1945	18.60	July 10, 1946	14.60	May 19, 1947	16.82
Mar. 23, 1946	19.13	Nov. 12	17.86		a/

154-81-22aa1. R. Abrahamson. Diameter, 48 inches. Measuring point, top of wood cover at north edge of pump base. Domestic water supply.

Water level, in feet below measuring point

Oct. 17, 1945	20.65	Nov. 12, 1946	20.07	July 7, 1947	19.62
July 11, 1946	19.77	May 19, 1947	19.84	Nov. 14	19.78

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued

154-81-27dd. A. M. Foss. Depth, 30 feet; diameter, 48 inches. Measuring point, top of wood cover at west side of pump base, 1.5 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 17, 1945	21.85	July 11, 1946	17.06	July 7, 1947	19.44
Mar. 23, 1946	20.57	May 19, 1947	20.70	Nov. 14	19.99

154-82-13ad. Depth, 29.1 feet; diameter, 48 inches. Measuring point, top of wood cover at south side of pump base, 1.1 feet above land surface. Not used.

Water level, in feet below measuring point

Oct. 18, 1945	20.85	Nov. 12, 1946	21.02	July 7, 1947	20.44
July 11, 1946	21.71	May 17, 1947	21.02	Nov. 14	20.89

155-81-2cc. Depth, 22.9 feet; diameter, 18 inches. Measuring point, top of wood cover, 0.6 foot above land surface. Not used.

Water level, in feet below measuring point

Oct. 16, 1945	14.06	Nov. 13, 1946	15.50	July 7, 1947	15.11
Mar. 26, 1946	14.56	May 16, 1947	15.72	Nov. 19	15.89
July 10	14.77				

155-81-6aa. Depth, 14.1 feet; diameter, 14 inches. Measuring point, top of wood cover, 0.5 foot above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 16, 1945	6.95	Nov. 13, 1946	Dry	July 7, 1947	4.55
Mar. 26, 1946	3.50	May 16, 1947	Dry	Nov. 13	9.22
July 12	Dry				

155-81-6cd. John Kauffman. Depth, 11.9 feet; diameter, 30 inches. Measuring point, top of casing, 3.2 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 16, 1945	10.00	July 12, 1946	9.65	May 16, 1947	7.33
May 26, 1946	5.04	Nov. 13	9.75		a/

155-81-11aa. Carl Olson. Depth, 10.6 feet; diameter, 20 inches. Measuring point, top of wooden cover, 0.7 foot above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 16, 1945	9.95	Nov. 13, 1946	7.57	July 7, 1947	5.64
July 11, 1946	8.86	May 16, 1947	5.82	Nov. 19	7.52

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued

155-81-11ddl. E. J. Burgess. Depth, 30 feet; diameter, 30 inches. Measuring point, top of wood cover, 0.2 foot above land surface. Not used.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 23, 1945	11.62	Nov. 13, 1946	12.48	July 7, 1947	13.67
July 11, 1946	9.88	May 16, 1947	14.06		

155-81-15dc. Depth, 22.3 feet; diameter, 20 inches. Measuring point, top of wood cover, 3.0 feet above land surface. Domestic water supply. Water level, in feet below measuring point: 1945, Oct. 17, 12.30; 1946, Mar. 23, 14.20; July 11, 13.30; Nov. 7, 14.59; 1947, May 16, 16.12 a/.

155-81-16cd. Depth, 8.6 feet; diameter, 48 inches. Measuring point, top of wood curb, 1.0 foot above land surface. Not used. Water level, in feet below measuring point: 1945, Oct. 17, 6.20; 1946, Mar. 23, 4.00; July 11, 6.55; 1947, May 16, 6.52 a/.

155-81-22cb. Depth, 32.0 feet; diameter, 48 inches. Measuring point, top of wood cover, 0.5 foot above land surface. Not used. Water level, in feet below measuring point: 1945, Oct. 18, 14.90; 1946, July 11, 14.85; Nov. 12, 15.72; 1947, May 16, 17.08 a/.

155-81-24aa. J. W. Foley. Depth, 47 feet; diameter, 20 inches. Measuring point, top of wooden cover, 1.1 feet above land surface. Water level, in feet below measuring point: 1945, Oct. 29, 21.04; 1946, Mar. 25, 20.54; July 11, 23.70; 1947, June 4, 27.79 a/.

155-81-26ddl. Peter Kraft. Depth, 60 feet; diameter, 18 inches. Measuring point, top of wooden cover, 0.7 foot above land surface. Water level, in feet below measuring point: 1945, Oct. 17, 12.77; 1946, July 11, 13.16; Nov. 13, 13.45; 1947, May 16, 14.00 a/.

155-81-29ab. Depth, 10.6 feet; diameter, 48 inches. Measuring point, top of wood curb, 3.3 feet above land surface. Not used. Water level, in feet below measuring point: 1945, Oct. 17, 7.85; 1946, July 11, 7.29; Nov. 7, 9.39; 1947, May 16, 5.96; June 10, 6.91 a/.

155-81-33dd. Depth, 39.3 feet; diameter, 24 inches. Measuring point, top of wood cover, 1.0 foot above land surface. Water level, in feet below measuring point: 1945, Oct. 18, 17.05; 1946, July 11, 16.01; Nov. 12, 18.62; 1947, May 16, 18.04 a/.

155-82-2dc. C. Hamback. Depth, 82.5 feet; diameter, 24 inches. Measuring point, top of wooden cover, 1.0 foot above land surface. Not used. Water level, in feet below measuring point: 1945, Oct. 16, 27.05; 1946, July 11, 15.77; 1947, May 16, 25.73 a/.

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued

155-82-10aa. Frank Hrdlicka. Depth, 15 feet; diameter, 48 inches. Measuring point, top of wood cover, 3.0 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1945	7.60	Nov. 13, 1946	7.58	July 7, 1947	3.53
Mar. 26, 1946	1.68	May 16, 1947	3.22	Nov. 13	8.17
July 12	6.75				

155-82-14dd. John Blaerud. Depth, 120 feet; diameter, 4 inches. Measuring point, top of casing, 1.5 feet above land surface. Not used.

Water level, in feet below measuring point

Oct. 17, 1945	40.70	July 12, 1946	40.48	July 7, 1947	40.26
Mar. 26, 1946	40.43	May 16, 1947	40.66	Nov. 14	40.64

155-82-23cd. Depth, 8.1 feet; diameter, 36 inches. Measuring point, top of wood curb, 0.6 foot above land surface. Not used.

Water level, in feet below measuring point

Oct. 17, 1945	3.55	Nov. 7, 1946	4.93	July 7, 1947	2.87
Mar. 23, 1946	.70	May 16, 1947	2.67	Nov. 14	4.97
July 12	3.71				

156-81-4aa. Abel Beaton. Depth, 185 feet; diameter, 1½ inches. Measuring point, top of pump, 2.9 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Oct. 15, 1945	7.70	Nov. 15, 1946	10.60	July 9, 1947	2.76
Mar. 26, 1946	6.11	May 23, 1947	6.84	Nov. 18	10.15
July 13	9.73				

156-81-17ccl. E. B. Engebritson. Depth, 55 feet; diameter, 15 inches. Measuring point, top of tile casing, 0.6 foot above land surface. Domestic water supply.

Water level, in feet below measuring point

Oct. 15, 1945	13.50	Nov. 13, 1946	12.28	July 9, 1947	6.26
July 12, 1946	10.90	May 15, 1947	6.39	Nov. 18	10.63

156-81-23bc. Depth, 20 feet; diameter, 20 inches. Measuring point, top of wood cover, 1.5 feet above land surface. Stock water supply. Water level, in feet below measuring point: 1945, Oct. 19, 8.75; 1946, July 13, 10.45; Nov. 13, 10.20; 1947, May 23, 9.69 a/.

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

156-81-32bc. Diameter, 36 inches. Measuring point, base of pump, 2.0 feet above land surface. Stock water supply. Water level, in feet below measuring point: 1945, Oct. 16, 12.65; 1946, July 12, 10.32; Nov. 13, 10.20; 1947, May 15, 10.27 a/.

156-81-35ad. C. Maurer. Depth, 11.1 feet; diameter, 48 inches. Measuring point, top of wood cover, 2.2 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1945	9.25	Nov. 13, 1946	9.56	July 9, 1947	9.02
July 11, 1946	8.22	May 23, 1947	9.11		a/

156-82-4ba. Rudolph Helseth. Depth, 60 feet; diameter, 48 inches. Measuring point, top of wood cover, 2.7 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 15, 1945	28.85	Nov. 19, 1946	17.94	July 9, 1947	14.41
July 13, 1946	19.50	May 5, 1947	15.67	Nov. 13	14.87

156-82-10bcl. Roy Tripp. Depth, 35 feet; diameter, 24 inches. Measuring point, top of wood cover, 0.6 foot above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Oct. 15, 1945	22.85	Nov. 19, 1946	10.36	July 9, 1947	7.11
July 13, 1946	8.65	May 15, 1947	10.73	Nov. 13	14.35

156-82-26dc. Arthur Korgel. Diameter, 48 inches. Measuring point, top of wood cover, 1.0 foot above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Oct. 16, 1945	6.70	Nov. 19, 1946	6.02	July 9, 1947	4.73
July 13, 1946	5.77	May 15, 1947	4.78	Nov. 13	b/6.26

156-82-28dcl. Stanley Laskowski. Depth, 25 feet; diameter, 48 inches. Measuring point, top of wood cover, 1.3 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 16, 1945	13.05	May 15, 1947	13.72	July 8, 1947	9.91
July 13, 1946	9.07				

a/ Measurements discontinued.
b/ Pump operating.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

156-83-7ccl. Elmer Werner. Depth, 50 feet; diameter, 24 inches. Measuring point, top of wood cover, 0.6 foot above land surface. Not used.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 14, 1945	13.10	Nov. 19, 1946	a/14.49	July 8, 1947	13.21
July 15, 1946	a/13.55	May 15, 1947	15.09	Nov. 11	13.88

156-83-9ccl. E. K. Livingstone. Depth, 13 feet; diameter, 48 inches. Measuring point, top of wood cover, 1.5 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 14, 1945	6.65	May 15, 1947	1.50	Nov. 11, 1947	a/6.91
July 15, 1946	4.77	July 8	2.36		

a/ Pump operating.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

156-83-14aa. Marie Selfors. Depth, 50 feet; diameter, 20 inches. Measuring point, top of recorder-shelter floor, 1.2 feet above land surface, and 53.38 feet above arbitrary datum.

	Water level, in feet above arbitrary datum, 1946						
Day	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		27.39	30.50	31.84	33.33	34.25	
2		27.48	30.55	31.86	33.69	33.88	
3		27.63	30.48	32.14	33.53	33.77	
4		27.73	30.56	32.36	33.32	33.65	(1)
5		27.78	30.71	32.35	33.27	33.85	
6		27.95	30.93	32.06	33.17	34.16	
7		28.03	31.05	31.96	33.14	34.23	
8		28.20	31.16	32.16	33.48	34.06	
9		28.63	30.92	32.35	33.65	34.08	34.57
10		28.52	30.87	32.42	33.52	34.25	(1)
11		28.38	30.90	32.34	33.49	34.18	35.15
12		28.63	31.05	32.50	33.65	33.96	34.64
13		28.79	31.25	32.65	33.55	34.14	34.60
14		28.69	31.26	32.75	33.64	(1)	
15		28.85	31.41	32.93	33.38	(1)	
16		29.09	31.40	33.06	33.49	34.08	
17		29.23	31.40	32.89	33.74	33.98	
18		29.24	31.41	32.64	33.77	(1)	
19		29.21	31.39	32.84	33.74	34.20	(1)
20	26.53	29.22	31.41	33.13	33.86	34.25	
21	26.61	29.36	31.42	33.37	33.99		
22	26.68	29.70	31.40	33.25	33.85		
23	26.77	29.61	31.46	33.17	34.12		
24	26.90	29.62	31.57	33.11	34.20		
25	26.95	29.65	31.64	33.18	34.26	(1)	
26	27.07	29.94	31.68	33.13	34.00		
27	27.17	30.00	31.52	33.19	33.66		
28	27.20	29.96	31.50	32.83	33.90		
29	27.33	30.14	31.51	32.79	34.05		
30	27.37	30.26	31.76	33.33	34.13		
31		30.54	32.00		34.13		

(1) Recorder not operating.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

156-83-14aa.--Continued.

Water level, in feet above arbitrary datum, 1947

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1					34.21	33.78	33.97		36.66	36.88	36.71	36.74
2					33.92	33.83	34.14		36.76	37.09	37.05	36.60
3					34.09	34.09	34.37		36.79	37.24	37.10	36.44
4					33.92	34.06	34.25		36.78	37.21	37.21	36.48
5					33.87	33.93	(1)		36.90	37.32	37.10	36.71
6			(1)		33.79	33.95			36.76	36.96	36.99	36.93
7					33.68	33.92	34.31		36.81	36.22	37.12	36.84
8				33.95	33.78	34.09	34.38		37.06	36.87	37.13	36.57
9				34.23	33.97	34.17	34.48		36.99	37.02	36.98	
10				34.30	34.17	34.02	34.63		37.04	37.15	36.90	(1)
11				34.30	34.10	33.76			36.78	37.27	36.96	
12				33.99	33.99	33.77			36.84	37.00	36.82	
13				34.08	34.12	33.89			37.32	37.11	36.97	36.86
14		(1)		34.00	34.06	33.91	(1)	(1)	37.17	37.08	36.98	37.20
15	(1)			33.89	33.88	33.85			36.96	37.13	37.01	36.74
16				33.99	34.07	33.87			36.97	37.37	36.47	
17				34.22	34.00	33.87			36.85	37.32	36.69	(1)
18				34.27	33.97	33.81	34.87		36.78	37.13	36.73	
19				34.06	34.00	33.91	35.06		36.81	37.21	36.61	36.66
20				34.24	34.02	34.13	35.02		36.95	37.08	36.64	36.35
21				34.17	34.07	34.05	35.02		36.88	37.28	36.64	36.98
22				34.00	33.82	34.13	35.28		36.64	36.84	36.64	36.98
23			34.73	34.06	33.87	34.17	35.37		36.89	36.74	36.95	36.93
24			34.43	34.00	33.92	34.05	35.42		36.56	36.81	37.11	36.95
25			34.23	33.84	33.89	34.12			36.59	36.68	36.82	36.82
26			34.11	34.09	33.92	34.25			36.61	36.96	36.94	37.08
27				33.90	33.76	34.27		36.50	36.88	36.88	36.71	36.89
28			(1)	34.15	33.79	34.23	(1)	36.54	36.84	36.93	36.70	36.95
29				34.32	33.93	33.97		36.72	36.44	37.04	36.45	36.22
30				34.33	34.21	34.03		36.61	36.65	37.08	36.85	36.80
31					33.93			36.68		36.80		36.75

1/ Recorder not in operation.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

156-83-14bbl. P. Michealtz. Depth, 10.9 feet. Measuring point, top of wood curb, 1.0 foot above land surface. Not used. Water level, in feet below measuring point: 1945, Oct. 14, 9.05; 1946, July 15, 8.89; Nov. 19, 9.93; 1947, May 15, 5.73 a/.

156-83-19bcl. D. Olson. Depth, 32.8 feet, diameter, 30 inches. Measuring point, top of wood cover, 1.7 feet above land surface. Not used.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 14, 1945	12.05	Nov. 19, 1946	14.44	July 8, 1947	10.11
July 15, 1946	11.07	May 15, 1947	11.01	Nov. 11	14.23

156-83-25cd. John Parizek. Depth, 12 feet; diameter, 48 inches. Measuring point, top of wood cover, 1.4 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 15, 1945	8.05	Nov. 19, 1946	9.15	July 8, 1947	7.02
July 13, 1946	7.86	May 15, 1947	7.81		

156-83-25dc. M. Finberg. Depth, 60 feet; diameter, 48 inches. Measuring point, top of wood cover, 0.5 foot above land surface. Stock water supply. Water level, in feet below measuring point: 1945, Oct. 15, 17.45; 1946, July 13, 18.79; Nov. 19, 19.78 a/.

156-83-30bc. Mrs. A. Sys. Depth, 67.6 feet; diameter, 24 inches. Measuring point, top of wood cover, 1.4 feet above land surface. Not used. Water level, in feet below measuring point: 1945, Oct. 14, 34.15; 1946, July 15, 33.75; Nov. 19, 34.99; 1947, May 15, 35.67 a/.

156-84-3bb. Depth, 42 feet; diameter, 36 inches. Measuring point, top of wood cover, 0.7 foot above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 13, 1945	26.00	Nov. 19, 1946	20.45	July 8, 1947	23.22
July 15, 1946	36.50	Apr. 2, 1947	19.99	Nov. 11	23.46

157-81-7aal. John Peck. Depth, 8 feet; diameter, 36 inches. Measuring point, top of wood curb, 2.0 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Oct. 14, 1945	5.35	Nov. 19, 1946	6.15	July 9, 1947	4.64
July 13, 1946	5.23	May 22, 1947	4.48	Nov. 13	5.98

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

157-81-7aa2. John Peck. Depth, 10 feet; diameter, 24 inches. Measuring point, top of iron curb, 0.5 foot above land surface. Stock water supply. Water level, in feet below measuring point: 1945, Oct. 14, 6.30; 1946, July 13, 4.32; 1947, July 9, 5.02 a/.

157-81-29ab. Depth, 12.4 feet; diameter, 48 inches. Measuring point, top of wood cover, 1.0 foot above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 14, 1945	9.60	Nov. 19, 1946	10.39	July 9, 1947	8.42
July 13, 1946	10.96	May 15, 1947	8.92	Nov. 13	b/11.37

157-81-31cd. Marian Rearick. Depth, 38 feet; diameter, 24 inches. Measuring point, top of wood cover, 2.2 feet above land surface. Domestic and stock water supply. Water level, in feet below measuring point: 1945, Oct. 15, 18.72; 1946, July 13, 17.22; Nov. 19, 16.05; 1947, May 15, 14.25 a/.

157-82-22dd. Diameter, 48 inches. Measuring point, top of concrete curb, 1.0 foot above land surface. Not used.

Water level, in feet below measuring point

Oct. 14, 1945	12.85	Nov. 19, 1946	14.40	July 9, 1947	11.09
July 13, 1946	10.45	May 15, 1947	11.88	Nov. 13	15.04

157-82-31ddl. Ruthville Texaco Station. Depth, 20 feet; diameter, 18 inches. Measuring point, top of wood cover, 1.5 feet above land surface. Domestic and industrial use.

Water level, in feet below measuring point

Oct. 14, 1945	8.75	Nov. 19, 1946	8.49	July 8, 1947	4.52
July 15, 1946	10.29	Apr. 2, 1947	8.50	Nov. 13	8.42

157-83-7ddl. H. A. Kluver. Depth, 20.5 feet; diameter, 24 inches. Measuring point, top of wood cover, 0.3 foot above land surface. Not used.

Water level, in feet below measuring point

Oct. 12, 1945	17.30	Nov. 19, 1946	19.62	July 8, 1947	5.68
July 15, 1946	12.83	May 19, 1947	5.91	Nov. 11	10.36
Sept. 11	13.29				

a/ Measurements discontinued.
b/ Pump operating.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

157-83-7dd2. H. A. Kluver. Depth, 30 feet; diameter, 20 inches. Measuring point, top of wood curb, 1.3 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 12, 1945	21.10	Nov. 19, 1946	19.22	July 8, 1947	14.82
July 15, 1946	18.04	May 20, 1947	16.42	Nov. 11	15.88
Sept.11	19.26				

157-83-14da. G. R. New. Depth, 12.4 feet. Measuring point, top of iron curb, 2.0 feet above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Oct. 13, 1945	9.50	Nov. 19, 1946	10.16	July 8, 1947	4.22
July 15, 1946	8.33	May 15, 1947	4.37	Nov. 13	7.68
Sept.13	9.52				

157-83-20bbl. Nell Rose. Depth, 70 feet; diameter, 20 inches. Measuring point, top of wood cover, 1.5 feet above land surface. Stock water supply. Water level, in feet below measuring point: 1945, Oct. 13, 16.77; 1946, July 15, 18.00; Sept. 11, 23.08; Nov. 19, 23.29 a/.

157-83-21cc. Depth, 52.1 feet; diameter, 20 inches. Measuring point, base of pump, 1.8 feet above land surface. Not used.

Water level, in feet below measuring point

Oct. 13, 1945	13.45	July 15, 1946	12.09	Nov. 19, 1946	14.51
Mar. 26, 1946	13.51	Sept.12	14.00	May 15, 1947	a/13.82

157-83-21dc. Depth, 23.6 feet; diameter, 20 inches. Measuring point, top of wood cover, 1.0 foot above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 13, 1945	13.07	July 15, 1946	11.78	Nov. 19, 1946	14.52
Mar. 26, 1946	12.89	Sept. 12	b/18.33	Apr. 2, 1947	a/14.80

157-83-25aal. Emil Lade. Depth, 75 feet; diameter, 18 inches. Measuring point, top of wood cover, 0.5 foot above land surface. Domestic and stock water supply. Water level, in feet below measuring point: 1945, 51.80; 1946, Sept. 13, 37.86; Nov. 19, 65.07; 1947, May 15, 52.81 a/.

157-83-33ccl. Laurence Schimmelpfenning. Depth, 46.1 feet; diameter, 48 inches. Measuring point, top of sheet-metal cover, 0.4 foot above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 13, 1945	22.35	Sept. 12, 1946	23.67	July 8, 1947	14.12
Mar. 26, 1946	16.10	Nov. 19	24.08	Nov. 11	24.02
July 13	25.26	Apr. 2, 1947	19.40		

a/ Measurements discontinued.
b/ Pump operating.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

157-83-36dc. Depth, 12.8 feet; diameter, 48 inches. Measuring point, top of wood curb, 1.9 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 13, 1945	3.85	Sept.13, 1946	5.30	July 8, 1947	3.48
July 15, 1946	9.50	Apr. 2, 1947	1.01	Nov. 13	4.96

157-84-18bc. O. Rastead. Depth, 25 feet; diameter, 48 inches. Measuring point, top of wood cover, 0.5 foot above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 13, 1945	17.50	Nov. 15, 1946	16.88	July 8, 1947	14.68
July 15, 1946	15.70	Apr. 2, 1947	16.22	Nov. 11	15.10
Sept. 4	16.89				

157-84-20cc. Public School. Depth, 30 feet. Measuring point, base of concrete slab, 3.0 feet above land surface. Not used.

Water level, in feet below measuring point

Oct. 13, 1945	27.00	Sept. 5, 1946	20.27	July 8, 1947	19.11
Mar. 26, 1946	21.02	Nov. 15	21.05	Nov. 11	19.32
July 15	20.13	Apr. 2, 1947	20.40		

157-84-22ad. A. M. Book. Depth, 24 feet. Measuring point, top of wood cover, 1.2 feet above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Oct. 12, 1945	10.20	Sept.10, 1946	10.48	July 8, 1947	7.61
Mar. 26, 1946	10.92	Nov. 19	11.08	Nov. 11	a/11.62
July 15	10.31	Apr. 2, 1947	10.26		

157-84-30ad. Julis Schulz. Depth, 20.5 feet; diameter, 48 inches. Measuring point, top of wood cover, 1.7 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Oct. 13, 1945	7.05	Nov. 15, 1946	7.08	July 8, 1947	3.66
July 15, 1946	4.98	Apr. 2, 1947	9.02	Nov. 11	6.05
Sept. 5	6.43				

157-85-5bb. Merrill Dahle. Depth, 30 feet; diameter, 48 inches. Measuring point, top of wood cover, 1.0 foot above land surface. Domestic water supply.

Water level, in feet below measuring point

Oct. 5, 1945	20.60	Sept. 4, 1946	21.07	July 12, 1947	19.08
July 15, 1946	19.99	Apr. 4, 1947	19.66	Nov. 11	19.59

a/ Pump operating.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

157-85-10aa. Johnson. Depth, 19.9 feet; diameter, 48 inches. Measuring point, top of wood curb, 1.6 feet above land surface. Not used.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Oct. 13, 1945	11.35	July 15, 1946	8.65	Nov. 15, 1946	a/11.48
Mar. 26, 1946	9.98	Sept. 4, 1946	9.43		

157-85-11dc. Depth, 21.9 feet; diameter, 48 inches. Measuring point, top of wood curb, 1.5 feet above land surface. Not used.

Water level, in feet below measuring point

Oct. 13, 1945	14.70	Sept. 4, 1946	13.73	Apr. 4, 1947	a/13.01
July 15, 1946	12.17	Nov. 15	14.54		

157-85-13cd. Depth, 40.7 feet; diameter, 36 inches. Measuring point, top of concrete curb, 0.8 foot above land surface. Not used.

Water level, in feet below measuring point

Oct. 13, 1945	11.80	Sept. 4, 1946	11.48	July 8, 1947	6.69
July 15, 1946	9.30	Nov. 15	12.71	Nov. 11	12.57

159-87-1dc1. C. Sorensen. Depth, 24 feet; diameter, 36 inches. Measuring point, top of wood cover, 0.9 foot above land surface. Domestic water supply.

Water level, in feet below measuring point

Sept.26, 1945	12.45	Oct. 24, 1946	13.80	July 12, 1947	7.12
July 17, 1946	10.75	Apr. 16, 1947	13.97	Nov. 7	12.45

159-87-7aa. J. W. Feldmann. Depth, 35 feet; diameter, 18 inches. Measuring point, top of wood cover, 0.9 foot above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Sept.25, 1945	13.90	Oct. 24, 1946	13.87	July 12, 1947	a/ 6.08
July 17, 1946	10.17	Apr. 16, 1947	16.86		

159-87-14cc. Arvid Wenberg. Depth, 25 feet; diameter, 48 inches. Measuring point, top of wood cover, 2.0 feet above land surface. Domestic and stock water supply. Water level, in feet below measuring point: 1945, Sept. 26, 13.55; 1946, July 17, 12.55; Oct. 24, 15.36; 1947, Apr. 16, 13.24 a/.

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

159-87-34cc. John E. Nelson. Depth, 12.1 feet; diameter, 12 inches. Measuring point, top of wood cover, 2.5 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.25, 1945	12.00	Oct. 24, 1946	Dry	Nov. 7, 1947	7.25
July 17, 1946	6.68	July 12, 1947	3.74		

160-87-4cd. E. J. Prehn. Depth, 14.8 feet; diameter, 48 inches. Measuring point, top of wood cover, 1.3 feet above land surface. Domestic and stock water supply. Water level in feet below measuring point: 1945, Sept. 26, 11.90; 1946, July 16, 11.95; 1947, Apr. 16, 8.99; July 11, 6.68.

160-87-7bb. Arthur Nelson. Depth, 18 feet; diameter, 30 inches. Measuring point, top of wood cover, 2.0 feet above land surface. Domestic water supply. Water level, in feet below measuring point: 1945, Sept. 26, 13.55; 1946, July 16, 9.11; Oct. 23, 12.74; 1947, Apr. 16, 12.45 a/.

160-87-13cd. Roy Cole, Depth, 30 feet; diameter, 36 inches. Measuring point, top of wood cover, 0.5 foot above land surface. Domestic water supply.

Water level, in feet below measuring point

Sept.25, 1945	8.70	Oct. 23, 1946	10.83	July 11, 1947	4.12
July 16, 1946	7.91	Apr. 16, 1947	8.76	Nov. 7	8.56

160-87-19ab. Levi Schammel. Depth, 30 feet; diameter, 30 inches. Measuring point, top of wood cover, 1.3 feet above land surface. Not used. Water level, in feet below measuring point: 1945, Sept. 25, 11.15; 1946, July 16, 10.93; Oct. 23, 12.30; 1947, Apr. 16, 13.69 a/.

160-88-4dc. Levi Emmel. Diameter, 18 inches. Measuring point, top of wood cover, 1.5 feet above land surface. Not used.

Water level, in feet below measuring point

Sept.26, 1945	10.63	Oct. 23, 1946	10.84	July 11, 1947	5.39
July 16, 1946	9.57	Apr. 17, 1947	9.61	Nov. 7	9.55

160-88-7dd. Diameter, 48 inches. Measuring point, 1.0 foot above land surface. Stock water supply.

Water level, in feet below measuring point.

Sept.20, 1945	12.59	Oct. 23, 1946	13.90	Nov. 7, 1947	11.98
July 16, 1946	12.32	July 11, 1947	8.53		

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

160-88-13bb. Leonard Kuglin. Diameter, 30 inches. Measuring point, top of tile casing, 1.3 feet above land surface. Domestic water supply. Water level, in feet below measuring point: 1945, Sept. 25, 13.80; 1946, July 16, 13.14; Oct. 23, 14.81; 1947, Apr. 16, 17.07 a/.

160-88-14dc. John Wirtz. Depth, 16 feet; diameter, 36 inches. Measuring point, top of wood cover, 0.8 foot above land surface. Domestic water supply well. Water level, in feet below measuring point: 1945, Sept. 25, 13.00; 1946, July 16, 10.80; Oct. 23, 12.52; 1947, Apr. 16, 12.99 a/.

160-88-25cc. Irenous Johnson. Diameter, 18 inches. Measuring point, top of wood cover, 2.3 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Date	Water level	Date	Water level	Date	Water level
Sept.25, 1945	16.15	Oct. 23, 1946	16.19	July 12, 1947	11.92
July 17, 1946	15.27	Apr. 16, 1947	16.03	Nov. 7	14.63

161-88-21dd. Diameter, 36 inches. Measuring point, top of wood cover, 3.2 feet above land surface. Stock water supply.

Water level, in feet below measuring point

Sept.23, 1945	9.15	Oct. 23, 1946	8.80	July 7, 1947	3.27
July 16, 1946	7.82	Apr. 17, 1947	5.94	Nov. 3	7.60
Oct. 4	9.76				

161-88-26cc. W. Mortenson. Depth, 20 feet; diameter, 16 inches. Measuring point, top of cover, 1.3 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Sept.20, 1945	12.10	Oct. 23, 1946	11.49	July 7, 1947	5.25
July 16, 1946	10.45	Apr. 17, 1947	7.39	Nov. 3	8.78
Oct. 3	11.42				

161-88-28aa. Diameter, 18 inches. Measuring point, top of cover, 2.4 feet above land surface. Domestic water supply.

Water level, in feet below measuring point

Sept.20, 1945	8.85	Oct. 23, 1946	8.84	July 7, 1947	3.08
July 16, 1946	7.83	Apr. 17, 1947	3.28	Nov. 3	7.18
Oct. 4	9.52				

161-88-29dd. C. R. Johnson. Depth, 19.0 feet; diameter, 48 inches. Measuring point, top of wood curb, 1.3 feet above land surface. Domestic and stock water supply.

Water level, in feet below measuring point

Sept.20, 1945	14.22	Oct. 23, 1946	16.17	July 7, 1947	a/ 7.57
July 16, 1946	14.47	Apr. 17, 1947	14.88		

a/ Measurements discontinued.

Table 9.--Water-level measurements in wells in Ward County, North Dakota--Continued.

161-88-34cc. Efrain Pedersen. Depth, 25 feet; diameter, 20 inches. Measuring point, top of wood curb, 2.1 feet above land surface. Domestic water supply. Water level, in feet below measuring point: 1945, Sept. 20, 16.40; 1946, July 16, 15.14; Oct. 23, 16.44; 1947, Apr. 17, 11.06 a/.

a/ Measurements discontinued.

Table 10.--Complete chemical analyses of representative ground waters in Bottineau County, North Dakota
[Dissolved constituents given in parts per million]

Location of well or spring	Date of collection	Depth of well (feet)	Temperature °F	pH	Specific conductance K×10-5	Silica SiO_2	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved Solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Percent Sodium
159-82-25cd	a 9-10-47	160	46	8.7	163	22	Tr	24	19	324	0.0	586	15	250	0.3	0.0	0.20	952	138	0.0	84
159-83-3ba	b 1921	254	-	-	-	9.8	1.9	14	4.3	1,030		848	12	1,135	-	Tr	-	2,650	53	-	-
11ab	a 6-14-47	310	47	8.2	545	11	.03	23	11	1,180	6.4	764	61	1,420	.4	8.0	3.1	3,100	103	.0	96
161-82-20aa	a 9-8-47	343	47	7.4	1,280	11	1.2	83	21	2,730	19	257	25	4,290	.0	1.0	-	7,330	294	83	95
161-83-6cb2	b 1921	25	-	-	-	21	.11	71	28	11		281	66	4.0	-	1.0	-	359	292	-	-
18cc	a 9-8-47	340	45	8.5	571	7.5	.15	22	5.0	1,220	18	470	6.2	1,720	.2	5.0	1.36	3,240	75	.0	96

a Analysis by: U. S. Geological Survey, Lincoln, Nebraska.
b Analysis from: Simpson, H. E., Geology and ground water resources of North Dakota: U. S. Geol. Survey Water-Supply Paper 598, 1929.

Table 11.--Complete chemical analyses of representative ground waters in Burke County, North Dakota
[Dissolved constituents in parts per million]

Location of well or spring	Dateof collection	Depth of well (feet)	Temperature °F	pH	Specific conductance K×10-5	Silica SiO_2	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved Solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Percent Sodium
161-89-3bc	a 1921	14.0	-	-	-	19	0.10	41	15	9.9		193	23	2.0	-	5.1	-	223	164	-	-
-26dc	b 6-6-47	237	50	8.3	309	14	.27	8.5	5.0	763	2.4	1,010	814	36	1.4	1.8	-	2,150	42	0	97
162-88-36cc	b 6-11-47	308	50	8.6	208	10	.6	7.0	4.2	460	7.2	992	112	95	1.6	.5	0.51	1,190	35	0	96
162-89-3ad	b 6-5-47	182	50	8.0	209	25	.05	93	44	391	17	643	593	72	.6	3.0	.55	1,560	413	0	66
-35dc	b 6-6-47	-	50	8.0	285	20	.1	235	54	400	18	500	1,170	16	.4	1.5	.54	2,160	808	398	51
162-92-12ba	c 1934	42	-	-	-	22	.00	102	43	89		461	184	26	1.0	27	-	691	436	-	-
-18cb	b 6-5-47	-	47	8.9	376	7.0	.18	6.0	3.7	918	8.4	1,390	750	59	.9	45	.34	2,490	30	0	98
162-94-3ad2	c 1934	26	-	-	-	30	.36	228	67	82		487	144	320	1.6	22	-	1,110	844	-	-
163-88-4bb	b 6-12-47	120	45	8.6	296	12	.05	44	9.8	653	12	745	884	18	.2	3.5	.50	2,010	150	0	90
-24bb1	b 6-12-47	440	50	8.5	460	23	.05	423	307	245	23	378	1,110	299	.4	1,180	.23	3,800	2,320	2,010	18
-28dd	b 6-5-47	200	50	9.0	339	11	.05	18	3.3	802	7.2	1,180	758	38	1.2	1.5	.52	2,230	58	0	96
163-89-8ad	b 6-5-47	153	50	8.4	333	13	.05	45	21	729	3.2	915	872	58	.6	1.5	.46	2,200	199	0	89
163-90-31dd	c 1934	223	-	-	-	27	1.4	132	54	373		633	776	21	1.6	8.0	-	1,730	592	-	-
163-93-8ad1	b 6-4-47	204	46.5	8.2	269	8.0	Tr	8.0	4.4	693	7.2	1,520	166	70	2.4	1.5	.48	1,720	38	0	97
-29dd	b 6-4-47	82.0	48	8.3	263	27	Tr	89	43	517	10	945	653	60	.4	2.5	.46	1,880	399	0	73
-32bd	c 1934	270	-	-	-	10	.15	.71	4.4	859		1,930	.41	212	3.6	1.3		2,110	20	-	-
163-94-33aa1	b 6-4-47	270	49.5	-	304	11	.05	.26	6.1	765	41	1,860	2.9	133	4.0	.2	.41	1,920	90	0	92

a Analysis from: Simpson, H. E., Geology and ground water resources of North Dakota: U. S. Geol. Survey Water-Supply Paper 598, 1929.
b Analysis by: U. S. Geological Survey, Lincoln, Nebraska.
c Analysis from: Abbott, G. A., and Voedish, F. W., The municipal ground-water supplies of North Dakota: North Dakota Geol. Survey Bull. 11, 1939.

Table 12.--Complete chemical analyses of representative ground waters in Divide County, North Dakota
[Dissolved constituents in parts per million]

Location of well or spring	Date of collection	Depth of well (feet)	Temperature °F	pH	Specific conductance Kx10-5	Silica SiO_2	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved Solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Percent sodium
162-95-4da	a 1935	35	-	-	-	11	0.00	24	8.5	171		490	59	6.2	0.00	2.7	-	518	101	-	-
-4ad	a 1934	265	-	-	-	8	.00	12	3.9	786		1,940	36	83	3.6	6.2	-	1,960	52	-	-
-14cc	b 6-4-47	122	48	8.2	122	19	.05	103	42	101	9.6	484	26	4.0	.2	3.0	0.25	829	430	34	33
162-96-5dcl	b 6-4-47	320	47	8.8	373	11	.05	14	3.3	911	13	1,450	784	44	2.0	2.5	.59	2,510	48	0	97
163-95-32dd	b 6-4-47	61	47.5	7.9	53.5	26	.05	60	17	8.5	4.4	284	16	.8	.2	.25	.14	284	220	0	8
163-96-13da	b 6-4-47	105	50	8.6	342	8.0	.05	59	38	729	11	854	1,080	48	1.6	1.0	.46	2,400	303	0	83
163-97-6dc	c 1921	242	-	-	-	33	.27	22	8.0	617		1,460	85	100	-	3.8	-	1,620	88	-	-
-6dc	b 5-2-47	242	-	8.7	240	30	Tr	20	7.6	609	0	1,430	99	9[illegible]	.8	3.2	.57	1,580	81	0	94
-13cc	b 6-6-47	457	47.5	7.7	131	30	Tr	116	39	155	0	809	23	63	.5	1.2	.32	874	450	0	43
-29ca	c 1921	30	-	-	-	25	.17	200	57	14		569	226	36	-	12	-	856	734	-	-
-29da	a 1934	775	-	-	-	18	.1	6.4	14	954		1,380	72	668	1.4	2.7	-	2,460	75	-	-
-31bc	b 6-4-47	350	49.5	-	324	9.1	.05	10	3.1	796	6.0	1,710	2.9	258	1.2	1.0	1.23	1,940	38	0	97
-35ba	b 6-4-47	275	49	8.1	126	26	.05	76	41	154	11	745	18	47	.5	7.5	.64	810	358	0	47
163-98-17aa	b 5-2-47	216	-	9.2	255	7.6	.05	10	2.0	586	9.6	916	518	16	.4	7.5	.51	1,610	33	0	97

a Analysis from: Abbott, G. A., and Voedish, F. W., The municipal ground-water supplies of North Dakota: North Dakota Geol. Survey Bull. 11, 1939.
b Analysis by: U. S. Geological Survey, Lincoln, Nebraska.
c Analysis from: Simpson, H. E., Geology and ground water resources of North Dakota: U. S. Geol. Survey Water-Supply Paper 598, 1929.

Table 13.--Complete chemical analyses of representative ground waters in McHenry County, North Dakota
[Dissolved constituents in parts per million]

Location of well or spring	Date of collection	Depth of well (feet)	Temperature °F	pH	Specific conductance Kx10-5	Silica SiO_2	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved Solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Percent sodium
153-80-26ab	a 1921	20	-	-	-	26	0.09	54	25	- 36		322	55	2.0	-	2.4	-	357	238	-	-
154-79-5cb	b 9-11-47	144	46	7.7	388	8.0	1.3	8.3	3.2	860	100	908	48	825	0.3	2.5	-	2,170	34	0	99
154-80-28dc	b 9-11-47	318	50	8.8	292	8.0	.61	4.7	3.0	706	5.2	1,210	1.0	392	.6	14	-	1,730	24	0	98
155-79-8aa	c 1934	103	-	-	-	10	.20	17	5.0	- 577		1,110	7.0	286	4.0	1.3	-	1,480	79	-	-
156-79-3dd	d 1946	55-60	-	-	-	12	.02	77	28	178	12	414	111	178	.3	3.4	-	789	307	0	-
-3dd	d 1946	65-70	-	-	-	14	.03	53	27	235	12	420	81	245	.2	3.2	-	864	243	0	-
-3dd	d 1946	85-90	-	-	-	18	.02	66	24	457	12	659	3.9	540	.4	1.9	-	1,440	263	0	-
-10aa2	d 1946	121	-	-	-	7.4	.09	5.0	2.3	562	12	980	7.5	340	.3	2.8	-	1,460	22	0	-
-22dd	b 9-11-47	114	49	8.8	393	9.0	1.8	12	3.8	863	5.6	846	1.9	885	.3	5.2	1.0	2,200	46	0	96
157-79-6dc	b 9-11-47	80	47	7.8	780	10	2.0	26	12	1,670	10	476	1.8	2,380	.3	3.5	-	4,350	114	0	97
157-80-30aa	c 1934	18.9	-	-	-	18	.80	58	34	- 8.5		156	121	10	.2	44	-	344	287	-	-
158-80-13aa3	d 1946	6.6	-	-	-	18	.04	186	68	544	18	456	858	505	.3	6.4	-	2,470	744	370	-
-31cc	b 9-11-47	16.0	46	7.8	631	7.0	.62	19	5.9	1,330	8.4	650	1.9	1,730	.4	1.5	1.7	3,420	72	0	97

a Analysis from: Simpson, H. E., Geology and ground water resources of North Dakota: U. S. Geol. Survey Water-Supply Paper 598, 1929.
b Analysis by: U. S. Geological Survey, Lincoln, Nebraska.
c Analysis from: Abbott, G. A., and Voedish, F. W., The municipal ground-water supplies of North Dakota: North Dakota Geol. Survey Bull. 11, 1939.
d Analysis by: Schroder, M. E., U. S. Geological Survey, Washington, D. C.

Table 14.--Complete chemical analyses of representative ground waters in Renville County, North Dakota
[Dissolved constituents in parts per million]

Location of well or spring	Date of collection	Depth of well (feet)	Temperature °F	pH	Specific Conductance Kx10-5	Silica SiO_2	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved Solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Percent Sodium
158-82-22cd	a 6-14-47	200	46	8.3	205	19	Tr	55	22	359	9.6	403	196	0.3	1.5	0.48		1,280	228	0	76
158-84-28aa	a 9-10-47	326	48	8.1	285	11	0.31	3.6	1.8	710	5.2	1,470	4.5	250	1.0	2.2	1.1	1,710	16	0	99
158-85-26dc	a 9-10-47	599	48	8.3	454	9.0	1.1	6.8	3.5	1,040	1.8	1,140	1.8	960	.6	1.8	2.0	2,590	32	0	98
159-84-25dd	a 9-10-47	450	49	9.2	545	16	1.6	11	4.6	1,200	6.8	788	1.3	1,430	.5	2.5	2.8	3,060	46	0	98
159-85-12bb	b 1934	20	-	-	-	28	.00	94	57	12		239	246	7.5	.4	40		593	469	-	-
160-84-19dd	a 9-10-47	400+	49	8.1	421	26	3.0	112	43	834	10	906	246	820	2.5	1.8	1.3	2,510	333	0	84
161-84-3dd	a 6-15-47	343	45	8.5	605	13	Tr	26	7.2	1,270	6.4	539	4.9	1,780	.2	1.0	1.76	3,380	94	0	96
-13cd2	b 1934	343	-	-	-	24	.3	37	19	1,010		769	40	1,190	.00	18		2,690	177	-	-
161-85-23ab	a 9-9-47	300	46	7.8	464	9.6	Tr	26	3.3	1,000	18	708	6.6	1,250	.2	9.0	.63	2,680	78	0	96
161-86-6bc2	a 9-8-47	400	48	8.7	232	9.0	Tr	17	13	543	0	989	271	138	.6	2.2	.50	1,490	96	0	92
161-87-1bc	a 9-8-47	426	48	7.1	271	10	3.8	6.0	3.5	647	6.0	1,160	.6	346	.8	1.8	.75	1,590	30	0	97
-17bc2	a 9-9-47	315	47	8.6	286	10	Tr	40	9.4	666	0	687	845	85	1.2	.7	.25	2,000	138	0	91
162-84-21cc	a 9-8-47	415	48	8.2	1,070	8.0	.70	65	18	2,300	14	331	1.5	3,520	0	2.2	-	6,090	236	0	95
162-85-29bb	a 9-8-47	-	45	7.4	462	6.0	2.6	13	5.4	996	9.6	723	1.4	1,160	.3	2.2	1.3	2,550	54	0	97
163-85-10ba	a 6-14-47	375	47	8.4	759	11	Tr	37	10	1,530	8.0	384	9.9	2,360	.3	1.0	1.63	4,160	133	0	96
163-86-29cd	a 9-8-47	563	48	6.7	1,040	4.0	1.6	54	12	2,150	12	310	.9	3,320	.4	1.0	2.7	5,710	184	0	95
-17bb1	a 6-6-47	716	54	8.4	649	7.6	.05	24	7.0	1,400	11	778	725	1,250	.6	.2	1.94	3,810	89	0	97

a Analysis by: U. S. Geological Survey, Lincoln, Nebraska.
b Analysis from: Abbott, G. A., and Voedish, F. W., The municipal ground-water supplies of North Dakota: North Dakota Geol. Survey Bull. 11, 1939.

Table 15.--Complete chemical analyses of representative ground waters in Ward County, North Dakota
[Dissolved constituents in parts per million]

Location of spring or well	Date of collection	Depth of well (feet)	Temperature °F	pH	Specific conductance Kx10⁻⁵	Silica SiO_2	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved Solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Percent sodium
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
a 151-86-10	b 1938 ?	-	-	-	-	20.	0.00	20	91	- 145	-	359	346	13	-	-	-	945	430	-	-
c -10	b 1938 ?	-	-	-	-	26	.02	19	77	- 147	-	378	252	34	-	-	-	837	368	-	-
d -10	b 1938 ?	-	-	-	-	25	.3	23	82	- 187	-	408	326	60	-	-	-	1,010	403	-	-
c -10	b 1938 ?	-	-	-	-	28	.02	36	138	- 277	-	444	436	285	-	-	-	1,510	661	-	-
f -10	b 1938 ?	-	-	-	-	24	.2	52	202	- 376	-	532	849	413	-	-	-	2,380	965	-	-
155-82-11cc	b 9-11-47	250	49	7.6	434	6.0	.47	7.5	3.9	930	7.2	1,030	.8	940	0.5	1.2	-	2,450	34	0	98
155-83-13bc	g 1921	30	-	-	-	25	.12	73	23	- 15	-	312	43	.2	-	2.7	-	332	277	-	-
-14cd2	b 1-15-32	158	-	-	-	-	2.3	93	28	- 473	-	982	143	300	-	-	-	1,560	347	-	-
-14cd2	b 2-1-40	158	-	-	-	30	2.3	56	25	- 262	-	677	67	133	.73	-	-	1,220	245	-	-
-14db2	g 1921	200	-	-	-	29	3.2	125	56	- 320	-	742	291	232	-	Tr	-	1,450	542	-	-
-14dc1	b 2-1-40	160	-	-	-	26	3	52	27	- 247	-	648	105	153	.5	-	-	1,260	316	-	-
-14dd2	b 9-20-46	145	-	-	-	-	.1	106	33	- 290	-	744	144	190	-	-	-	1,150	390	-	-
-23ba2	b 1-15-32	-	-	-	-	-	2.0	75	31	- 248	-	704	96	124	-	-	-	924	315	-	-
-23ba2	b 2-1-40	-	-	-	-	26	2.3	60	21	- 85	-	406	48	28	.80	-	-	648	236	-	-
-23ba3	b 1-15-32	-	-	-	-	-	1.0	37	18	- 182	-	536	17	76	-	-	-	657	166	-	-
-23ba3	b 2-1-40	-	-	-	-	28	1.75	58	24	- 111	-	468	35	46	.75	-	-	742	243	-	-
-24ba1	b 1-31-45	-	-	-	-	14	7.7	72	32	- 238	-	544	190	125	-	-	-	1,030	311	-	-
-24ba2	b 1-31-45	-	-	-	-	27	.7	137	56	- 268	-	637	284	209	-	-	-	1,380	572	-	-

Table 15--Complete chemical analyses of representative ground waters in Ward County, North Dakota--Continued

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
h 155-85-11	b 5-24-21	-	-	-	-	16	1.7	10	3.4	920		1,950	2.6	294	-	-	-	2,240	39	-	-
j -11	b 5-24-21	-	-	-	-	19	.11	406	158	105		403	1,460	26	-	-	-	2,550	1,660	-	-
k -17	b 7-5-21	-	-	-	-	14	.94	-	-	-		1,920	30	106	-	-	-	2,300	-	-	-
m -21	b 7-5-21	-	-	-	-	15	.75	16	48	882		2,150	31	110	-	-	-	2,340	60	-	-
156-81-23aa	n 9-11-47	238	45	8.2	454	8.0	.99	11	3.7	994	8.8	720	1.6	1,150	0.3	1.5	0.83	2,530	42	0	98
156-83-5bb	n 9-12-47	-	51	7.3	479	7.0	.12	10	5.7	1,050	11	936	1.4	1,120	.3	2.2	-	2,670	48	0	97
-12dc	n 9-12-47	-	48	8.3	295	7.0	.62	12	3.7	718	8.8	1,280	137	295	.3	10	-	1,820	45	0	97
p 156-87-21	b 1938 ?	-	-	-	-	19	2.4	119	79	508		820	893	87	3	-	-	2,130	628	-	-
q -21	b 1938 ?	-	-	-	-	45	8	9.6	15	1,020		1,060	1,350	19	1.6	-	-	3,000	101	-	-
r -21	b 1938 ?	-	-	-	-	20	.3	13	12	968		2,030	1.5	354	3	-	-	2,390	80	-	-
s -21	b 1938 ?	-	-	-	-	18	.1	69	32	6.1		295	56	10	1	-	-	368	306	-	-
t -21	b 1938 ?	-	-	-	-	31	.6	288	113	32		523	774	14	1.1	-	-	1,600	1,180	-	-
159-87-25dd	n 9-10-47	410	46	7.2	344	8.0	4.1	3.5	1.7	872	6.4	1,810	.5	305	1.8	1.5	.66	2,090	16	0	99
160-87-24bc	n 9-9-47	280	46	8.7	276	8.0	.72	3.2	3.0	682	14	1,410	6.0	250	2.0	4.5	-	1,670	20	0	97
160-88-17cc	g 1934	400	-	-	-	19	.6	21	16	527		1,180	95	137	1.6	4.4	-	1,380	117	-	-
-20cd	g 1921	313	-	-	-	32	.58	30	16	515		1,190	100	134	-	4.4	-	1,430	141	-	-
Souris River	b 9-27-45	-	-	-	-	10	7.7	99	45	239		567	245	154	-	-	-	1,110	434	-	-
Do	b 10-10-45	-	-	-	-	8	7.0	99	49	227		573	219	160	-	-	-	1,110	448	-	-

a Ryder School No. 1; Ryder, No. Dak.
b Analysis from: Akin, P. D., Geology and ground-water conditions at Minot, North Dakota; North Dakota Ground-water studies, No. 6, August 1947.
c Ryder School No. 2; Ryder, No. Dak.
d Ryder School No. 3; Ryder, No. Dak.
e Ole Olness; Ryder, No. Dak.
f Sig Olness; Ryder, No. Dak.
g Analysis from: Simpson, H. E., Geology and ground water resources of North Dakota: U. S. Geol. Survey Water-Supply Paper 598, 1929.
h M. Seltz; Des Lacs, No. Dak.
j Des Lacs Public School; Des Lacs, No. Dak.
k George McKee; Des Lacs, No. Dak.
m H. W. Gunther; Des Lacs, No. Dak.
n Analysis by: Schroder, M. E., U. S. Geological Survey, Washington, D. C.
p Berthold Park; Berthold, No. Dak.
q Berthold Public School; Berthold, No. Dak.
r City of Berthold; Berthold, No. Dak.
s S. Stredrick; Berthold, No. Dak.
t B. Johnson; Berthold, No. Dak.

Table 16.--Partial chemical analyses of water from wells in Bottineau County, North Dakota
(Dissolved constituents in parts per million)

Location number of well/spring	Date of collection (1947)	Depth (feet)	Specific conductance	Carbonate (CO_2)	Bicarbonate (HCO_3)	Total Bicarbonate (HCO_3)	Chloride (Cl)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
159-81-5cb	Oct. 29	220	300	0	710	710	515
6da	do.	300	715	0	495	495	2,080
19aa	Oct. 24	245	214	0	190	190	2.0
19cc	Oct. 29		180	0	495	495	220
22dd	do.	190	748	0	540	540	2,240
31cc	do.	320	668	0	620	620	1,860
32cc	do.		642	0	520	520	2,320
33bb	do.		753	0	440	440	2,940
33dc	do.	190	722	0	505	505	2,130
34bb	do.	180	645	0	620	620	1,780
159-82-2cb	Oct. 22	196	587	64	570	700	1,720
2cc	do.	213	392	74	845	995	865
3aa	do.	250	594	69	600	740	1,700
8cc	do.	260	327	0	630	630	805
14bb	do.	250	655	79	545	705	1,940
15da2	do.	200	315	74	875	1,020	570
21dc	do.	250	479	69	780	920	1,220
24aa2	Oct. 28	236	583	0	695	695	1,560
25cd	Oct. 29	160	199	0	820	820	253
28dc	do.	260	375	0	815	815	390
31cb	do.	270	340	275	320	879	315
33ba	do.	360	384	44	850	920	495
35ad	do.	300	195	0	815	815	216
35bb	do.	160	196	0	795	795	242
159-83-1ba	Oct. 22	318	406	54	845	955	950
3cd	Oct. 24	340	386	89	880	1,060	785
9dd	do.	380	515	95	610	810	1,350
10ab	do.	317	371	49	900	1,000	770
13cc	Oct. 22	223	370	93	755	945	795
14dc	Oct. 23	295	424	143	630	920	990
15da	Oct. 24	406	633	128	460	720	1,830

Table 16.--Partial chemical analyses of water from wells in Bottineau County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
159-83-16ad	Oct. 24	285	471	98	625	825	1,180
18bc	do.	425	450	74	860	1,010	1,040
18cd	do.	360	505	59	700	820	1,330
20cb	do.	347	550	64	625	755	1,510
21aa	do.	285	476	133	575	844	1,200
21dd	Oct. 29	367	486	0	930	930	1,140
22ab	Oct. 24	341	392	108	755	975	835
23cc	do.	290	474	133	630	900	1,170
25cb2	Oct. 29	430	474	0	960	960	1,120
26dc2	do.	292	516	0	865	865	1,260
31ba	Oct. 24		614	79	590	750	1,760
33cc	Oct. 23	400	503	74	725	875	1,300
34ba	Oct. 29	453	558	4.9	825	835	1,420
34dd	Oct. 23	322	412	113	855	1,080	885
160-82-5cb	Oct. 22	300	317	0	665	665	785
17dd2	do.	180	184	49	695	795	256
18aa	do.	365	202	0	850	850	300
20ab2	Oct. 23	250	164	64	765	895	140
26ad	Oct. 29	210	621	0	640	640	1,730
26cd	Oct. 22	250	463	69	705	845	1,200
28cd	Oct. 23		198	157	680	999	165
29ba	Oct. 22	120	863	39	430	510	2,860
30bc	Oct. 23	203	292	89	645	825	595
30dc1	do.	270	292	148	625	925	478
31cc	Oct. 22	265	291	79	790	950	180
34cc	Oct. 29	382	724	84	355	525	2,110
160-83-1bc1	Oct. 23	300	722	59	300	460	2,320
4ba	do.	297	717	98	350	550	2,330
5cb	do.	265	531	59	215	335	1,680
8cd	do.	246	623	98	325	525	1,920
10bc	do.	250	330	172	425	774	765
11cb	do.	240	347	117	530	760	835
12ad	Oct. 24	217	245	0	480	480	582
13cb	Oct. 23	220	164	44	555	655	241
17ba1	do.	230	680	84	335	505	2,150
17cc	do.	260	618	89	350	530	1,900
18aa	Oct. 24	300	461	89	575	755	1,200
19bb	Oct. 23	350	380	128	610	870	900
21da	do.	250	373	93	475	665	615
27cd	do.		408	118	705	945	955

Table 16.--Partial chemical analyses of water from wells in Bottineau County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
160-83-30ad	Oct. 23	360	764	69	380	520	2,440
34dc	Oct. 22	342	654	59	590	710	1,960
35bb1	Oct. 23	330	649	59	550	670	1,970
161-82-9dd	Aug. 13		1,100	0	305	305	3,780
17bb	do.	321	1,020	0	375	375	3,470
20aa1	do.	343	1,230	12	250	274	4,330
21bb	do.	347	1,160	0	330	330	4,070
29bd	do.		717	0	510	510	2,220
161-83-1aa	Aug. 14	350	859	0	415	415	2,940
2bb	do.	350	661	13	440	466	2,060
3dc	do.	323	441	0	720	720	1,160
5bd	July 30	380	838	49	420	520	2,760
8cd	do.	350	596	49	480	580	1,760
9bb	do.	375	544	16	520	552	1,590
9cd	do.	360	838	0	420	420	2,770
12ad	Aug. 14	250	472	9.8	665	685	1,280
12dc1	do.	380	667	20	460	500	2,080
14cc	July 30	325	912	22	320	364	3,080
17ad	do.	453	1,000	0	330	330	3,570
17da	do.	365	756	20	390	430	2,390
18cc	do.	340	596	49	410	510	1,780
20bb	do.	380	461	49	660	760	1,200
21ab	do.		517	16	600	632	1,460
25bb	Aug. 13	300	600	0	635	635	1,760
30bb	July 30	417	691	0	610	610	2,100
33ba	do.	350	525	24	640	688	1,480
162-83-2ca	Aug. 14	400	606	0	595	595	1,880
4cd	Aug. 13	350	797	0	455	455	2,540
9aa	do.	350	592	45	670	670	1,730
10ad	do.	347	722	0	490	490	2,260
14ab	Aug. 14	300+	622	0	395	395	2,810
24bd	do.	300	622	0	595	595	1,920
26dc1	do.	335	828	0	410	410	2,760
28ad	do.	326	800	0	370	370	2,700
32dc1	July 30		912	7.9	260	276	3,080
35da	Aug. 14	372	965	0	375	375	3,420

Table17.--Partial chemical analyses of water from wells in Burke County, North Dakota
(Dissolved constituents in parts per million)

Location number of well/spring	Date of collection (1947)	Depth (feet)	Specific conductance	Carbonate (CO_2)	Bicarbonate (HCO_3)	Total Bicarbonate (HCO_3)	Chloride (Cl)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
161-89-3dc1	June 9	94	361	20	425	965	13
4bc	June 16	92	306	0	995	995	30
5ac3	do.	227	274	26	1,610	1,660	157
5dd1	June 9	97	223	64	1,300	1,430	5
5dd2	do.	80	336	0	980	980	22
6cc	June 10	58	237	0	1,100	1,100	17
6da	June 9	70	217	64	1,410	1,540	27
8ba	do.	100	217	167	1,170	1,510	22
8cb	do.	102	266	33	540	608	20
9bb1	do.		342	0	905	905	25
9bb2	do.	190	261	44	630	720	14
10dd	do.	273	150	0	645	645	19
12bb	do.	112	176	3.8	465	483	23
13cc	do.	170	340	0	985	985	56
14aa	do.	120	314	0	505	505	18
14da	do.	235	223	132	990	1,370	41
15cc	do.	150	270	69	1,040	1,140	52
19da	June 10	100	123	49	1,310	1,310	14
20aa	June 9	96	207	216	755	1,190	18
21ba1	do.	150	221	152	1,290	1,570	46
21da	do.	100	210	40	1,380	1,480	50
23aa	do.	180	353	0	580	580	17
24cb	do.	180	3[illegible]	14	805	895	18
24dd	do.	600	247	86	1,480	1,550	153
25bc1	do.	274	229	59	1,580	1,640	94
26cc1	do.	265	293	59	940	1,060	21
26dc	do.	237	295	28	980	1,040	32
27bb1	do.	136	483	0	580	580	58
28aa2	do.		268	33	1,050	1,120	17
34da	do.	300	198	0	1,110	1,110	69

Table17.--Partial chemical analyses of water from wells in Burke County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
161-90-3dd	June 10	187	238	0	825	825	14
11cd	do.	89	155	305	60	679	12
12ab	do.		214	187	420	799	12
14da	do.	48	282	0	660	660	17
15dc	June 16		150	0	545	545	6.0
17aa	do.	52	204	54	725	835	7.0
17cd	do.	312	197	59	1,050	1,170	16
19dd1	do.	82	185	23	770	816	3.0
19dd2	do.	125	267	64	730	860	10
20dc1	do.	130	263	54	790	900	16
22dc	do.	60	227	0	565	565	28
23db	June 10	200	256	0	820	820	13
24aa1	do.	63	205	0	590	590	20
26ba	June 16	190	240	0	815	815	10
28ab	do.	170	263	54	765	875	16
28ba	do.	165	259	34	775	845	15
30da1	do.	34	153	0	560	560	16
35cd	do.	72	119	0	515	515	7.0
161-91-3ba	May 26	120	575	0	545	545	23
5cb	May 28	60	210	0	845	845	12
7dc1	do.	209	212	89	1,250	1,430	28
8dc	May 29	165	248	49	985	1,080	16
9aa	do.	59	42.4	44	195	285	4.0
10dd	June 10	180	232	79	1,060	1,220	24
12cc1	do.	90	259	59	1,030	1,150	27
13ba	do.	124	252	54	990	1,100	28
14ba	do.	165	278	74	1,110	1,260	36
14dc	do.	190	225	74	1,020	1,170	26
15dd	May 23	187	222	79	1,070	1,230	25
17aa	do.	235	183	133	900	1,170	18
17cc	May 22	104	219	0	980	980	18
21ba	May 26	75	247	39	820	900	8.0
161-92-3dd	May 21	125	326	0	885	885	20
12cb	do.	165	230	0	670	670	8.0
13dd	May 28	220	227	15	835	865	23
14ba	do.	125	455	0	825	825	32
162-88-3cc	June 16	180	369	0	630	630	48
4cb	do.	250	297	0	300	300	34
9ba1	do.	350	284	0	470	470	27
9ba2	do.	130	369	0	620	620	40

Table17.--Partial chemical analyses of water from wells in Burke County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
162-88-11cd	June 18	375	198	0	570	570	55
13bc	do.		208	0	535	535	28
17bb	June 16	260	265	0	905	905	46
25cc	June 18	600	236	27	895	949	310
26aa	do.	347	258	118	750	990	102
26da	do.	315	196	28	785	841	62
27aa	do.	527	305	13	1,180	1,210	428
31ad	June 16	248	301	89	900	1,080	32
34da	June 18	320	202	0	390	390	18
36cc	do.	308	196	19	1,050	1,090	90
162-89-3ad	June 10	182	215	0	700	700	64
3cd	June 16	160	213	0	1,010	1,010	75
5aa1	June 10	376	232	24	970	1,020	71
6ad	do.	196	290	0	935	935	73
7cd	do.	150	245	20	815	855	45
8dd	do.	460	308	21	1,470	1,510	352
9ab	June 16	265	204	0	1,000	1,000	76
13bc	do.	279	223	11	1,430	1,450	72
15bc	do.	280	255	0	1,420	1,420	63
18ad	June 10	200	300	12	460	484	8.0
21ad	June 16	90	285	0	585	585	10
21bc	June 6	76	290	9.8	505	525	53
22ad1	June 16	120	240	0	455	455	7.0
23bc	do.		399	0	290	290	56
23dd	do.	150	238	64	1,380	1,510	112
24da	do.		274	44	770	860	35
26bd	do.		284	0	335	335	25
28bc	do.	160	251	74	1,400	1,550	140
29cc	June 9	100	214	251	1,060	1,570	31
30dc	do.	150	293	44	1,420	1,510	37
31da	June 10	270	263	16	1,690	1,720	184
32dc	June 16		849	0	730	730	156
33dc	do.	68	257	22	1,420	1,460	24
34ab	do.		253	0	1,110	1,110	56
34cc	do.	83	265	30	1,540	1,600	25
35dc	do.		281	0	580	580	15
162-90-2da	June 10		280	0	905	905	54
3dd	do.	230	333	10	810	830	49
4bb	do.	192	247	26	970	1,020	51
11ad	do.	225	339	0	735	735	38
15cc	June 16	236	274	12	660	684	11

Table 17.--Partial chemical analyses of water from wells in Burke County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
162-90-15dc1	June 10	60	494	0	655	655	158
19aa	do.	128	250	0	575	575	5.0
23db	June 16		312	0	375	375	12
26ad	do.		361	79	870	1,030	30
28cd	June 10		314	22	825	869	30
30ad	do.	80	257	0	840	840	22
30dd	do.	80	191	0	895	895	27
31dd	do.	80	198	334	720	1,400	35
32ba	do.	65	283	0	740	740	44
33dd1	do.	120	232	69	1,470	1,610	73
34dd1	do.	45	348	0	880	880	30
35ad	June 9	55	194	0	780	780	17
36ad	June 10	236	216	64	1,280	1,410	86
162-91-3dd2	May 26	360	234	93	360	550	24
5aa	May 28	40.0	355	0	680	690	140
5ba2	May 26	157	247	0	705	705	12
5dd	May 29	74	492	0	1,080	1,080	70
6ab	May 26	160	259	49	630	730	15
8ba	May 28	231	262	69	1,480	1,620	117
8dd	May 29	135	485	69	735	875	21
9cd	do.		357	162	955	1,280	40
10ad	May 26	127	114	39	170	250	16
11aa	June 10	130	241	37	1,650	1,730	44
13dc	do.	120	188	0	640	640	38
14bc	May 28	160	237	44	1,320	1,420	23
15bb	May 29	90	320	74	845	995	44
15dd	May 26	80	315	0	850	850	38
17cb	May 29	105	254	74	1,600	1,740	51
21ab	do.	195	255	0	1,700	1,700	92
25ad	June 10	120	210	0	1,520	1,520	27
25dd	do.	80	208	19	1,440	1,480	27
26cb	May 28	140	240	0	670	670	57
27ac	May 27	106	255	104	1,750	1.960	39
34bd	do.	100	232	25	1,320	1,360	32
162-92-5cd	May 28	225	280	64	1,620	1,740	158
5da1	do.	165	271	49	1,770	1,870	65
7dd	do.	67	367	79	1,720	1,880	84
17bb	do.	70	371	59	1,190	1,310	48
18cb	May 26		303	329	1,060	1,730	65

Table17 .--Partial chemical analyses of water from wells in Burke County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
162-92-26cc	May 28	120	262	44	1,790	1,880	57
35db	May 26		265	152	1,640	1,950	46
162-93-5bb	May 28	140	294	69	2,000	2,140	56
6cb1	May 26	80	262	74	1,780	1,920	62
6dd2	do.	100	321	177	1,660	2,020	218
8aa	May 29	260	277	113	1,540	1,770	132
9ah1	May 26	100	253	74	1,680	1,830	58
9ba	May 28	100	268	39	1,830	1,910	140
10bb	May 29	90	236	98	1,450	1,650	46
11ab2	do.	171	264	69	1,030	1,170	34
15bd1	do.	80	313	113	1,920	2,140	54
19bd	May 28	240	260	93	1,540	1,740	72
19ca1	do.	700	344	128	1,850	2,110	242
19ca2	do.	612	352	118	1,850	2,100	246
19ca3	do.	300	288	113	1,590	1,820	117
19ca4	May 26	250	309	93	1,210	1,400	33
20cc	May 28	180	304	138	1,040	1,320	34
24ba	May 27	183	240	79	1,540	1,700	64
26cc2	May 29	165	257	69	1,620	1,760	95
27ad2	do.	160	246	89	1,470	1,660	44
31db	May 27	170	336	0	940	940	10
33da	May 26	100	269	0	825	825	8.0
162-94-7ba	May 28		196	0	635	635	6.0
10ca	May 29	201	267	79	1,400	1,560	40
11cd	May 26		254	108	1,700	1,920	49
163-88-1cb	June 18	180	328	0	690	690	160
2bb	June 19	125	250	0	1,060	1,060	330
4bb	do.	120	276	0	810	810	18
8ba	do.	200	170	69	650	790	11
12aa	do.	395	552	0	570	570	1,590
19ac	June 9	200	181	44	1,220	1,310	40
19dd1	do.	212	188	27	1,280	1,330	44
24bb1	June 18	440	474	0	400	400	290
26ad	June 19	40	192	0	455	455	16
28dd	June 9	200	304	67	1,090	1,230	38
29bb	do.	180	318	17	980	1,010	37
30dc	June 10	140	363	6.9	780	794	38
32ba1	do.	180	365	0	865	865	35
33bb	June 9	101	321	0	1,000	1,000	55

Table17.--Partial chemical analyses of water from wells in Burke County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
163-89-4bc	June 16	90	353	0	950	950	10
5bc	do.	180	303	6.9	1,020	1,030	62
6bc	June 10	110	285	0	960	960	47
7bc	do.	200	373	25	840	890	48
8ad	June 16	153	309	24	875	923	56
8bb	do.	170	315	0	1,040	1,040	75
17ad	do.	200	289	18	740	776	64
21bc	do.	300	282	9.8	260	280	38
22cc	June 9	250	304	22	850	894	26
23dd	do.	126	333	0	530	530	31
24cc	June 6	195	240	103	295	505	23
24dc	June 9	150	364	0	630	630	30
25ad	do.	200	327	113	385	615	32
25cb	June 10	167	305	0	665	665	21
26ab	June 9	120	340	0	500	500	26
27da	June 10	132	386	18	460	496	29
28bc1	June 9	186	343	0	780	780	35
33dc	June 10	200	272	0	875	875	73
34ca1	do.	200	267	0	845	845	88
35cd1	do.	380	126	44	745	835	41
35da	do.		263	133	775	1,040	80
163-90-6cc1	June 16	116	236	0	540	540	19
7db	do.	120	365	0	720	720	30
8bc	do.	150	292	89	780	960	26
8cc	do.	300	297	13	1,620	1,650	52
8da	do.	290	287	54	1,280	1,390	55
9bb	do.	294	378	0	920	920	24
10bb	do.	240	382	59	975	1,100	31
17da	June 10	235	326	14	840	868	29
19bc	do.	387	251	64	1,220	1,350	28
20cc	do.	365	303	64	990	1,120	40
21cc	do.	280	326	12	955	979	28
22bc	do.	207	339	0	740	740	30
22dc	do.	210	346	0	700	700	26
24bc	June 16	175	396	21	615	657	20
24cb	June 10	412	267	0	1,000	1,000	76
25cb	do.		243	22	670	714	29
26dd	do.	198	249	44	685	775	33
28bc1	do.	265	343	12	920	944	26
32db	do.	212	255	0	1,020	1,020	39
33cd	do.	200	243	12	990	1,010	54

Table17.--Partial chemical analyses of water from wells in Burke County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
163-90-34bc	June 10	298	305	16	1,140	1,170	48
34cb	do.	275	255	0	815	815	42
163-91-7bb	May 29	140	140	0	140	140	14
15cb2	May 28	700	287	0	690	690	41
21cc	May 26	280	288	0	410	410	19
22ad	May 28	190	297	0	930	930	58
28dd	do.	165	331	138	1,090	1,370	114
29dc	May 27	180	317	30	700	760	23
32bc	May 28	150	375	0	830	830	6.0
34bd	do.	179	289	54	825	935	35
35aa	June 10	274	255	49	1,470	1,570	129
35cd	do.	100	176	0	165	165	10
163-92-1da1	May 27	211	220	69	1,310	1,450	26
2ba	May 28	175	397	25	995	1,045	13
4ab	May 26	75	642	34	1,000	1,070	56
4dd1	May 28	110	620	0	780	780	172
11aa	May 29	160	384	0	1,000	1,000	16
15bb	May 26	200	63.1	20	140	180	10
19da	May 28		253	0	120	120	24
21dc	do.	245	138	0	485	485	6.0
23cd2	May 29	170	224	0	560	560	6.0
26ad	May 26	105	134	0	425	425	6.0
35cc	May 29		222	0	625	625	13
163-93-6dc	do.	255	506	93	1,330	1,520	41
7ba	do.		436	0	1,610	1,610	43
8ad1	May 26	204	252	89	1,400	1,580	70
9da	May 29	60	582	0	1,620	1,620	37
12bc	do.	47	154	0	835	835	6.0
15ba2	May 26		490	0	735	735	48
19dd	May 29	150	296	0	450	450	24
20bb	do.	265	214	0	780	780	74
23aa	Oct. 24	255	84.3	0	405	405	3.0
24da	May 27		201	30	430	490	35
28cd	May 28		421	0	675	675	44
28dd	May 27	110	273	0	550	550	16
29cd	May 29	200	251	20	1,080	1,120	40
29dd	do.	82.0	281	0	945	945	59
32bd	do.	275	331	128	1,750	2,010	220

Table 17.--Partial chemical analyses of water from wells in Burke County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
163-93-33ab	May 29	40	612	0	580	580	115
163-94-2cd2	May 27	110	308	0	720	720	11
4ba2	May 29	300	273	0	880	880	33
6aa1	do.	125	401	39	860	940	28
6cb	do.	260	572	0	1,060	1,060	45
11ab	May 26	125	381	0	675	675	18
12dc	May 29	96	277	0	540	540	8.0
14aa	do.	20	279	0	515	515	48
15cc	do.	150	375	0	745	745	19
15da1	May 26	280	331	69	950	1,090	62
17da1	May 27	160	320	49	1,140	1,240	44
20ca1	May 26	240	254	79	1,600	1,760	99
22cc	May 29	198	240	0	1,400	1,400	92
22db	do.	98	259	0	820	820	13
23ab	May 26	110	373	0	715	715	44
24aa	do.	200	187	0	700	700	4.0
26cb	May 29	90	166	0	555	555	7.0
30ad	May 28	309	287	467	880	1,830	120
33aa1	May 29	270	291	84	1,740	1,920	127
164-88-31ba	June 19		222	59	700	820	8.0
33bc	do.	140	231	89	660	840	20
35dd	June 18	285	270	0	1,180	1,180	310
164-89-30dd1	June 16	135	296	0	1,020	1,020	71
31ac	do.	156	229	21	1,000	1,040	90
31ad	do.	165	270	0	1,000	1,000	89
32bc	do.	186	270	177	665	1,020	73
32dd	do.	90	328	49	980	1,080	74
34cd	do.	150	309	0	940	940	53
164-90-25dc1	do.	150	253	59	995	1,120	97
26dc	do.	170	245	64	1,050	1,180	96
32dc	do.	200	309	49	1,450	1,550	43
34cc1	do.	200	241	64	1,560	1,690	64
164-91-32dc1	May 28	362	152	0	555	555	12
34dc	do.	56	325	0	555	555	26
164-92-25dd	May 26	700	255	148	1,070	1,370	163
34db	May 27	400	339	20	85	125	14
164-94-32cc	May 26	125	369	0	915	915	25
33ad	May 29	110	349	44	1,030	1,120	28

Table18.--Partial chemical analyses of water from wells in Divide County, North Dakota
(Dissolved constituents in parts per million)

Location number of well/spring	Date of collection (1947)	Depth (feet)	Specific conductance	Carbonate (CO_2)	Bicarbonate (HCO_3)	Total Bicarbonate (HCO_3)	Chloride (Cl)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
161-97-20ab	Aug. 13	150	175	0	360	360	14
161-98-15bb	do.	130	225	49	340	440	24
18da1	do.	300	202	0	505	505	18
20bb1	do.	224	191	0	605	605	14
25da	do.	268	470	0	350	350	165
162-95-4ad2	May 28	365	299	108	1,740	1,960	88
5ab	do.	340	287	123	1,640	1,900	123
7ab	do.	230	280	246	1,120	1,620	39
14cc	May 26	122	123	0	585	585	1.0
19cb1	May 28	80	217	0	925	925	8.0
18bd2	do.		253	0	1,050	1,050	8.0
5dc1	May 29	320	356	59	1,320	1,440	44
13db	May 28	300	289	0	1,310	1,310	8.0
15aa1	May 26	370	272	98	1,680	1,880	75
15bb1	May 29	200	279	0	1,120	1,120	8.2
21ba	do.	500	77.6	0	380	380	6.0
30bc	May 12	150	212	0	520	520	12
162-97-9aa	do.	109	280	0	643	643	21
10bb	May 13	320	161	0	1,080	1,080	48
14aa	May 12	265	212	0	986	986	45
19cc2	May 13	350	256	0	808	808	28
31dd	do.	143	189	0	559	559	9.0
36aa	May 12	184	210	0	689	689	10
162-98-1bb	May 13	300	205	0	970	970	23
1da2	May 12	270	230	84	1,200	1,370	84
3aa2	May 6		244	0	808	808	13
5ad	do.	107	263	0	886	886	3.0
6ba	do.	307	364	122	740	987	22
12cb	May 12		290	39	1,340	1,420	55
12cd	do.	160	244	0	1,340	1,340	98

Table 18.--Partial chemical analyses of water from wells in Divide County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
162-98-12dd	Oct. 24	324	212	0	1,190	1,190	70
13cd2	May 12	350	204	0	636	636	15
14da2	May 13	140	52.3	0	326	326	12
23da3	May 12	400	193	0	969	969	30
24aa	do.	400	216	0	1,430	1,430	63
26ab	do.	362	251	0	1,310	1,310	26
31aa3	May 6	365	367	59	1,060	1,180	19
32bb	do.	380	371	0	1,090	1,090	19
35cc	May 12	297	96.6	125	198	452	11
35dd	do.	105	254	0	667	667	20
162-94-34da	May 6	508	209	0	842	842	7.0
163-95-1dc	May 29	190	212	0	605	605	11
14da	do.	120	388	93	1,320	1,500	60
18bc	do.	143	319	231	835	1,300	52
23bc	May 26	120	538	49	945	1,040	64
32dd	May 29	61	45.7	0	290	290	0
163-96-1cd1	May 26	237	288	113	1,300	1,520	84
6aa	May 12	205	262	0	966	966	63
8cc	May 29	150	167	0	35	35	17
13da	May 26	105	322	64	750	880	45
163-97-4cb	May 13	320	204	0	1,390	1,390	76
6cc1	May 6	264	57.1	81	158	322	16
6cc2	do.		407				
6dc	do.	242	243	0	1,510	1,510	95
7dd	do.	162	224	0	1,490	1,490	85
8dd	May 13	230	201	0	1,170	1,170	92
17cd	do.	370	239	0	1,560	1,560	86
18ad	May 6	221	179	155	576	891	102
18bb	do.	275	42.4	32	182	246	7.0
22cd3	May 13	560	271	39	1,230	1,310	313
26bb	Oct. 24	438	630	0	185	185	0
27cc2	May 26	455	199	0	1,260	1,260	91
29db	May 13	600	243	42	1,200	1,290	226
31bc	May 6	350	293	31	1,670	1,730	260
34aa1	May 13	270	146	0	954	954	43
35ba	do.	275	139	0	891	891	44
163-98-1ad	May 6	280	262	55	1,410	1,520	60
17aa	do.	216	251	71	856	1,000	14
19da	do.	384	223	67	652	788	12
21bb	do.	60	269	0	490	490	33
23dd	do.	320	240	0	1,420	1,420	73

Table 18.--Partial chemical analyses of water from wells in Divide County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
163-98-25bb	May 6	318	232	0	1,450	1,450	78
26cd	do.	280	202	0	1,150	1,150	50
30ab	do.	160	263	0	908	908	14
30ba	do.	180	226	0	804	804	10
32ab2	do.	498	309	142	1,130	1,420	23
163-99-2dd2	do.	327	292	45	1,560	1,650	230
11cd1	May 13	260	420	27	1,570	1,620	19
12ca	do.	400	293	266	801	1,340	38
12cb	do.	308	358	39	1,430	1,510	24
13ba	May 12		311	0	1,400	1,400	19
23aa	May 6	419	317	53	1,360	1,470	16
24bb	do.	400	220	83	1,410	1,580	4.0
164-95-28dd	May 28	165	237	0	745	745	13
29cc	May 27	138	260	0	910	910	23
33dd	May 28	140	298	0	655	655	16
35dd	May 29	130	284	0	750	750	18
36dd	do.	90	459	0	520	520	37
164-96-29da	May 13	200	136	0	738	738	24
34aa	May 29	84	162	0	455	455	12
34cd	do.	120	158	0	520	520	13
164-97-31bc	May 6	228	250	47	1,430	1,530	76
33bc	May 12	185	184	0	1,190	1,190	26
164-98-34cd	May 6	250	258	47	1,460	1,560	50
164-99-35ad	do.	440	340	37	1,470	1,550	437

Table19.--Partial chemical analyses of water from wells in McHenry County, North Dakota
(Dissolved constituents in parts per million)

Location number of well/spring	Date of collection (1947)	Depth (feet)	Specific conductance	Carbonate (CO_2)	Bicarbonate (HCO_3)	Total Bicarbonate (HCO_3)	Chloride (Cl)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
153-79-6dc	July 15		356	49	1,080	1,180	20
7ab2	do.	119	238	59	1,090	1,210	43
153-80-3aa2	July 17	314	367	39	910	990	790
7ad	do.	295	310	11	900	922	620
11cb	do.	200	66.7	0	360	360	4.0
14cc	do.	65	103	0	395	395	4.0
15dd	July 16	50	176	0	555	555	16
154-78-6cc2	July 17	148	142	69	750	890	60
30ca	July 16	175	378	21	745	787	925
154-79-1ca	July 17	156	162	44	940	1,030	73
5cb	July 16	144	378	0	940	940	850
6dc	do.	185	253	49	1,090	1,190	350
7aa	do.	115	223	59	1,210	1,330	180
10bb	July 17	103	183	69	980	1,120	37
10dd	July 16	140	124	64	520	650	3.0
11ab	July 17	283	218	18	1,170	1,210	180
11dc	July 16		148	59	760	880	6.0
14aa	do.	180	173	44	1,080	1,170	30
15ad	do.	150	167	0	770	770	5.0
15bb	do.	180	280	0	920	920	105
15cb	do.	120	163	0	740	740	8.0
18cb	July 15	110	78.5	0	490	490	0
22aa	July 16	114	157	0	740	740	12
22cb	July 15	250	234	59	1,010	1,130	30
23cb	July 16	200	357	162	715	1,040	50
24bb	do.	170	159	0	710	710	9.0
27cb	July 15	200	319	16	1,030	1,060	512
28bb	do.	90	135	59	450	570	0
28dd2	do.	175	322	8.9	1,000	1,020	560
30aa2	do.	68	291	0	510	510	125
36ca	July 16	111	320	0	865	865	680

Table19.--Partial chemical analyses of water from wells in McHenry County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
154-80-1bc	July 16	200	220	49	1,190	1,290	240
2ac	do.	140	249	26	950	1,000	540
5bb	do.	214	349	24	845	893	755
6ad	do.	240	357	0	920	920	775
8bb	do.	240	334	18	970	1,010	670
17bc2	July 17	245	328	16	1,020	1,050	600
17cb1	do.	289	391	20	1,110	1,150	810
18ad	do.	190	424	0	710	710	124
20dd1	do.	206	256	0	790	790	34
28bc	do.	265	288	128	830	1,090	490
28dc	do.	318	285	31	1,240	1,300	380
30cc2	do.	244	275	16	990	1,020	435
155-78-31dc	July 16	120	223	24	1,140	1,190	220
155-79-8cd	do.	106	149	59	660	780	22
8da1	do.	112	179	84	815	985	69
9cb	do.	106	195	0	605	605	66
11aa	July 15	120	325	17	1,020	1,050	605
12ab	do.		229	49	1,140	1,240	200
13dc1	do.	40	150	0	970	970	36
15ab	July 16	115	291	24	1,030	1,080	500
17aa	do.	112	241	0	1,220	1,220	298
17cc1	July 15	90	174	24	765	813	24
20aa	do.	160	311	21	875	917	600
20ba1	do.	188	340	0	955	955	690
20ba2	do.	240	433	0	850	850	1,100
21da	do.	100+	251	138	790	1,070	335
23aa1	do.	137	283	11	1,080	1,100	430
23aa2	do.	137	267	15	1,060	1,090	355
25bb	do.	70	113	0	690	690	21
25cb	do.	100	138	0	630	630	30
26aa	do.	150	367	0	845	845	850
31aa	July 17	125	339	49	950	1,050	680
31bb	do.	150	314	26	910	962	610
32aa	do.	185	311	49	900	1,000	580
32cc2	do.	145	377	49	845	945	840
33bc2	do.	110	318	49	900	1,000	630
33cd	do.	150	142	12	655	679	31
34bb	do.		321	26	1,010	1,060	595

Table19.--Partial chemical analyses of water from wells in McHenry County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
155-80-1cb	July 16	160	373	20	840	880	890
1da	do.	160	239	26	1,100	1,150	345
2bc	do.	135	243	24	1,030	1,080	340
3cc	do.	140	145	59	560	680	14
3dc	do.	160	283	59	1,010	1,130	545
5cc	do.	187	225	30	1,040	1,100	320
6ac1	do.	167	450	0	780	780	1,220
6bc	do.	300+	457	0	790	790	1,260
6dd	do.	270	373	12	950	974	840
7ac	do.	140	333	22	920	964	710
8cc2	do.	180	156	59	860	980	42
11ba	do.	100	378	16	870	902	900
14aa	do.	120	378	18	795	831	900
16cb	do.	150	356	0	880	880	820
17ba2	do.	121	312	22	910	954	620
17bb	do.	110	312	49	960	1,060	590
18dd	do.	150	360	16	820	852	820
19da	do.		266	89	960	1,140	460
20bb	do.	240	338	0	740	740	795
22bc	do.		403	0	880	880	975
23aa	do.	225	374	39	840	920	850
23cc	do.	120	299	35	980	1,050	580
26aa	do.	200+	327	22	965	1,010	630
26cc	do.	200	285	28	920	976	720
27bb	do.	360	388	20	840	880	900
29aa	do.	90	201	128	820	1,080	92
33cc	do.	180	331	0	980	980	675
34bb	do.	150	273	16	1,100	1,130	390
156-79-5dc	July 15	165	392	20	740	780	950
16cc	do.	200+	381	20	840	880	865
19cd2	do.	232	477	14	750	778	1,270
20dd	do.	180	421	69	770	910	1,030
31cc	do.	110	403	0	880	880	900
33bc	do.	100	289	18	1,090	1,130	450
156-80-5bd	July 14	100+	506	0	800	800	1,380
5dd	July 15	160	502	9.8	765	785	1,280
12dd	do.	196	353	0	920	920	760
15cc	do.		431	0	800	800	1,030
17ad	do.	220	437	7.9	800	816	1,040
17dd1	do.	300	457	15	785	815	1,100

Table19.--Partial chemical analyses of water from wells in McHenry County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
156-80-21bc	July 15	160	437	11	725	747	1,040
21da	do.	100+	408	49	1,050	1,150	820
22bb	do.	160	457	0	800	800	1,110
23aa	do.	120	433	0	860	860	910
23ca	do.	100+	360	0	985	985	900
24bc2	do.	150	447	0	895	895	1,110
24cc1	do.	140	358	9.8	1,020	1,040	695
24dd	do.	100+	469	12	730	754	1,240
27dd	do.	181	276	0	1,240	1,240	400
28dd	do.	167	403	0	900	900	915
35dd	do.	140	326	18	990	1,030	550
157-79-6dc	July 14	80	738	16	465	497	2,400
18ba	do.	250	620	0	630	630	1,900
157-80-2ab	do.	114	423	22	765	809	1,040
2cc	do.	220	730	0	575	575	2,320
6dc1	July 15	80	510	0	740	740	1,680
7cd	do.	180	537	9.8	745	765	1,530
9ba1	do.	110	510	14	790	818	1,430
10aa	July 14	110	449	0	915	915	1,100
13aa	do.	145	635	0	630	630	1,980
13bb	do.	180	695	20	510	550	2,160
16cc	July 15		567	0	700	700	1,820
18da	do.	210	546	0	775	775	1,600
21ad	July 14		325	0	1,130	1,130	585
21cc	Oct. 24	145	567	9.8	145	165	390
23ad	July 14	120	270	49	835	935	460
27cd	do.	200	396	24	940	988	890
30ac	do.	300	427	64	860	990	1,020
30dd	do.	168	471	13	815	841	1,240
31dc	do.	193	427	0	955	955	1,030
32bb	do.	265	355	12	1,100	1,120	690
158-79-18bb1	Oct. 30	180	670	0	550	550	2,030
18dd1	do.	155	604	0	645	645	1,720
20cc	Oct. 29	210	649	0	690	690	1,650
30dd	do.	190	670	0	530	530	2,420
31cd	July 14		620	18	645	681	1,860
32cb	do.	400	780	0	515	515	2,590
158-80-1bd	Oct. 20	215	565	0	665	665	1,600
3bc	Oct. 28	222	759	0	510	510	2,260
6aa1	do.	210	451	0	780	780	1,270

Table 19.--Partial chemical analyses of water from wells in McHenry County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
158-80-6bc	Oct. 28	190	608	0	560	560	2,070
10cc	do.	210	845	0	490	490	2,600
11ad	Oct. 29	200	568	0	630	630	1,620
11ba	do.	204	555	0	650	650	1,600
11cc2	do.	195	742	0	500	500	2,140
12cd	do.	175	653	0	580	580	1,960
12bc	do.	200	589	9.8	640	660	1,660
12dc	Oct. 30	180	668	0	540	540	1,990
13dd	do.	90	698	0	560	560	2,170
15ab2	Oct. 29	225	903	0	460	460	2,680
20dc1	do.	275	231	0	610	610	139
21cd	do.		810	0	490	490	2,440
22ab	do.	176	728	15	470	500	2,100
22bb	do.	176	689	0	530	530	1,940
24bb3	do.	190	514	0	660	660	1,860
29ad1	do.	176	203	0	610	610	176
31cc	do.	160	656	25	600	650	1,770
33aa	do.	160	514	0	860	860	1,360
36bc1	do.	193	598	0	600	600	1,700
159-80-18aa1	Oct. 28	250	865	0	475	475	2,680
19dd	do.	300	776	0	500	500	2,340
26dd	do.	174	300	0	550	550	145
28da1	do.	140	571	0	745	745	1,500
31dc	Oct. 29		667	118	135	375	2,260
32cd1	Oct. 28	190	759	0	500	500	2,250
32dc	do.		692	0	615	615	2,020
33dc	do.	170	668	0	515	515	1,950
34dd	Oct. 30	200	565	0	540	540	1,640
35da2	Oct. 28	190	499	30	610	670	1,500

Table 20.--Partial chemical analyses of water from wells in Renville County, North Dakota
(Dissolved constituents in parts per million)

Location number of well/spring	Date of collection (1947)	Depth (feet)	Specific conductance	Carbonate (CO_2)	Bicarbonate (HCO_3)	Total Bicarbonate (HCO_3)	Chloride (Cl)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
158-81-1ad	Aug. 25	200	636	93	445	635	1,970
1cd	do.	180	644	59	490	610	2,030
2ad	Aug. 22	180	567	44	615	705	1,640
2cd	Aug. 25	180	571	69	435	575	1,740
7dd	Aug. 22	212	716	49	470	570	2,260
9bc1	do.	350	642	54	505	615	1,980
12aa	Aug. 25	80	390	0	380	380	188
19bb	Aug. 22	320	329	69	1,030	1,170	580
30ac	Aug. 25	300+	395	98	775	975	920
158-82-3db	Aug. 22	180	192	0	620	620	264
5ad	do.	200	357	79	780	940	780
7dd	do.	345	294	79	1,240	1,400	228
8dc	do.	275	340	69	990	1,130	335
9ab	do.	275	273	69	760	900	392
10ba	do.	275	219	49	780	880	335
11bc	do.	150	222	39	490	570	160
11cd	do.		326	30	650	710	460
13bb1	do.	365	648	39	530	610	1,990
17ab	do.	250	335	79	1,060	1,220	380
19ad	Aug. 25	341	368	98	880	1,080	760
20aa	Aug. 22		468	59	820	940	1,170
21cd	Aug. 25	218	484	74	745	895	1,290
22cd	Aug. 22	200	206	20	460	500	198
23cb	do.	300	214	0	650	650	208
24ab	Aug. 25		320	54	980	1,090	455
24cc	do.	250	283	113	985	1,210	395
25dc1	do.	211	430	74	780	930	1,040
26dc	Aug. 22	180	416	59	860	980	970
30bc	Aug. 25	270	436	64	850	980	1,040
30cd	do.	341	400	89	905	1,080	865

Table20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
158-82-32cb	Aug. 25	400	283	93	1,040	1,230	392
32ab2	do.	275	239	0	495	495	140
158-83-2ad	Oct. 29	362	453	0	930	930	1,070
3dd2	Oct. 23	325	422	89	790	970	1,010
4ab	do.	401	496	59	750	870	1,240
6da	do.	500	548	79	685	845	1,470
10aa	do.	280	410	133	955	1,220	855
10da	do.	332	442	59	750	870	1,070
12dd	Oct. 29	293	474	0	925	925	1,100
15ba2	Oct. 23	300	466	59	730	850	1,160
21dd	Aug. 25	458	483	74	805	955	1,260
23dc	do.	350	496	123	630	880	1,300
24dd	do.	250	452	118	720	960	1,140
25ad	Aug. 22	330	444	39	900	980	1,070
26cb1	do.	328	507	64	825	955	1,270
27dd	Aug. 25	280	501	54	815	925	1,340
32ca1	Aug. 22	518	512	49	855	955	1,320
158-85-6cb1	Oct. 24	270	436	143	1,280	1,570	720
15cc	Oct. 23	600+	452	167	830	1,170	1,020
21ad	Oct. 21		432	128	880	1,140	995
22bc	do.	428	403	172	1,540	1,890	585
29aa	Oct. 23		392	157	1,570	1,890	485
33bb	Oct. 24	535	423	157	1,160	1,480	745
138-86-1ad1	do.	600	486	138	1,170	1,450	920
3cb	Oct. 20	230	375	123	980	1,130	145
4ad	do.	250	401	118	860	1,100	95
8bb	do.	315	324	172	1,380	1,730	310
9cc2	Oct. 24	400	403	108	780	1,000	78
10dd	do.		425	128	1,130	1,390	160
12cc1	do.	500+	377	167	1,060	1,400	485
13ab1	do.	600	370	162	1,380	1,710	465
14dd1	do.	280	353	192	1,280	1,670	188
15bc1	do.	440	419	113	770	1,000	53.0
20aa	do.	200	250	0	465	465	8.0
21bb	do.	250	300	157	1,350	1,670	172
21cb2	do.	300	303	187	1,410	1,790	192
21db	do.	250	308	138	1,360	1,640	152
22aa1	do.	350	473	152	1,180	1,490	840
25ad	do.	500	403	128	1,160	1,420	740

Table 20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
159-84-4dd	Oct. 21	400+	473	108	760	980	1,250
21ba	do.	430	510	98	690	890	1,430
159-85-7bc2	Sept. 10	646	748	69	475	615	2,420
7dd	do.		399	98	1,320	1,520	685
18ab	do.	620	691	64	575	705	2,160
19dc	do.	600	446	157	1,100	1,420	910
21cd	do.	600+	512	84	985	1,150	1,260
27cc1	Oct. 24	525	501	98	800	1,000	1,250
27cc2	do.	80	499	0	465	465	745
29bb	Sept. 10	608	270	89	890	1,070	415
29cc	do.	400	227	113	835	1,060	182
31bc	do.	600	473	118	1,240	1,480	990
33dd1	Oct. 24	580	277	128	1,040	1,300	302
34bb	do.	738	387	128	1,180	1,440	650
35ac1	do.	570	467	128	830	1,090	1,100
159-86-1cc	Sept. 10	618	389	148	1,510	1,810	520
2cd	do.		533	84	945	1,110	1,360
4dc	do.		321	157	1,450	1,770	305
5ad	do.		329	98	1,360	1,560	422
7bb1	Sept. 9		353	103	1,540	1,750	410
9bb	Sept. 10	800	409	128	1,470	1,730	635
10cd	do.	390	336	162	1,640	1,970	265
11ab	do.		495	93	1,100	1,290	1,150
12dd1	do.	700	696	79	530	690	2,180
13ba	do.		388	148	1,660	1,960	505
14ba	do.	600	430	157	1,540	1,860	660
17ad	do.		340	123	1,690	1,940	300
18bc1	Sept. 9	230	346	69	1,310	1,450	300
18cc	do.		292	113	1,460	1,690	218
19dd	Oct. 20	300+	317	143	995	1,280	212
28cc	Oct. 21	200	336	226	1,300	1,840	320
29bc1	do.		334	182	1,420	1,790	360
30da1	Oct. 20	600	366	187	1,440	1,820	415
31aa2	Oct. 21		378	211	1,430	1,860	480
31cd1	Oct. 20		356	133	920	1,190	60
33bc2	Oct. 21	185	336	226	1,420	1,880	332
34dc1	do.		422	79	720	880	190
36ad	Sept. 10		437	128	1,420	1,680	760
160-84-3aa	Oct. 21	400	488	69	450	590	1,460
4bb	do.	400	332	59	470	590	668

Table 20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
160-84-4dd	Oct. 21	275	337	98	595	795	720
5ad	do.	350	333	74	450	600	660
7cc	Oct. 22	375	562	84	395	565	1,670
9bb	Oct. 21	280	319	20	440	480	645
10bc	Oct. 22	300	325	79	385	545	655
14dc	Oct. 21	600	379	89	670	850	940
16da	Oct. 24	270	673	0	515	515	7.0
17aa	Oct. 21	400	874	59	275	395	3,100
21bb	do.		720	49	330	430	2,400
23dd	do.		643	74	420	570	2,070
28dd	Oct. 22	286	398	108	845	1,060	855
30aa	Oct. 21		473	84	615	785	1,330
160-85-2dbl	Oct. 22	540	1,040	74	160	310	3,660
3ab	Sept. 8	240	731	59	335	455	2,420
10bb	do.		683	69	465	605	2,130
13bb	Oct. 22	350	319	30	370	430	608
15ba	Sept. 8		716	49	445	545	2,320
17da	do.		636	59	565	685	1,940
21cc	do.		754	64	445	575	2,440
23ad	Oct. 21		554	79	465	625	1,660
23cd2	Oct. 22		750	69	340	480	2,420
26ab	Oct. 21	382	546	74	475	625	1,680
26dd	Oct. 22		587	89	485	665	1,720
27aa	Oct. 21		564	74	405	555	1,780
160-86-5cb	Sept. 11	557	554	69	675	815	1,560
6abl	Sept. 8	606	496	69	805	945	1,250
8bc2	Sept. 11	296	217	0	390	390	54
10ccl	do.	682	544	84	805	975	1,440
10dd	do.	700	796	64	525	655	2,580
16cc	Sept. 10	300+	275	20	450	490	72
17bb	Sept. 11	486	413	103	1,050	1,260	408
19cd	Sept. 9	300	308	108	1,290	1,510	300
22aa	Sept. 10	360	429	108	1,090	1,310	890
24dc	do.	611	753	59	460	580	2,450
25bc	do.	475	545	93	910	1,100	1,410
28dc	do.	400	308	93	1,510	1,700	265
30abl	Sept. 9	400	323	148	1,340	1,640	280
31cc	Sept. 11	350	305	89	1,320	1,500	355
35ab	Sept. 10	627	667	79	605	765	2,040
36cd	do.	600+	727	49	510	610	2,320

Table 20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
161-84-4bb1	July 3	492	1,120	18	265	301	3,740
5ab	July 2	492	888	30	305	365	2,960
9aa	do.		698	49	380	480	2,210
12cd	July 3		568	6.9	390	404	1,760
12da	July 30	294	741	59	320	440	2,360
14bd1	do.	375	574	49	540	640	1,670
15dd	July 3	270	604	20	560	600	1,820
16dd	do.		710	6.9	195	209	2,300
17aa1	Aug. 14	500	485	14	860	888	1,220
18cd	July 30	390	939	0	350	350	3,170
21bb1	July 3	350	645	12	545	569	1,960
22aa	do.	300	557	44	605	695	1,600
28dd	July 30	300	397	98	920	1,120	810
29aa	do.		775	49	520	620	2,450
29dc	do.	383	894	18	325	361	2,970
161-85-7aa1	July 3		768	44	455	545	2,480
8bc	June 17	400	747	0	525	525	2,320
15aa	do.	400	509	18	545	581	1,390
15bc	do.	300	551	0	525	525	1,590
15da	June 17	400	634	0	550	550	1,900
16ba	June 18	397	600	0	555	555	1,780
23ab	June 17	300	473	44	635	725	1,220
23dd	Aug. 14	435	852	0	400	400	2,780
25ba	do.		446	44	820	910	1,090
28aa	do.	504	617	0	570	570	1,820
29bb	do.	450	889	18	390	426	2,860
161-86-6bc2	June 19	400	243	49	1,070	1,170	145
15da	Aug. 13	437	417	16	910	942	980
18bb2	June 18	396	418	16	1,020	1,050	840
19cd2	June 17	375	305	44	1,530	1,620	250
19dc	do.	365	357	49	1,100	1,200	610
20ba	June 18	300	408	108	820	1,040	410
24dd1	June 17		311	69	1,260	1,400	332
26cb1	Aug. 13	360	403	69	1,090	1,230	730
28cc	June 17	530	323	0	505	505	250
29dd1	do.	440	382	18	1,100	1,140	730
30cc	do.	425	386	13	1,240	1,270	700
31aa	June 18		348	0	1,480	1,480	375
31cc2	June 17	400	303	167	1,140	1,480	358

Table20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
161-87-1bc	June 19	426	252	74	950	1,100	312
5cb	June 18	330	253	0	1,380	1,380	202
6aa	do.	375	253	0	835	835	235
6cc	do.	285	197	118	850	1,090	122
7bc	do.	275	245	187	540	919	72
8bc1	do.	326	229	0	1,020	1,020	272
9ad	do.	620	237	0	595	595	55
10ac	do.	352	258	0	1,060	1,060	112
10bc	do.	330	182	0	760	760	185
11cd1	do.	289	311	59	1,240	1,360	312
12ad2	June 19	800	384	148	1,180	1,480	610
17ad	June 18	325	322	16	830	862	95
17bc2	do.	315	288	26	630	682	75
18bc1	do.	275	230	0	820	820	90
18dc	do.	295	242	59	1,130	1,250	112
22ab	do.	350	290	23	1,140	1,190	378
22bb1	do.	332	303	138	1,180	1,460	315
22dd1	do.	382	253	44	1,150	1,240	249
23cc1	June 17	300	343	64	1,320	1,450	462
23dd	do.	265	442	20	1,110	1,150	935
25cd	June 18		341	231	635	1,100	570
26ad1	June 17	350	391	54	1,180	1,290	695
28dc	do.	167	333	98	990	1,190	240
28dc	do.	330	323	69	1,000	1,140	230
31bb	June 18	300	227	21	1,180	1,220	174
31cd	do.	320	264	0	1,420	1,420	222
32dd	June 17	400	395	49	1,520	1,620	520
33ad	do.	300	323	49	1,230	1,330	302
34aa1	do.	300	271	64	1,360	1,490	189
34cc	do.	303	300	0	1,320	1,320	388
35cd1	do.	369	350	44	1,310	1,400	522
162-84-3bb	July 30	400	443	59	760	880	1,060
5bb	Sept. 8	490	560	20	555	595	1,670
12cc	Aug. 13	300	529	8.9	410	428	1,540
14ba	July 30		912	0	280	280	3,110
15bc	do.	500	1,030	12	240	264	3,640
15cb	do.	500	1,030	12	260	284	3,560
17dd	July 3	390	1,010	22	255	299	3,520
21cc	do.	415	944	59	320	440	3,060
28cc	do.	418	629	49	460	560	1,900

Table20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
162-84-30ba	July 3	413	1,040	9.8	335	355	3,500
31bb1	do.	370	974	22	325	369	3,160
32ad1	do.	350	974	15	280	310	3,300
32ba1	do.	388	737	26	375	427	2,260
32dd2	do.	364	888	24	315	363	2,950
33cd	do.	400	1,120	14	285	313	3,710
162-85-3dd	do.	400	835	12	310	334	2,840
6ad	Aug. 14	447	546	39	580	660	1,520
7dd	July 3	400	660	39	465	545	2,060
8bc	do.	428	557	25	545	595	1,630
9aa	do.	430	789	24	335	383	2,610
10ab1	do.	416	811	64	290	420	2,700
10cd1	do.	640	947	19	320	358	3,220
10dc	do.		645	7.9	350	366	3,060
16cd	June 18	493	791	18	370	406	2,560
23cb	June 17	400	764	13	375	401	2,350
23dd	June 18	500	725	44	55	135	2,400
25cc1	June 17	440	933	16	350	382	3,020
162-86-1cb	Sept. 8		689	49	465	565	2,170
5da1	June 17		58.2	0	315	315	41
10bc1	do.	428	672	0	570	570	2,030
11bc	Sept. 8		434	64	675	805	1,120
11cc	Aug. 14	475	433	16	865	897	1,040
12cc	do.	410	707	14	530	558	2,150
14cb3	do.	360	600	0	570	570	1,750
22ba	do.	350	548	0	645	645	1,600
26ad	June 17	500	622	0	370	370	1,910
26dd1	do.	625	800	0	555	555	2,460
31bb1	June 19	192	353	138	665	945	165
162-87-2aa	do.		560	0	690	690	1,440
6dd2	do.	390	310	49	950	1,050	540
8ad	do.		464	30	785	847	1,120
8cc1	do.	75	372	0	570	570	55
14bb2	do.	700	297	19	905	943	100
14cd	June 18	360	368	59	1,040	1,160	670
21bb	June 19	600	204	0	445	445	45
21cc	do.	610	406	24	885	933	890
22ad	June 18	715	193	14	650	678	262
23ad	June 19	710	397	59	990	1,110	780

Table20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
162-87-24ab	June 19	450	453	84	730	900	1,040
24bc	do.	465	261	69	1,030	1,170	300
25ab	do.	400	339	79	995	1,160	578
25cb1	do.	655	430	0	800	800	980
26bb1	June 18	555	200	0	530	530	282
26bc	do.	550	252	79	670	830	407
26dc	June 19	555	388	0	960	960	825
27dd	June 18	640	206	64	640	770	269
28cc1	do.	480	256	0	1,170	1,170	285
28dd	do.		386	16	955	987	775
31dd1	do.		146	0	595	595	24
32ba1	do.		418	12	855	879	910
34ad1	do.	670	272	23	785	831	478
163-84-2dd	Sept. 8	400	611	54	470	580	1,900
3bd1	do.	314	486	49	490	590	1,420
5cc	do.	400	648	30	470	530	2,060
6dd1	do.	400	756	25	365	415	2,510
8dc	Aug. 13	256	435	0	580	580	1,220
13bb	Sept. 8		715	39	370	450	2,340
14bb	do.	370	705	44	340	430	2,320
19ba	do.	356	775	34	280	350	2,620
21cd	July 30	280	647	22	450	494	2,000
23cc	Sept. 8	325	591	54	395	505	1,850
24aa	do.	300	675	39	340	420	2,200
26cc	do.	280	781	44	355	445	2,600
30cc	Aug. 13	325	390	0	510	510	1,080
163-85-1cd	do.	400	860	0	370	370	2,940
4dc	do.		590	0	560	560	1,800
5ad	Sept. 8	425	468	108	410	630	1,320
6ad1	do.	452	487	49	510	610	1,400
7aa	Aug. 13	376	622	0	470	470	1,960
8bb1	do.	378	807	0	410	410	2,660
15cd	do.	350	315	44	770	860	420
29cd	do.	500+	904	20	324	364	3,150
31bc	Aug. 14	350	881	0	405	405	3,020
31cc1	do.	500	591	0	590	590	1,730
32ab	Aug. 13	400	988	18	260	296	3,490
34cb	do.	402	754	0	410	410	2,460
163-86-1da	do.		737	14	362	390	2,380
2dc	do.		670	0	410	410	2,160

Table 20.--Partial chemical analyses of water from wells in Renville County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
163-86-3cb2	June 17		686	0	440	440	2,120
4ad1	do.		517	0	415	415	1,520
10aa	Sept. 8		934	39	320	400	3,220
11bc	do.	500	605	20	295	335	1,950
12bb	Aug. 13		700	0	420	420	2,250
13ad	Sept. 8		622	39	445	525	1,960
14bb	do.		758	59	285	405	2,530
20cd	June 17	492	339	49	800	900	640
23ba	Sept. 8		809	49	485	585	2,670
25cc	Aug. 13		491	49	740	840	1,280
26cc	do.	382	378	20	936	976	820
27aa	do.	378	377	69	900	1,040	790
27cc	do.		306	39	870	950	468
27dd	do.		409	49	710	810	1,000
34ba	do.	365	573	0	605	605	1,700
34cc	do.		383	0	975	975	815
35bc	do.		568	0	710	710	1,590
163-87-2dd	June 19		318	20	810	850	648
17bb2	do.	502	598	11	555	577	1,710
32dc	do.	400	170	0	550	550	272
33ad1	do.		312	49	665	765	688
34cb1	do.	500	324	49	500	600	50
164-85-32bc	Sept. 8		410	54	695	805	1,040
35aa	do.		490	59	655	775	1,340
164-86-31ac	June 17	450	441	7.9	665	681	1,160
33cc	do.	400	672	0	410	410	2,080
33dd	do.	400	747	0	360	360	2,420

Table 21.--Partial chemical analyses of water from wells in Ward County, North Dakota
(Dissolved constituents in parts per million)

Location number of well/spring	Date of collection (1947)	Depth (feet)	Specific conductance	Carbonate (CO_2)	Bicarbonate (HCO_3)	Total Bicarbonate (HCO_3)	Chloride (Cl)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
154-81-6aa1	July 3	365	289	79	720	880	910
7aa	July 5	285	338	98	880	1,080	650
11ab1	July 3	250	384	108	765	985	850
12cc	July 5	310	327	221	825	1,270	520
15bc1	do.	350	234	26	485	537	120
17da2	July 3	300	568	275	1,840	2,400	355
19ac1	July 5	200	346	177	895	1,250	600
22aa2	do.	305	308	182	755	1,120	510
24cb2	do.	225	278	236	970	1,450	270
25bb	July 3	250	326	118	960	1,200	550
30da	July 5	275	357	123	825	1,080	720
155-81-10da	June 17		68.0	0	415	415	0
14ad1	do.	10	66.1	12	240	264	9.0
14bb3	do.		54.7	0	220	220	6.0
14da	do.	200	404	69	745	885	937
17cc	do.	135	250	44	900	990	70
18dc2	do.	365	435	49	750	850	1,060
19ad1	do.	133	231	69	900	1,040	38
19ba1	do.	1,000	419	59	730	850	1,000
19cc	do.	112	231	49	840	940	33
23cc1	do.	200	372	16	850	882	813
23dd	do.	200	121	15	650	680	63
24bc	do.	160	364	69	830	970	760
26ab1	do.	200	381	69	770	910	876
26dd2	do.	185	409	128	620	880	965
30ca	do.	96	282	79	845	1,000	73
155-82-11cc	do.	250	424	54	960	1,070	935
20cc2	do.	35	189	79	710	870	10
30da	do.	75	206	64	665	795	26
155-83-3cb	Aug. 13	98	244	0	565	565	20

Table21.--Partial chemical analyses of water from wells in Ward County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
155-83-7bb1	Aug. 13	55	611	0	620	620	7.0
8cc	do.	200	397	49	1,320	1,420	680
10dc2	do.	420	356	0	1,010	1,010	720
10cc2	do.	370	373	44	1,050	1,140	720
15cc4	do.	525	375	22	1,070	1,110	720
18ac2	do.	800	412	44	1,080	1,170	835
21ac	do.	365	361	49	1,150	1,250	610
25cc	June 17	120	185	64	525	655	10
26ab	do.	120	202	59	630	750	28
156-81-1cc	July 3	165	280	152	250	559	640
2cc	July 2	280	13.1	0	65	65	12
2dd	July 3	140	368	54	845	955	780
3aa	July 2	176	371	69	935	1,080	740
4ba	July 14	380	406	79	870	1,030	930
4cb	do.	275	449	118	710	950	1,120
5da	do.	250	487	59	760	880	1,280
7cc1	do.	258	449	128	730	990	1,100
11ac	July 3	235	465	74	660	810	1,180
15aa	July 2	200	465	64	710	840	1,200
17cc2	July 14	226	406	89	835	1,020	895
23aa	July 5	238	441	74	610	760	1,140
25aa	do.	250	434	128	580	840	1,090
26ab	June 17		202	59	630	750	28
29ab1	July 14	365	471	108	630	850	1,260
156-82-6dd1	July 3	132	430	128	785	1,040	1,000
10cb	do.	330	444	118	780	1,020	1,040
12bc	do.		490	113	655	885	1,270
13ab2	do.	350	458	74	845	995	1,100
16cd	July 5	380	416	221	595	1,040	940
17bb1	July 3	550	424	177	770	1,130	925
17cd	July 5	360	366	128	750	1,010	785
19cc	do.	401	346	172	620	969	715
26aa2	do.	350	342	113	460	690	720
28dc2	do.	300+	400	246	610	1,170	830
30dd	do.	300	405	162	660	989	915
35dc	July 3	300	437	118	815	1,060	1,020
36bc	July 5	325	447	118	790	1,030	1,040
156-83-5bb	Aug. 13	580	480	0	970	970	1,160
7bc	do.	485	471	0	1,000	1,000	1,110
7cc2	Aug. 14	535	422	69	890	1,030	900

Table21.--Partial chemical analyses of water from wells in Ward County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
156-83-12dc	Aug. 13	290	300	49	1,290	1,390	255
13cd1	do.	271	280	54	890	1,000	145
25ad1	do.	365	348	44	1,200	1,290	550
28dd	do.	707	459	24	1,050	1,110	1,010
31cc2	do.	365	400	44	1,340	1,430	680
32dd1	do.	415	314	0	1,170	1,170	105
33dd	do.	407	170	0	1,240	1,240	32
157-81-3da	Aug. 22	170	392	89	820	1,000	875
4aa	Aug. 25	175	376	84	890	1,060	810
4bc	do.	210	489	74	740	890	1,310
4dc	do.	160	462	89	720	900	1,200
5ad	do.	180	488	64	750	880	1,320
7bb	do.	184	382	84	750	920	885
8ca	do.	235	464	74	815	965	1,190
8da	do.	270	467	98	700	900	1,220
11ba	do.	200	455	74	770	920	1,170
12cc	do.	194	559	93	555	745	1,640
15cd	Aug. 22	280	520	64	650	780	1,440
15dd	do.	250	491	79	750	910	1,280
17aa	do.	250	474	89	710	890	1,180
21ad	do.	250	546	98	620	820	1,490
23cc	do.	305	536	89	610	790	1,940
23dd	do.	290	474	74	805	955	1,200
25da	Aug. 25	250	533	79	630	790	1,500
26cc	Aug. 22	304	529	79	600	760	1,490
26da	do.	340	483	69	670	810	1,300
30aa	do.	300	533	89	640	820	1,500
30dc	Aug. 25	300	648	59	510	630	1,990
33cd	Aug. 22	480	572	49	610	710	1,640
34dd	Aug. 25	285	441	98	690	890	1,120
157-82-1cb	do.	180	412	59	940	1,060	938
5cc	Aug. 14	380	359	69	895	1,030	735
9cc	do.	470	431	0	820	820	1,040
9dc	do.	265	239	44	650	740	335
10dd1	Aug. 13	300	488	20	860	900	1,200
11ad	Aug. 25	220	472	39	845	925	1,220
11bc	Aug. 13	315	489	0	940	940	1,200
12da	Aug. 25	385	404	0	1,020	1,020	930
12cb1	Aug. 22	216	421	64	925	1,050	960
15bb	Aug. 13	600	505	26	990	1,040	1,200

Table 21.--Partial chemical analyses of water from wells in Ward County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
157-82-15dd	Aug. 14	290	463	18	850	886	1,160
19aa	do.	383	312	0	1,200	1,200	600
20bc	do.	368	309	16	1,170	1,200	485
22aa2	Aug. 13	320	473	0	450	450	1,140
23ad	Aug. 22	285	468	103	705	915	1,140
24bc	Aug. 25	285	454	152	615	924	1,160
24cd	Aug. 22	290	365	30	820	880	785
25ab	do.	300	469	89	750	930	1,170
26ab	do.	312	428	113	655	885	1,050
28cc1	Aug. 14	320	186	0	570	570	130
30cc	Aug. 13	485	339	49	1,060	1,160	570
31dd2	Aug. 14	310	318	0	580	580	700
34dd	Aug. 22	360	434	89	820	1,000	1,040
35bc	Aug. 25	380	409	113	670	900	975
32cb	Aug. 14	480	336	0	1,200	1,200	540
158-87-3dd	Oct. 20	400	354	25	930	980	125
12ba	Oct. 21	240	296	172	1,630	1,980	142
159-87-1cd1	Sept. 9	250	273	89	1,450	1,630	178
1dc2	do.	380	282	39	1,720	1,800	145
2bc	Sept. 11		311	182	1,460	1,830	220
3bb	Sept. 9	292	351	128	1,660	1,920	335
3cd	do.		320	98	1,620	1,820	265
5aa	do.	307	282	128	1,400	1,660	190
5dd	do.	325	258	93	1,340	1,530	168
10da	do.		320	133	1,520	1,790	240
11cc1	do.		292	138	1,520	1,800	180
12dd	do.	220	306	98	1,530	1,730	228
18dc	Oct. 20		367	246	1,520	2,020	375
19ab	do.		324	172	735	1,080	52
20dd	Oct. 21		319	197	1,420	1,820	290
25dd	Sept. 10		347	143	1,580	1,870	350
26cd	Oct. 21		354	113	715	945	40.0
27cc	Oct. 20	250	276	172	1,260	1,610	65
29ba	Oct. 21		281	211	1,260	1,690	185
29cd	Oct. 20		261	113	1,110	1,340	120
35dd	Sept. 9	250	308	108	1,530	1,750	190
36bc	do.		290	89	1,500	1,680	210
36cb	do.	300	399	98	1,130	1,330	75

Table 21.--Partial chemical analyses of water from wells in Ward County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
159-88-24aa	Oct. 20		251	84	240	410	40
160-87-3cc	Sept. 11		370	89	1,130	1,310	645
3dc2	do.	300	373	84	1,100	1,270	640
9cc	do.		300	113	1,170	1,400	375
11aa	do.	350	285	118	1,160	1,400	320
11bc	do.	320	300	133	1,240	1,510	320
11dd	do.	410	415	98	875	1,070	930
14aa	do.		278	113	1,020	1,250	212
20cc	Sept. 9		300	103	1,420	1,630	285
20dc	do.		340	89	1,520	1,700	385
21cc1	Sept. 11	175	295	128	1,300	1,560	280
22ab	do.		320	123	1,190	1,440	418
22bb	do.	380	333	128	1,160	1,420	468
22dc	do.		320	182	895	1,260	475
23dd	do.		292	138	1,160	1,440	305
24bc1	do.		273	123	1,170	1,420	262
25bc	do.	180	273	143	1,140	1,430	262
25cd	do.		300	123	1,240	1,490	320
26ab	do.		282	34	1,060	1,130	245
30ab	Sept. 9		306	98	1,380	1,580	315
33bb	do.		368	133	1,760	2,030	340
33cd	do.	325	398	108	1,600	1,820	540
34bc	do.	400	386	118	1,500	1,740	535
35aa	Sept. 11	235	295	113	1,250	1,480	318
160-88-5bb	do.		295	138	1,260	1,540	280
12bc	do.	361	290	128	1,240	1,500	135
12cc1	do.	400	292	123	1,140	1,390	355
13aa	do.	414	275	93	1,270	1,460	265
21ab	Sept. 9	505	203	84	925	1,090	100
22aa	do.		361	44	480	570	52
23cd	do.		238	118	960	1,200	115
26ab	do.		311	79	1,480	1,640	308
28da1	do.	306	132	0	80	80	13
161-88-2bc1	June 18	310	245	0	620	620	112
3aa	do.		198	20	840	880	215
3bb	do.	400+	339	20	510	550	30
4cd	June 19	300	194	108	910	1,130	35
6aa1	June 18	285	281	0	625	625	22
8bc	June 9		223	64	1,270	1,400	66
10bc	June 19	300+	237	44	1,450	1,560	104

Table21.--Partial chemical analyses of water from wells in Ward County, North Dakota--Continued.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[illegible]-88-11ab	June 18		249	44	820	910	350
11bb	June 19	300	94.9	22	480	524	22
11cc	do.		255	118	1,150	1,390	235
13dc	June 18	718	548	9.8	870	890	1,320
14cc	do.		355	236	80	559	40
17ca1	June 9	296	233	69	1,480	1,620	76
20ba1	do.		296	118	1,200	1,440	168
22dc	June 18	304	285	0	1,410	1,410	275
23aa	do.	300	239	49	1,240	1,340	125
25bc	June 16	350	240	79	1,240	1,400	184
26dc	do.	350	284	14	1,300	1,330	246
36aa	do.		417	84	780	950	108

Table 22.--Logs of wells and test holes, Bottineau County, North Dakota

Test hole 159-81-19aa. Located 8 feet south and 323 feet west of northeast corner section.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, yellow, with some gravel	15	16
Clay, brown, with some gravel	5	21
Clay, sandy, gray, with some gravel	25	46
Clay, sandy, gray, with some lignite fragments	9	55
Clay, sandy, gray, with some gravel	30	85
Clay, sandy, gray, with some lignite fragments	51	136
Gravel and sand	4	140
Lignite, black	5	145
Gravel and sand	10	155
Lignite, black, with some gravel	11	166
Gravel, clean, with some lignite fragments (coarse)	34	200
Sand, fine, and gravel, lignite fragments	16	216
Gravel, coarse, clean, and fine sand	11	227
Bedrock (undifferentiated):		
Clay, brown	6	233
Lignite, black	3	236
Clay, brown	9	245
Hole filled.		

Test hole 156-82-34dd. Located 382 feet north and 29 feet west of southeast section corner.

Glacial drift:		
Soil	1	1
Clay, yellow, with some gravel	15	16
Clay, brown, with some gravel	13	29
Clay, sandy, gray	4	33
Sand and gravel	2	35
Sand, fine	16	51
Clay, silty sandy, gray, with some gravel	20	71
Clay, sandy, gray, with some lignite fragments and gravel	4	75
Clay, sandy, gray, with thick strips of gravel	20	95
Clay, sandy, gray, and fine sand	4	99
Bedrock (undifferentiated):		
Clay, sandy silty, gray	7	106
Boulder, granite, (soft)	8	114
Clay, sandy silty, gray	12	126
Hole filled.		

Table 22.--Logs of wells and test holes, Bottineau County, North Dakota--Con.

Test hole 159-82-34dd. Located 31 feet north and 18 feet west of southeast corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Clay, sandy, yellow	3	6
Gravel with thin strips of yellow sandy clay	4	10
Clay, sandy, yellow, with thin strips of sand	3	13
Clay, sandy, gray, with some gravel	5	18
Gravel with thin strips of gray sandy clay	3	21
Clay, sandy, gray, with some gravel	31	52
Gravel	1	53
Clay, sandy, gray, with some gravel	12	65
Clay, sandy, gray, with some gravel and thin strips of lignite fragments	19	84
Clay, sandy, gray, with thin strips of gravel, sand, and strips of lignite fragments	23	107
Clay, sandy, gray, with some gravel	13	120
Clay, sandy, gray, with thin strips of gravel	4	124
Clay, sandy, gray, with some gravel and boulders	12	136
Clay, sandy, gray, with thin strips of gravel and lignite fragments	4	140
Lignite fragments with thin strips of gravel	18	158
Clay, sandy, gray	2	160
Gravel and fine sand with strips of lignite and strips of gray sandy clay	26	186
Lignite with strips of gravel and small strips of gray sandy clay	10	196
Bedrock (undifferentiated):		
Strips of gray compact and massive sand	5	201
Sand, gray, compact	9	210
Hole filled.		

Table 22.--Logs of wells and test holes in Bottineau County, North Dakota--Con.

Test hole 160-81-35dc. Located 166 feet north and 0.53 mile east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Sand, fine, and gravel	9	12
Clay, sandy, gray, with some gravel	13	25
Sand, fine, with some lignite fragments	19	44
Clay, silty, sandy, gray, with some gravel	71	115
Clay, sandy, gray, with some lignite fragments and gravel	21	136
Sand, fine, and gravel with some gray clay	29	165
Bedrock (undifferentiated):		
Clay, sandy, gray	8	173
Lignite	2	175
Clay, brown, with some gray, sandy, clay	10	185
Hole filled.		

Test hole 160-82-10cc. Located 44 feet north and 24 feet east of southwest section corner.

Glacial drift:		
Soil	2	2
Clay, yellow, with some gravel	14	16
Clay, brown, with some gravel	6	22
Clay, sandy, gray, with some gravel	3	25
Sand and gravel	3	28
Clay, sandy, gray, with some gravel	7	35
Clay, gray, with boulders	2	37
Clay, sandy, gray, with some gravel	48	85
Sand and gravel	8	93
Clay, sandy, gray, with some gravel	22	115
Clay, sandy, gray, with some gravel and lignite fragments	70	185
Bedrock (undifferentiated):		
Clay, brown, with strips of light sandy clay	10	195
Clay, sandy, gray	10	205
Hole filled.		

Test hole 161-83-13dc. Located 56 feet north and 0.4 mile west of southeast section corner.

Glacial drift:		
Soil	1	1
Sand and gravel	12	13
Clay, sandy, gray	37	50
Clay, sandy, gray, with some gravel and lignite fragments	98	148
Clay, sandy, gray, and fine sand	7	155
Clay, sandy, silty, gray	30	185
Sand and gravel	14	199
Bedrock (undifferentiated):		
Lignite, hard	4	203
Clay, brown	2	205
Hole filled.		

Table 22--Logs of wells and test holes in Bottineau County, North Dakota--Con.

Well 161-83-19dd -/

	Thickness (feet)	Depth (feet)
Glacial drift:		
Clay and sand	320	320
Bedrock (undifferentiated):		
Sandstone	8	328
Lignite and shale	2	330
Sandstone	4	334
Shale	42	376
Shale, sandy	1	377
Lignite and shale	3	380
Shale, sandy; water	11	391

-/ Log modified from Simpson, op. cit. p. 85.

Test hole 161-83-33cc. Located 0.15 mile north and 29 feet east of southwest section corner.

Glacial drift:		
Soil	4	4
Clay, sandy, yellow, with some gravel	8	12
Sand, fine	1	13
Clay, sandy, yellow	1	14
Clay, sandy, gray, with some gravel	15	29
Gravel	1	30
Clay, sandy, gray, with some gravel	7	37
Clay, sandy, gray, with thin strips of gravel	2	39
Clay, sandy, gray, with some gravel	30	69
Clay, sandy, gray, with thin strips of gravel	33	102
Clay, sandy, gray, with some gravel and fine sand	38	140
Gravel	2	142
Clay, sandy, gray, with thin strips of gravel	66	208
Clay, sandy, gray, and thin strips of lignite fragments	3	211
Bedrock (undifferentiated):		
Clay, sandy, white	1	212
Shale, white, hard	1	213
Clay, sandy, gray	21	234
Shale, brown	1	235
Clay, sandy, brown	5	240
Hole filled.		

Well 162-83-2cb. -/

Glacial drift:		
Clay, sandy	240	240
Clay	10	250
Clay and sand	12	262
Gravel	23	285
Bedrock (undifferentiated):		
Shale, with hard streaks	11	296
Sandstone, fine, gray	18	314
Sandstone, hard, gray; water	30	344

-/ Log modified from Simpson op. cit. p. 83

Table 22.--Logs of wells and test holes in Bottineau County, North Dakota--Con.

Well 162-83-33da.[/]

	Thickness (feet)	Depth (feet)
Glacial drift:		
Clay and sand	205	205
Bedrock (undifferentiated):		
Sandstone	55	260
Shale	8	268
Sandstone, soft	11	279
Sandstone, hard	9	288
Sandstone, soft	28	316
Sandstone, hard	37	353
Shale, sandy	17	370
Sandstone, fine	10	380
Shale, sandy	90	470
Shale and sandstone, hard	184	654

[/] Log modified from Simpson, op. cit., p. 83

Table 23.--Logs of wells and test holes in Burke County, North Dakota

Well 161-89-5ac2. _/

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow	13	15
Sand and gravel	3	18
Clay, hard, gray	3	21
Clay, with stones	7	28
Fort Union formation:		
Shale and lignitic shale	15	43
Sandstone, gray	8	51
Shale, hard, blue	27	78
Lignite	3	81
Shale, soft, with thin lignite beds	41	122
Lignite	4	126
Shale, hard, brown	4	130
Shale, very hard, gray	20	150
Limestone, gray	2	152
Shale, hard, gray	43	195
Shale, soft	10	205
Shale, hard gray, with thin lignite beds	208	413
Shale, sandy, gray with thin lignite beds; water	17	430
Lignite	3	433
Shale, very hard, with thin lignite beds	41	474
Shale, hard, gray	2	476
Shale, very hard with soft layers	87	563
Shale, gray, and gray sandstone, fine; small amount of water (cased out)	5	568
Limestone	5	573
Shale, gray, with thin beds of fine sandstone, gray	51	624
Shale, very hard to hard	46	670
Shale, sandy, soft	25	695
Sandstone, hard	3	698
Sandstone, soft; water and small amount of gas	4	702
Shale, hard, gray	8	710

_/ Log from Ebert Rice, driller.

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 161-89-5cb. Located 0.4 mile north and 6 feet east of southwest corner of section.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, sandy, yellow	8	10
Gravel and fine sand	7	17
Clay, sandy, gray	5	22
Fort Union formation:		
Clay, sandy, gray, with some gravel	5	27
Lignite	4	31
Clay, sandy, gray	14	45
Lignite	2	47
Clay, sandy, gray	6	53
Lignite	3	56
Sand, gray, and clay	9	65
Hole filled.		

Test hole 161-89-36dd. Located 52 feet north and 26 feet west of southeast section corner.

Glacial drift:		
Soil, sandy, brown	1	1
Clay, sandy, brown, with some gravel	10	15
Clay, sandy, gray, with some gravel	33	48
Clay, sandy, gray, with strips of limestone	4	52
Boulder, granite	1	53
Clay, sandy, gray, with boulders and small strips of limestone	12	65
Clay, sandy, gray, with some gravel	17	82
Clay, sandy, gray, with strips of brown sandy clay with some gravel and lignite	13	95
Boulder, granite	1	96
Clay, sandy, gray, with some gravel and lignite fragments	44	140
Clay, sandy, gray, with small strips of gravel	6	146
Clay, sandy, gray, with small strips of lignite and gravel	19	165
Lignite, hard, with small strips of gravel.	5	170
Lignite, hard	9	179
Lignite, hard, with small strips of gravel.	30	209
Lignite, hard, with strips of gravel and gray sandy clay	15	224
Clay, sandy, gray, small strips of lignite.	34	258
Boulders and gravel, small strips of lignite	5	290
Boulders and gravel	20	310 (?)
Fort Union formation:		
Lignite and some gravel (wash-down)	4	314
Clay, sandy, gray	1	315
Hole filled.		

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 161-91-2aa. Located 168 feet north and 14 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with some gravel	18	19
Clay, sandy, yellow, with fine sand and some gravel	5	24
Clay, brown, with some gravel	6	30
Gravel, with yellow sandy clay	3	33
Fort Union formation:		
Clay, sandy, gray	10	43
Lignite	10	53
Sand, gray	39	92
Lignite	3	95
Hole filled.		

Test hole 162-89-13cc. Located 15 feet north and 70 feet east of southwest section corner.

Glacial drift:		
Soil	1	1
Clay, sandy, yellow	4	5
Clay, sandy, yellow, with some gravel	11	16
Clay, sandy, gray, with some gravel	5	21
Sand, fine and gravel	2	23
Clay, sandy, gray, with some gravel	15	38
Gravel	2	40
Clay, sandy, gray, with some boulders	3	43
Boulder	1	44
Clay, sandy, gray, with some gravel and boulders	4	48
Clay, sandy, gray, with some gravel and lignite fragments	44	92
Sand, fine	1	93
Clay, sandy, gray, with some gravel and lignite fragments	3	96
Boulder, granite	2	98
Clay, sandy, gray, with some gravel	7	105
Clay, sandy, gray, with some gravel and lignite fragments	40	145
Gravel	1	146
Clay, sandy, gray, with small strips of gravel and lignite fragments	16	162
Gravel and lignite fragments, with strips of gray, sandy clay	6	168
Clay, sandy, gray, with small strips of gravel and lignite fragments	17	185
Fort Union formation:		
Lignite	3	188
Lignite, with strips of white clay	30	218
Clay, white, with strips of lignite	20	238
Limestone, gray	3	241
Sand, gray	9	250
Hole filled.		

Table 23.--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 162-89-28dd. Located 14 feet north and 65 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Clay, yellow	10	13
Clay, sandy, gray, with some gravel	38	51
Sand, fine and gravel	4	55
Clay, sandy, gray, with some gravel	11	66
Clay, sandy, gray, with some strips of limestone	6	72
Clay, sandy, gray, with some gravel	28	100
Limestone and "sand" rock	1	101
Clay, sandy, gray, with some gravel and lignite fragments	14	115
Fort Union formation:		
Clay, gray	5	120
Lignite	2	122
Light clay, gray	23	145
Hole filled.		

Test hole 162-90-16cc. Located 33 feet north and 105 feet east of southwest corner of section.

Glacial drift:		
Soil	2	2
Clay, sandy, yellow	7	9
Gravel, sandy, fine	2	11
Clay, sandy, yellow, with some gravel and fine sand	16	27
Clay, sandy, gray, with some gravel and lignite fragments	50	77
Gravel and strips of limestone in gray sandy clay	7	84
Clay, sandy, gray, with some gravel	8	92
Gravel	2	94
Clay, sandy, gray, with some gravel and lignite fragments	61	155
Gravel, with lignite fragments	6	161
Clay, sandy, yellow, with lignite fragments	9	170
Fort Union formation:		
Sand, gray	25	195
Hole filled.		

Table 23.--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 162-94-3bb. Located 45 feet south and 53 feet east of northwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Clay, sandy, brown, with some gravel	19	22
Clay, sandy, gray, with some gravel and strips of limestone	11	33
Boulder	1	34
Clay, sandy, gray, with some gravel	5	39
Fort Union formation:		
Sand, gray, compact	2	41
Lignite	4	45
Clay, gray	3	48
Sand, gray, compact	37	85
Sandstone, gray	1	86
Sand, gray compact	10	96
Shale, gray	4	100
Hole filled.		

Test hole 162-93-11aa. Located 49 feet south and 16 feet west of northeast section corner.

Glacial drift:		
Soil	3	3
Clay, sandy, yellow	11	14
Clay, gray	2	16
Gravel	8	24
Fort Union formation:		
Clay, sandy, gray	5	29
Lignite	2	31
Clay, gray	4	35
Sand, fine, gray	14	49
Lignite	2	51
Sand, fine, gray	8	59
Lignite	1	60
Sand, fine, gray	10	70
Clay, brown	11	81
Lignite	1	82
Sand, fine, gray	12	94
Lignite, hard	1	95
Hole filled.		

Test hole 162-93-6dd. Located 3 feet south of south quarter-section line and 727 feet west of east section line.

Glacial drift:		
Soil, sandy, brown	3	3
Clay, sandy, brown, with angular limestone pebbles	24	27
Fort Union formation:		
Clay, gray, with some strips of lignite	33	60
Clay, sandy, gray	30	90
Sand, gray	10	100
Hole filled.		

Table 23.--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 163-89-17da. Located 0.27 mile north and 26 feet west of southeast corner of section.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Sand, brown, and boulders	10	10
Clay, sandy, brown	16	26
Sandstone	1	27
Clay, sandy, brown, with strips of limestone	3	30
Clay, sandy, gray	17	47
Clay, sandy, brown	1	48
Clay, sandy, gray, with lignite fragments	60	108
Clay, sandy gray, with some gravel and lignite fragments	51	159
Sand, fine, and gravel with boulders and lignite fragments	30	189
Boulder	2	191
Sand, fine, and gravel with boulders and lignite fragments	9	200
Boulders, with gravel and fine sand	3	203
Gravel, with lignite fragments	8	211
Gravel, fine sand with boulders, strips of clay and lignite fragments	71	282
Fort Union formation:		
Sand, fine, gray	18	300
Hole filled.		

Test hole 163-90-15cc. Located 197 feet north and 10 feet east of southwest section corner.

Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with some gravel	18	19
Clay, sandy, gray, with some gravel	28	47
Gravel	2	49
Clay, sandy, gray	1	50
Gravel	9	59
Clay, sandy, gray, with some gravel	31	90
Clay, sandy, gray, with some gravel and boulders	20	110
Clay, gray, with some gravel, boulders, and lignite fragments	62	172
Boulders, with gravel and lignite fragments	50	222
Fort Union formation:		
Lignite, hard	8	230
Hole filled		

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 163-90-31cc. Located 79 feet north and 8 feet east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Clay, sandy, brown, with some gravel	22	25
Clay, yellow, very sandy	11	36
Clay, sandy, gray, with some gravel	4	40
Gravel, fine	8	48
Clay, sandy, gray, with some gravel and lignite fragments	147	195
Gravel	6	201
Fort Union formation:		
Clay, gray	17	218
Lignite	2	220
Clay, sandy, with strips of lignite	35	255
Hole filled.		

Test hole 163-90-36cb. Located 0.26 mile north and 20 feet east of southwest section corner.

Glacial drift:		
Soil	3	3
Clay, yellow	6	9
Clay, brown, with some gravel	19	28
Clay, gray	8	36
Clay, sandy, gray, with some gravel and lignite fragments	114	150
Boulder, limestone	1	151
Clay, sandy, gray, with some gravel and lignite fragments	18	169
Gravel, with strips of gray sandy clay	3	172
Clay, gray, sandy, with lignite fragments	8	180
Gravel and boulders	21	201
Clay, sandy, gray, with some gravel	5	206
Fort Union formation:		
Lignite, hard	14	220
Sand, gray	15	235
Hole filled.		

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 163-91-21aa. Located 62 feet south and 24 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with gravel	30	31
Clay, sandy, gray, with gravel	38	69
Gravel and boulders	2	71
Clay, sandy, gray, with narrow strips of gravel.	5	76
Clay, sandy, gray, with gravel	4	80
Gravel and boulders	5	85
Clay, sandy, gray, with gravel and boulders	10	95
Gravel	1	96
Clay, sandy, gray	1	97
Gravel	1	98
Clay, sandy, gray, with boulders	8	106
Limestone, fine grained, hard, gray	1	107
Clay, sandy, gray, with gravel and boulders	41	148
Fort Union formation:		
Sand, compact, gray, with strips of lignite	22	170
Hole filled.		

Test hole 163-92-21aa. Located 32 feet south and 37 feet west of northeast section corner.

Glacial drift:		
Soil	2	2
Clay, yellow, with some gravel	3	5
Clay, brown, with some gravel	16	21
Clay, gray, with some gravel	18	39
Clay, sandy, gray, with some gravel, lignite and limestone fragments	110	149
Clay, sandy, gray, with hard strips of limestone	27	176
Clay, sandy, gray, with some gravel, lignite and limestone fragments	18	194
Gravel	6	200
Clay, sandy, gray with some gravel	4	204
Gravel	12	216
Clay, sandy, gray with some gravel	29	245
Fort Union formation:		
Clay, sandy, gray	40	285
Sand, fine, gray	10	295
Hole filled.		

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 163-92-36dd. Located 116 feet north and 70 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, sandy, brown, with gravel	10	12
Boulder	1	13
Clay, sandy, brown, with gravel	15	28
Clay, sandy, gray, with gravel	2	30
Gravel	1	31
Clay, sandy, gray, with gravel and lignite fragments	9	40
Gravel and boulders	1	41
Clay, sandy, gray, with gravel	20	61
Fort Union formation:		
Clay, sandy, gray, with strips of fine sand and lignite fragments	23	84
Lignite	4	88
Clay, gray, with strips of lignite	2	90
Clay, gray	25	115
Sand, compact, gray, with strips of gray clay	5	120
Hole filled.		

Test hole 163-93-23aa. Located 56 feet south and 25 feet west of northeast section corner.

Glacial drift:		
Soil	1	1
Clay, yellow	18	19
Sand, fine and clay	4	23
Clay, sandy, yellow	4	27
Clay, sandy, gray, with some gravel and lignite fragments	59	86
Boulder, granite	2	88
Clay, sandy, gray, with some gravel	12	100
Gravel	2	102
Clay, sandy, gray, with some gravel	28	130
Boulders, limestone and granite	2	132
Clay, sandy, gray, with some gravel and lignite fragments	27	159
Clay, hard	1	160
Clay, sandy, gray, with some gravel	21	181
Gravel, with strips of limestone	4	185
Clay, sandy, gray, with some gravel and lignite fragments	5	190
Fort Union formation:		
Clay, silty and sandy	65	255
Hole filled.		

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 163-93-34ba. Located 17 feet south and 0.4 mile east of northwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, sand, fine, brown	6	6
Clay, sandy, brown, with some gravel	10	16
Clay, sandy, brown, with strips of gravel and gray sandy clay and lignite fragments	12	28
Clay, sandy, gray	17	45
Clay, sandy, gray, with lignite fragments and strips of fine sand	6	51
Sand, fine, with lignite fragments	7	58
Fort Union formation:		
Lignite with thin strips of clay	23	81
Clay, sandy, gray	1	82
Sand, fine, gray	3	85
Clay, sandy, gray	4	89
Lignite with strips of gray sandy clay	3	92
Boulder, granite	1	93
Clay, sandy, gray	47	140
Sand, compact, gray	10	150
Hole filled.		

Test hole 163-93-36dd. Located 82 feet north and 39 feet west of southeast section corner.

Glacial drift:		
Soil, sandy, brown	3	3
Clay, yellow, with gravel	17	20
Gravel and fine sand with some clay	4	24
Fort Union formation:		
Clay, brown	3	27
Clay, sandy, gray	13	40
Clay, sandy, gray, with some gravel and lignite fragments	17	57
Gravel and gray clay	7	64
Clay, sandy, gray, with limestone and lignite fragments	9	73
Clay, gray, with lignite fragments	18	91
Lignite with strips gray clay	6	97
Sand, fine, gray, with some clay	8	105
Hole filled.		

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 163-94-6aa. Located 15 feet south and 794 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, brown, with some gravel	40	42
Clay, sandy, bluish gray with some gravel and lignite fragments	50	92
Fort Union formation:		
Clay, gray, with strips of lignite	6	98
Clay, brown to black	1	99
Clay, gray, with strips of lignite	17	116
Lignite	7	123
Clay, brown, with strips of lignite	2	125
Clay, gray, with strips of lignite	35	160
Lignite	2	162
Clay, gray	8	170
Hole filled.		

Test hole 163-94-15dd. Located 17 feet north and 128 feet west of southeast section corner.

Glacial drift:		
Soil, sandy, brown	1	1
Clay, silty, yellow	18	19
Clay, sandy, brown, with some gravel	15	34
Clay, sandy, gray, with some gravel	26	60
Fort Union formation:		
Clay, gray	7	67
Clay, sandy, gray, with strips of lignite	98	165
Clay-shale, white	1	166
Hole filled.		

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 163-94-23cd. Located 18 feet north of south section line and 406 feet west of half-section line.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, clay, brown, with some gravel	18	18
Gravel, with strip of clay	2	20
Clay, sandy, gray, with some gravel	25	45
Boulders, with gray sandy clay	2	47
Limestone	2	49
Clay, sandy, gray	2	51
Clay, sandy, gray, with gravel and thin strips of gravel	9	60
Fort Union formation:		
Clay, sandy, gray	72	132
Lignite	3	135
Clay, sandy, gray, with strips of lignite	14	149
Lignite with strips of clay and fine sand	29	178
Clay, sandy, gray	5	183
Lignite, with strips of gray sandy clay	15	198
Clay, sandy, gray, with strips of lignite	12	210
Lignite with thin clay strip	8	218
Clay, sandy, gray with strips of fine sand and strips of lignite	10	228
Sandstone, gray	2	230
Limestone, buff colored	1	231
Hole filled.		

Well 164-92-25dd.-/

Glacial drift:		
Clay, yellow	8	8
Clay, blue, and gray sand	172	180
Fort Union formation:		
Sandstone, gray, and hard gray shale	60	240
Shale, gray	40	280
Lignite	3	283
Shale, gray	17	300
Shale, sandy	115	415
Shale, gray	55	470
Shale, sandy	30	500
Shale, sandy; water	18	518
Shale, gray	80	598
Sandstone, fine; water near base	108	706
Shale, gray	2	708

_/ Log from office of M. St. P. and S. Ste. Marie Railroad.

Table 23--Logs of wells and test holes in Burke County, North Dakota--Con.

Test hole 164-92-36dd. Located 48 feet north and 77 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow, with gravel	10	12
Sand, fine, with lignite fragments	2	14
Clay, sandy, gray, with some gravel	24	38
Gravel	2	40
Clay, sandy, gray, with gravel	55	95
Boulder, granite	1	96
Clay, sandy, gray, with gravel and lignite fragments	149	245
Fort Union formation:		
Clay, gray	1	246
Sand, fine, gray	10	256
Lignite, black	9	265
Hole filled.		

Test hole 164-93-31dd. Located 17 feet north and 52 feet west of southeast section corner.

Glacial drift:		
Soil	2	2
Clay, yellow	6	8
Clay, brown, with gravel	8	16
Fort Union formation:		
Clay, yellow	5	21
Clay, gray, with lignite fragments	4	25
Sand, fine, gray	25	50
Shale		50
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, North Dakota

Test hole 161-98-11cc. Located 45 feet north and 39 feet east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, clay, yellow, with some gravel	13	13
Clay, sandy, brown, with some gravel	24	37
Clay, sandy, gray	68	105
Gravel	2	107
Clay, gray, with some gravel	15	122
Gravel	8	130
Clay, sandy, gray	4	134
Gravel	2	136
Clay, sandy, gray, with strips of gravel . . .	14	150
Clay, sandy, gray, with gravel, limestone and lignite fragments.	232	382
Clay, gray	41	423
Clay, sandy, gray, with gravel, limestone fragments.	50	473
Fort Union formation:		
Clay, sandy, gray, with lignite fragments. . .	6	479
Sand, fine, gray with shale and lignite	21	500
Hole filled.		

Test hole 161-98-27bb. Located 11 feet south and 49 feet east of northwest section corner.

Glacial drift:		
Soil	1	1
Clay, yellow, with gravel	11	12
Clay, sandy, blue, with gravel	18	30
Sand, fine	2	32
Clay, sandy, blue	3	35
Sand, fine	2	37
Clay, sandy, blue, with strips of fine sand .	11	48
Gravel, coarse and fine sand	4	52
Clay, sandy, blue, with strips of fine sand . .	7	59
Iron pyrite	1	60
Fort Union formation (not reached)		
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 162-96-11aa. Located 90 feet south and 35 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, brown, with some gravel	6	8
Boulder, granite	1	9
Clay, yellow, with some gravel	13	22
Clay, sandy, gray, with strips of yellow sandy clay	13	35
Fort Union formation:		
Clay, sandy, gray, with strips of fine sand	10	45
Clay, sandy, gray, with some gravel	15	60
Clay, sandy, gray, with narrow strips of lignite	15	75
Clay, sandy, gray, with strips of fine sand	3	78
Clay, sandy, gray	22	100
Hole filled.		

Well 162-97-33dd. /

Glacial drift:		
Soil	2	2
Clay, yellow to gray	150	152
Fort Union formation:		
Shale, blue	32	184
Sandstone; water under artesian head	8	192

/Log from owner, M. G. Miller.

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 162-98-12dd. Located 147 feet north and 8 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Clay, yellow	3	6
Clay, sandy, brown	8	14
Sand, fine	8	22
Clay, sandy, brown, with some gravel	12	34
Sandstone, hard	1	35
Clay, sandy, gray	6	41
Gravel	5	46
Clay, sandy, gray, with some gravel	11	57
Gravel, sand and gray clay	43	100
Gravel	16	116
Clay, sandy, gray, with some gravel	59	175
Clay, gray, with some gravel and limestone and lignite fragments	65	240
Clay, sandy, gray, with strips of sandstone and some gravel	15	255
Fort Union formation:		
Clay, sandy, gray, with strips of gray clay and gravel with lignite fragments	61	316
"Rock"	1	317
Clay, gray	7	324
Rock, hard		324
Flowing well, initial flow 2-3 gpm		
Hole filled.		

Test hole 162-98-23cc. Located 26 feet north and 146 feet east of southwest section corner.

Glacial drift:		
Soil	1	1
Clay, brown, with some gravel	24	25
Clay, gray, with some gravel	14	39
Sand, fine, and gravel with lignite fragments	11	50
Boulder, limestone	1	51
Fort Union formation:		
Lignite	1	52
Limestone	1	53
Clay, sandy, gray, with strips of lignite	99	152
Clay, sandy, gray	16	168
Lignite	11	179
Lignite and brown clay	3	182
Clay, gray, with strips of lignite and fine sand and limestone	13	195
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 163-95-15dd. Located 91 feet north and 26 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow	4	6
Clay, brown, with some gravel	25	31
Sand, coarse	1	32
Clay, brown	2	34
Boulder, granite	1	35
Fort Union formation:		
Clay, gray and brown with strips of lignite	8	43
Clay, bluish gray with strips of lignite	18	61
Clay, gray	27	88
Sandstone	1	89
Clay, gray	1	90
Limestone or "siltstone", hard, fine grained	4	94
Clay, gray	6	100
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, South Dakota--Con.
Well 163-95-27bd2 ✓.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Clay, yellow	45	45
Clay, blue	40	85
Bedrock:		
Shale, green (Fort Union formation)	5	90
Shale, blue	10	100
Limestone, thin-bedded	10	110
Sandstone; water	15	125
Shale, blue to gray	40	165
Limestone, thin-bedded	5	170
Lignite	5	175
Shale, brown	25	200
Limestone, gray	20	220
Shale, gray	60	280
Shale, brown	25	305
Lignite	10	315
Shale, gray	5	320
Shale, sandy, gray	50	370
Sandstone; water	10	380
Shale, black to gray	40	420
Shale, with pebbles	5	425
Lignite	8	433
Shale, gray	17	450
Shale, black to gray	90	540
Shale, sandy, gray	50	590
Shale, gray	20	610
Shale, sandy, gray	85	695
Sandstone; water and small amount of gas	20	715
Shale, sandy, gray	35	750
Shale, brown	30	780
Shale, gray	125	905
Shale, brown	65	970
Shale, gray	40	1,010
Shale, gray; small amount of gas	10	1,020
Sandstone	15	1,035
Shale, black	5	1,040
Shale, sandy, gray	95	1,135
Shale, black	15	1,150
Sandstone; water and small amount of gas	55	1,205
Shale, blue (Pierre shale?)	95	1,300
Shale, broken, black	30	1,330
Shale, blue	370	1,700
Shale, dark blue	65	1,765
Limestone, thin-bedded	1	1,766
Shale, dark gray	164	1,930
Shale, black	33	1,963
Limestone, thin-bedded	1	1,964
Shale, dark gray	71	2,035
Limestone, thin-bedded	1	2,036
Shale, dark gray	75	2,111
Limestone, thin-bedded	1	2,112
Shale, dark gray	116	2,228
Limestone, thin-bedded	2	2,230
Shale, dark gray	5	2,235

✓ Log from Northwest Oil Co.

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 163-95-29dd. Located 88 feet north and 13 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow	12	14
Sand, fine	2	16
Clay, blue	1	17
Sand, fine with strips of yellow clay	2	19
Fort Union formation:		
Sandstone	4	23
Sand, fine, gray	18	41
Sand, compact white	3	44
Clay, sandy, gray, with strips of compact gray sand	11	55
Sand, compact, gray	12	67
Lignite	1	68
Clay, gray with strips of lignite and brown clay	4	72
Clay, sandy, gray	4	76
Clay, gray	18	94
Lignite	2	96
Clay, gray, with strips of brown and bluish clays	34	130
Hole filled.		

Test hole 163-96-5aa. Located 33 feet south and 43 feet west of northeast section corner.

Glacial drift:		
Soil	3	3
Clay, gray	1	4
Gravel	10	14
Clay, silty, gray	31	45
Fort Union formation:		
Clay, sandy, blue, with fine sand	26	71
Clay, gray, with lignite	4	75
Clay, brown, tight, with strips of light gray clay, and lignite	7	82
Clay, blue and gray	4	86
Clay, gray, with some strips of lignite	10	96
Lignite, with strips gray clay	3	99
Clay, gray	22	121
Lignite, hard and soft in strips, some clay	12	133
Clay, gray, with strips of lignite	24	157
Lignite	2	159
Clay, gray, tight, with strips of lignite	10	169
Lignite, with some clay	12	181
Clay, sandy, gray, with strips of lignite	8	189
Sandstone, gray, hard	3	192
Sand, gray, compact	8	200
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Well 163-96-6aa. 1/

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow	12	14
Sand and clay	100	114
Fort Union formation:		
Lignite and lignitic shale	16	130
Sandstone, coarse; water	30	160

1/ Log from owner, Godfred Johnson.

Well 163-96-8cc. 1/

Glacial drift:		
Soil	2	2
Clay, yellow, with pebbles	40	42
Clay, blue	103	145
Fort Union formation:		
Shale, sandy, blue; water	5	150

1/ Log from owner, Bank of North Dakota.

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 163-96-15dd. Located 31 feet north and 80 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, brown	5	6
Clay, brown, with gravel	10	16
Clay, gray, with strips of brown clay, with some gravel	9	25
Sand, coarse and fine gravel	26	51
Gravel with boulders, some lignite fragments	4	55
Fort Union formation:		
Clay, sandy, gray and brown	36	91
Clay, sandy, blue, with strips of lignite	10	101
Lignite, with strips of clay	5	106
Clay, sandy, blue and brown, with strips of lignite	31	137
Sandstone, gray, hard	2	139
Sand, fine with strips of gray sandy clay	5	144
Sand, gray, compact	6	150
Sand, fine, with strips of gray sandy clay	7	157
Sand, gray, compact with some brown sandy clay	44	201
Lignite, with strips of brown and gray sandy clay	16	217
Sand, gray, compact with strips of lignite, some brown clay	29	246
Lignite with compact gray sand some brown sandy clay	12	258
Clay, sandy, gray, with some green, gray and brown clay	15	271
Sand, gray, compact with strips of lignite	18	289
Clay, sandy, brown (carbonaceous) with strips of lignite	7	296
Clay, sandy, gray, and green, with strips of lignite	27	323
Lignite, soft	2	325
Clay, sandy, gray, with strips of green sandy clay and some lignite	20	345
Sandstone, thin strips, with dark gray and brown clay	5	350
Sandstone, gray, hard	1	351
Clay, sandy, gray with strips of lignite	69	420
Clay, sandy, gray	5	425
Clay, sandy, brownish gray, with strips of lignite	5	430
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 163-96-29dd. Located 70 feet north and 28 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow, with fragments of gypsum	11	13
Clay, sandy, gray	4	17
Boulder, limestone	1	18
Gravel, with strips of yellow clay	7	25
Clay, yellow, with strips of gravel	11	36
Clay, sandy, gray with some gravel	26	62
"Rock"	1	63
Clay, sandy, gray with some gravel	17	80
Gravel, fine and sand	11	91
Clay, sandy, gray, with some gravel	17	108
Boulder, limestone	1	109
Clay, sandy, gray with some gravel	29	138
Boulder, limestone	2	140
Clay, sandy, gray with strips of limestone and gravel	64	204
Sand, fine with some gray clay and lignite fragments	5	209
Clay, sandy, gray with some gravel	30	239
Boulder, limestone	2	241
Clay, sandy, gray with some gravel and lignite fragments	25	266
Fort Union formation:		
Clay, gray with some gravel	13	279
Lignite	2	281
Clay, gray with strips of lignite	37	318
Lignite, soft, with hard strips	11	329
Clay, sandy, brown (carbonaceous) with strips of lignite	7	336
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 163-97-13cc. Located 8 feet north and 44 feet west of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, gray	4	5
Sand, fine and gravel	2	7
Clay, yellow	3	10
Clay, blue	23	33
Clay, yellow and gray	12	45
Rock (??), strips	1	46
Clay, gray, with fine sand	15	61
Clay, silty, gray	41	102
Clay, gray, with some gravel and lignite fragments	138	240
Clay, gray, with some gravel, lignite fragments and fine sand	55	295
Clay, gray	89	384
Sand, fine and gravel, with lignite fragments	13	397
Gravel and fine sand	31	428
Sand, fine and gravel with gray clay	20	448
Boulders	9	457
Clay, gray	2	459
Fort Union formation: (not reached)		
Flowing well, initial flow, 4-5 gpm		
Hole filled.		

Well 163-97-19da4. /

Glacial drift:		
Sand and clay, yellow	45	45
Gravel; a little water	3	48
Clay, blue, with stones	112	160
Clay, gray	10	170
Sand and gravel; water which originally flowed	4	174
Fort Union formation:		
Shale, hard, gray	1	175

/ Log modified from Simpson, H. E., Geology and ground-water resources of North Dakota: U. S. Geological Survey Water-Supply Paper 598, p. 122, 1929.

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Test hole 163-97-26bb. Located 28 feet south and 14 feet east of northwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	4	4
Clay, yellow, with some gravel	14	18
Clay, sandy, gray, with some gravel	51	69
Clay, sandy, yellow with some gravel	16	85
Clay, sandy, brown, with some gravel and strips of limestone	48	133
Boulder, limestone	1	134
Clay, sandy, brown with some gravel	7	141
Gravel, with fine sand	7	148
Clay, sandy, brown with some gravel and strips of limestone	46	194
Clay, sandy, blue with some gravel	36	230
Gravel and fine sand, with lignite fragments	3	233
Clay, sandy, gray, with some gravel, strips of limestone and lignite fragments	30	263
Boulder, limestone	2	265
Clay, sandy, gray, with some gravel, strips of limestone and lignite fragments	35	300
Gravel with strips of limestone	6	306
Clay, sandy, gray with some gravel	5	311
Clay, sandy, gray with strips of limestone, gravel and lignite fragments	24	335
Boulder, limestone	2	337
Fort Union formation:		
Clay, sandy, gray with some lignite fragments	38	375
Clay, sandy, gray with strips of sand	40	415
Rock	1	416
Clay, sandy, gray	14	430
Sand, fine	8	438
Flowing well, initial flow 3-4 gpm		
Hole filled.		

Well 163-97-29bc3. /

Glacial drift:		
Soil	5	5
Clay, yellow	15	20
Sand and gravel	10	30
Clay, yellow	12	42
Fort Union formation:		
Shale, blue	433	475
Shale, sandy, white	85	560
Sandstone and lignitic shale	19	579
Shale, hard	3	582
Sandstone, fine; water	28	610

/ Log from City Engineer, Crosby

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Well 163-97-31bc 1/.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Clay and gravel, yellow	36	36
Clay and gravel, blue to gray	148	184
Clay, sticky, gray	54	238
Fort Union formation:		
Shale, hard, gray	2	240
Sandstone, fine, white; a little water	8	248
Shale, sandy, brown; water, originally a small flow	3	251

1/ Log modified from Simpson, op. cit., p. 123.

Test hole 163-97-33cc. Located 515 feet north and 167 feet east of southwest section corner.

Glacial drift:		
Clay, sandy, yellow, with some gravel	13	13
Clay, yellow, dark	11	24
Clay, gray, sandy with some gravel	17	41
Gravel	5	46
Clay, gray	2	48
Gravel	4	52
Clay, sandy, gray	4	56
Sand, with gray clay and strips of gravel and lignite fragments	8	64
Gravel, fine, with lignite fragments	7	71
Gravel, with boulders, strips of limestone and gray clay	5	76
Clay, sandy, gray, with strips of gravel ...	8	84
Clay, sandy, gray	81	165
Gravel and strips of limestone	2	167
Clay, sandy, gray, with some sand and/or gravel strips	159	326
Clay, sandy, gray, with some strips of limestone	40	366
Clay, sandy, gray, with some gravel and lignite fragments	62	428
Gravel, with gray clay and lignite fragments	16	444
Sandstone, hard	1	445
Clay, sandy gray, with some gravel and lignite fragments	51	496
Rock	1	497
Clay, sandy, gray	24	521
Fort Union formation: (not reached)		
Hole filled.		

Table 24--Logs of wells and test holes in Divide County, North Dakota--Con.

Well 163-97-34aa2. 1/

	Thickness (feet)	Depth (feet)
Glacial drift:		
Clay, yellow	22	22
Sand	1	23
Clay, yellow	11	34
Clay, yellow, with gravel	20	54
Clay, yellow, with stones	3	57
Clay, yellow, with sand	42	99
Clay, blue, with gravel	14	113
Clay, hard, blue	35	148
Fort Union formation:		
Shale, hard, gray	32	180
Shale, blue, with stones	47	227
Shale, blue, with boulders	21	248
Shale, blue, with lignite	30	278
Shale and sandstone	2	280
Sandstone, soft; water	15	295
Shale, blue	1	296

1/ Log from City Engineer, Crosby.

Well 163-98-23dd. 1/

Glacial drift:		
Clay, yellow to blue, with stones	64	64
Sand, white	3	67
Clay and gravel, alternating	213	280
Fort Union formation:		
Shale, hard, gray	30	310
Sandstone, fine, blue-gray; water, originally a small flow	2	312

1/ Log modified from Simpson, op. cit., p. 121.

Table 25--Logs of wells and test holes in McHenry County, North Dakota.

Well 153-80-22da. 1/

Alluvium and glacial drift:		
Sand	12	12
Clay, blue	26	38
Gravel, coarse; water	8	46
Clay, blue	114	160
Sand	12	172
Clay, blue	98	270
Clay and coarse sand; water	40	310
Clay and fine sand; very little water	31	341

1/ Log from records, town of Velva.

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 154-80-2dc. Located 39 feet north and 0.49 mile west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with gravel and fine sand.	5	6
Clay, sandy, yellow, with some gravel	18	24
Clay, sandy, gray, with gravel and fine sand	6	30
Sandy, fine, with thin strips of gray, sandy clay and lignite fragments	3	33
Clay, sandy, gray	3	36
Gravel with thin strips of gray sandy clay and lignite fragments	8	44
Clay, sandy, gray, with some gravel	20	64
Fort Union formation:		
Clay, gray	18	82
Clay, shale, brown	7	89
Clay, shale, brown, with thin strips of gray, compact sand	35	124
Clay, gray	7	131
Sand, compact, gray, with thin strips of clay	4	135
Sandstone, hard, gray	3	138
Sand, compact, gray	6	144
Sand, compact, gray, and brown clay, in strips.	16	160
Clay, gray	18	178
Clay, shaley, brown	4	182
Clay, brown and gray	4	186
Sand, compact, gray	9	195
Shale, hard, gray	5	200
Hole filled.		

Well 154-80-6aa. 1/

Glacial drift:		
Clay, blue	100	100
Clay, gray	60	160
Clay, hard, with gravel	21	181
Clay, gray	19	200
Sand, fine; water	25	225
Fort Union formation:		
Shale, hard, black	3	228
Shale, sandy, red	7	235
Shale, gray	185	420
Shale, sandy, white	65	485
Shale, white	4	489
Pierre shale:		
Shale, blue	94	583
Shale, gray	40	623
Shale, soft, blue	51	674
Shale, gray	46	720
Shale, black	120	840

1/ Log from Simpson, op. cit., p. 157.

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 154-80-20dd. Located 81 feet north and 26 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, sandy, yellow, gravel and fine sand, in strips	3	5
Clay, sandy, yellow, with some gravel	8	13
Clay, sandy, brown, with some gravel	5	18
Clay, sandy, brown, with thin strips of gravel	2	20
Clay, sandy, brown, with some gravel	12	32
Sand, fine, with thin strips of coal	3	35
Clay, sandy, brown, with some gravel and fine sand	2	37
Clay, sandy, brown, with some gravel	9	46
Gravel	1	47
Clay, sandy, brown and gray	6	53
Clay, sandy, gray, with thin strips of fine sand	2	55
Clay, sandy, gray, with some gravel	5	60
Clay, sandy, gray, with thin strips of fine sand gravel and lignite fragments	11	71
Fort Union formation:		
Sand, fine with thin strips of lignite	12	83
Lignite	1	84
Sand, fine, and strips of lignite	3	87
Clay, shale-like, gray	6	93
Lignite, fine gray sand, gray, shale-like clay in thin strips	27	120
Hole filled.		

Test hole 155-79-1cc. Located 53 feet north and 208 feet east of southwest section corner.

Glacial drift:		
Soil	1	1
Clay, sandy, white	2	3
Clay, sandy, yellow, with thin strips of fine sand	7	10
Clay, sandy, gray, with some gravel	21	31
Clay, sandy, gray, with strips of gravel	4	35
Clay, sandy, gray, with some gravel	22	57
Fort Union formation:		
Clay, gray	5	62
Lignite	3	65
Sand, compact, gray	16	81
Sand, compact, gray, and gray clay in strips.	8	89
Clay, gray	7	96
Sand, compact, gray	12	108
Clay, gray, with strips of light green compact sand	25	133
Lignite	2	135
Clay, gray	27	162
Sand, compact, gray	8	170
Clay, brown	11	181
Sand, compact, green	4	185
Clay, brown	7	192
Clay, brown, and sand, compact green, in strips	8	200
Hole filled		

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 155-79-29aa. Located 10 feet south and 105 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, gray, and gravel	3	4
Gravel	6	10
Sand, fine, gray	16	26
Clay, sandy, gray, with thin strips of gravel and fine sand	31	57
Clay, sandy, gray, fine sand and gravel, and lignite fragments, in strips	11	68
Clay, sandy, gray, with some gravel, and thin strips of gravel and fine sand	36	104
Fort Union formation:		
Sand, compact, gray	18	122
Clay, gray, with thin strips of gray, compact sand	9	131
Sand, compact, grayish green, and brown clay, in strips	20	151
Clay, brown	17	168
Sand, compact, gray, with strips of brownish-gray clay	18	186
Clay, gray	14	200
Hole filled.		

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 156-79-3dd. Located 330 feet north of section corner, on west border of road.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, sandy, dark brown	4	4
Sand, brown to rust-colored, with small angular chert fragments; water at 7½ feet below land surface	6	10
Clay, sandy, brown to buff, with small angular chert fragments and rounded limy pebbles ...	3	13
Clay, sandy, gray to brown, with small angular chert and feldspar fragments	2	15
Clay, sandy, gray, with small angular chert fragments and coarse quartz sand	8	23
Clay, silty, gray, with small angular to rounded chert fragments, red to black siliceous rock, and black basic rock	30	53
Sand, fine, clean to clayey; water, which rose to 32 feet below land surface	7	60
Clay, dark gray, with coarse sand and small angular chert fragments	5	65
Sand and gravel, with shale pebbles and small angular fragments of chert and lignite; water, which rose to 19 feet below land surface ...	1	66
Gravel and fine sand; water, which rose to 13 feet below land surface	9	75
Clay, dark gray, with sand, gravel, and small angular chert fragments, limestone, and lignite	10	85
Clay, soft, gray, with thin seams of fine sand.	5	90
Clay, silty, gray, with rock fragments, and large stone at 93 feet below land surface	7	97

Cased to 81 feet below land surface; bailing well at 10 gallons a minute lowered water level to 80 feet below land surface, where it held constant; water level rose to 14 feet below land surface 1½ hours after bailing stopped. Casing pulled and hole filled.

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 156-79-10aal. Located 275 feet south of section corner, on west border of road.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, sandy, brown	2	2
Sand, yellow; water level 7 feet below land surface	8	10
Clay, sandy, gray	57	67
Sand, fine, clean; water, which rose to 14 feet below land surface	6	73
Sand, gray, with small amount of clay	5	78
Clay, gray, with sand, and small pebbles of shale; water, which rose to 36 feet below land surface	12	90
Clay, sandy to silty, with small pebbles of shale and fragments of lignite; small supply of water	8	98
Bedrock (undifferentiated):		
Shale, very hard, dark brown	$4\frac{1}{2}$	$102\frac{1}{2}$

Cased to 81 feet below land surface; bailing well at 8 gallons a minute lowered water level to 83 feet below land surface, where it held constant; water level rose to 60 feet below land surface 15 minutes after bailing stopped. Casing pulled and hole filled.

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 156-79-10aa2. Located 675 feet south of section corner, on west border of road.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, sandy, black	4	4
Sand, gray	4	8
Clay, sandy to silty, blue to gray, with sand, gravel and small angular chert fragments	32	40
Clay, sandy, dark gray, with sand, gravel, small pebbles of shale and small angular fragments of chert and lignite	10	50
Sand, fine to coarse, with lignite fragments; 30 per cent clean gravel	5	55
Clay, hard, gray to black, with small amounts of sand and gravel	6	61
Sand, loose, fine to medium	8	69
Clay, tough, dark gray, with small amounts of sand and gravel, and small angular chert fragments	5	74
Sand, compact, fine to coarse, with clay and much angular gravel	6	80
Clay, gray to black, with sand and gravel	13	93
Sand, gray, with brown streaks and a few small angular chert fragments	11	104
Clay, brown to gray, with a few small angular chert fragments	7	111
Sand, fine, dark gray, with small lignite flakes	8	119
Clay, dark brown to black, lignitic	2	121

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 156-79-10aa3. Located 975 feet south of the section corner, on west border of road.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, sandy, black	2	2
Sand, yellow, rounded quartz	7	9
Clay, sandy, gray	9	18
Clay, hard, gray	27	45
Clay, hard, sandy, gray	8	53
Sand and gravel, with small angular chert fragments	1	54
Sand, fine, gray, with clay	7	61
Clay, hard, sandy, gray, with small angular chert fragments	34	95
Hole filled.		

Test hole 156-79-10ad. Located 1,475 feet south of section corner, on west border of road.

Glacial drift:		
Soil, sandy, black	4	4
Sand, yellow, rounded to angular quartz, with small angular fragments of yellow chert and white feldspar	3	7
Clay, sandy, brown	8	15
Clay, sandy, gray	8	23
Clay, gray	13	36
Clay, sandy, gray	16	52
Clay, sandy, hard, with small angular chert fragments	48	100
Hole filled.		

Test hole 157-80-12bb. Located 42 feet south and 63 feet east of northwest section corner.

Glacial drift:		
Soil	2	2
Clay, yellow, with some gravel	10	12
Clay, sandy, gray	24	36
Clay, silty, sandy, gray, with some gravel	19	55
Clay, sandy, gray, with thin strips of gravel.	6	61
Clay, sandy, gray, with some gravel	12	73
Gravel	3	76
Clay, sandy, gray, with thin strips of gravel.	4	80
Clay, sandy, gray, with some gravel	12	92
Bedrock (undifferentiated):		
Clay, brown, with some gray clay-sand	53	145
Hole filled.		

Test hole 157-80-21cc. Located 68 feet north and 24 feet east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, brown, with some gravel	33	34
Clay, gray	5	39
Sand, fine and gravel with some lignite fragments	5	44
Clay, sandy, gray, with some gravel	11	55
Clay, sandy, gray, with thin strips of gravel.	8	63
Clay, sandy, gray, with some gravel and lignite fragments	45	108
Bedrock (undifferentiated):		
Clay, sandy, gray	12	120
Lignite	2	122
Clay, brown	4	126
Clay, sandy, silty, gray	9	135
Clay, brown	10	145
Hole filled.		

Test hole 157-80-31cc. Located 46 feet north and 70 feet east of southwest section corner.

Glacial drift:		
Soil	1	1
Clay, yellow, with some gravel	3	4
Clay, sandy, brown, with some gravel	17	21
Clay, sandy, gray, with some gravel	20	41
Boulders and gravel	1	42
Gravel, with some lignite fragments		
Clay, sandy, gray, gravel, and lignite fragments in strips		
Clay, sandy, gray, with pebbles		59
Clay, sandy, gray, with strips of gravel	2	61
Clay, sandy, gray, with gravel, some lignite fragments	1	62
Clay, sandy, gray, with strips of fine sand	2	64
Clay, sandy, gray, with pebbles, small strips of lignite fragments	8	72
Clay, sandy, gray, with very small strips of gravel	6.5	78.5
Lignite	.5	79
Clay, sandy, gray, with small strips of fine sand and gravel, and some lignite	33	112
Bedrock (undifferentiated):		
Clay, brown, dark	18	130
Hole filled.		

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 158-80-8aa. Located 44 feet west and 25 feet south of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Sand, fine	4	7
Clay, sandy, gray, with some gravel	33	40
Clay, sandy, gray, with thin strip of fine sand and gravel	5	45
Clay, sandy, gray, with some gravel	6	51
Clay, sandy, gray, with some gravel	64	115
Bedrock (undifferentiated):		
Lignite	1	116
Clay, sandy, gray, with some gray, silty clay	8	124
Clay, sandy, gray	12	136
Clay, brown, with some gray, sandy clay	29	165
Hole filled.		

Test hole 158-80-13aa1. Located 100 feet south of section corner, on west border of road.

Glacial drift:		
Soil, sandy, gray	3	3
Clay, sandy, yellow, with rounded pebbles as much as half an inch in diameter.....	12	15
Clay, sandy, gray, with rounded pebbles as much as 1 inch in diameter.....	10	25
Clay, gray, with sand and gravel, and streaks of yellow sandy clay.....	14	39
Sand, coarse, with clay and gravel	4	43
Sand, medium, with clay and gravel	2	45
Sand, clayey, with gravel, and large lignite fragments in streaks of yellow sand	5	50
Clay, sandy, with gravel.....	35	85
Sand, clay, and gravel, with pebbles as much as 1 inch in diameter.....	10	95
Sand, fine, with clay and gravel.....	5	100
Hole filled.		

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 158-80-13aa2. Located 625 feet south of section corner, on west border of road.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, sandy, gray	3	3
Silt, gray, with gravel	3	6
Clay, silty, yellow, with gravel	4	10
Clay, sandy, yellow, with gravel	7	17
Clay, sandy, gray, with gravel	3	20
Clay, gray, with sand and gravel	25	45
Clay, gray, with sand, gravel and streaks of yellow sandy clay	5	50
Clay, gray, with sand and gravel	15	65
Clay, sandy, with gravel	14	79
Sand, fine, with clay	6	85
Clay, sandy, and gravel	10	95
Clay with small amount of sand and gravel	15	110
Hole filled.		

Test hole 158-80-13aa3. Located 1,150 feet south of section corner, on west border of road.

Glacial drift:		
Soil, sandy, gray	3	3
Clay, sandy, yellow	7	10
Clay, tough, gray, with streaks of brown sand and rounded pebbles as much as half an inch in diameter; lignite fragments at 65 feet below land surface	55	65
Sand, fine, and gravel	1	66
Sand, fine, with gravel and streaks of hard clay	9	75
Hole filled.		

Table 25--Logs of wells and test holes in McHenry County, North Dakota--Con.

Test hole 158-80-13ad1. Located 1,600 feet south of section corner, at west border of road.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, sandy, gray	6	6
Clay, sandy, yellow to gray	4	10
Clay, yellow, with sand and gravel	8	18
Clay, sticky, gray with sand and a few pebbles	11	29
Clay, sticky, gray, with sand and gravel	11	40
Clay, gray, with gravel as much as three-eighths of an inch in diameter, and lignite fragments as much as 1 inch in diameter	2	42
Clay, with fine sand and lignite fragments	3	45
Clay, sandy, with gravel	25	70
Clay, hard, sticky	5	75
Clay, sandy, with gravel	2	77
Sand and gravel, with clay	2	79
Clay, sandy, tough, and gravel	11	90
Hole filled.		

Test hole 158-80-13ad2. Located 2,100 feet south of section corner, at west border of road.

Glacial drift:		
Soil, sandy, gray	3	3
Clay, sandy, yellow	2	5
Clay, silty, yellow	14	19
Clay, with sand and gravel	16	35
Clay, gray with sand, gravel, and lignite fragments	5	40
Clay, sand, and gravel; pebbles as much as half an inch in diameter; lignite fragments	5	45
Clay, with sand and gravel	20	65
Clay, sandy; small amount of gravel	10	75
Clay, sand and gravel	15	90
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota

Test hole 158-82-17cc. Located 0.1 mile north and 51 feet east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Gravel	8	9
Clay, sandy, brown	1	10
Clay, sandy, gray, with thin strips of fine sand and gravel	29	39
Strips of sand, gravel, and gray, sandy clay	8	47
Clay, sandy, gray	3	50
Clay, sandy, with strips of gravel and fine sand	8	58
Clay, sandy, gray, with some gravel, and some thin strips of lignite fragments and gravel.	31	89
Clay, sandy, gray, with some fine sand and gravel	23	112
Clay, sandy, gray, with gravel	9	121
Clay, sandy, gray, with thin strips of gravel and fine sand	26	147
Clay, sandy, gray, with some gravel	29	176
Bedrock (undifferentiated):		
Sand, gray, compact	4	180
Hole filled.		

Test hole 158-83-35ad. Located 0.3 mile south and 12 feet west of northeast section corner.

Glacial drift:		
Soil	1	1
Sand, fine, and gravel with some yellow clay	6	7
Clay, sandy, gray, with some gravel	49	56
Gravel	2	58
Clay, sandy, gray, with some gravel	89	147
Bedrock (undifferentiated):		
Clay, gray, and strips of sandy clay	18	165
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 158-84-3aa. Located 178 feet south and 30 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Clay, yellow, with some gravel	13	16
Clay, sandy, gray, with some gravel	41	57
Gravel and fine sand	2	59
Clay, sandy, gray, with some gravel and lignite fragments	148	207
Bedrock (undifferentiated):		
Clay, sandy, gray	8	215
"Shale" rock, hard, brown	1	216
Clay, sandy, gray	9	225
Hole filled.		

Test hole 158-86-11bb. Located 11 feet south and 71 feet east of northwest section corner.

Glacial drift:		
Soil	3	3
Clay, sandy, yellow, with some gravel	10	13
Clay, sandy, gray, with some gravel	18	31
Sand, fine, and clean gravel	7	38
Sand, fine, and gravel with strips of clay and lignite fragments	17	55
Clay, sandy, gray, with some gravel and lignite fragments	80	135
Gravel, coarse, clean	10	145
Gravel, coarse, and some gray, clay	35	180
Clay, sandy, gray, with some strips of gravel	35	215
Clay, gray	18	233
Bedrock (undifferentiated):		
Lignite, black	2	235
Clay, silty, gray	10	245
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 158-86-20aa. Located 51 feet south and 21 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, yellow	10	11
Clay, sandy, yellow, with strips of fine sand and gravel	7	18
Clay, sandy, gray, with boulder and gravel	9	27
Clay, sandy, gray, with thin strips of sand and gravel	31	58
Gravel	4	62
Clay, sandy, gray, with strips of gravel	22	84
Clay, sandy, gray, with thin strips of gravel and strips of lignite fragments	77	161
Clay, sandy, gray, with boulders and gravel	11	172
Clay, sandy, gray, with gravel and some lignite fragments	15	187
Fort Union formation:		
Lignite, hard	1	188
Clay, sandy, gray, with strips of lignite	10	198
Clay, sandy, white	2	200
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 159-85-10ac. Located 0.51 mile north and 0.6 mile east of southwest section corner and flood plain of Souris River.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Gravel, coarse and boulders	6	7
Clay, yellow, with some boulders	16	23
Clay, brown, with some gravel	5	28
Clay, sandy, gray, with some gravel	18	46
Clay, sandy, silty, gray, with some gravel and lignite fragments	30	76
Clay, sandy, gray, some pure clay	2	78
Bedrock (undifferentiated):		
Clay, sandy, gray	7	85
Lignite	1	86
Clay, sandy, gray	19	105
Hole filled.		

Test hole 159-85-20cc. Located 16 feet north and 34 feet east of southwest section corner.

Glacial drift:		
Soil	2	2
Clay, yellow, with boulders	6	8
Clay, brown and gray, with gravel	16	24
Clay, sandy, gray, with lignite fragments	32	56
Gravel, fine	2	58
Clay, sandy, gray, with lignite fragments	8	66
Clay, sandy, gray, with some gravel and lignite fragments	29	95
Clay, sandy, gray, with some strips of gravel	21	116
Clay, sandy, gray, with some gravel and lignite fragments	34	150
Bedrock (undifferentiated):		
Clay, sandy, gray, and strips of lignite	75	225
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 160-84-16da. Located 0.4 mile north and 26 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, yellow	4	5
Clay, sandy, yellow, with some boulders and gravel	5	10
Sand	3	13
Clay, sandy, gray	28	41
Clay, sandy, gray, with thin strips of gravel and lignite fragments	36	77
Clay, sandy, gray, with some gravel	30	107
Clay, sandy, gray, with thin strips of gravel and lignite fragments	24	131
Clay, sandy, gray, gravel, and fine sand in thin strips	51	182
Clay, sandy,gray, gravel, and boulders in strips	12	194
Clay, sandy, gray, with thin strips of gravel.	54	248
Bedrock (undifferentiated):		
Clay, sandy, white	1	249
Lignite, hard	2	251
Clay, sandy, gray, white, and lignite in strips	19	270
Hole filled.		

Test hole 160-85-36aa. Located 10 feet south and 38 feet west of northeast section corner.

Glacial drift:		
Soil	2	2
Clay, yellow, with some gravel	14	16
Clay, brown, with some gravel	10	26
Clay, sandy, gray, with some gravel	18	44
Sand, fine, and gravel	1	45
Clay, silty, sandy, gray, with some gravel	21	66
Clay, sandy, gray, with some gravel	4	70
Clay, sandy, gray, with some strips of sand and gravel, and lignite fragments	54	124
Sand, fine, and gravel	4	128
Clay, sandy, gray, with some gravel and lignite fragments	77	205
Clay, sandy, gray, with lignite fragments	48	253
Bedrock (undifferentiated):		
Clay, gray	12	265
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 160-86-10cc. Located 38 feet north and 52 feet east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, yellow, with some gravel and boulders	25	26
Clay, sandy, brown, with some gravel	8	34
Clay, sandy, gray, with some gravel	53	87
Sand, fine and gravel	3	90
Clay, sandy, gray	6	96
Clay, sandy, gray, with thin strips of gravel	5	101
Clay, sandy, gray	4	105
Clay, sandy, gray, with some gravel and lignite fragments	110	215
Clay, brown	3	218
Clay, sandy, gray, with some gravel and lignite fragments	63	281
Bedrock (undifferentiated):		
Lignite	1	282
Clay, sandy, gray	8	290
Lignite, brown	3	293
Clay, sandy, gray, with lignite fragments	24	317
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Well 161-84-17dd2 1/.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil, clay, and sand	65	65
Bedrock:		
Shale, sandy (Fort Union formation?)	30	95
Sandstone, coarse	30	125
Shale and sandy shale	143	268
Limestone, thin-bedded	2	270
Shale; gas	2	272
Shale, brown and blue	23	295
Limestone, thin-bedded	1	296
Sandstone; water	19	315
Shale, with thin-bedded limestone	10	325
Lignite	5	330
Shale, sandy, gray	5	335
Shale, gray	43	378
Limestone, thin-bedded	1	379
Shale, brown	111	490
Sandy shale	110	600
Shale, gray and brown (Pierre shale?)	245	845
Shale, sandy; water	5	850
Shale, gray to blue	220	1,070
Shale, black	25	1,095
Shale, gray to blue	330	1,425
Limestone, thin-bedded	1	1,426
Shale, blue	53	1,479
Limestone, thin-bedded	1	1,480
Shale, gray and brown	390	1,870
Shale, gray; trace of oil	40	1,910
Shale, black to brown	510	2,420
Shale, limy, black, trace of oil	85	2,505
Limestone, thin-bedded	5	2,510
Shale, brown and thin-bedded limestone	90	2,600
Shale, brown	55	2,655
Shale, gray; small amount of gas	345	3,000
Shale, gray to blue	50	3,050
Sandstone; no water	10	3,060
Shale, gray	35	3,095
Limestone, thin-bedded	15	3,110
Shale, gray	90	3,200
Limestone and sandstone, broken	15	3,215
Limestone and sandstone, hard	4	3,219
Limestone, sandy	21	3,240
Shale, sandy	10	3,250
Shale, gray	20	3,270
Sandstone	20	3,290
Limestone	10	3,300
Shale, gray	10	3,310
Sandstone	2	3,312

(Continued)

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Well 161-84-17dd2 [1]. (Continued)

	Thickness (feet)	Depth (feet)
Bedrock:		
Shale, gray	3	3,315
Sandstone; water	15	3,330
Sandstone; small amount of gas	10	3,340
Shale, gray; small amount of gas (Jurassic?)	30	3,370
Shale, sandy, gray	30	3,400
Shale, gray	30	3,430
Limestone, gray to blue	20	3,450
Shale, with thin-bedded limestone	20	3,470
Limestone and shale, broken	25	3,495
Shale, hard	5	3,500
Limestone, sandy; water	5	3,505
Shale, blue and gray	232	3,737
Shale, red to gray	98	3,835
Limestone, sandy	9	3,844
Sandstone	11	3,855
Shale, hard, gray	3	3,858
Limestone, sandy	5	3,863
Sandstone	2	3,865
Shale, hard, gray	7	3,872

[1] Log modified from Laird, W. M., Selected deep well records: North Dakota Geol. Survey Bull. 12, pp. 4-6, 1941. Geologic names as published have been omitted because not now used by the U. S. Geological Survey.

Well 161-84-21ba [1].

Glacial drift:		
Sand and clay	75	75
Bedrock (undifferentiated):		
Shale and sandy shale	188	263
Shale and sandstone	19	282
Sandstone; gas	13	295
Sandstone and shale; water	47	342
Lignite	2	344
Sandstone and shale; water	6	350

[1] Log modified from Simpson, op. cit. p. 206.

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 161-85-24aa. Located 59 feet south and 835 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with gravel and boulders	11	12
Gravel and sand, with lignite fragments	6	18
Clay, sandy, yellow	2	20
Clay, sandy, gray, with boulders	11	31
Strips of fine sand and gray sandy clay	5	36
Clay, sandy, gray, with thin strips of gravel and fine sand and thin strips of lignite fragments	40	76
Sand, fine	2	78
Clay, sandy, gray, with thin strips of fine sand	28	106
Gravel	1	107
Clay, sandy, gray, with thin strips of gravel and sand	14	121
Strips of gravel and gray sandy clay	19	140
Gravel with strips of clay	9	149
Strips of gray sandy clay and gravel	25	174
Clay, sandy, gray, with thin strips of gravel	36	210
Clay, sandy, gray, with thin strips of gravel and boulders	8	218
Boulder, granite	3	221
Clay, sandy, gray, with gravel and boulders	23	244
Clay, sandy, gray, with brown, sandy, clay, gravel and boulders	6	250
Bedrock (undifferentiated):		
Clay, sandy, gray, with brown, clay	10	260
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 161-87-12dd. Located 23 feet north and 87 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, silty, yellow	2	4
Gravel and yellow clay	4	8
Clay, sandy, yellow	11	19
Clay, sandy, gray	5	24
Boulder, limestone	1	25
Clay, sandy, gray, with some gravel	6	31
Lignite fragments	1	32
Clay, sandy, gray	4	36
Clay, sandy, gray, with strips of hard clay	4	40
Clay, sandy, gray, with some gravel	35	75
Clay, sandy, gray, with some gravel and lignite fragments	145	220
Clay, sandy, gray, with strips of limestone and granite boulders	7	227
Clay, sandy, gray, with some gravel	29	256
Bedrock (undifferentiated):		
Clay, gray	19	275
Sand, fine, gray	10	285
Hole filled.		

Test hole 161-87-23aa. Located 210 feet south and 14 feet west of northeast section corner.

Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with some gravel	20	21
Sand, fine and clay	4	25
Clay, sandy, gray	7	32
Sand, fine, and gravel	3	35
Clay, sandy, with some strips of lignite fragments	20	55
Sand, fine, and lignite fragments	40	95
Gravel, fine and sand	10	105
Clay, sandy, gray, with lignite fragments	11	116
"Rock"	2	118
Clay, sandy, gray, with some gravel and lignite fragments	78	196
Bedrock (undifferentiated)		
Clay, gray	7	203
Lignite	7	210
Clay, gray, with strip of lignite	31	241
Sand, fine, gray	14	255
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 162-84-25dd1. Located 508 feet north and 45 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Sand and gravel	4	5
Clay, sandy, gray, with some gravel	25	30
Sand, fine and gravel	2	32
Clay, sandy, gray, and gravel mixed	46	78
Clay, silty, sandy, gray, with some fine gravel	78	156
Clay, sandy, gray, with some gravel	39	195
Clay, sandy, gray, with some lignite fragments and gravel	33	228
Bedrock (undifferentiated):		
Clay, sandy, gray, and brown carbonaceous shale	27	255
Hole filled.		

Test hole 162-84-25dd2. Located 29 feet north and 486 feet west of southeast section corner.

Glacial drift:		
Soil	1	1
Clay, gray	2	3
Sand, fine, and gravel	3	6
Clay, gray, with some gravel	10	16
Clay, sandy, silty	27	43
Clay, sandy, gray, with some lignite fragments	37	80
Clay, sandy, gray, with some gravel	25	105
Bedrock (undifferentiated) (not reached)		
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 162-86-12dd. Located 430 feet north and 20 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with some gravel	18	19
Clay, sandy, gray, with some gravel	17	36
Clay, sandy, silty, gray	8	44
Clay, sandy, gray, with some gravel	25	69
Sand, fine, and gravel	3	72
Clay, sandy, gray, with strips of gravel and lignite fragments	19	91
Clay, sandy, gray, with strips of lignite fragments	14	105
Clay, sandy, gray, with strips of gravel and lignite fragments	11	116
Clay, sandy, gray, with gravel and lignite fragments	19	135
Clay, sandy, gray, with lignite fragments	15	150
Clay, sandy, gray, with some gravel and lignite fragments	35	185
Clay, sandy, gray, with strips of gravel	11	196
Gravel and fine sand	5	201
Clay, sandy, gray, with some gravel	47	248
Gravel and fine sand, with some gray clay	5	253
Clay, sandy, gray, with some fine gravel	35	288
Sandstone	5	293
Bedrock (undifferentiated):		
Clay, sandy	24	317
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 162-86-28cc. Flood plain, Souris River.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	7	7
Clay, silty, yellow	6	13
Clay, silty, blue	19	32
Sand, fine, and gravel with a few clam shells	4	36
Clay, sandy, silty, gray	8	44
Sand, fine, gravel, some shells in it	19	63
Gravel, coarse, and boulders	8	71
Bedrock (undifferentiated):		
Lignite, and strips of brown clay	8	79
Clay, sandy, gray	4	83
Lignite and brown clay	3	86
Clay, sandy, gray	6	92
Lignite	2	94
Clay, sandy, gray	6	100
Lignite	1	101
Clay, sandy, gray	5	106
Lignite	3	109
Clay, sandy, gray	16	125
Hole filled.		

Test hole 163-84-5ba. Located 61 feet south and 0.51 mile west of northeast section corner.

Glacial drift:		
Soil	1	1
Sand and gravel	24	25
Gravel with some sandy gray clay	7	32
Sand, fine and lignite fragments	5	37
Gravel, fine and gray, sandy, clay	3	40
Clay, silty, sandy, gray, with some gravel	23	63
Clay, sandy, gray, with some gravel	37	100
Boulders, limestone and granite	1	101
Clay, sandy, gray, with some gravel	14	115
Clay, sandy, gray, with small strips of gravel.	24	139
Clay, sandy, gray, with some gravel and lignite fragments	40	179
Clay, sandy, gray, with some gravel	56	235
Bedrock (undifferentiated):		
Clay, sandy, gray	10	245
Hole filled.		

Table 26--Logs of wells and test holes in Renville County, North Dakota--Con.

Test hole 163-85-26bb. Located 22 feet south and 46 feet east of northwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Gravel with strips of yellow, sandy clay	11	11
Clay, sandy, gray, with gravel	19	30
Clay, sandy, gray, with small strips of gravel	10	40
Lignite fragments	1	41
Clay, sandy, gray with gravel	9	50
Clay, sandy, gray, with strips of gravel	9	59
Clay, sandy, gray, with gravel and lignite fragments	41	100
Lignite fragments	1	101
Clay, sandy, gray, with gravel	22	123
Gravel with small strips of gray sandy clay ..	3	126
Clay, sandy, gray, with strips of gravel and boulders	78	204
Clay, sandy, gray, with gravel and lignite fragments	35	239
Strips of gray, sandy clay and gravel	6	245
Clay, sandy, gray, with gravel	20	265
Clay, sandy, gray, with strips of light gray and brown, sandy clay	15	280
Bedrock (undifferentiated):		
Clay, sandy, gray, and brown, sandy, clay, and strips of lignite	30	310
Hole filled.		

Table 26--Logs of wells and test holes in Ronville County, North Dakota--Con.

Test hole 163-87-31dd2. Located 26 feet north and 18 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, sandy, yellow, with some large rocks and gravel	11	13
Clay, sandy, gray, with some gravel	20	33
Gravel	2	35
Gravel and gray sandy clay, in strips, also lignite fragments	19	54
Gravel, with some clay strips	9	63
Clay, sandy, gray, with some gravel	13	76
Clay, sandy, gray, with some gravel and lignite fragments	31	107
Clay, sandy, gray	18	125
Clay, sandy, gray, with some gravel and lignite fragments	18	143
Gravel	2	145
Clay, silty, sandy, gray, with some gravel and lignite fragments	35	180
Clay, sandy, gray, with small strips of gravel	16	196
Boulder, granite and limestone	3	199
Clay, gray, sandy, with some gravel and lignite fragments	16	215
Fort Union formation:		
Clay, gray	11	226
Clay, brown (carbonaceous)	4	230
Sand, gray	25	255
Hole filled.		

Table 26--Logs of wells and test holes in Ward County, North Dakota

Test hole 153-81-1aa. Located 72 feet south and 18 feet west of northeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow, with some gravel	24	26
Clay, brown, with some gravel	7	33
Sand and gravel, coarse, clean	16	49
Clay, sandy, gray, with some gravel	30	79
Fort Union formation:		
Clay, gray, with some brown clay	9	88
Clay, sandy, silty, gray	7	95
Clay, gray	15	110
Sandstone, gray	1	111
Clay, silty, sandy, gray	59	170
Clay, sandy, green	9	179
Sandstone, hard	1	180
Clay, silty, sandy, gray, with some brown clay	55	235
Clay, sandy, gray	35	270
Sandstone, brown, hard	1	271
Clay, sandy, gray, with some lignite fragments	33	304
Sandstone, hard	1	305
Clay, sandy, gray, with some lignite fragments	2	307
Hole filled.		

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 153-81-11ba. Located 0.1 mile south of bridge over Souris River and 34 feet west of section line.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, silty, yellow	7	8
Sand, fine	8	16
Gravel, with some lignite fragments	11	27
Gravel and gray silty clay	8	35
Sand and gravel, with some lignite fragments	9	46
Clay, sandy, silty, fine, gray, with some lignite fragments	48	94
Boulder, limestone, hard	2	96
Clay, sandy, gray, with some gravel	34	130
Clay, sandy, gray	38	168
Fort Union formation:		
Clay, sandy, gray	24	192
Clay, sandy, gray	31	223
Lignite	1	224
Clay, silty, sandy, gray	13	237
Sandstone, gray, hard	2	239
Clay, sandy, gray	7	246
Clay, gray, with some green sandy clay	8	254
Clay, gray, with thin strips of brown clay	23	277
Clay, sandy, gray	6	283
Clay, gray	8	291
Sandstone, hard	1	292
Clay, brown and gray	5	297
Hole filled.		

Test hole 155-81-13aa. Located 13 feet south and 58 feet west of northeast section corner.

Glacial drift:		
Soil	1	1
Silt, fine, and sandy clay	5	6
Clay, yellow, with some gravel	21	27
Sand and gravel	9	36
Clay, sandy, gray	7	43
Sand and gravel, coarse	44	87
Boulder, granite	2	89
Fort Union formation:		
Clay, gray	17	106
Hole filled.		

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-82-19aa. Located 95 feet south and 45 feet west of northeast corner section.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, sandy, yellow, with some gravel and fine sand	13	14
Clay, sandy, brown, with some gravel	3	17
Clay, sandy, yellow, with some gravel	16	33
Clay, sandy, brown	4	37
Clay, sandy, gray, with some gravel	4	41
Clay, sandy, gray, with thin strips of gravel	2	43
Sand, fine, and gravel with thin strips of lignite fragments and gray, sandy clay	11	54
Clay, sandy, gray, with thin strips of fine sand and lignite fragments	5	59
Sand, fine	1	60
Clay, sandy, gray, with thin strips of lignite fragments	2	62
Sand, fine	1	63
Clay, sandy, gray, with thin strips of lignite fragments	11	74
Fort Union formation:		
Clay, sandy, gray, with strips of lignite	3	77
Sand, gray, compact	15	92
Lignite	3	95
Sand, compact, gray and lignite in strips	5	100
Hole filled.		

Well 155-83-13cb 1/.

Alluvium and glacial drift:		
Clay, yellow to gray	34	34
Sand and clay	9	43
Clay, blue	15	58
Sand and clay	12	70
Clay, blue	20	90
Sand, fine	10	100
Sand; water	18	118
Clay, blue	2	120

1/ Log from Minot Creamery Co.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-14cc. U.S.G.S. A-2 [1].

	Thickness (feet)	Depth (feet)
Sand, silty, and yellow leached clay	10	10
Sand, medium to coarse, brown; buff clay, limestone, limonite, and lignite grains present	20	30
Sand, medium, dark brown, with a few grains of coarse sand and fine gravel	5	35
Sand, fine to medium, light brown and yellow; well-sorted	20	55
Sand, medium, silty, light brown	15	70
Sand, fine to medium, light brown	38	108
Fort Union formation (?)		
Sandstone, yellow-gray, partly cemented with calcium carbonate	19	127

[1] Akin, P. D., Geology and ground-water conditions at Minot, North Dakota. North Dakota Ground-Water Studies No. 6. August 1947.

Test hole 155-83-14cd1. City of Minot, Test No. 3 (1938) [1].

Sand and clay, yellow	24	24
Clay, sandy, blue	34	58
Sand, fine, dirty	75	133
Sand and gravel	11	144
Clay and gravel	2	146
Clay, gray	15	161

[1] Akin, P. D., op. cit.

Test hole 155-83-14cd2. City of Minot Supply Well No. 3 [1].

Soil, sandy, brown	4	4
Sand, fine, silty, brown	12	16
Sand, fine, brown	4	20
Clay, dark olive drab	14	34
Clay, dark olive drab, sandy	12	46
Silt, sandy, brown, with interbedded dark olive-drab clay	20	66
Clay, sandy, dark olive drab	4	70
Silt, sandy, light greenish gray	12	82
Clay, dark olive drab	4	86
Sand, medium, well-rounded, brown	16	102
Sand, fine, well-sorted, gray	22	124
Sand, fine to coarse	4	128
Gravel and sand, dirty	2	130
Gravel and sand	8	138
Silt and sand, gray	2	140
Gravel and sand	18	158
Clay, brown	6	164

[1] Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Well 155-83-14db [1].

	Thickness (feet)	Depth (feet)
Alluvium and glacial drift:		
Clay and sand	86	86
Sand, fine; water	38	124
Sand, coarse; water	6	130
Sand, coarse and gravel; water	28	158

[1] Log from City Engineer, Minot.

Test hole 155-83-14dcl. City of Minot, Supply Well No. 4 [1].

Clay, sandy, and loam	10	10
Sand	12	22
Clay, blue, impervious	70	92
Sand, fine	33	125
Sand, medium to coarse	11	136
Gravel and sand	6	140
Sand, gravel, and boulders	15	155
Gravel, hard-packed	3	158
Gravel and clay	2	160

[1] Akin, P. D., op. cit.

Test hole 155-83-14ddl. U.S.G.S. F-1 [1].

Quaternary sediments:		
No log	115	115
Sand, fine to medium, with some coarse gravel, light brown	10	125
Sand, medium to coarse, brown, well-sorted	18	143
Clay, silty	16	159
Gravel, fine to coarse, and sand; contains white indurated clay pebbles	4	163
Sand, fine to medium, gray, well-sorted	35	198
Clay, gray, with coarse sand and gravel	11	209
Sand, fine to medium, light brown	2	211
Clay, bluish gray, gritty, contains some sand and gravel; calcareous	37	248
Fort Union formation (?)		
Shale, blue-gray; contains few grains of lignite and medium sand; calcareous	10	258
Sandstone, gray, partly cemented	30	288

[1] Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Well 155-83-18ab 1/.

	Thickness (feet)	Depth (feet)
Alluvium and glacial drift:		
Sand and gravel; water	108	108
Fort Union formation:		
Lignite and lignitic shale	12	120
Shale, blue	40	160
Lignite	6	166
Shale, gray	9	175
Lignite	3	178
Shale, gray, and sand; water	65	243
Shale, hard, black	1	244
Shale, sandy, black; water and gas under pressure	2	246
Shale, gray	34	280
Sandstone and shale	10	290
Sandstone; water	26	316
Shale, gray	69	385
Shale and sandstone, hard	12	397
Shale, brown	13	410
Sandstone; water and gas under pressure	8	418
Shale, hard; gas	82	500

1/ Log from Velva Petroleum Co.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-22aa. U.S.G.S. A-1 [1].

	Thickness (feet)	Depth (feet)
Quaternary sediments:		
Silt, yellowish brown	13	13
Sand, very fine, light brown, and silt	19	32
Sand, medium-dark brown, with silt, gravel, and lignite	11	43
Sand, medium to coarse, light to dark brown; coarse grains poorly rounded; contains lignite, limestone, limonite, and shale grains	9	52
Sand, fine to medium, light brown	13	65
Sand, very fine to medium; dark-colored grains give it a greenish brown cast; poorly rounded, well-sorted, well-washed; lignite and limonite grains and flakes of mica present	15	80
Sand and gravel, brown; lignite pebbles up to 1 inch in diameter; many fragments of wood and lignite	4	84
Sand, fine to coarse, light brown; grains of shale and lignite common; grains of limonite, limestone and mica present	21	105
Sand, fine to medium, light brown; some coarse grains of shale, lignite and igneous rocks; poorly rounded	7	112
Clay, blue-gray, gritty, with coarse grains of sand	18	130
Fort Union formation (?)		
Clay, blue-gray, indurated, shows conchoidal fracture	20	150
Clay, blue-gray, indurated, conchoidal fracture; contains lignite laminae	10	160
Clay, blue-gray, indurated, conchoidal fracture; contains shell fragments	18	178

[1] Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-22abl. U.S.G.S. B-1 [1].

	Thickness (feet)	Depth (feet)
Quaternary sediments:		
Silt, gray-brown, some fine sand and organic matter	4	4
Sand, medium to coarse, clean, well-sorted and rounded, gray to light brown	5	9
Sand, coarse, well-rounded and sorted, light brown, some lignite grains	14	23
Sand, medium to coarse, well-rounded and sorted light brown, some lignite grains	6	29
Sand, coarse, poorly rounded, brown; contains lignite, mica, pyrite, green and black quartzite, and limestone	3	32
Sand, medium to coarse, well-rounded and sorted, medium brown; contains clear crystalline limestone, lignite, and shale grains	17	49
Sand, coarse, and fine angular gravel; contains shale, black quartzite, clear crystalline limestone, and limonite grains and pebbles	10	59
Sand, medium to coarse, fairly well-rounded, light brown; in part coated and cemented with limestone	5	64
Sand, coarse, light brown, angular to rounded	15	79
Sand, fine to coarse, reddish brown, well-rounded	6	85
Sand, reddish brown, and gray-blue clay	7	92
Fort Union formation (?)		
Silt and clay, gray-blue; cavings (?) of sand and gravel	7	99
Silt and clay, gray-blue, slightly calcareous; silt grains, angular, range 0.1 mm. to 0.01 mm; estimated 70% silt, 30% clay; no sand	10	109
Silt and clay, gray-blue, slightly calcareous; some fine sand and mica flakes	70	179
Silt and clay, gray-blue, slightly calcareous; contains vegetable matter and mica flakes	10	189
Silt and clay, gray-blue, slightly calcareous, some sand	20	209
Silt and clay, gray-blue, slightly calcareous; contains a fresh-water gastropod	10	219
Silt and clay, gray-blue, slightly calcareous, some organic matter	35	254
Silt and clay, gray-blue, slightly calcareous, organic matter, iron-stained in part	35	284
Silt and clay, gray-blue, slightly calcareous, iron-stained; limestone boulder (caved from above (?))	10	294
Silt, clay, gray-blue, slightly calcareous, some sand grains and mica flakes, iron-stained	49	343
Sand, no sample; artesian water	10	353
Struck artesian water in sand between 343 and 353 feet but no samples of the sand were obtained.		

[1] Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-22ad. U.S.G.S. A-3 [1].

	Thickness (feet)	Depth (feet)
Clay, gray; contains some medium grains of quartz sand	12	12
Sand, fine to medium, buff; contains some (fresh-water?) shell fragments	11	23
Clay, gray, with few grains coarse sand, calcareous	6	29
Clay, sand and gravel, calcareous; much wood 44 to 45 feet	40	69
Sand, fine to medium, well-sorted	23	92
Sand, medium to coarse, and fine gravel	36	128

[1] Akin, P. D., op. cit.

Test hole 155-83-22da. U.S.G.S. B-3 [1].

Quaternary sediments:		
Clay, gray, well-leached, with a few grains of sand	9	9
Clay, gray, with a few sand grains; fine material is slightly calcareous	20	23
Clay, gray, with a few grains of igneous rocks and lignite	16	45
Sand, medium dominantly of igneous rocks with a few shale particles; well-sorted	11	56
Sand, medium to coarse, and gravel; boulder chips abundant; some of gravel larger than $\frac{1}{4}$ inch	10	66
Sand, medium to coarse; abundant lignite	2	68
Sand and gravel with pieces of lignite	10	78
Sand, medium to coarse; coarse grains dominantly angular; small buff-colored grains of limestone and shale present	12	90

[1] Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-23ac1. City of Minot, Test No. 12 (1915) 1/.

	Thickness (feet)	Depth (feet)
No log	84	84
Sand, fine to coarse, and gravel	14	38
Sand, fine to coarse	4	102
Sand and gravel	8	110
Sand, medium to coarse	4	114
Sand and gravel	12	126
Sand and gravel, clayey	2	128
Sand and gravel	1	129
Sand and gravel, silty	2	131
Sand and gravel	1	132
Shale or clay, black	1	133
Clay, gray	4	137

1/ Akin, P. D., op. cit.

Test hole 155-83-23ac2. City of Minot, Test No. 11 (1915) 1/.

No log	90	90
Quicksand and clay	3	93
Clay	3	96
Sand, fine, clay and wood	10	106
Sand, coarse	2	108
Sand, fine	2	110
Quicksand and clay	10	120
Sand, coarse	3	123
Clay with sand and gravel	1	124
Quicksand with clay	1	125
Clay and sand	4	129
Clay and gravel	2	131
Clay, blue	3	134
Clay, sand, and gravel	7	141
Sand, fine	1	142
Clay	2	144
Sand, fine, and lignite	1	145
Clay	3	148

1/ Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-23ba1. City of Minot, Test No. 2 (1938) _/.

	Thickness (feet)	Depth (feet)
Sand and clay	36	36
Clay, blue	22	58
Sand and clay	36	94
Sand, fine, hard, brown	4	98
Sand, fine, hard, black	6	104
Sand, fine, clean	14	118
Sand, fine dirty	7	125
Sand and gravel	7	132
Clay, sand, and gravel	4	136
Clay, blue	19	155

_/ Akin, P. D., op. cit.

Test hole 155-83-23ba2. City of Minot, Supply Well No. 2 _/.

Clay, sand, and gravel	85	85
Sand	5	90
Sand, coarse, and clay	4	94
Sand, coarse	4	98
Sand and lignite	3	101
Sand and gravel	7	108
Gravel	5	113
Sand, coarse	2	115
Sand and gravel	3	118
Sand coarse	13	131
Clay and sand	1	132

_/ Akin, P. D., op. cit.

Test hole 155-83-23ba3. City of Minot, Supply Well No. 1 _/.

Clay, sand, and gravel	85	85
Sand, coarse	13	98
Gravel and sand	10	108
Sand, coarse, and lignite	4	112
Sand, fine to coarse	6	118
Gravel	4	122
Sand	4	126
Gravel and clay	4	130
Sand, coarse	5	135
Clay, gravelly, and gumbo	3	138

_/ Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-23ba4. City of Minot, Test No. 8 (1915) 1/.

	Thickness (feet)	Depth (feet)
No log	108	108
Sand, fine to medium, clean	2	110
Sand, medium to coarse	2	112
Sand, coarse, and fine gravel	3	115
Sand, medium to coarse	10	125
Sand, coarse, and fine gravel	5	130
Sand and clay	5	135

1/ Akin, P. D., op. cit.

Test hole 155-83-23ba5. City of Minot, Test No. 1 (1938) 1/.

Sand and clay	70	70
Sand, fine, dirty	48	118
Sand and gravel	2	120
Clay	34	154

1/ Akin, P. D., op. cit.

Test hole 155-83-23bb. City of Minot, Test No. 10 (1915) 1/.

No log	19	19
Sand, fine	8	27
Sand, very fine, yellow	8	35
Clay, gray, silt	47	82
Sand, fine to medium, gray	14	96
Sand and gravel	4	100
Sand, fine to medium	8	108
Sand and gravel	10	118
Sand, fine to medium	1	119
Gravel, fine	2	121
Sand, coarse, angular	5	126

1/ Akin, P. D., op. cit.

Test hole 155-83-23bc1. City of Minot, Test No. 3 (1915) 1/.

No log	7	7
Sand, fine to medium	21	28
Silt, sandy, yellow	2	30
Silt, sandy, white	5	35
Silt, gray	21	56
Sand, fine, and clay	6	62
Silt, sandy, dark gray	13	75

1/ Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-23bc2. City of Minot, Test No. 4 (1915) 1/.

	Thickness (feet)	Depth (feet)
No log	13	13
Sand, fine	1	14
Sand, very fine, white	6	20
Sand, fine, gray	23	43

1/ Akin, P. D., op. cit.

Test hole 155-83-23bc3. City of Minot, Test No. 6 (1915) 1/.

No log	19	19
Quicksand	1	20
Sand, fine	15	35
Sand, fine and clay	47	82
Quicksand	16	98
Sand, fine, and clay	2	100
Sand, fine	7	107
Sand, fine, and clay	10	117
Sand, coarse	1	118
Sand and clay	2	120
Sand, coarse	1	121
Sand, fine	5	126

1/ Akin, P. D., op. cit.

Test hole 155-83-23bd1. City of Minot, Test No. 7 (1915) 1/.

No log	117	117
Sand, coarse, well-sorted	10	127
Gravel and sand	6	133

1/ Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Well 155-83-23cb1 [1].

	Thickness (Feet)	Depth (feet)
Alluvium and glacial drift:		
Soil	4	4
Clay, sandy, yellow	5	9
Clay, yellow	10	19
Sand, fine to coarse, with clay	10	29
Sand, fine to coarse, gray, and silt	16	45
Clay, blue, with sand, gravel and lignite fragments	34	79
Clay, blue	7	86
Clay, blue, with sand	48	134
Clay, blue	15	149
Clay, blue, with sand and gravel	20	169
Clay, blue	20	189
Clay, blue, with sand	50	239
Clay, blue, with sand and gravel	10	249
Sand, fine, gray to blue, and lignite fragments	17	266

[1] Log from City Engineer, Minot.

Test hole 155-83-23cb2. U.S.G.S. A-4 [1].

Clay, yellow-gray, well-leached	4	4
Clay, yellow-gray, with limestone and other sand grains, calcareous	15	19
Sand, fine to coarse, and fine gravel	26	45
Clay, gray, silty, calcareous	34	79
Clay, yellow-gray to brown, gritty, sand grains and pebbles mostly angular	20	99
Shale, blue-gray, non-calcareous	140	239
Sandstone, gray, loosely cemented	27	266

[1] Akin, P. D., op. cit.

Test hole 155-83-24ba1. Northern States Power Company, well No. 2 [1].

Fill	5	5
Clay	5	10
Clay, sandy	25	35
Clay, blue	35	70
Clay, sandy	13	83
Sand	14	97
Sand and gravel	12	109
Clay, sandy	2	111

[1] Akin, P. D., op. cit.

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 155-83-24ba2. Northern States Power Company, well No. 1 ✓.

	Thickness (feet)	Depth (feet)
Fill	18	18
Clay, blue	54	72
Clay, sandy	10	82
Sand and gravel	18	100
Clay, blue	2	102

✓ Akin, P. D., op. cit.

Test hole 156-81-17cc. Located 111 feet north and 142 feet east of southwest section corner.

Glacial drift:		
Soil	1	1
Clay, yellow	14	15
Sand and gravel	3	18
Clay, sandy, gray	7	25
Gravel with thin strips of gray clay	11	36
Clay, sandy, gray, with some gravel	60	96
Sand, fine and gravel	13	109
Bedrock (undifferentiated):		
Clay, gray	29	138
Hole filled.		

Test hole 156-82-34dd. Located 382 feet north and 29 feet west of southeast section corner.

Glacial drift:		
Soil	1	1
Clay, yellow, with some gravel	15	16
Clay, brown, with some gravel	13	29
Clay, sandy, gray	4	33
Sand and gravel	2	35
Sand, fine	16	51
Clay, silty sandy, gray, with some gravel.	20	71
Clay, sandy, gray, with some lignite fragments and gravel	4	75
Clay, sandy, gray, with thick strips of gravel	20	95
Clay, sandy, gray, and fine sand	4	99
Bedrock (undifferentiated):		
Clay, sandy, silty, gray	7	106
Boulder, granite, (soft)	8	114
Clay, sandy, silty, gray	12	126
Hole filled.		

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 157-82-28dd. Located 87 feet north and 23 feet west of southeast section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	2	2
Clay, yellow, with some gravel	15	17
Clay, sandy, brown, with some gravel	6	23
Clay, sandy, gray, with some gravel	5	28
Gravel	3	31
Clay, sandy, gray, and gravel, in strips	4	35
Gravel	5	40
Clay, sandy, gray, and gravel, in strips	6	46
Gravel	1	47
Clay, sandy, gray, with some gravel	36	83
Clay, sandy, gray, with thin strips of gravel and lignite fragments	8	91
Gravel, with strips of gray, sandy clay and lignite fragments	3	94
Clay, sandy, gray, gravel, and lignite fragments, in thin strips	6	100
Clay, sandy, gray, with gravel and fine sand and thin strips of lignite fragments	19	119
Clay, sandy, gray, with thin strips of fine sand , gravel, and lignite fragments	11	130
Clay, sandy, gray, with some gravel and boulders	2	132
Clay, sandy, gray	10	142
Gravel, with strips of gray sandy clay	2	144
Bedrock (undifferentiated):		
Clay, sandy, gray	53	197
Shale	4	201
Clay, sandy, gray	9	210
Hole filled.		

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 157-83-9cc. Located 59 feet north and 27 feet east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glcaial drift:		
Soil	1	1
Clay, yellow, with some gravel and fine sand	3	4
Clay, yellow, with some gravel	6	10
Clay, sandy, yellow, with strips of fine sand.	3	13
Sand, fine	4	17
Clay, sandy, gray	11	28
Clay, sandy, gray, with strips of fine sand	6	34
Sand, fine	6	40
Clay, sandy, gray, with thin strips of gravel and fine sand	14	54
Clay, sandy, gray, with some gravel	4	58
Sand, fine, and gravel	2	60
Clay, sandy, gray, with thin strips of gravel.	3	63
Clay, sandy, gray, with some gravel and some thin strips of gravel	18	81
Gravel and fine sand	1	82
Clay, sandy, gray, with thin strips of gravel.	2	84
Gravel and fine sand	1	85
Clay, sandy, gray, with thin strips of gravel.	6	91
Sand, fine, and gravel with some lignite fragments	3	94
Clay, sandy, gray, with thin strips of gravel and lignite fragments	27	121
Clay, sandy, gray, with gravel and fine sand and thin strips of gravel	41	162
Boulders	1	163
Clay, sandy, gray, with thin strips of gravel and fine sand	15	178
Clay, sandy, gray, with some gravel	12	190
Clay, sandy, gray, with strips of fine sand and gravel	6	196
Bedrock (undifferentiated):		
Sand, gray, compact	14	210
Hole filled.		

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 157-83-30bb. Located 51 feet south and 45 feet east of northwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	3	3
Clay, yellow	9	12
Clay, gray, with some gravel	34	46
Clay, sandy, gray, with some strips of fine sand and gravel	10	56
Sand and gravel	4	60
Clay, sandy, gray	4	64
Sand, fine, and gravel	23	87
Clay, sandy, gray, with some gravel and lignite fragments	133	220
Bedrock (undifferentiated):		
Clay, brown and gray, with some gray, sandy clay	25	245
Hole filled.		

Test hole 157-84-35cd. Located 46 feet north and 0.26 mile east of southwest section corner.

Glacial drift:		
Soil	1	1
Clay, yellow, with some gravel	15	16
Clay, yellow, and fine sand	3	19
Sand, fine, and gravel	4	23
Clay, yellowish brown, with some gravel	9	32
Clay, sandy, gray, with some gravel	9	41
Clay, silty, sandy, gray, with some gravel and lignite fragments	28	69
Clay, sandy, gray, with thin strips of lignite fragments and gravel	7	76
Clay, silty, sandy, gray, with some lignite fragments and gravel	19	95
Clay, silty, sandy, gray, with some lignite fragments	59	154
Bedrock (undifferentiated):		
Clay, gray	7	161
Clay, brown, and lignite with some gray, silty clay	7	168
Clay, sandy, gray	17	185
Hole filled.		

Table 27--Logs of wells and test holes in Ward County, North Dakota--Con.

Test hole 160-88-10cc. Located 24 feet north and 53 feet east of southwest section corner.

	Thickness (feet)	Depth (feet)
Glacial drift:		
Soil	1	1
Clay, yellow, with some gravel	16	17
Clay, sandy, gray, with some gravel	4	21
Boulder, limestone	1	22
Clay, sandy, gray, with some gravel	2	24
Boulder, limestone	1	25
Sand, fine and gravel with strips of gray sandy clay	15	40
Sand, fine, gray	5	45
Clay, sandy, gray, with some gravel and lignite fragments	6	51
Clay, sandy, gray, with small strips of lignite fragments	25	76
Gravel, with strips of lignite fragments	3	79
Clay, sandy, gray, with small strips of lignite fragments and gravel	32	111
Clay, sandy, gray, with strips of lignite fragments and gravel	7	118
Boulder, limestone	1	119
Clay, sandy, gray, with small strips of lignite fragments and gravel	15	134
Clay, sandy, gray, with strips of fine sand	26	160
Clay, sandy, gray, with boulders	2	162
Clay, sandy, gray, with strips of fine sand	3	165
Clay, sandy, gray, with some lignite fragments	16	181
Clay, sandy, gray, with small strips of lignite fragments and gravel, some boulders	119	300
Clay, sandy, gray, with strips of gravel, some boulders	23	323
Strips of gray sandy clay, gravel, and some lignite fragments and boulders	24	347
Limestone	1	348
Fort Union formation:		
Lignite	2	350
Strips of hard lignite, and gray sandy clay	5	355
Lignite, hard	4	359
Strips of lignite, gray sandy clay	5	364
Strips of lignite, light gray compact sand, and light brown sandy clay	12	376
Clay, sandy, gray, with some lignite	4	380
Clay, sandy, white, with gray sandy clay	13	393
Clay, sandy, white, with some lignite	7	400

Hole filled.

Table -- Record of Wells in Bottineau County, North Dakota

Well number 1/	Owner or tenant	Type of well 2/	Depth of well (feet) 3/	Diameter of well (in.)	Type of casing 4/	Character of water-bearing material 5/	Method of lift 6/	Use of water 7/	Measuring point: Description 8/	Measuring point: Distance above land surface (feet)	Measuring point: Height above mean sea-level (feet)	Depth to water level below measuring point (feet) 9/	Date of measurement	Chemical analysis 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 81 W.													
4cd	Mrs. J. Roberts	Dn	12	2	P	S	P,H	D,S				10	10- 9-45	
5aa	H. W. Weiz	Du	11	12	W	S,G	CY,W	D,S				8	10-20-47	
5cb	C. Zurkan	Dr	220	6	P		FO.1	S				Flow	10-20-47	P
6ba	H. L. Diamond	Du	10.5	48	W		N	N,D	Tca	2.8		9.10	10- 9-45	
6da	N. J. Fox	Dr	300	4	P		CY,G	S	Tco	1.9		12.14	10-20-47	P
10ab	J. H. Gilbert	Dn	15	2	P	S	CY,W	S				10	10- 9-45	

Footnotes:

1. Location number: Well numbers give the location of wells according to General Land Office Surveys and according to the following formula: Township--Range--Section, 160-acre tract within that section, and the 40-acre tract within the quarter section. If two or more wells are located within a 40-acre tract, the wells are numbered serially according to the order in which they were inventoried. The 160-acre and 40-acre tracts are designated a, b, c or d in a counter-clockwise direction beginning in the northeast quarter. For example: Well 162-96-5cd1 is located in SE¼, Sec. 5, T. 162 N., R. 96 W., and was the first of two or more wells inventoried in that 40-acre tract. In this tabulation, the numbers representing the township and range have been omitted in the column headed "Well number".

2. B, bored well; DD dug and drilled well; Dn, driven well; Dr, drilled well; Du, dug well; Sp, spring.

3. Reported depths below the land surface are given in feet; measured depths are given in feet and tenths below measuring points.

4. C, concrete (brick tile or pipe); P, iron or steel pipe; T, clay tile; W, wood.

5. Cl, clay, and sandy clay; Clb, blue sandy clay; Cly, yellow sandy clay; G, gravel; L, lignite; Q, quicksand; R, rock undifferentiated; S, sand; Sh, shale; Ss, sandstone; X, see well logs.

6. Method of lift: C, horizontal centrifugal; Cy, cylinder; F, natural flow; N, none; P, pitcher pump; S, submersible turbine; T, turbine; VC, vertical centrifugal.
Type of Power: B, butane; E, electric; G, gas engine; H, hand operated; T, tractor; W, windmill.
Flow given in gallons a minute.

7. D, domestic; I, irrigation; In, industrial; N, not being used; O, observation; P, public supply; S, stock.

8. Bp, base of pump; Hp, hole in pump base; Hc, hole in casing; L, land surface; Tca, top of casing; Tco, top of cover; Tcu; top of curb; Tp, top of pump.

9. Measured depths to water level are given in feet, tenths and hundredths; reported depths to water level are given in feet.

10. P, partial analysis; C, complete analysis; U, reported as not suitable for domestic use.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 81 W. cont.													
11da	H. M. Clark	Du	11			S	CY,H	D,S,O	Bp	2.0		7.70	10- 9-45	
15ad		Du		12	P		CY,H	N	Tco	.1		7.05	10-21-47	
17cc	C. Koehler	Du	8	40	W		N	N	Tco	.0		6.18	10-20-47	
19aa	U.S. Geological Survey	Dr	245.0	4 3/4	N	X	N	N	L		1520	5.52	8-12-47	P
19cc	W. Henning	Dr					CY,W	S						P
19dc	Alfred Nelson	Du	12.8	48	W		CY,H	D,O	Tca	.5		10.25	10-10-45	
20dd	J. Magnuson	Du	9	48	C	S,G	CY,W	D,S	Tco	.6		9.39	10-21-47	
21aa1	O. Erickson	Du	6.4	40	C		CY,H	N	Tco	1.3		7.11	10-21-47	
21aa2	do.	Du		40	C		CY,W	S	Tca	.8		7.61	10-21-47	
22ad	G. Barlow	Du	8	40	W	S,G	CY,W	S				6	10-21-47	
22da1	N. Mickleson	Du	10	40	W		CY,H	D	Tco	1.7		7.69	10-21-47	
22da2	do.	Du	8	40	W		N	N	Tca	1.9		7.62	10-21-47	
22dd	do.	Dr	190	4	P		CY,W	S				15	10-21-47	P
23cc	Marcus Mickleson	Du	16	40	C	S	CY,G	D,S	Tca	1.1		9.36	10-21-47	
23dd	Kjomaas	Du	11.7	48	W		CY,W	S,O	Tca	.8		10.05	10-10-45	
24bb	Ira Johnson	Dr	300	3	P	Ss	CY,W	D,S				50	10-10-45	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 81 W. cont.													
25dd	G. W. Douglas	Dr	300	3	P		CY,W	D,S				40	10-10-45	U
27ab	Carl Kjomaas	Du	12.9	48	C	S,G	F,H	D,S,O	Tco	1.2		11.20	10-10-47	
27ba1	John Erickson	Du	16	48	W	S,G	CY,W	S	Tco	.3		8.20	10-20-47	
27ba2	do.	Dn	16	1¼	P	S,G	F,H	D						
27ba3	do.	Du	13	40	C	S,G	N	N						
28ab	T. Steen	Dr	185	3	P	S	CY,W	S						
28dc		Dr		3	P		CY,W	S						
28dd	P. Slobacker	Dr	240	4	P		CY,W	S				15	10-21-47	
29da1	G. W. Steen	Du		36	C		CY,H	S	Bp	.6		8.59	10-21-47	
29da2	do.	Du		36	C		CY,H	D,S	Tco	.9		8.59	10-21-47	
31cc	Lewis Steen	Dr	320	4	P		CY,W	S				35	10-21-47	F
32cc		Dr					CY,W	S						P
33bb	Dr. Knutson	Dr		4	P		CY,W	S						F
33dc	E. E. Brace	Dr	190	4	P		CY,W	S						P
34bb	Helgeson	Dr	180	4	P	Ss	CY,W	S				50	10-21-47	P
34cd		Du		36	W		N	N,O	Tca	.6		13.75	10-10-45	
35bb	Faunderson	Du	11	36	C	S,G	CY,W	D,S	Tca	1.0		8.92	10-21-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 82 W.													
1aa	H. L. Diamond	Du	15.5	48	W		CY,W	D,S,O	Tco	1.5		10.22	10- 9-45	
2cb	Harold Tarcustad	Dr	196	5	P		CY,W	S						P
2cc	Catherine Keeler	Dr	213	5	P		CY,W	S						P
3aa	P. Jimmy	Dr	250	4	P		CY,W	S				8	10- 9-47	P
5ab	F. R. States	Du	15	24	T	G	CY,H	D,S,O	Tco	1.3		11.10	10- 9-45	
5bb		Du	6.7	48	W	G	N	N,O	Tco	2.0		4.90	10- 3-45	
5db1	C. Gunning	Du	16	40	C		CY,H	S	Tca	2.2		7.48	10-17-47	
5db2	do.	Du	16	40	C		CY,W	D,S						
6aa	Ole Sather	Du	9	18	T		CY,W	D,S				9	10- 3-45	
7cc	B. Helmoning	Dr	441	4-6	P		CY,W	N	Hp	1.3		31.50	10-10-47	
8cc	John Oos	Dr	260	3-5	P		CY,W	S						P
9bb	H. Flom	Du	6	40	C	G	CY,H	S	Tca	3.0		7.14	10-17-47	
11bc	John A. Running	Dr	312	2	P		CY,W	S				40	10- 9-47	
11dc	L. Elm	Dr	240	4	P		CY,W	N				40	10- 9-47	
13ab	John H. Olliges	Du	14	18	T	G	CY,W	D,S,O	Tco	.8		11.80	10-10-45	
14bb	J. B. Simonedge	Dr	250	5	P		CY,W	S						P

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 82 W. cont.													
15bb		Dr	230	4	P	L								
15da1	Gunning	Du		8	T		CY,H	N	Bp	1.1		15.36	10- 9-47	
15da2	do.	Dr	200	5	P	G	CY,W	S						P
16aa		Du	9.5	48	W		N	N,O	Tco	1.7		8.05	10-10-45	
17dc	Ottis Talseth	Du		24	C		CY,W	N	Tca	1.4		3.74	10- 9-47	
18aa		Du	12.0	48	W		CY,H	D,O	Bp	2.5		8.50	10- 3-45	
20bc		Dr		4	P		N	N						
21dc	Invold Bjerken	Dr	250	4	P		CY,W	S				10	10- 9-47	P
22dc	E. German	Dr		3	P		N	N						
23ad	E. E. Lony	Dr	250	3	P		CY,W	N				16	10-20-47	
24aa1	Roy Rutledge	Du	16	40	W		CY,H	D						
24aa2	do.	Dr	236	4	P		CY,W	S				16	10-20-47	P
25bb		Dr	200	4	P	Ss								
25cd	M. E. O'Connell	Dr	160	2-3	P		CY,W	S						C,P
28dc	G. Brooks	Dr	260	4	P		CY,W	S	Tca	.7		37.14	10-17-47	P
29cd		Dr		3	P		N	N	Tca	1.6		28.40	10-17-47	
30ba	G. Egen	Dn	10	1¼	T		T,G	S				5	10-10-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 82 W. cont.													
31cb	O. Blunken	Dr	270	4	P		CY,H	N				30	10-17-47	P
33ba	Elmer Kiedski	Dr	360		P		CY,G	S				28	10-17-47	P
34ad	Basil O'Connell	Dn			P		CY,G	S						
34dd	U.S. Geological Survey	Dr	210.0	4 3/4	N	X	N	N	L		1551.79	7.21	8-12-47	
35ad	Clarence Stein	Dr	300	4	P		CY,W	S						P
35bb	F. A. Christman	Dr	160	6	P		CY,G	D,S						P
35cc	A. Drcuth	Du	14	24	C		CY,G	S	Bp	1.6		10.77	10-21-47	
	T. 159 N., R. 83 W.													
1ba	J. Talley	Dr	318	6	P	S,Ss	CY,E	S				18	10- 8-47	P
2aa	T. Nelson	Du	10	40	W	S,G	N	N				7	10- 8-47	
2ab	do.	Du		48	W		N	N	Tca	1.8		6.05	10- 8-47	
2ad		Du		18	C		F,H	D						
2bc	E. LaClair	Du	14	48	W		CY,W	D,S	Bp	.8		10.31	10-17-47	
2cb	Lester Convass	Du	10	40	C		CY,E	D,S						
3ba	Town of Lansford	Dr	254	4	P	Ss	Fire							C
3cd	Delbert Bradley	Dr	340	6	P		CY,W	S						P
3dc	Roy Helming	Dr	280	4	P	G,Sh	CY,W	S						

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 83 W. cont.													
4bc	S. A. Martinson	Du	10	40	W	S,G	CY,W	D,S						
6cc	A. Holburg	Du	15½	24	F	G	CY,H	N,O	Tco	2.6		8.15	10- 2-45	
7da	W. Davis	Du	15	40	W	S,G	T,G	D,S				10	10-13-47	
7dd	do.	Du		40	W	S,G	CY,H	S						
8dd		Du					CY,H	N						
9aa	Martinson Estate	Du	16.1	48	F		CY,G	D,S,O	Tca	1.5		7.45	10- 7-45	
9cc	E. Stewart	Dr	310	4	P		CY,W	N						
9dd	McCloud	Dr	380	3-6	P	Ss,Sh	CY,W	D,S						P
10ab	Leslie Heath	Dr	317	6	P		CY,W	S						
11ab	L. Helming	Dr	310	3	P	Sh	CY,W	S	Tca	.9		33.72	6-14-47	C
11cc	H. Helming	Du	15	20	T		CY,H	D,O	Tca	2.5		10.65	10- 7-45	
12dc	C. Knutson	Du	18	40	W	S,G	CY,W	N	Bp	.5		5.93	10-10-47	
12dd	do.	Du		40	P	S,G	CY,H	N	Tca	1.0		7.47	10-10-47	
13cc	R. Undlin	Dr	223	5	P		CY,W	S				30	10-10-47	P
14dc1	George Rutledge	Dr	295	4-6	P		CY,W	S						P
14dc2	do.	Du		12	P		CY,H	N	Tca	.5		7.[illegible]	10-10-47	
15da	Clarence Rutledge	Dr	406	2-4	P		CY,E	S						P

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 83 W. cont.													
16ad	M. Nesvig	Dr	285	3	P		CY,W	S						P
17cd	Donald Zieitz	Du	11.0	48	W	S,G	CY,H	D,S,O	Tco	1.6		9.65	10- 7-45	
18bc	E. E. Railing	Dr	42.5	4	P	Sh	CY,W	S						P
18cd	A. Roen	Dr	360	6	P		CY,W	S						P
18dd		Du	14.0	40	N		N	N				Dry	10-13-47	
20cb	Harry Sanukaul	Dr	347	3½-6	P	S,Sh	T,E	S						P
21aa	Charles Zeitz	Dr	285	2-3	P	Ss,Sh	CY,W	S						P
21dd	E. Aaus	Dr	367	4	P		CY,W	S				60	10-15-47	P
22ab	J. J. Rutledge	Dr	341	3-6	P	S,Sh	CY,W	N						P
22bc	F. Johnson	Dr	313	3	P	S,Sh	CY,N	N						
22cc		Dr	220	4	P		CY,N	N						
23cc	George Rutledge	Dr	290	4	P	G,Sh	CY,W	S						P
24bc	Undlin	Du		40	W		CY,H	D	Tco	1.8		6.77	10-10-47	
24cd	G. Kolstead	Du	11	40	W	S,G	CY,H	D	Tco	.9		10.57	10-10-47	
24dd	G. H. Hill	Du	9.3	48	W		CY,W	S,O	Tco	1.4		8.60	10- 8-45	
25cb1	J. L. Nesvig	Du		48	W		CY,G	D,S	Tco	.8		7.65	10-17-47	
25cb2	do.	Dr	430	6	P	Ss,Sh	CY,W	S						P

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 83 W. cont.													
26dc1	L. Espeseth	Du		36	W		CY,H	N	Tco	1.7		7.44	10-17-47	
26dc2	do.	Dr	292	3-4	P		CY,W	S						P
29aa	B. Zeitz	Du	8	40	W	G	CY,G	D,S						
29da	H. E. Houmann	Du	16	36	W	Cl,S	N	N	Tca	2.2		3.71	10-15-47	
31ba	J. Saveldaul	Dr		4	P		CY,E	S						P
33ab		Du,Dn	13	48	W		CY,H	D,S	Tco	1.0		6.27	10-15-47	
33bb		B		18	W		N	N	Tco	1.3		17.82	10-15-47	
33cc	O. Slenneg	Dr	400	5	P	Ss,Sh	CY,W	S						P
34aa	J. Fauther	Du	9				F,H	D,O	Tco	1.1		10.40	10- 7-45	
34ba	do.	Dr	453	4-6	P		CY,W	S						P
34cd		Du		40	W		N	N	Tco	1.1		7.49	10-13-47	
34dd	N. Theis	Dr	322	3-4	F		CY,W	S						P
	T. 160 N., R. 81 W.													
5ad		Dn		1¼	P		CY,H	D,S						
20aa	Pease	Dn	5	1¼	P		F,H	D,S						
20cb1	R. Haskins	Du	8	48	W		CY,H	S	Bp	2.5		6.24	10-20-47	
20cb2	do.	Du		40	W		N	N	Tca	.0		3.73	10-20-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 81 W. cont.													
20cb3	R. Haskins	Dn	8	1¼	P		P,H	D						
21bb1	D. E. Pease	Dn	8	1¼	P	S	P,H	D						
21bb2	do.	Dn	9	1¼	P		CY,W	S						
22de		Dn		1¼	P		P,H	N						
23cb	F. Koehler	Du	12	48	W		N	N				Dry	10-20-47	
25cc	Denver Clark	Du	10	48	W		CY,H	D,S	Bp	1.5		10.30	10-20-47	
26dd	Peter Kelley	Du	6.5	40	W	S	N	N	Tca	.6		5.67	10-20-47	
29dc	Porter Rogers	Du	16	40	W		CY,H	D,S	Tca	.5		9.69	10-20-47	
30ba	Jens Jenson	Dr	275		P		CY,H	D,S						
31bb	Albert White	Du	17	18	C		CY,H	N	Tca	.7		7.53	10-16-47	
32cc	Ruben Mattern	Du	6	24	P		P,H	D,S	Tca	.8		5.34	10-20-47	
32dd		Dn	10	1¼	P		CY,G	D,S						
33ba	A. Rosenthal	Du	10	48	W	G	CY,H	S	Tca	1.5		9.55	10-20-47	
34ad1	John Vogel	Du	8	40	W		N	N	Tco	1.3		7.01	10-20-47	
34ad2	do.	Du	8	40	W		CY,H	S	Tco	.5		5.22	10-20-47	
34cc1	Clarence Roberts	Du	7	36	W		P,H	D						
34cc2	do.	Du		72	W		CY,H	N	Tca	1.8		8.39	10-20-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 81 W. cont.													
35ba1	H. Rosenthal	Du	14	40	W	S	CY,H	D,S	Tco	1.7		7.37	10-20-47	
35ba2	do.	B	17		N	S	N	N	L			7.27	10-20-47	
35dc	U.S. Geological Survey	Dr	185.0	4 3/4	N	X	N	N	L		1508	3.97	8-12-47	
	T. 160 N., R. 82 W.													
1aa	Carl O. Johnson	Dn	12	1¼	P		CY,H	D,S				8½	10-16-47	
1ba1		Du	12	48	W		CY,W	S	Tca	2.1		9.52	10-16-47	
1ba2		Dn	12	1¼	P		P,H	D						
2aa		Dr	320	2	P		N	N	Tco	2.2		1.93	10-16-47	
4cc	Helgeson	Dn	8	1¼	P		CY,W	D,S						
5cb	George Hanson	Dr	300	2-4	P		FO.5	S				Flow	10- 9-47	P
8ad	Roy Pilgrim	Du	17	48	W	G	CY,H							
9aa1	Invold Helgeson	Dn	16	1¼	P		CY,W	D,S						
9aa2	do.	Dn	16	1¼	P		P,H	D						
10aa1	R. C. Stracek	Dn	15	1¼	P	G	CY,E	S						
10aa2	do.	Dn	15	1¼	P	G	P,H	D						
10aa3	do.	Dn	14	1¼	P	G	CY,H	D,S						
10cc	U.S. Geological Survey	Dr	205.0	4 3/4	N	X	N	N	L		1519	20.30	8-12-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 82 W. cont.													
11ad1	Axel Svee	Du	9	40	W	G	CY,W	S	Bp	3.3		9.05	10-16-47	
11ad2	do.	Dn	9	1¼	P		P,H	D						
13bc	Ernest Benson	Dn	12	1¼	P		P,H	D,S						
13dd1	A. W. Elsworth	Du	18	40	C		CY,H	S	Bp	.6		11.99	10-16-47	
13dd2	do.	Dn	18	1¼	P	G	P,H	D						
14da		Dn		1¼	P		P,H	D						
17aa	August Dkoenig	Dr	365	4	P	R	F3	S				Flow	10- 9-45	U
17dd1	Roy McLean	Dr	260	6	P		F3	D,S				Flow	10- 9-45	
17dd2	do.	Dr	182	4	P	R	FO.5	S				Flow	10- 9-47	P
18aa	August Shoenig	Dr	365	3-4	P		CY,W	S						P
19bc	Laurence Culbertson	Dn	12	1¼	P		CY,H	D,S						
19cc1	Walter Morris	Dr		4	P		N	N						
19cc2	do.	Du	18				CY,G	N						
19cc3	do.	Dn	11	1¼	P	G	CY,H	D						
20ab1	Floyd Tyler	Dr	200	2-3	P		N	N	Tca	1.6		7.45	10- 8-47	
20ab2	do.	Dr	250	2-4	P	R	CY,E	D,S						P
21ab	R. B. Hiddaugh	Du	10	36	W	R	CY,W	D,S	Tca	1.2		7.95	10- 9-45	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 82 W. cont.													
24da		Dn		1¼	P		CY,H	N						
25dd		Du		48	W		T,G	S	Tco	1.5		6.98	10-16-47	
26aa		Dn	16	1¼	P		F,H	D						
26ad	J. C. Cunningham	Dr	210	4	P	R	CY,W	S				15	10-16-47	P
26cc	B. King	Dr			P	S,Ss								
26cd	C. Cunningham	Dr	250	4	P	R	CY,W	S						P
27cc	Aksel Sagsveen	Du	18	1¼	P		CY,W	D,S,O	Tco	.9		6.80	10- 9-45	
28cc		Dr	200	3	P									
28cd		Dr		5	P		CY,W	N						P
28dc		Dr		3	P		CY,G	S						
29ba	Orval Preskey	Dr	120	4	P	R	CY,W	S				20	10- 8-47	P
29da	Newton Tyler	Dr	200	3	P	R	CY,G	D,S				80	10- 9-45	
29dd	do.	Dr		3	P		N	N						
30bc	Charles Morris	Dr	203		P		CY,W	S						P
30dc1	E. S. Canora	Dr	270	3	P	R	CY,W	N						P
30dc2	do.	Du		48	W		CY,H	N	Tco	.7		10.19	10- 8-47	
31ab		Du	7.0	24	P		N	N				Dry	10- 8-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 82 W. cont.													
31cc	Clarence Dickson	Dr	265	2-4	P		CY,W	D,S						P
32cc		Du		40	W		CY,W	D,S	Tco	1.6		7.97	10- 8-47	
33bb1	John Danberg	Dr	200	4	P	R	N	N						
33bb2	do.	Dr	210	3	P		N	N	Tca	2.5		35.54	10- 8-47	
34cc	C. E. Offenbacker	Dr	382	4	P	R	CY,W	N						P
34dd		Du		18	T		CY,W	S,O	Tca	1.6		9.80	10- 9-45	
35ad	V. L. Farvasted	Dr	220	4	P	R	CY,N	N	Bp	1.3		5.27	10-16-47	
	T. 160 N., R. 83 W.													
1bc1	A. Stover	Dr	300	2-3	P	S	CY,W	S	Tca	.9		38.08	10- 8-47	P
1bc2	do.	B	25	6	P		F,H	D						
1cc	C. R. Heinlein	Dr	253	6	P		CY,W	D,S				30.	10- 8-45	
4ba	Andrew Bjork	Dr	297	2-3	P		CY,W	S						P
5cb	J. Tally	Dr	265	4	P		CY,W	S				30	10- 6-47	P
8cd	Emery Blowers	Dr	246	2-3	P	S	CY,W	S	Hc	1.7		15.08	10- 6-47	P
10bc	G. Huss	Dr	250	4	P	S	CY,H	S	Bp	2.1		26.22	10- 8-47	
11bb		Dr		4	P		CY,W	S						
11cb	Phillip Larson	Dr	240	2-3	P		CY,W	S						P

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 83 W. cont.													
12ad	Roy Sidener	Dr	217	2-4	P	S	CY,W	S				11	10- 8-47	P
13bc	Elmer McLean	Du	15	36	C		CY,H	D						
13cb	do.	Dr	220	2-6	P	S	CY,G	S				12	10- 8-47	P
14ad	Charles Knutson	Du	11	60	W	S	CY,G	S	Bp	2.1		7.69	10- 8-47	
14dd		Dr			P		CY,W	N						
15dd	J. Holmes	Dr	250	4	P	Ss								
17aa1	J. H. Gibbs	B	11.6	14	P		N,H	D,O	Tca	3.0		11.40	10- 7-45	
17aa2	do.	Dr	285	4		Ss								
17ba1	C. A. Gillstraph	Dr	260	2-3	P	S	CY,W	S				12	10- 7-47	P
17ba2	do.	Du	9	15	T		VY,H	D						
17cc	George Blowers	Dr	260	2-3	P	S	CY,W	S						P
18aa	T. Blowers	Dr	300	2-3	P		CY,W	S				10	10- 6-47	P
18cc	B. Robbins	Dr	319		P	Ss								
19bb	Elden Otto	Dr	350	2-3	P		CY,W	S	Tca	.2		46.14	10- 7-47	P
19cc		Du		24	C		N	N	Tca	.8		5.37	10- 7-47	
21cd1	Henry Knaack	Du	12	43	C	G	N	N	Tco	1.7		7.96	10- 7-47	
21cd2	do.	Du		24	C		N	N	Tca	2.3		13.80	10- 7-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 83 W. cont.													
21da	J. Otten	Dr	250	2-4	P		CY,W	D,S						P
22cc	Emery Blowers	Dr	365	3	P	S	N	N						
24cd	J. D. O'Keefe	Du	12	40	W	G	CY,W	D,S	Tco	1.8		11.00	10- 8-47	
25ba	do.	Du	10	40	W		CY,W	S	Bp	1.8		10.89	10- 8-47	
26bb	Floyd Baker	B	60.1	20	T	S	N	N,O	Tca	1.7		19.05	10- 8-47	
27ad	Bryan Dean	Dr	260	2-3	P	G	CY,W	S				20	10- 7-47	
27cd	H. Hammer	Dr		4	P		FO.5	S				Flow	10- 7-47	P
27dd	Thomas Keefe	B	66	18	C	G	CY,E	D,S				25	10- 7-47	
29cc	Milton Holmes	Du	10	60	C		CY,W	S	Tco	1.0		6.21	10- 7-47	
29cd	do.	Du	7	40	W		CY,H	N				Dry	10- 7-47	
30ad	Alvin Larson	Dr	360	2-3	P		CY,W	S				10	10- 7-47	P
31da	Agnes Smittaud	Dr	347	2-3	P		CY,W	S						
32ab	Albert Smittaud	Du	15	40	W		T,G	D	Tco	.0		10.65	10- 7-47	
32bb		Du	10	36	C		CY,W	S	Tco	1.5		6.27	10- 7-47	
32dd	C. H. Aus	Du	12.9	36	W		N,H	S,O	Tca	2.6		5.15	10- 7-45	
33ba	B. Iverson	Dr	307	2-3	P	S	CY,W	N						
34dc	O. Holmes	Dr	342	2-4	P	S	CY,W	S						P

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T.160 N., R. 83 W. cont.													
34cd		Du		18	T		CY,H	D	Tp	4.5		9.10	10- 8-45	
35bb1	Emil Vedvig	Dr	330	2-4	P		CY,W	D,S				18	10- 7-47	P
35bb2	do.	Du	14	40	W	G	CY,H	S	Bp	.7		11.22	10- 7-47	
35bc		Du	7.7	43	W		N	N,O	Tco	1.5		6.20	10- 7-45	
35dc	J. C. Johnson	Du	15	24	T	G	CY,H	D,S	Tca	.5		7.11	10- 8-47	
	T. 161 N., R. 82 W.													
5cc	Grant Kirby	Dr					CY,W	S						
6bb1		Du	13	48	W		CY,H	S	Bp	1.7		3.45	7-29-47	
6bb2		Du	13	48	W		CY,H	S	Bp	.6		6.21	7-29-47	
7aa	J. Cramer	Dr	280	2-3	P		N	N	Tca	.4		24.49	7-31-47	
7cd	Cook	Dr	320	3	P	Cl	CY,G	S						
7dc	M. Rice	Dr	320	3	P		CY,W	N	Tco	2.3		26.55	7-31-47	
8dd1	P. Rice	Du		18	T		CY,H	N						
8dd2	do.	Dr	260	3	P	Cl	CY,W	S						
9bb	Ernest Rice	Dr					CY,W	S	Tco	.7		22.92	7-31-47	P
17bb	John Asheim	Dr	321	3	P	L	CY,W	S						P
18ba	N. Nicholson	Dr	250	4	P		CY,W	N	Bp	.7		19.88	7-31-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 82 W. cont.													
18dc	Wittewds	Dr	335	2-3	P	S	CY,W	N						
19dd	M. Bly	Dr	340	4	P	S	CY,W	S						
20aa1	Vernon Asheim	Dr	343	3	P		CY,W	S						P
20aa2	do.	Du,Dn	20	1¼	P		F,H	D						
21bb	Jesse Kirby	Dr	347	2	P	L	CY,W	S				10	7-31-47	P
28ba		Dr		2	P		CY,W	N						
29bd	J. C. Banks	Dr		3	P		CY,W	S				30	7-31-47	P
29db	do.	Du	14	24	P		F,H	N	Tca	1.0		6.14	7-31-47	
32cb	Charles Adams	Dr	250	4	P	S	CY,H,F	D,S	Tca	.7	Flow	0	10- 8-47	
	T. 161 N., R. 83 W.													
1aa	Mrs. Tenberg	Dr	350	4	P		CY,W	S			1558			P
1bc	Mrs. Williams	Dr	450	1½-4	P		CY,W	N			1570			
2ba	A. B. Ericson	B	52	24	T		CY,H	D	Tco	1.3	1567.3	12.65	7-30-47	
2bb	Lacy Greek	Dr	350	3-4	P		CY,G	S			1552			P
2cc	O. Staven	Du	46	40	W		CY,H	N	Tco	.5	1560.5	7.48	7-29-47	
3dc	Herman Staven	Dr	323	3-4	P		CY,W	S	Tca	1.1	1572.1	7.70	7-29-47	P
4cd	Hemming-Halvorson	Du	20	40	W		CY,H	D,S	Bp	1.8	1594.8	12.25	7-25-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 83 W. cont.													
5bd	Carl Gilseth	Dr	380	3-5	P		CY,W	S			1594			P
6cb1	Town of Mohall	Du	20	40	C		N	N	Tca	2.0	1599	6.27	7-23-47	
6cb2	do.	Du	25	216	B	G	C,E	P			1597	12	10- 3-45	C
6cd	do.	Du	20	240	C	G	N				1600			
7bd	Smith	Du	10.6	48	W		CY,H	D,S	Tco	1.5	1596.5	9.05	10- 3-45	
7cd	Town of Mohall	Du	20	240	C	G	C,G	P						
8ba	Carl Gilseth	Dr	350	4	P		CY,W	N	Tca	1.2	1602.2	23.85	7-24-47	
8cd	G. Herrigstad	Dr	350	3-5	P		CY,W	S			1605			P
9bb	Carl Crougan	Dr	375	2-3	P		CY,W	S			1592	12	7-24-47	P
9cd	A. Halvorson	Dr	360	3	P		CY,W	S			1596	15	7-24-47	P
9da		Dr	300				CY,W	D,S			1592	50	10- 3-45	U
10ba	Oliver Staven	Dr	330	4	P		F	S			1566			
[illegible]	Carl Pfefferkorn	Du	23	40	C		CY,H	S	Tca	.4	1583.4	10.76	7-29-47	
[illegible]c2	do.	Du	12	40	W		N	N	Tca	2.0	1584	6.15	7-29-47	
[illegible]d	W. Williams	Dr	250	3-4	P		CY,W	S	Hc	1.5	1563.5	29.43	7-29-47	P
[illegible]c1	Kevp	Dr	380	4	P		P,G	S			1573	30	7-29-47	P
[illegible]c2	do.	Dr	330	4	P		N	N			1572			

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 83 W. cont.													
13ab	J. Reed	Du	20	40	C		CY,E	D	Tco	0.5	1570	5.45	7-29-47	
13cd1	George Bunker	Du	14	48	C		CY,H	N	Tco	.6	1535.6	5.80	7-25-47	
13cd2	Witteman	Du		24	T		CY,H	D	Tco	.4	1533.4	3.02	7-25-47	
13dc	U.S. Geological Survey	Dr	205.0	4 3/4	N	X	N	N	L		1535.0	3.93	8- 9-47	
14cc	Witteman	Dr	325	3	P		CY,W	S	Tca	.4	1582.4	19.90	7-25-47	P
15cc1	Milton Rice	Du	10	24	T		CY,G	S	Tco	3.6	1586.6	7.54	7-25-47	
15cc2	do.	Du	12				CY,W	S			1589			
16cd1	Roy Winder	Dr	300	4	P		CY,W	S			1603	40	7-25-47	
16cd2	do.	Dr		3	P		N	N			1604			
17ad	Marrias Aune	Dr	453	2-3	P		CY,W	S			1604			P
17da	O. Solemsaus	Dr	365	2-3	P		CY,H	S			1608	25	7-24-47	P
18aa	T. Haugan	Dr	380	3	P		CY,H	N	Hp	2.8	1614.8	38.14	7-23-47	
18cc	Haugan	Dr	340	3	P		CY,H	N			1611			P
18dc	Connole	Dr			P		CY,W	S			1616			
19ab		Du		40	W		CY,H	D	Tco	.8	1596.8	10.80	7-24-47	
19cc		Du					CY,H	N			1624			

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 83 W. cont.													
19dd	J. C. Fisher	Dr	391	2	P	Ss,X					1595			
20bb	Wortz Jahansen	Dr	380	3-4	P		CY,W	S			1617	20	7-23-47	P
20dc	Haugan	Dr		3	P		CY,W	S	Tca	0.8	1614.8	33.70	7-24-47	
21ab	E. Salvey	Dr		3	P		CY,W	S			1607			P
22ba		Dr		3	P		CY,W	S	Tcu	.5	1593.5	25	10- 7-45	
23dd		Dr	300	4	P	Ss,X	CY,G	D,S			1584	30	10- 7-45	
24ba		Du					CY,H	N			1534			
24cd		Dr		3	P		CY,W	N	Tca	.3	1570.3	19.56	7-31-47	
25bb	Charles F. Adams	Dr	300	4	P		CY,W	S	Bp	1.4		22.74	7-31-47	P
26bb		Du	11	60	W		CY,H	N	Bp	1.3		5.31	7-31-47	
28cb	O. Mortenson	Du	16	40	W		P,H	D,S	Tca	.7		5.55	7-24-47	
30bb	J. C. Fischer	Dr	417	3-4	P		CY,W	S						P
30da	Emmett Thorp	Du	18	48	W		CY,E	S						
31bb	Bernard Schraeder	Dr	350	3	P		CY,W	S						
31cc		Dr	400	4	P									
32cd		Dr	380	4	P									
32dd	H. A. Milleton	Du	12.5	48	W		CY	S,O	Tco	3.0		3.40	10- 7-45	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 83 W. cont.													
33ba	Ernest Martins	Dr	350	3-4	P		CY,W	D,S				40	7-24-47	P
33cc	U.S. Geological Survey	Dr	240.0	4 3/4	N	X	N	N	L		1567	5.24	8-14-47	
	T. 162 N., R. 83 W.													
2ca	A. Nelson	Dr	400	3	P		CY,W	S				80	7-30-47	P
2cb	G. A. Durnin	Dr	344		P	Ss,X								
4cd	Ekberg Bros.	Dr	350	3	P		CY,W	S						P
5bc		Dr		3	P		N	N	Tca	1.2		2.26	7-30-47	
6dc1	Capadahl	Dn	12	1¼	P	S,G	CY,E	D,S						
6dc2	do.	Dn	12	1¼	P	S,G	CY,E	D						
8ca	Glen Mace	Du	6	48	W		CY,G	D,S			1575			
8cb	G. Brackelberg	Du	15	48	W		N	N	Tca	.8	1570.8	3.36	7-31-47	
8cc	Roy Brackelberg	Du	15	48	W		CY	S,O	Tco	2.0	1569.0	6.50	10- 3-45	
9aa	Albert Mace	Dr	350	2	P		CY,W	S			1580	80	7-30-47	P
10ad	R. L. Swearinger	Dr	347	3	P	Cl	CY,W	S			1590	20	7-30-47	P
13ab	Mrs. Jennie Peterson	Du		48	W		CY,H	D,S	Bp	.6	1570	6.36	7-30-47	
14ab	C. Thorp	Dr	300+	3	P		CY,W	S			1589.4	13	7-30-47	P
14cd	Miller	Du	10½	60	W	Cl,G	CY,H	S	Tco	1.8	1576.8	6.02	7-30-47	

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 83 W. cont.													
15cc	Perry School District	Du,Dn		36	C	S,G	CY,H	D			1567			
21aa	Mrs. C. Meagher	Du				S	CY,W	N,O	Tco	2.2	1556.2	4.82	10- 3-45	
21ad	do.	Du	13	40	W		CY,H	D			1554			
24bd	Ruder	Dr	300	3	P		CY,W	S			1584.9	24	7-30-47	P
25bc	O. Ronning	Dr	400	3	P		CY,W	N	Tca	1.4	1577.4	22.40	7-30-47	
25cb1	do.	B	73	24	W		CY,H	S	Bp	.7	1571.7	5.78	7-30-47	
25cb2	do.	B	32	24	W		N	N	L		1571	5.55	7-30-47	
26dc1	R. Sherer	Dr	385	3	P		CY,W	S			1566			P
26dc2	do.	Du	14	24	W		CY,H	S	Tca	.2	1566.2	5.49	7-30-47	
27bb		Dr					CY,H	N			1574			
27cd		Dr					CY,W	S			1557			
28ad	Witteman-Clifford	Dr	326	4	P	S	CY,W	S			1581			P
30cc1	Louis Erickson	Du	15	60	C		CY,G	S	Tco	.7	1606.7	10.39	7-23-47	
30cc2	do.	Du	11	48	C		CY,H	D	Tco	.4	1606.4	8.39	7-23-47	
31dd	Town of Mohall	Du	25				T,B	P			1585			
32dc1	Harold Ring	Dr		2-3	P		CY,W	S	Tca	1.0	1593.0	9.10	7-24-47	P
32dc2	do.	Du	20		C		CY,H	S			1590			

Bottineau County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 83 W. cont.													
33da	F. Rebillard	Dr	652	3	P	S,X	CY,W	D,S,O			1585	50	10- 3-45	
35ba1		Du	14	14	C		CY,H	D			1550			
35ba2		Du					P,H	N			1550			
35da	A. J. Skeaden	Dr	372	4	P		CY,W	S			1561	20	7-30-47	P
36ba		Dr		3	P		CY,H	N			1563			

Table -- Record of Wells in Burke County, North Dakota

Well number 1/	Owner or tenant	Type of well 2/	Depth of well (feet) 3/	Diameter of well (in.)	Type of casing 4/	Character of water-bearing material 5/	Method of lift 6/	Use of water 7/	Measuring point: Description 8/	Measuring point: Distance above land surface (feet)	Measuring point: Height above mean sea-level (feet)	Depth to water level below measuring point (feet) 9/	Date of measurement	Chemical analysis 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 89 W.													
1bc	Bowbells Golf Club	B		10	T		P,H	D,O	Tca	2.3	1934.3	9.85	4-23-45	
1cc		B	20	8	T		CY	D			1938	16	9-24-45	
2bb	John E. Cook	Du	12	48	W	S	CY	S	Tco	2.2	1938.2	10.50	7-31-46	
3bb	Albert Dahlmie	Dr	90	4	P		CY,W	S	Bp	.3	1940.3	6.86	7-31-46	
3bc	City of Bowbells	Du	14.0	96	W		T,G	P	Tcu	1.1	1931.1	10.02	7-31-46	C
3dc1	Carl Swenson	Dr	94	4	P	L	CY,W	S	Tca	.6	1949.6	39.71	7-15-46	P

Footnotes:

1. Location number: Well numbers give the location of wells according to General Land Office Surveys and according to the following formula: Township--Range--Section, 160-acre tract within that section, and the 40-acre tract within the quarter section. If two or more wells are located within a 40-acre tract, the wells are numbered serially according to the order in which they were inventoried. The 160-acre and 40-acre tracts are designated a, b, c or d in a counter-clockwise direction beginning in the northeast quarter. For example: Well 162-96-5cd1 is located in SE¼, Sec. 5, T. 162 N., R. 96 W., and was the first of two or more wells inventoried in that 40-acre tract. In this tabulation, the numbers representing the township and range have been omitted in the column headed "Well number".

2. B, bored well; DD dug and drilled well; Dn, driven well; Dr, drilled well; Du, dug well; Sp, spring.

3. Reported depths below the land surface are given in feet; measured depths are given in feet and tenths below measuring points.

4. C, concrete (brick tile or pipe); P, iron or steel pipe; T, clay tile; W, wood.

5. Cl, clay, and sandy clay; Clb, blue sandy clay; Cly, yellow sandy clay; G, gravel; L, lignite; Q, quicksand; R, rock undifferentiated; S, sand; Sh, shale; Ss, sandstone; X, see well logs.

6. Method of lift: C, horizontal centrifugal; Cy, cylinder; F, natural flow; N, none; P, pitcher pump; S, submersible turbine; T, turbine; VC, vertical centrifugal.
Type of Power: B, butane; E, electric; G, gas engine; H, hand operated; T, tractor; W, windmill.
Flow given in gallons a minute.

7. D, domestic; I, irrigation; In, industrial; N, not being used; O, observation; P, public supply; S, stock.

8. Bp, base of pump; Hp, hole in pump base; Hc, hole in casing; L, land surface; Tca, top of casing; Tco, top of cover; Tcu; top of curb; Tp, top of pump.

9. Measured depths to water level are given in feet, tenths and hundredths; reported depths to water level are given in feet.

10. P, partial analysis; C, complete analysis; U, reported as not suitable for domestic use.

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 89 W. cont.													
3dc2	Carl Swenson	B	16	5	T	G	CY	D	Tca	2.1	1951.1	8.59	7-15-46	
4bb	Charles Speer	Du	30	24	W		CY	N	Tcu	.8	1950.8	8.80	7-31-46	U
4bc	P. Thompson	Dr	92	4	P	L	CY	N	Tca	.2	1955.2	20.87	7-12-46	P
5ac1	City of Bowbells	Dr	543		P	Ss					1957			
5ac2	do.	Dr	710		P	Ss,X	T,E	P	L		1957	110		
5ac3	do.	Dr	227	8	P		T,E	P	L		1957	220		
5cb	U.S. Geological Survey	Dr	65.0	4 3/4	N	X	N	N	L		1945	3.00	8-25-47	P
5dd1	L. P. Christianson	Dr	97	4	P		CY,E	D,S	Tca	2.1	1958.1	25.12	7-12-46	P
5dd2	do.	Dr	80	5	P	L	N	N,O	Tca	2.0	1958	26.35	9-14-45	P
6cc	Mrs. Walter Gorman	Dr	58	6	P	L	CY	N	Tca	.9		21.53	7-12-46	P
6da	Federal Land Bank	Dr	70				CY	S						P
8ba	John Cook	Dr	100	5	P	L	CY	N	Tca	.7		25.03	7-12-46	P,U
8cb	A. Fisher	Dr	102	5	P	L	CY,W	N	Tca	1.4		28.96	7-12-46	P
9bb1	A. G. Wiper	Dr		6	P		CY,G	S	Tca	.1	1959.1	24.02	7-12-46	P
9bb2	do.	Dr	190	4	P		CY,H	S			1960			P
10dd	Christ Olson	Dr	273	3	P	Ss	CY,W	S	L		1955	130	7-15-46	P
12bb	Louis Anderson	Dr	112	2	P	Ss	CY	N			1941			P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 89 W. cont.													
13cc	W. Quanbeck	Dr	170	6	P	L	CY,W	S	Bp	1.0	1957	117.92	8- 1-46	P,U
13dd		Dr		6	P		CY	N	Tca	.7	1951.7	119.17	8- 1-46	
14aa	A. C. Thompson	Dr	120	5	P	Ss	CY,W	S	Bp	1.5	1948.4	27.51	7-15-46	P
14cd1	J. P. Neve	Du	12		W		CY	D,O	Tcu	.7		16	9-24-45	
14cd2	do.	Dr	170		P	L	CY,W	S	L			100+	7-15-46	
14da	P. Jordy	Dr	285	4	P	Ss	CY,G	S	L		1957	100	7-15-46	P,U
15cc	Ole Berg	Dr	160	6	P		CY,W	D,S	Tca	.9	1971.9	66.82	7-13-46	P
18cb		Du		16			CY	N	Tcu	.8		7.66	7-12-46	
18cc1		Du		48	W		CY,G	S,O	Tco	1.2		16.30	8-14-45	
18cc2														
18cc3							CY							
19da	A. Olson	Dr	180	6	P		CY,E	D,S	Hp	2.1		31.16	7-14-46	P
20aa	T. Jacobson	Dr	96	5	P	L	CY	N,O	Tca	1.1		26.68	9-14-45	P
20da	S. Knutson	Du	27	52	W	S,G	CY	D,S	Tcu	1.6	1971.5	9.67	7-10-46	
21ba1	T. Jacobson	Dr	150		P	L,Ss	CY,W	S	Tca	1.0	1971.9	47.99	7-12-46	P
21ba2	do.	Du	15	8	T		CY	D	Tca	.5	1971.5	10.56	7-12-46	
21da	F. F. Haenhouse	Dr	100	5	P	L	CY,W	S	Bp	1.8	1974.8	41.25	7-13-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 89 W. cont.													
22aa	Jordy	Dr	180	3	P	Ss	CY,W	N			1966			
23aa	D. Bystedt	Dr	180	4	P	L	CY,W	S	L		1961	70	8- 1-46	P
23cc	S. Knutson	Dr	170	6	P	L	CY,W	S	Bp	1.0	1973	65.58	8- 1-46	U
24bb	Olson Bros.	Dr	180	6	P	L	N	N,O	Tca	1.3		62.32	7-15-46	
24cb	H. C. Olson	Dr	180	6	P	L	CY,W	S	Tca	1.2		105.20	8- 1-46	P
24dd	Richard Hansen	Dr	600	3	P		CY,W	N	L		1955	120	7-15-46	P,U
25bc1	H. G. Hanson	Dr	274	4	P	L,Ss	CY,W	S	L		1966	130	7-15-46	P
25bc2	do.	Du	35	36	W		N	N	Tcu	.4	1966.4	9.88	7-15-46	
25bc3	do.	B	35				CY	D						
26cc1	Mrs. C. Carlson	Dr	265	3	P	Ss	CY,W	S	Tca	2.2	1973.1	155.37	7-13-46	P
26cc2	do.	Du	24	42	W		CY,E	D	Tco	1.1	1972.1	11.59	7-13-46	
26dc	Jordan Hansen	Dr	237	3	P	Ss	CY,W	S	L		1972	150	7-15-46	C,P,U
27aa		Dr		6	P		CY	N	Tca	.6	1966.6	124.64	8- 1-46	
27bb1	H. H. Hanson	Dr	136	10	P	L	CY,W	N	Bp	1.2	1972.2	41.20	7-13-46	P
27bb2	do.	Du	23.0	36	W	S,G	CY	N	Bp	.8	1976.8	14.21	7-13-46	
27dd		Dr	220	5	P	Ss	N	N,O	Tca	1.1		83.48	7-13-46	
28aa1		Dr	100	3	P	L	CY	N	L		1972	120	8- 1-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 89 W. cont.													
28aa2		Dr		3	P		CY,G	S	L		1971	120	8- 1-46	P
28bc	Arthur Ekstrom	Dr		6	P		N	N	Tca	0.1	1970	16.23	7-13-46	
28dd	E. Lindquist	Du	24	48	W	S	CY	N,O	Tcu	2.0	1984	17.28	9-14-45	
29cc	Frank Leichtnam	Du	22	48	W	S	CY	D,O	Tcu	1.8		19.75	9-14-45	
30ba	A. Sagness	Du	30	36	W	S	CY,E	S	Tco	.9	1984.9	16.44	7-12-46	
31ac		Du	21.0	48	W		CY	N	Tcu	1.7	2004.6	17.88	7-12-46	
32aa	Alfred Johnson	Du	24	24	W	S	CY	D,S	Tco	1.5	1985.5	16.96	7-13-46	
33bb	I. A. Sagness	Du	24	48	W	S	CY,W	D,S	Tco	2.2	1983.1	18.50	7-13-46	
33dd	F. Johnson	B	46	14	W	S	CY,G	S	Tcu	.0	1977	12.02	7-13-46	
34da	Wilfred I. Helms	Dr	300	4	P	Ss	CY,W	S	L		1965	100	7-13-46	P,U
35ba1	Raymond A. Anderson	Du	27.0	24	W	S	CY,E	S	Tcu	2.4	1975.32	14.80	7-13-46	
35ba2	do.	Du	27.0	36	P	S	CY	D	Tca	.4	1973.65	11.97	7-13-46	
36dd	U.S. Geological Survey	Dr	315.0	4 3/4	N	X	N	N	L		1962.67	5.10	8-13-47	
	T. 161 N., R. 90 W.													
1bb	Mrs. E. Buckrud	Dr	180	4	P	L	N	N	Tca	1.1	1953.1	20.88	8- 1-46	-
2ba	Raymond Mattson	Dr	261	5	P	Ss	CY	D,S	Tca	1.0	1956.9	30.08	7-16-46	
2dd		B	31.0	12	W		CY	N	Bp	.5	1958.5	16.81	7-11-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 90 W. cont.													
3dd	G. Nelson	Dr	187	6	P	L	CY,W	D,S			1956	50	9-15-45	P
4aa		Du	11.0	36	W		N	N	Tcu	3.9	1937.9	9.58	7-10-46	
7ba	L. Peterson	B	80	18	W	L	CY,G	D,S	L		1962	50	7- 9-46	
7dc	C. Jenson	Du	18	48	C	S	CY,G	S	Tca	.0	1974	16.40	7- 9-46	
8cc		Du	14.0	60	W		N	N	Tcu	1.1	1974.1	10.28	7-10-46	
9bc	Oscar Kallberg	Dr	50	4	P	L	CY	D,S	L		1961	2	7-10-46	
11cd	Carl Meiby	Dr	89	5	P	Ss	CY	N	Tca	2.0	1960	10.60	7-11-46	P
12ab		Dr		4	P		CY,W	S	Tca	2.1	1961.1	10.39	7-11-46	P
12bc		Du		48	W	S	CY,G	S	Tcu	.8	1971.8	21.51	7-11-46	
12cb	M. Hanson	B	30	24	W	S	CY,W	S	Tco	.5	1970.5	25.83	7-11-46	
12da	P. and L. Hanson	Du	13.0	48	W	G	N	N,O	Tcu	3.4	1966.4	9.75	8-14-45	
13ab	M. Mertes	Du	30	48	W	G	CY,D	D,S	Tco	.8	1973.8	19.72	7-11-46	
14aa		Dr	125	6	P	L	CY,W	S	Tca	.4	1970.4	20.31	7-11-46	
14da	Carl A. Johnson	Dr	48	4	P	S,G	CY,W	D,S			1966	15	7-11-46	P
15bc1	Myre Epson	Du	20	24	W		CY,W	S	Tco	.6	1977.6	14.60	7-10-46	
15bc2	do.	Dr	92	3-2	P	L		N				Dry		
15dc		Dr		4	P		CY		Tca	1.6	1976.6	27.15	7- 9-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 90 W. cont.													
17aa	Emil Carlson	Dr	52	6	P	L	F	D,S			1966.	Flow	1934	P
												Flow	7-10-46	
17bb		Du	6.0	36	W		N	S	Tcu	0.4	1966.4	1.5	7-10-46	
17cd	John Kemmel	Dr	312	3	P	Ss	CY,G	D,S	L		2013	70	7-10-46	P
18bb	Federal Land Bank	Dr	80	4	P		N,F	N	Tca	2.4	1989.4	Flow	1934	
18dc		Du	14.7	48	W	G	CY	D,O	Tco	.3	2015.3	12.12	9-15-45	
19dd1	Carl Jepson	Dr	82	5	P	L	CY,W	S	L		2048	22	7- 9-46	P
19dd2	do.	Dr	125	3	P		CY,G	D			2045			P
20dc1	H. W. Ruhnke	Dr	130		P	Ss	CY,E	D,S			2040	115	7- 9-46	P
20dc2	do.	Du	15.0	36	W	G	CY	N	Tcu	1.4	2035.4	11.13	7- 9-46	
21ab	Edwin T. Peterson	Du	38	48	W	S	CY,E	D,S	Tcu	.7	2003.7	29.89	7-10-46	
22bb	Mrs. Edith Wahlund	B	31	24	T	S	CY	S	Tca	.5	1996.5	24.51	7- 9-46	U
22cd	Harrey Olson	Du	43	24	W		CY,E	D,S	Bp	2.6	2033.6	37.69	7- 9-46	
22dc	Louis Sundin	Dr	60	4	P	S	CY,W	S	Bp	2.1	2023	31.87	7- 9-46	P
23bb		Du	22.0	36	W	S	CY	N	Tco	.3	1985.3	19.73	7-11-46	
23bc	John Chrest	B		18	T		CY	D,S,O	Tco	.4	1997.4	30.40	4-15-45	
23db	H. Haroldson	Dr	200	3	P	Ss	CY,E	D,S	L		1990	40	7-11-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 90 W. cont.													
24aa1	S. Ross	Dr	63	4	P		CY,E	D,S	L		1976	18	7-12-46	P
24aa2	M. Ross	Du	30	48	W		N	N	Tcu	0.0	1970	11.12	7-12-46	
24bd1	Emil Johnson	Du	20.0	36	W		CY	N	Tcu	1.8	1973.8	7.48	7-11-46	
24bd2	do.	Dr			P		N	N						
24cb1	Aden Nelson	Du	24	36	C	S	CY,W	N	Tca	1.2	1975.2	10.29	7-11-46	U
24cb2	do.	Dr	470		P		N	N						
25ba1	F. Bornstedt	Du	30	42	W	G	CY,W	S	Tco	1.1	1987.1	17.81	7-11-46	U
25ba2	do.	Du	11	18	C		CY	N	Tca	1.8	1985.8	8.08	7-11-46	U
26ba	France Linstrom	Dr	190	5	P	L	CY,E,W	D,S	Tca	.9	2001.9	31.27	7-11-46	P
26ca		Dr		6	P		CY,W	N	Bp	.1	1993.1	27.28	7-10-46	
28ab	Louis Sudein	Dr	170	4	P	L	CY	D,S	Tca	1.4	2031.4	39.77	7- 9-46	P
28ba	Gunder Opseth	Dr	165	4	P	L	CY,W	D,S			2033	35	7- 9-46	P
28bc		Du	37.0	28	W		CY	N	Tco	.6	2054.6	31.40	7- 9-46	
29aa	Harold Opseth	Du	35	24	W	S,G	CY,W	S	Tco	1.0	2030	22.77	7- 9-46	U
30da1	S. Olson	Dr	34	6	P		CY,W	N	Tca	.2		18.73	5-15-47	P
30da2	do.	Du	27	36	W	G	CY,W	N	Bp	.9		19.80	5-15-47	
32aa	E. E. Hartman	Du	27	40	W		CY,W	N	Bp	1.6	2063.6	18.41	5-15-47	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 90 W. cont.													
32cd	Twin City Fire Ins. Co.	B	72	18	W	G	CY,W	N	Bp	1.0		10.36	5-15-47	
34ddl	T. H. Thompson	Du		36	W		N	N,O	Tco	1.0	2053	14.65	9-15-45	
34dd2	do.	160	5	P		N	N							
35ad	Walfred Olson	Du	40	42	W	G	CY	D,S	Tco	1.6	2031.6	33.16	7-11-46	
35cd	Edna Olson	Dr	72	3	P	L,Ss	CY,W	D,S	Tco	.5	2047.5	26.43	7-11-46	P
	T. 161 N., R. 91 W.													
1bb	E. Lindquist	Dr	132	4	P	L								
2aal	U.S. Geological Survey	Dr	95.0	4 3/4	N	X	N	N	L		1957	17.46	7-11-47	
2aa2	Mrs. John McCann	Du	17.0	36	W	Cl	N	N	Tcu	.0	1958	12.37	6-13-46	
3ba	J. A. Baillip	Dr	120	5	P		CY,H	N			1954			P
4ba	S. Romeden	Du	23.0	38	W	L	CY	N	Tco	.7	1954.7	18.82	6-10-46	
5cb	Mrs. A. E. McEvers	Dr	60	5	P	L	CY,G	S						P
7dcl	Arthur Chrest	Dr	209	5	P	L	CY,W	S	L			49	6- 8-46	P
7dc2	do.	B	30	18	T		CY	D				12	6- 7-46	
8cd	John Wood	B	100	12	T		CY,W	S	Tca	.6		80.08	6-10-46	
8dc		Dr	165	3	P		CY,W	S						P
8dd	Virgil Young	Dr	170	3	P	L	CY,W	N				Dry	6-11-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 91 W. cont.													
9aa	Staile Hendrickson	Dr	59	3	P	G	CY	N			1985			P
10dd	Cehart Cullickson	Dr	180	2	P		CY,E	S	L		2017.	20.	6-12-46	P,U
11dd	Paul Christianson	Dr	107	5	P	L	CY	N,O	Tca	.7	1994.7	1.42	9-15-45	
12cc1	Buscky-Land Co.	Dr	90	4	P	L	CY	N	Tca	.3	1995.3	2.53	6-15-46	P
12cc2	do.	Dr	107		P	L								
13ba	Perry Kestler	Dr	124	4	P	L	CY,G	S	Tca	1.1	1996.1	14.45	6-13-46	P
14ba	John Thies	Dr	165	4	P	L	CY,E	D,S	Tca	1.3	2016.3	14.75	6-13-46	P
14dc	Ernest N. Anderson	Dr	190	4	P	Ss	CY	D,S	Tca	2.6	2043.6	54.52	6-12-46	P
15dd	Elvin Cullickson	Dr	187	3	P	L	CY,W	S			2057	45	6-12-46	P,U
16cc	Clayton School District	Dr	70	4	P		CY	D	Tca	.9	2092.9	15.66	6-10-46	
16dd		Dr	120			Ss								
17aa	Glendon Bryan	Dr	235	3	P	L	CY,W							P
17cc	F. Luckman	Dr	104	5	P	Ss	P	F				Flow	6-10-46	P
18bb	S. Ramdan	B	46	18	W	S	CY,W	D,S	L			36	6- 7-46	
21aa	D. Lundgren	Dr	70	8	P		CY	N	Bp		2084.3	11.00	6-10-46	
21ba	S. Swanson	Dr	75	3	P	L	CY,H	S			2098			P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 91 W. cont.													
23da	I. Gosecky	Du	31.0	36	W	S	CY	N	Tcu	1.2	2075.2	21.89	6-12-46	
24aa	K. Kirkelie	Dr	100	2	P		CY,W	D,S			2041			
24ba	K. Chrest	Dr	100	3½	P	L	CY,W	D,S	Tca	.5	2043.5	48.79	6-12-46	
	T. 161 N., R. 92 W.													
1bd	G. Pierson	Du	8	28	W		CY	S	Tco	1.6	2011.6	7.00	6- 4-46	U
1cc		B		18	W	CY	D,S	Tcu	.3	2037.3		2.00	6- 5-46	
2bb	Jacob Mess	B	74	18	T		CY,W	D,S	L		2013	36	6- 5-46	
2dd		Du	11.0	36	W		CY	N	Tcu	1.7	2065.7	1.00	6- 5-46	
3bb	Oscar Bakken	B	60	24	W		CY,E	D,S	Tcu	.0	2052	24.00	6- 4-46	
3dd	Ernest Eaton	Dr	125		P		CY,W	D,S			2073	35	9- -45	P
4bb	T. Welsh	B	65	24	W		CY	S	Bp	.9	2077.9	31.32	6- 4-46	U
4cc	Clarence Sernsen	B	60				CY,G	D,S	Tco	.5	2100.5	25.50	6- 4-46	
5cb		Dr		5	P		CY	D,S	Tca	.7	2110.7	28.91	6- 7-46	
6cc	Charles Reinholdt	B	37.0	18	P		CY	S	Tca	.0	2167	10.66	6- 4-46	
7ba		B		14	T		CY,W	N	Tco	.6	2175.6	8.20	5-14-47	
8ac		B		14	T		CY,E	D,S			2164			
8dbl	Peter Burg	B	25	14	T		CY,H	D,S	Tca	.4	2187.4	17.12	5-15-47	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 92 W. cont.													
8db2	Peter Burg	Dr	175	5	P		N	N	Tca	1.4	2188.4	38.01	5-15-47	
9bc	Clifford Eggen	B	45	24	W		CY,W	D,S	Tcu	.0		16.33	6- 4-46	
9bd	Mrs. R. C. Dowing	B	42	16	T		CY,G	D,S			2188			
10aa	Lee Eaton	B	70				CY,W	S,O	Tco	2.0	2082	11.15	9- -45	
10ca	L. L. Griffith	B	40				CY	D,S	L		2160	23	6- 4-46	
11ad	George Alden	B	50	18	T		CY	D,S	L		2081	35	6- 5-46	
11ba	Clarence Pommier	B	30.0	18	W		CY,G	D,S	Bp	1.2	2084.2	8.60	6- 5-46	
11da	H. F. Pommier	B	65	16	T		CY,W	D,S	L		2084	24	6- 5-46	
12cb	Peter Weibmann	Dr	165	5	P		CY,W	D,S	Tca	.7	2086.7	22.66	6- 5-46	P
12dd1	Maud Beard	B	54.4	18	W		CY,G	D,O	Tcu	.7		20.53	9-15-45	
12dd2	do.	B	41.5	30	W		CY,G	S,O	Tcu	1.7		29.90	9-15-45	
13ad		B	44.0	12	W		CY,W	N	Tco	.6	2096.6	39.51	6- 7-46	
13cb	Earl G. Randall	B	24.0	24	W		CY,W	D,S	Tca	1.6	2167.6	15.71	6- 7-46	
13dd		Dr	220	5	P		CY,E	S		.	2159	.		P
14ba	J. Steen	Dr	125	5	P		CY,W	S	Tca	.0	2113	29.50	6- 4-46	P,U
14bb	Mrs. Ellsworth	Du	35	40	W		CY,G	D,S	Tca	1.6	2142.6	21.44	5-15-47	
14cc		B	45	16	T		CY,H	D,S	Tco	2.2	2360.2	14.22	5-15-47	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 92 W. cont.													
15aa1	W. C. Ellsworth	B	32	18	W		CY,H	S	Tca	0.4	2190.4	22.02	5-15-47	
15aa2	do.	B	38	24	W		CY,H	D,S	Tco	1.0	2211	29.67	5-15-47	
18ba1	N. Eggens	Du	22	36	W		CY,H	D	Bp	2.0	2369	15.87	5-15-47	
18ba2	do.	B	25	36-18	W		CY,H	S	Tca	2.3	2367.3	14.35	5-15-47	
	T. 161 N., R. 93 W.													
1aa	Mrs. F. Brusuen	Dr	118		P		CY,W,F	D,S				Flow	5-29-46	
	T. 162 N., R. 88 W.													
3cc	James Conlin	Dr	180	3	P		CY,W	D,S	L		1868	50	7-24-46	P
4cb	Mrs. H. Clemens	Dr	250	5	P		CY,G	S	Tca	.9	1875.9	34.80	7-24-46	P
6cd		Dr	300	2	P		CY	N						
7cb	E. Hedstrup	Dr		2	P		CY,W	S			1902			U
9ba1	Frank Stephen	Dr	350	4	P		CY,G	S	L		1882	50	7-24-46	P
9ba2	do.	Dr	130	2	P	S	CY,W	D	L		1875	50	7-24-46	P
11cd	Mrs. Iva B. Nelson	Dr	375	4	P		CY,W	S						P
13bc		Dr		6	P		CY,W	S	Bp	1.8	1859.8	39.52	7-26-47	P
17bb		Dr	260	4	P	Ss	CY,W	D,S	L		1899	50	9-18-45	P
18cc	A. E. Kerkelie.	Dr	320	3	P		CY,W	S	L		1912	30	7-24-46	U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 88 W. cont.													
19bb	B. Dahl	Du	18.0	48	W	G	CY	S	Tco	0.0	1916	12.70	7-24-46	
20bc	Howe Denny	Du	8.0	48	W	G	N	S	Tca	.8	1910.8	7.68	7-24-46	
22da	C. Falken	Dr	160	6	P	Ss	CY,W	N	Tca	1.0	1878	98.58	7-29-47	
24dd	R. H. Fox	Dr	565	4	P	Ss	CY,W	N	Bp	2.8	1864.8	46.54	7-26-47	
25bb		Dr	468	1¼-3	P	Ss,L	CY,W	D,S,O	Bp	2.3	1874.3	90	9-24-45	
25cc	C. W. Folkert	Dr	600	4	P		CY,W	D,S	L		1865	90	9-24-45	P
26aa	Henry McDiarmio	Dr	347	3	P	Ss	CY,W	D,S	Tca	2.0	1874	77.87	7-29-46	P
26dc	F. Cant	Dr	315	4	P	Ss	CY,W	D,S	L		1880	95	7-29-46	P
27aa	Peter Nelson Est.	Dr	527	4	P	Ss	CY,G	D,S	L		1874	160	7-29-46	P
30cc1		Du	13.0	10	W		CY	D,S	Bp	1.2	1908.2	8.37	7-29-46	
30cc2		Du	18.0	24	C		CY	D,S	Tca	1.0	1911	6.48	7-29-46	
31ad	Mrs. Louise Durwood	Dr	248	6	P	Cl	CY,E	D,S	L		1927	45	7-24-46	P
31cc	R. F. Dodge	Du	10	48	W		CY	D,S,O	Tco	2.9		6.35	9-18-45	
31dd	W. C. Mitchell	Dr	283	4	P	Ss	CY,W	S	Tca	1.3	1923.3	81.78	7-29-46	U
33cc		Dr		2	P		CY	N			1911			
34aa	J. C. Jensen	Dr	350	4	P	Ss	N	N	Tca	1.7	1887.7	96.58	7-29-46	
34dc	E. Brooks	Dr	320	2-3	P		CY,W	S	Tca	1.6	1898.6	41.00	7-29-46	P,U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 88 W. cont.													
36cc	A. C. Lawson	Dr	308	3	P	L	CY,W	S	L		1882	70	7-29-46	C,P,U
	T. 162 N., R. 89 W.													
1bb	Raymond Swenson	Du	18.5	48	W	G	CY	D,S,O	Tco	1.5	1908.5	12.22	9-18-45	
1dd	Albert Haas	Du	12.0	60	W	G	CY,W	S	Tco	.6	1901.6	7.16	7-24-46	
2cd		Dr	69.0	4	P							Dry	7-24-46	
2dd1	Simon Lynch	Du	20.0	48	W	S	CY	N	Tcu	1.0	1909	9.62	7-29-46	
2dd2	do.	Du	14.0	24	W	S	CY	N	Bp	1.0	1910	9.08	7-29-46	
3ad	John Owens	Dr	182	2	P	Ss	CY,W	D,S	L		1921.3	100	7-29-46	C,P
3cd	John Auffort	Dr	160	2	P	Ss	CY	N			1924.4			P
4cd		Du	7.0	48	W		CY,W	N,O	Tco	1.1		5.95	8-13-45	
5aa1	Smith	Dr	378	2½	P	Ss	CY,W	D,S	L		1916.5	90	9-17-45	P
5aa2	do.	Du	42	48	W		CY	N,O	Tco	1.0	1918.0	33.25	9-17-45	
5dd1	P. M. Peterson	Du	8.0	36	W		CY,W	N	Bp	1.4	1910.4	6.86	7-30-46	
5dd2	do.	Dr	394	3	P		N	N,O	Tca	2.5	1911.5	72.96	10-11-37	
6ad	Mary Siverling Estate	Dr	196	6	P	L,Ss	CY,W	D,S	Bp	1.0	1932.37	9.63	7-30-46	P
7cd	E. K. Melby	Dr	150	2	P	Ss	CY,W	S			1940			P
8bc	T. H. Aderson	Dr		6	P	Ss	[illegible]	N	Tca	1.0	1936.69	75.74	7-30-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 89 W. cont.													
8dd	John C. Walleen	Dr	460	6	P	Ss	CY,W	S	Bp	0.6	1928.31	51.88	7-30-46	P,U
9ab	Alvin Hass	Dr	265	3	P		CY,W	S	L			70	7-30-46	P,U
10cc1	J. Felch	Dr	432	2	P	Ss	CY,W	S			1909			
10cc2		B		6	P		CY	N	Bp		1913	12.34	7-30-46	
11bb		Du	25				CY	D	Tco	.1		9.08	7-29-46	
12dc	Elzor Matte	Du	12	42	W	G	CY	S	Tco	.8	1903.8	6.70	7-24-46	
13bc	Fritz Siemers	Dr	279	2	P	L	CY,G	D,S	L		1913	60	7-29-46	P
13cc	U.S. Geological Survey	Dr	145.0	4 3/4	N	X	N	N	L		1910	16.63	7-14-46	
13dd		Dr		3	P		CY,W	S	Tca	.0	1917	6.43	7-16-46	
14aa1	D. D. Billesland	Du	14			S	CY	D,O	L		1912	10	9-18-45	
14aa2	do.	Dr		2	P		CY,W	S						
14dc	H. G. Redmer	Dr	200	3	P	L	N	N			1921			
15bc1	Andrew Zacharias	Dr	280	2	P	L	CY,W	S	L		1921	60	7-30-46	P
15bc2	do.	B	18.0	6	P	G	CY	D	Tca	.4	1923.4	13.49	7-30-46	
17aa1	Frank Schultz	Du	10.5	48	W	G	CY	D,O	Tco	1.5	1918.5	7.42	9-17-45	
17aa2	do.	Dr	200	2½	P	L	CY,W	S						
17cc		Dr		6	P				Tca	1.3	1945.3	32.25	7-31-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 89 W. cont.													
17da	J. Fern	Dr	200	6	P	L			L		1935.2	41+	7-31-46	
18ad	Hilbert Pfeifer	Dr	200	4	P		CY,W	S	Bp	.9	1931.42	60.71	7-31-46	P,U
18cc		Dr		2½	P		CY	N,O	Hp	2.6	1941.8	7.25	9-21-45	
18da	P. J. Stuckey	Dr	200	6	P		CY	N	Bp	1.0	1941.28	46.02	7-31-46	
19dd	H. W. Anderson	Dr		5	P		CY,W	N	Tca	.2		57.09	7-31-46	
20da	John E. Cool	Dr	120	5	P	Ss	CY,W	N	Tca	2.3	1912.2	51.28	7-30-46	
21ad	Albert Klein	Dr	90	4	P	L	CY,W	S	L		1934	38	7-30-46	P
21bc	Arthur Reich	Dr	76	4	P	Ss	CY,W	D,S	Tca	.7	1936.7	57.19	7-30-46	P
21da	Albert Klein	Du	12.0	24	W	S	CY	D	Tcu	2.0	1933	6.48	7-30-46	
22ad1	Frank H. Redner	Dr	120	3	P	Ss	CY,G	S	L			30	7-29-46	P
22ad2	do.	Du	9	60	W	G	CY	D	Tcu	1.5	1916.5	8.44	7-29-46	
22cc	Frank Dyer	Dr	81	5	P	L	CY,W	N,O	Tca	.4	1917	55.18	9-18-45	
23bc		Dr		2	P		CY,G	S			1921			P
23dd		Dr	150	4	P		CY,W	S	L		1912	50	9-18-45	P
24da	J. D. Conlin	Dr		4	P		CY,W	D,S			1921			P
25ab	A. Smith	Dr	180	4	P	Ss	W	N,O	Tca	1.3	1920.3	103.03	7-24-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 89 W. cont.													
26bd		Dr		8	P		CY,W	S	Tca	0.9	1921.9	11.86	7-29-46	P
28bc	Mary L. Corey	Dr	160	4	P		CY,G	S	L		1940	30	7-30-46	P
28dd	U.S. Geological Survey	Dr	145.0	4 3/4	N	X	N	N	L		1941	3.69	7-14-47	
29cc		Dr	100	2	P	Ss	CY	N						P
29dd		Dr		5	P		CY	N	Tca	.6	1943.6	20.18	7-30-46	
30dc	J. Engelhart	Dr	150	5	P	Ss	CY,W	S	Tca	.4		17.89	7-31-46	P,U
31bb		Du		24	W		CY	N	Tco	.3		13.01	7-16-46	
31da	Albert Olson	Dr	270	3	P	Ss	CY,W	D,S	Bp	1.4		22.38	7-31-46	P
32dc		Dr		6	P		CY,W	N,O	Tca	1.0		24.75	9-19-45	P
33cc	Carl Aufforth	B	47	24	W		CY	S	Tco	.4	1955.4	24.77	7-31-46	U
33dc	D. C. Landis	Dr	68	6	P	L	CY,E	D,S	L		1948	17	7-31-46	P
34ab	Gunther Harms	Dr		4	P	G	CY,W	D,S	Tca	.6	1941.6	57.09	7-30-46	P
34cc	A. J. Bollsmayer	Dr	83	3	P	L	CY,E	S	L		1947	10	7-31-46	P
34dc	Siemers Estate	Dr	232	5	P	Ss	CY,G	S	Tca	1.2	1947.2	57.16	7-31-46	U
35bc	Clarence Wilkes	Du	10.0	36	W		CY,W	D,S	Tcu	1.1	1934.1	8.29	7-30-46	
35dc	Arnold Anderson	Dr		4	P		CY,G	S	Tca	1.3	1937.72	35.18	7-31-46	C,P,U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 90 W.													
1bc	A. J. Kellogg	Dr		2	P		CY,W	N			1936.8			
1dc	G. Strawbridge	Du	45	24	W	G	CY	N	Tco	1.1	1935.42	36.23	7-16-46	
2dc		B	18.0	12	W		CY	N			1943.9	Dry	7-27-46	
2da	F. Delsworth	Dr		2	P		CY,W	D,S			1940.0			P
3dd	V. Donahue	Dr	230	4	P	Ss	CY,W	S	Tca	1.8	1954.58	8.06	7-10-46	P,U
4bb	G. Bergstreser	Dr	192	3	P	Ss	CY,W	D,S	L		1928	60	9-16-45	P
5ab		DD		6-36	W		CY,W	S,O	Tco	.8		10.28	9-15-45	
5cc	T. and G. McCarty	DD	19.7	3-48	W	S	CY	N,O	Tco	.5		9.55	9-19-45	
6ad	Flaxton Cemetery	Du		48	W		CY	D,O	Tco	.2		8.25	9-19-45	
6ba		Du		36	W		CY	D,O	Tco	.8		11.55	9-15-45	
6cb1	Kenneth Christensen	Du	18	24	W		CY,W	D,S	Tcu	.3		6.44	6-14-46	
6cb2	do.	Du	13.0	36	B		CY	D	Tco	.5	6.57		6-14-46	
8bb	A. Christenson	B	84	24	T		CY,W	S	Bp	1.6		63.37	7- 2-46	U
9bb1	City of Flaxton	D	30				CY	P	Tco	2.5	1928.72	11.64	7- 2-46	
9bb2		Du		48	W		CY	N	Tcu	2.4	1929.20	8.71	7- 2-46	
9cd	John Arens	B	86	12	W	S,G	CY	S	Bp	.9	1954.29	24.57	7- 3-46	
10aa	Lee Carter	B	40	24	W	G	CY,W	S	Tco	.6	1949.74	15.48	7-10-46	U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 90 W. cont.													
10dc	Sadie E. Huff	B	64	18	W	L			Tco	0.0	1950.3	13.11	7- 3-46	
11ad		Dr	225	2	P		CY,W	D,S			1943.3			P
11cc	J. J. Kellogg	Dr	170	2	P	Ss	N	N	Tca	2.0	1944.57	10.31	7-10-46	
12cc	A. Christianson	Dr	80	2	P	Ss	N	A			1941.5			
15bb	C. G. Whitman	B	40	24	W		N	A	Tca	.0	1914.4	8.79	7- 3-46	
15cc	Mrs. J. Bushe	Dr	236	2	P	Ss	CY,W	D,S			1956.3			P
15dc1	J. Nygaard	Dr	60	6	P	Ss	CY,G	D,S	L		1957.6	40	7- 3-46	P
15dc2	do.	Du	23	24	P	G	CY	D	Tco	.5	1959.70	8.89	7- 3-46	
16cc	U.S. Geological Survey	Dr	195.0	4 3/4	N	X	N	N	L		1958.40	22.96	7-10-47	
17aa1	Carl E. Kavel	Du	18.0	36	W	G	N	S	Tcu	2.0	1952.0	6.70	7- 2-46	
17aa2	do.	B	40	24	W	G	CY	D,S	L		1951	13	7- 2-46	
18da	G. Strompre	Dr	168	4	P	L	CY,W	D,S	Tcu	1.3	1958.3	24.33	7- 2-46	
19aa	Conrad Olson	Dr	128	5	P	Ss	CY,E,W	D,S	Tca	1.2	1964.2	66.78	7- 2-46	P
21dd	M. Funck	Du	26.0	28	C	S	CY,W	S	Tca	.2	1948.2	17.71	7- 2-46	U
22ad	P. Christenson	Du	40	30	P	G	CY,W	D,S	Bp	.4	1960.4	22.60	7- 3-46	
23ad	Orler Ferm	B	25	24	W		CY,W	D,S	Tco	.3	1960.3	18.97	7-16-46	
23bd		Du	60	24	W		CY,G	S	Tco	.2	1953.2	17.02	7-16-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 90 W. cont.													
23db		Dr		2	P		CY,W	S			1957			P
24aa	C. Peterson	Dr	190	3	P	Ss	N	N,O	Tca	0.5	1947.5	4.90	9-21-45	
24dd1	Jens Briggs	Du		24	W	G	CY	D	Tco	1.0	1954.0	12.49	7-16-46	
24dd2	do.	Dr	175	4	P						1952			
25dc	Roy J. Peterson	Dr		2	P	L	CY,W	N	Tca	2.5	1953.5	.00	7-16-46	
26ad	P. M. Lellan	Dr		6	P	L	CY,W	N	Tca	.0	1957	9.84	7-16-46	P
27dc1	Alfred Jensen	Du	20	30	P		CY	D,O	Bp	1.8	1947.8	11.85	9-19-45	
27dc2	do.	Dr	160	2½	P		CY,W	S			1953.5			
28ac	H. C. Nelson	B		12	W		CY	S	Tco	.3	1955.68	21.88	7- 3-46	
28cd		Dr		8	P		CY,W	S	Tca	1.2	1953.18	17.56	7- 2-46	P
28dd	Peter W. Pederson	Dr	65	8	P	S,G	N	N	Tca	.3	1959.02	18.92	7- 2-46	
29bb		B	23.0	12	W		CY	N	Bp	.8	1952.8	19.22	7- 2-46	
29cc	M. Hinds	Dr	60	6	P	G	N	N	Tca	.6	1948.6	15.65	7- 2-46	
30ad	L. Anderson	Dr	80	4	P		CY,W	D,S	Tca	1.3	1967.3	25.83	6-14-46	P
30cd	Gale and Hallay	Dr		6	P		CY,W	N	Tca	.5	1962.5	21.50	9-15-46	
30dd	W. Kundiger	Dr	80	4	P	L	CY,W	D,S	Tca	1.90	1969.9	34.30	6-14-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 90 W. cont.													
31ad	Ida Hinds	Du	42	14	T		CY,E	S	Tca	0.0	1965	20.05	6-14-46	U
31dd	Farmers Merchants Bank	Dr	80	5	P	L			Tca	1.3	1953.3	9.87	6-14-46	P
32ba	A. L. Jacobson	Dr	65	6	P	S	CY,W	D,S	Tca	.1	1961.1	21.65	7- 2-46	P
33dd1	P. W. Peterson	Dr	120	4	P		CY,W	D,S	L		1955	20	7-10-46	P
33dd2	do.	B	90	24	P		N	N	Tco	.0	1956	12.84	7-10-46	U
34dd1	M. Funck	Dr	45	6	P	L	CY,W	D,S	Hp	1.2	1959.2	16.62	7- 2-46	P
34dd2	do.	B	45	24	W	L	CY,G	S	Tcu	1.2	1960.2	15.38	7- 2-46	
35ad	Peter Peterson	Dr	55	6	P	L,Ss	CY,W	D,S	Tca	.8	1962.8	13.54	7-16-46	P
35cd1	N. Funck	Du	30	42	W	G	CY	D	Tcu	1.0	1956.0	8.58	7-10-46	
35cd2	do.	Du	15	42	W	S,G	CY	S	Tcu	1.9	1956.9	6.96	7-10-46	
36ad	Robert J. Magadanz	Dr	236	3	P	Ss	CY,W	S	L		1951	30	7-16-46	P,U
	T. 162 N., R. 91 W.													
1ab1	N. Peterson	B	65	24	W		CY	S	Tcu	1.0		14.00	6-13-46	
1ab2	do.	Du		24	W		CY	D,S	Tcu	.9		7.80	6-13-46	
3bd	F. and T. McCarty	B	60	24	W	S	CY,W	D,S	Tcu	1.1		28.48	6-11-46	
3ca	Bird Estate	Du	23.0	36	W	S	CY	N	Tcu	1.9		22.50	6-11-46	
3dd1	Carl Kallbert	Du		48	W		N	N,S	Tco	1.3		14.05	9-15-45	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 91 W. cont.													
3dd2	Carl Kallbert	Dr	360	3	P	Ss	CY,W	D,S						P
4dd	Mrs. G. Kostad	Dr	385	2	P	L	CY,W	D,S	L			100	6-12-46	
5aa	Walter Monsen	B	40.0		W	G	CY,W	S	Tco	0.0	1942	28.26	6-11-46	P,U
5ba1		Du	22	36	W		CY	D	Tco	1.4	1948.4	16.89	6-11-46	
5ba2		Dr	157	2½	P	Ss					1948			P
5cd		Du		36	W		CY	N,O	Tco	.4	1960.4	24.53	9-15-45	
5dd	W. Holte	Dr	74	2	P	L	CY	N	L		1960	30	6-11-46	P
6ab	S. Stagleson	Dr	160	6	P	Ss	CY,W	D,S	L		1953	100+	6-10-46	P
6bb		Du	16.0	48	W		CY,G	S	Tco	.6	1951.6	13.12	6-10-46	
6cb	do.	Du	19.0	36	W	L	CY	D,S	Tco	.9	1959.9	15.39	6-10-46	
7cb		Du	32.0	34	W		CY	N	Tco	.6	1953.6	13.82	6-10-46	
8ab1	J. E. Noren	Dr	57	2	P	L	CY,W	S	L		1957	35	6-11-46	
8ab2	do.	Du	20	16	T	T	CY	D	L		1957	10	6-11-46	
8ba	Clarence Blom	Dr	231	3	P	L	CY,G	S	L		1960	60	6-10-46	P
8dd	E. Bunting	Dr	135	3	P	Ss	CY,G	S	L		1954	50	6-10-46	P,U
9ba	J. E. Berg	B	52.0	12	T	S	CY,W	D,S	Tca	.3		21.45	6-11-46	
9cb	Chester S. Noren	Dr	70	6	P	L	CY	N	Tca	.2	1947.2	15.20	6-10-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 91 W. cont.													
9cd		Dr		6	P		CY,H	N			1937			P
10ad	P. Peterson	Dr	127	2	P		CY,W	N			1951			P
10da	Melford Undhjem	B	100	18	W		CY,G	D,S	Bp	1.0	1952.0	18.05	6-12-46	
11aa	A. E. Undhiem	Dr	130	3	P	L	CY,G	S	L			40	6-13-46	P,U
11db	E. Granrod	Du	19	36	W	G,S	CY	S	Tcu	.4	1961.4	12.77	6-13-46	U
13dc	Jens Larson	Dr	120	4	P		CY,W	D,S	Tca	2.4	1949.4	13.25	6-14-46	P
14aa1	Carl Koster	Du	28	48	W		CY	N	Tcu	.0	1942	14.78	6-13-46	
14aa2	do.	Du	28	36	W		CY	N	Tco	.3	1946.3	13.55	6-13-46	
14bc	Mrs. Violet Berge	Dr	160	2	P		CY,W	S	L		1953	40	6-13-46	P
15ad	Henry Benge	Du	30	30	P	S	CY,W	D,S	L		1957	26	6-12-46	
15ba	A. D. Undhjem	Dr	80	2	P	Ss	CY,G	D,S	L		1952	15	9-15-45	
15bb		Dr	90	2	P		CY,H	S			1948			P
15cc	Olaf Nelson	Dr		3	P		N	N	Tca	1.3	1952.3	30.70	6-11-46	
15dd	Vernon Nelson	Dr	80	4	P	L,Ss	CY,W	D,S	Tca	1.8	1951.8	21.90	6-12-46	P
17ad	H. Holen	Dr	125	2	P	Ss	CY	S	L		1963	26	6-10-46	U
17ba	A. K. Nolen	B	92			L	CY	S	Tco	.0	1962	33.54	6-11-46	
17cb		DD	105		W,P	L	CY	N	Tco	1.8	1963.8	7.00	6-10-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 91 W. cont.													
18ab	A. Hostdjor	B	82	18	W	L	CY,W	S	Bp	1.1	1958.1	27.05	6-10-46	
18bb	Hjelmer Anderson	Du	40	36	W	L	CY,W	S	Tco	1.4	1950.4	14.98	6-10-46	U
19bb	Norman Houaland	Du	21.0	48			CY	S	Tcu	.3	1947.3	12.38	6-10-46	U
19cc	John F. Berg	Du	18	38	C	S,G	CY	D,S	Tca	1.2	1945.2	10.82	6- 7-46	
19dd	T. Fritsch	B	50	24	W	L	CY,G	D,S	Tca	1.8	1949.8	16.82	6- 7-46	
20cc	J. Fritsch	B	45	14	T	L	N	N,O	Tco	1.3		12.35	9-21-45	
20dd		B	43	24	W		CY,G	S	Tcu	1.6	1946.6	22.08	6-10-46	
21ab	Milfred Bishop	Dr	195	3	P	L	CY,G	S	L		1937	20	6-11-46	P,U
21dd1		Du	20	36	W		N	N	Tco	1.0	1957	15.27	6-11-46	
21dd2		B	40	14	W		CY	N	Bp	.0	1955	17.03	6-11-46	
22ac	Peter Cormilly	Du	33	48	W	L	CY	S	Tco	1.3	1959.3	30.75	6-12-46	
23bb	Harry Bunting	Dr	130	3-1	P	L	CY	N	Tca	1.7	1962.7	30.48	6-12-46	
23dc	Martin Petersen	B	30	20	T		CY,G	D,S,O	Tco	.5	1740.5	18.35	9-19-45	
24bc	A. Nelson	B	60	16	W	S,G	CY	N	Tco	.0	1948.0	20.80	6-13-46	
24cc	B. Paulson	Du	26	48	W	G	CY	S	Tco	.6	1948.6	19.28	6-12-46	U
24dd	J. M. Dellage	Du	28				CY,G	S	Bp	.9	1956.9	15.86	6-12-46	U
25ad		Dr	120		P	L	CY	D	L		1945	50	9-19-45	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 91 W. cont.													
25dd	Harold Luckman	Dr	80	4	P	L	DY,W	D,S	Bp	0.8	1957.8	7.94	6-13-46	P
26cb	O. J. Rukken	Dr	140	3	P	L	CY,W	S,I	Bp		1964			P
26da	Marvin Rykken	Dr	140	2½	P		CY,W	S		1.2	1951.2	7.41	6-12-46	
27ac	A. Anderson	Dr	106	2	P	L	CY,E	D,S	L		1953	40	6-12-46	P
28bd		B	32.0	12	W		CY,W	N	Bp	1.2	1960.2	13.55	6-11-46	
29cc	Mrs. K. Johnson	B	54	18	W	L	CY	S	Tco	1.3	1950.3	8.43	6- 7-46	
30aa	Frank Ronnie	Dr	80	8	P	Ss	CY,W	N,O	Tco	3.0		15.15	9-21-45	
32bb	Mrs. K. Johnson	B	18	18	T	S	CY	D	L		1949	14	6- 7-46	
33ad	Joseph E. Pfeifer	B	80	13		S	CY,W	D,S			1953			
33cb	Mrs. A. Monson	Du	20	24	W	S	CY	D,S	Tcu	1.1	1963.4	15.33	6-10-46	
34bd	A. Johnson	Dr	100	6	P	Ss	CY,W	D,S	L		1969	30	6-12-46	P
	T. 162 N., R. 92 W.													
1cd	Mrs. A. Anderson	Du	42.0				CY	N	Tco	.0	1975	39.96	6-10-46	U
1dd	John Ross	Du		24	W	S,G	CY,G	S	Tca	.3	1982.3	37.38	6-10-46	
2dd	Helmer Hermanson	Du		48	W		CY,W	D,S	Tcu	1.0	1974.0	39.00	6-.6-46	
3ad	C. Martinson	B	43	12	T	G	CY	N	Tca	.9	1960.9	38.91	6- 4-46	
3ba	L. H. Bakke	Du	26.0	36	W		CY	D,S	Tcu	.8	1972.8	24.10	6- 6-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 92 W. cont.													
3dd1	Mrs. F. Johnson	Du	42	48	W	G	CY,W	S	Tco	2.0	1957.0	22.33	6- 6-46	
3dd2	do.	B	40	12	T		CY	D	L		1957	34	6- 6-46	
5ba	S. O. Wallen	B	58.0	12	T	L	CY,W	N	Bp	.9		7.66	6- 7-46	
5cc		Dr			P		CY,W	D,S						
5cd	George Dahl	Dr	225	3	P	Ss	CY,W	S						P
5da1	Alvin Bomstad	Dr	165	2	P		CY,W	S	L			20	6- 7-46	P
5da2	do.	Du	20.0	28	C		CY	D	Tca	.6		10.91	6- 7-46	
6da	O. Gordon	B	44.0	12	T	S	CY	N	Bp	3.4		7.82	6- 8-46	
7dd	Frank Bywater	Dr	67	6	P	Ss	CY	D,S	Tca	2.0		13.81	6- 7-46	P
10aa	Harold Post	Du	25	36	W		CY	S	Tcu	2.0	1960.0	14.00	6- 6-46	U
10ba	Edward Larson	B	78.0	18	T	S	CY,W	S	Tca	.8	1953.8	12.82	6- 5-46	U
10cc	Peter Amundusen	B	45	13	T	L	CY	S	Tca	.0	1945.0	6.58	6- 5-46	U
11aa		DD	41	5-36	P		CY	D	L		1974	.38	9-15-45	
11ba	T. Blom	B	34.0	12	T	S	CY	N	Tca	.7	1962.7	33.95	6- 6-46	U
12ba	Lignite Community Hall	Du	42			G					1975			C
12bb1	Great Northern RR. Co.	Du	54	120	W	G	CY,G	RR	L		1975	52	6-10-46	
12bb2	T. Iverson	Du	50	48	W		CY,E	D	L		1973	46	6-10-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 92 W. cont.													
14ba	R. O. Huttner	B	40	12	T	G	CY,W	S	Tca	1.0		13.41	6- 5-46	U
17bb	Mrs. M. Busch	Dr	70	6	P		CY	D,S	L		1943	14	6- 7-46	P
18cb		Dr			P		CY,W	N	Hp	.9	1944.9	19.93	6- 4-46	C,P
19cc	Martin Amundson	Du	23.0	36	W	G	CY,W	N	Tcu	2.2	1969.2	16.95	6- 4-46	
22db	Bank of North Dakota	Du	27.0	24	W		CY	S	Tcu	.8	1941.8	6.00	6- 5-46	U
24cc	M. E. Olaspey	Du	14	48	W	G	CY	D,O	Tco	.9	1944.9	10.37	9-15-45	
26cc	G. Grandall	Dr	120	3	P		CY,W	D,S	L		1964	15	6- 4-46	P
27ab		B		14	W		CY	N,O	Tco	.2	1947.2	11.15	9-15-46	
27bb1	Jesse Miller	Du	14.0	36	W	G	CY	D	Tco	.6	1947.6	6.00	6- 5-46	
27bb2	do.	Dr	120	2	P	L		N			1947			
28ab		Du		48	W		N	N	Tcu	.0	1952.0	7.95	6- 5-46	
29bc		Du	8.0	36	W		N	N	Tcu	1.6	1964.6	8.00	6- 4-46	
29cb		Du		24	W		CY,W	N	Tco	.0	1975	13.00	6- 4-46	
29dd	K. Hermanson	B	40	18	T	L	CY,W	S	Tca		1984	12.32	6- 4-46	U
30aa1	Swen Reistad	B	14	18	T		CY,W	D,S	L		1962	12	9-21-45	
30aa2	do.	Du	14	36	W	S,G	CY	S	Tcu	1.5	1963.5	12.75	6- 4-46	U
30bc		B	23.0	12	T	G	CY	N	Tca	.6	1984.6	9.58	6- 4-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 92 W., cont.													
30cb		B		12	T		CY,G	N	Bp	1.0	1994	19.00	5-29-46	
30cd		B	30.0	18	T		CY,W	N	Tco	.0	2020	12.00	6- 4-46	
30dc	Arthur Monson	B	40.0	24	W		CY,G	S	Tcu	1.7	1993.7	15.60	6- 7-46	U
31db	S. Reistad	B	100	12	W		CY,W	S	Tcu	.0	2053	19.00	6- 4-46	
33cd	A. Knudson	B	23.0	12	T	L	CY	D,S	Bp	1.1	1969.1	19.41	6- 6-46	
33dc		Du	28.0	28			CY	N	Tcu	.0	1962.0	16.00	6- 4-46	
35db	W. Peterson	Du	10.0	24	W		CY,W	S	Tcu	1.0	1953.0	7.00	6- 5-46	P,U
	T. 162 N., R. 93 W.													
1bb		B	33.0	18	T		CY	N	Tca	1.1	1935.1	5.48	5-27-46	
2cb		B	45.0	18	T		CY	N	Tca	.8	1937.8	16.10	5-29-46	
3bb	H. M. Runingen	B	35	12	T	L	CY,W	S	Tca	1.0	1934.0	16.60	5-28-46	U
5aa		Du	19.0	36	W		N	D	Tca	.8	1931.8	9.18	5-28-46	
5bb	Lee Powell	Dr	140	2½	P		CY	S	L		1930	20	5-29-46	P,U
6aa		B		12	T		CY	S,O	Tco	1.0		4.85	9-11-45	
6cb1	John Bissell	Dr	80	5	P		CY,W	S			1932	8	5-24-46	P,U
6cb2	do.	B	17.0	12	W		CY	N	Tcu	2.0	1934.0	5.10	5-24-46	U
6dd1	U.S. Geological Survey	Dr	100.0	4 3/4	N	X	N	N	L		1937	9.40	8-16-47	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 93 W. cont.													
6dd2	Oliver Running	Dr	100	2½	P		CY,W	S	L		1939	20	5-29-46	U
7dd1	Henry Jacoby	Du	30				CY,G	S	Tco	1.5		13.60	9-11-45	
7dd2	Charles Jacoby	B	12.0	24	T		CY	D	Tca	.6		7.00	5-28-46	
8aa	O. W. Biorngjeld	Dr	260	3	P	L,Ss	CY,W	D,S	L		1941	20	5-28-46	P
8da	Henry Hassel	B	100				CY,G	S	L			18	5-28-46	U
9ab1	Clarence Thompson	B	100	12	P	L	CY,W	S	L		1941	20	5-29-46	P,U
9ab2	do.	B	18.0	12	T		CY	N	Tca	.2	1942.2	9.00	5-28-46	U
9ba	Wenstad	Dr	100	3	P	L,Ss	CY	S	L		1940	18	5-28-46	P
9bb	do.	B	15.0	6	P	S	CY	D	Tca	.0	1938.0	8.00	5-28-46	
10bb		Dr	100	2	P		CY,H	S	L		1930	20	5-28-46	P,U
10cc		B	39.2	18	T		CY,W	N,O	Tco	.9	1945.9	19.75	9-21-45	
11aa	U.S. Geological Survey	Dr	95.0	4 3/4	P	X	N	N	L		1935	12.50	8-25-47	
11ab1	Herman Rude	B	29.0				CY,W	S	Tco	.8	1942.8	17.00	5-28-46	U
11ab2	do.	Dr	171	2	P		CY	S	L		1942	15	5-28-46	P,U
11bc		B	30	12	W		CY,G	D	Tcu	.6		24.40	5-28-46	
12bb	Olof Shefstads	B	43	14	T		CY	S	Tca	.0	1937	16.02	5-27-46	U
13ca	Milo Serdahl	Du	24.0	36	W	S	CY,G	S	Tcu	1.0	1953	14.00	5-29-46	U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 93 W. cont.													
14dd	John Koppelslon	B	100	18	T	L	CY,W	S	Tca	1.0	1956.9	24.10	5-29-46	U
15bd1	O. Bonsness	Dr	80	2	P	L	CY,W	S	L		1950	15	5-29-46	P,U
15bd2	do.	B	57.0	18	T	L	CY	S	Tco	1.0	1949.0	4.73	5-28-46	U
18bb	Trudy Traer	Du	18		C		CY,H	D						
19bd	Kincaid Mine	Dr	240	4	P		T,E	In.,RR						P
19ca1	Montana-Dakota Utilities	Dr	700	6-8	P		T,E	In.				190	5-19-47	P
19ca2	do.	Dr	612	6-8	P		T,E	In.				190	5-19-47	P
19ca3	do.	Dr	300	8	P		T,E	In.				200	5-19-47	P
19ca4	do.	Dr	250	3	P		T,E	In.				1.75	5-19-47	P
20cc	Kincaid Mine	Dr	180	6	P		Fl	D				Flow	5-19-47	P
22dc		B	36.6	16	T		N	N,O	Tca	.0	1988	9.80	9-21-45	
23cb	J. Olsen	Du	14.0	36	W		CY,G	S	Tca	.5	1972.5	9.36	5-28-46	
24ba	J. Busch	Dr	183	4	P	L	CY	S	L		1952	20	5-29-46	P,U
25db	Ebert Larson	B	70	12	W		CY	D	Tca	1.0	2019.0	42.08	5-29-46	
26cc1	J. Granrud	B	14.0	12	T		CY	D	Tco	.3	2058.3	7.81	5-28-46	
26cc2	do.	Dr	165	2	P	S	CY,W				2059			P
27ad1	Chester Oas	B	18.0	12	T		CY	D	Tca	1.6	2024.6	13.90	5-28-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 93 W. cont.													
27ad2	Chester Oas	Dr	160	2	P		CY,W				2021			P
28bd	B. Dalhide	B		14	T		CY,H	D,S	Bp	1.1		21.91	5-14-47	
31db		Dr	170	3	P		CY,W	S						P
31dd	O. A. Watterud	Dr		4	P	L	CY,W	S						
32ad	Marvin R. Young	B	60	14	T		CY,W	D,S						
32ba		B		18	T		CY,G	D,S	Bp	1.7		19.92	5-13-47	
32da		B	60	14	T		CY,G	N	Tca	.2		37.98	5-14-47	
33da		B	100	18	T		CY,W	S						P
33dd	George Ely	B	100	14	T		CY,W	D,S	Bp	1.4		66.02	5-14-47	
34aa	Kenneth Rude	B	84	18	W	L	CY,W	D,S	Bp	1.8	2066.8	46.07	5-14-47	
34ba	Otto Tueter	B	62	14	T	L	CY,W	D,S	Bp	2.3	2072.3	41.64	5-14-47	
35bc	A. H. Brusren	B	85	14	T	L	CY,G	S			2085			
35ca	Norman Das	B		14	T		CY,W	D,S	Bp	2.0	2084	20.76	5-14-47	
	T. 162 N., R. 94 W.													
2ad	George Johnson	B	50	18	W		N	N	Tca	.0	1929	17.00	5-23-46	
2ba1	Anton Boen	Du	20	24	W		CY	D,O	Tca	.8	1926.8	14.87	9-11-45	
2ba2	do.	B	65	18	T		CY	D,O	Tca	1.0	1928.0	29.92	9-11-47	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 94 W. cont.													
3ad1	Nels Gundarson	Dr	88		P		CY,E	D,S	L		1927	20	9-11-45	
3ad2	Town of Larson	B	26		S									C
3bb	U.S. Geological Survey	Dr	100.0	4 3/4	N	X	N	N	L		1923.05	1.70	6-30-47	
4ac	T. Tweet	B	72	12	W	S,L	CY,H	S	Tco	.9	1926.9	9.04	5-23-46	
4dd1		B	24.0	12	W		CY,H	D	Tca	.8	1937.8	12.04	5-23-46	
4dd2		B	32.0	24	W		CY,H	S	Tca	2.0	1939	7.00	5-23-47	
7ab1		Dr		2	P		CY,H	N			1945			
7ab2		Du		36	W		N	N	Tca	2.4	1947.4	5.82	5-13-47	
7ba		Dr					CY	D,S			1961			P
7bc	E. L. Hagen	Dr					CY,W	D,S						
8bc		Du	34	48	W		CY,H	N	Bp	.5	1942.5	9.77	5-13-47	
9bb		B		24	W		CY,H	N	Tco	1.5	1947.5	13.63	5-13-47	
9dc		B	29	14	T	L	CY,W	D,S	Bp	.5		16.20	5-13-47	
10ca	Charles Ely	Dr	201	3	P		CY,W	D,S				12	5-17-47	P
10dc	do.	Dr	200	3	P		CY,W	D,S						
11cd	R. Iverson	Dr		6	P		CY,W	D,S						P
11dd	Hans Dahlbom	Du	10	48	W		N,H	D	Tco	.0		8.00	5-23-47	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 94 W. cont.													
12ad		Du	21	24	W		N	N	Tco	1.4		10.06	5-24-47	
13dd		Du		48	W		CY,G	D,S	Bp	1.8		16.83	5-13-47	
14aa1	Andrew Nordal	Du	19	40	W	G	CY,H	S	Bp	2.3		14.62	5-13-47	
14aa2	do.	Du	20	36	W	G	N	N	Tca	2.8		17.54	5-13-47	
15aa1		B	27	14	T	G	CY,H	N	Tca	.8		15.51	5-13-47	
15aa2		Du		36	W	G	CY,W	N	Bp	1.4		12.82	5-13-47	
15bc		Du	18	36	W		N	N	Tca	.4		10.76	5-13-47	
17ab		B	80	14	P	S	CY,W	N	Tca	.0		57.64	5-13-47	
18ac	H. P. Altner	B	50	18	T	L	CY,W	D						
18ca	Mrs. Flugge	Du	30	48	W	Cl,S	CY,W	S	Tco	.8		15.52	5-13-47	
	T. 163 N., R. 88 W.													
1cb	Edwin Johnson	Dr	180	4	P		CY,W	D,S	L		1852	70	7-26-46	P
2bb	Clair Olney	Dr	125	4	P		CY,W	D,S	Tca	1.7	1859.7	73.08	7-25-46	P
2dd1	W. B. Hazelton	B	45	16	W		N	N,O	Tcu	.9	1841.9	12.75	9-24-45	
2dd2	do.	Du	35	36	W	S,G	CY	S,O	Tco	.5	1845	12.30	9-24-45	U
3da		B	55.0	18	W		CY	N	Tco	.4	1855.4	16.72	7-26-46	
4bb	Theo. Knutson	Dr	120	3	P		CY	D,S	L		1859	80	7-25-46	C,P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 88 W. cont.													
6dc	Clarence Jacobson	Du	27.0	60	C		CY,W	N	Bp	0.5	1856.5	25.66	7-26-46	U
8ba	Henry Moen	Dr	200	4	P		CY,W	D,S	Bp	1.1	1859.1	67.87	7-26-46	P
8dc	Joe Freed	Du	35	36	W		CY,E	S	Tco	1.3	1852.3	19.88	7-25-46	U
9da		Du	13.0	42	W		CY,W	D,S	Tco	1.7	1865.7	9.57	7-26-46	
10bc	Harvey Nelson	Du	36.0	24	W		N	N	Tcu	.7	1869.7	17.50	7-26-46	
11cd		Dr		3-2	P		CY,W	S	L			50	7-26-46	
12aa	T. Gilbertson	Dr	395	4	P	Ss	CY,W	S	L		1843	120	9-24-45	P,U
12dd		Du		28	W		CY,G	S	Tcu	1.1	1845.1	30.80	7-26-46	
13bc		B	37.0	24	W		N	N	Tco	1.8	1863.8	10.57	7-25-46	
14cc	Ray Emmel	B	45	24	W	S	CY	D,S	Tcu	1.3	1869.3	15.50	7-24-46	
15ba1	Cliff Kanbalch	B	37.0	24	W		CY	D,S	Tcu	1.0	1873.0	13.36	7-25-46	
15ba2	do.	Du	27.0	28	W	S,G	N	N	Tco	1.9	1873.9	12.81	7-25-46	
18cb1	Arnhold Ludtke	Du	16	36	W		CY	D	Tcu	2.0	1868.0	9.11	7-23-46	
18cb2	do.	Du	18.0	36	W		CY,G	S	Tcu	1.7	1862.7	4.60	7-23-46	
19ac	John Kallberg	Dr	200	2	P	L	CY,W	S	L		1870	140	7-23-46	P,U
19dd1	G. T. Swenson	Dr	212	3	P	L	CY,W	D,S	L		1874	48	9-18-45	P
19dd2	do.	Du	14	48	W	S	CY	D,O	Tco	.8	1874.8	9.46	9-18-45	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 88 W. cont.													
24ad	Knapp	B	30	24	W	G	N	N	Tcu	1.0	1875	11.97	7-26-46	
24bb1	Gordon H. Fox	Dr	440	2-3	P		CY,W	N	Tca	.8	1857.8	60.98	7-26-46	C,P
24bb2	do.	Du						N				Dry	7-26-46	
24bc	H. A. Hunt	B	38.0	24	W	S	CY,G	N	Tcu	.6	1857.6	22.92	7-25-46	
25bc	Martin Bird	Du	35	36	W		CY	D,S	Tcu	1.8	1857.8	24.02	7-25-46	
25bd		B	21.0	18	W		CY,W	S	Tcu	1.8	1854.8	12.10	7-26-46	
25dc	Norman St. Croix	B	25	24	W	G	CY	D,S	Tcu	1.8		13.68	7-26-46	
26ad	W. Kalmdach	Dr	40	4	P		CY,W	D,S	Tca	1.2	1861.2	22.75	7-25-46	P
28bd	Mrs. Clark	Dr	100	2	P	L	CY,W	N			1853			
28dd	D. Dodge	Dr	200	6	P		CY,W	D,S	Hc	1.1	1857.1	44.50	7-24-46	C,P
29bb	Wilard Swenson	Dr	180	2	P	L	CY,W	S	L		1869	40	7-23-46	P,U
29dd	Bank of North Dakota	Dr	44.0	3	P	L	N	N	L		1862	Dry	7-23-46	
30dc	E. Neilson	Dr	140	2	P		CY,W	D,S	L		1881	50	7-23-46	P
32ba1	T. Bauen	Dr	180	2	O		CY,W	S	L		1871	60	7-23-46	P
32ba2	do.	Du		48	W		CY,G	D	Tco	.4	1872.4	9.67	7-23-46	
32cc	Earl Owens	B	80	18	P		CY,G	S	Tco	.4	1880.4	73.89	7-24-46	U
33bb	Joseph Gins	Dr	101	4	P		CY,W	D,S	L		1866	40	7-24-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 88 W. cont.													
33cc	Albert Luckman	Dr		2	P		CY	N			1877			
	T. 163 N., R. 89 W.													
4bc	D. Burke	Dr	90	2	P	L	CY,W	D,S	L		1870	23	7-18-46	P
5aa		Dr	90	2	P	L	CY	D,S	L		1865	25	7-18-46	
5bc	F. A. Freed	Dr	180	2	P	L	CY,G	D,S	L		1872	90	9-17-45	P
6bc	John C. Peterson	Dr	110	2	P	L	CY,W	D,S	L		1887	70	7-17-46	P
7bc	Bertha Johnson	Dr	200	5	P	Ss	CY,W	S	L		1901	110	7-17-46	P,U
7dd	M. McIntee	Dr	138	4	P	Ss	CY	N	Hp	3.1	1907.1	11.15	9-17-45	
8ad	R. G. Emerson	Dr	153	5	P	L	CY,W	D,S	Tca	1.0	1893.0	78.99	7-18-46	C,P
8bb	G. Ganskop	Dr	170	4	P	Ss	CY,W	D,S	L		1896	100	7-17-46	P
8dd	Floyd Swenson	Dr	200	5	P	Ss	CY,W	N,O	Tca		1903	48.43	9-17-45	
9cd		Dr	200	2	P	Ss	CY,W	N			1894			
9dc	J. Andrews	Dr	200	2	P	Ss	CY	N			1896			
10dc	J. L. Gverdett	Du	12	48	W	S	CY	D,S,O	Tco	1.5	1832.5	8.38	9-17-45	
11ad	J. Agman	Du	8.0	36	W		CY,W	D,S	Tco	1.0	1857.0	6.70	7-19-46	
12dd	Melvin Mattern	Du	14	30	W	S	CY	D,S	Tco	1.7	1844.7	9.44	7-18-46	
13dal	Carl E. Olson	Du	15	36	W		CY	D,S	Tco	2.1	1869.1	12.11	7-23-46	

Burke County. cont..

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 89 W. cont.													
13da2	Carl E. Olson	Du	11.0	50	W	S	CY	S	Tcu	0.6	1866.6	9.35	7-23-46	
15ab	C. H. Cornell	Du	20	36	W		CY,W	D,S	Tcu	.7	1884.7	8.46	7-18-46	
17ad	Carl Knudson	Dr	200	4	P	Ss	CY,W	D,S	Tca		1902	38.0	7-18-46	P
17da	U.S. Geological Survey	Dr	300.0	4 3/4	N	X	N	N	L		1876.46	5.72	7-11-47	
18bc	T. Harms	Dr	142	3	P		CY	S	L		1915	70	7-17-46	U
18da	Thomas Madden	Dr	179	4	P	Ss	N	N			1912			
21bc	Knutson	Dr	300	4	P	Ss	CY,W	N			1909			P
21cd	Carl H. Peterson	Du	22	42	W	S	CY	D,S	Tco	.7	1915.7	17.62	7-18-46	
22cc	P. C. Peterson	Dr	250	2½	P	Ss	CY,W	S	L		1913	90	7-19-46	P
23dd	Mrs. L. Coons	Dr	126	2½	P	L	CY,W	D,S	L		1884	60	7-19-46	P
24cc	do.	Dr	195	2	P	L	CY	S	L		1887	90	7-19-46	P,U
24dc	Hans Hanson	Dr	150	4	P	L	CY,W	D,S	L		1881	50	7-23-46	P
25ad	George Swenson	Dr	200	6	P	Ss	CY,W	S	Bp	.8	1880.8	51.59	7-23-46	P,U
25cb	B. B. Bair	Dr	167	2½	P	Ss	CY,W	S	L		1898	40	7-19-46	P,U
26ab	Glen Swenson	Dr	120	2	P	Ss	CY,W	D,S			1892	55	7-19-46	P
26cd		Du	11.0	36	W		P	D,S	Tcu	1.8	1899.8	7.48	7-19-46	
27cb		B		12	W		CY	N	Tco	.7	1909.22	12.17	7-19-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 89 W. cont.													
27da	Leroy Luke	Dr	132	2	P		CY,W	D,S	L		1920.5	100	7-19-46	P
28bc1	Robert W. Swenson	Dr	186	4	P		CY,W	S	Tca	2.3	1916.49	137.57	7-18-46	P,U
28bc2	do.	Du	25	24	P		CY	N	Bp	1.4	1916.45	18.02	7-18-46	U
31ad	Mrs. R. Adenz	Du	10				CY,W	D,S,O	Tco	.5	1911.90	7.00	9-21-45	
31cc	Martha Stohl	Dr	200	6	P		CY,W	S	L		1933.7	35	9-16-45	
32bd	C. Hermanson	Du	9	36	W	G	CY,W	N	Tco	1.2	1909.9	3.52	6-17-46	
32cb	Frank Nelson	Du	20	52	W		CY,E	D	Tco	1.0	1918.37	15.92	6-17-46	
32dc	Jens Larson	Du					CY,W	D,S	Tco	.8	1911.85	7.99	6-17-46	
33cc		Du		48	W		CY,W	S	Tco	.5	1916.46	40.61	7-23-46	
33dc	B. Hass	Dr	200	2	P	Ss	CY,W	D,S	L		1922.4	50	7-23-46	P
34ca1	Fritz Peterson	Dr	200	3	P	Ss	CY,W	D,S	L		1913.5	90	7-23-46	P
34ca2	do.	Dr	187	2	P	Ss	N	N	Tca	2.7	1916.44	89.68	7-23-46	
35cd		Dr	380	2	P	Ss	CY,W	N			1907			P
35da		Dr		4	P		CY,W	D,S						P
	T. 163 N., R. 90 W.													
6cc1	C. Smith	Dr	116	3	P		CY,W	D,S	L			45	6-26-46	P
6cc2	do.	Du	30	48	C	S	CY	N	Tco	.5		13.26	6-26-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 90 W. cont.													
7db	C. Jenson	Dr	120	4	P	Ss	CY,W	S	L			50	6-27-46	P,U
8bc	M. Landford	Dr	150	2½	P		CY,G	D,S	L			20	9-16-45	P
8cc	John Jacobson	Dr	300	2	P		CY,W	S	L			210	6-27-46	P,U
8da	Oliver Smith	Dr	290	2	P	L,Ss	CY,W	S	L		1935	100	6-27-46	P,U
9bb	Ray Hanson	Dr	294	2	P		CY,W	S	L		1927	80	6-27-46	P,U
10bb	W. S. Town	Dr	240	2	P	L	CY	S	L		1921	80	6-27-46	P,U
12da	T. Harms	Dr	180	2	P	Ss	CY,G	S	L		1905	80	6-17-46	
13ad	Federal Land Bank	Dr	300	2	P	Ss	CY,W	D,S	L		1913.6	150	6-17-46	
14bb	Leo Vic	Du,Dr		48-2	W	S	CY,W	D,S	Tco	0.1	1924.55	15.19	7-16-46	
14da	John Jordonson	Du	30	36	W	S	CY,W	S	Tcu	1.9	1927.41	27.18	7-16-46	U
15cc	U.S. Geological Survey	Dr	230.0	4 3/4	N	X	N	N	L		1926.06	3.75	7- 9-47	
17cd	John Anderson	Dr	300	2	P	L,Ss	CY,W	S	L			120	6-26-46	U
17da	C. J. Christenson	Dr	235	3	P		CY,W	D,S	L		1941	100	6-26-46	P
18aa	Nels Boget	Dr	280	4	P	Ss	CY,W	N	Tca	1.1		100+	6-26-46	
18dd	Robert Nelson	Du	35	36	W	G	CY	D,O	Tco	.5		10.40	9-16-45	
19bc	Wilbur Murphy	Dr	387	2½	P	L,Ss	CY,W	S	L			100	9-16-45	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 90 W. cont.													
20bb1	Andrew Larson	Du	16.0	24	W	S	N	D	Tcu	2.4		10.16	6-26-46	
20bb2	do.	Dr	270	2		Ss	N	N						
20cc	Norman Hygaard	Dr	365	1¼-2	P	Ss	CY,W	D,S	L			114	6-26-46	P
20dd	Henry Skeen	B		12	W		CY	N	Tcu	1.5	1940.45	11.42	6-27-46	
21cc	do.	Dr	280	3	P		CY,W	S	L		1941	80	6-27-46	P,U
21dd	R. Christianson	Dr	230	2	P	L,Ss	CY	N	L		1936	50	9-21-45	
22bc	Amos Nelson	Dr	207	6	P	Ss	CY,W	S	L		1935	110	6-27-46	P,U
22cc		B					CY,W	S,D,O	Tco	1.2		34.15	9-21-45	
22dc	Alfred Larson	Dr	210	4	P		CY,W	S	L		1935	90	6-28-46	P,U
24aa		Dr		3	P		CY	D,S			1921			
24bc	G. Ganskop	Dr	175	2½	P	Ss	CY,W,G	D,S	L		1923	50	9-21-45	P
24cb	Christen H. Rawn	Dr	412	3	P		CY,W	D,S	L		1933	85	7-16-46	P
25cb		Dr		2	P		CY,W	D,S	L		1927	85	7-17-46	P
25db		Du	13.0	36	P		CY,W	N	Tco	.3	1926.3	8.17	7-18-46	
26dd	Henry Rawn	Dr	198	6	P	L,Ss	CY,W	D,S	Tca	1.3	1933.3	78.99	7-16-46	P
27cc		Du		48	W		CY,W	N	Tco	.1	1932.1	26.09	6-27-46	
28ab		Du	19.0	24	W		P,CY,W	D,S	Tco	.5	1941.5	8.03	6-27-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 90 W. cont.													
28bc1		Dr	265	2	P		CY,W	S	L		1943	150	6-27-46	P
28bc2		Du	30	10	W		CY	D	Tco	1.2	1944.2	21.50	6-27-46	
28cd		Du	35	36	W	G	CY	N	Tco	.6	1936.6	27.96	6-27-46	
29cb		Du	21.0	48	W		CY	D,S	Tco	.7		13.22	6-26-46	
30ca		B	70	24	T		CY,G	S	Tca	.6		58.69	6-26-46	U
30da	Fair Grounds, Flaxton	B					CY	S,O	Tco	.2		11.27	9-21-45	
31cc	U.S. Geological Survey	Dr	255	4 3/4	N	N	N	N	L		1933.55	20.90	7- 7-47	
31db	M. St. P. & S. Ste.	Du	30				CY,W	RR	L			10	9-19-45	
	M. Ry.													
31dd	Flaxton Hotel	Dr	223			Ss								C
32aa	Carl Lind	Du	23	36	W		CY,G	D,S	Tcu	.4	1948.4	13.68	6-27-46	
32cc1	Town of Flaxton	Dr	217			Ss								
32cc2	do.	Dr	400			Ss								
32db	Miss A. Jenson	Dr	212	3	P		CY,W	S	L			120	6-28-46	
33ba		Dr		6	P		CY,W	D,S	Bp	1.8	1939.8	19.35	7- 2-46	
33cd	A. Eggert	Dr	200	3	P	Ss	CY,W	D,S	L		1930	100	6-28-46	P
34aa	Harlad Knight	Dr	48	4	P	G,L	CY,W	S	Tca	1.2	1933.2	44.00	6-28-46	U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 90 W. cont.													
34bc	E. A. Anderson	Dr	298	3	P	L	CY,G	S	Tca	1.4	1945.4	34.62	6-28-46	P,U
34cb	Aage Christenson	Dr	275	2	P	Ss	CY,W	D,S	L		1934	125	6-23-46	P
35dc	W. Huff	Du	22	48	W	G	CY,W	D,S,O	Tco	1.0		19.25	9-16-45	
36cb	U.S. Geological Survey	Dr	235.0	4 3/4	N	X	N	N	L		1913	20.50	7-10-47	
	T. 163 N., R. 91 W.													
1aa	Gerald Altringer	Dr	150	2½	P		CY,W,G	S	L			40	9-16-45	U
2ba	Emery Carpenter	Du	20	48	W	S	CY,W	D,S	Tco	1.5		15.08	6-25-46	
3dc	Elmer Johnston	Dr	190	2	P		CY,G	D,S	L			120	6-25-46	
4cd	P. J. Hogan	Du	80	24		S	N	S	Tcu	2.7		12.79	6-24-46	
4dd1	Floyd M. Swenson	Du	20.3	24	T	S	N	N,O	Tca	.2		19.05	9-16-45	U
4dd2	do.	B	71.0	12	T	S	CY,W	S	Tco	1.1		66.47	6-25-46	U
5bd	Mrs. E. K. Beaumont	Du	30	40	W	G	CY	N	Tco	2.5	1951.5	15.57	6-24-46	
6ba	M. Valentine	Du	28	40	W	S	CY	D,O	Tco	1.0	1956.0	12.22	9-12-45	
7bb	Alvin Bratsberg	Dr	140	4	P	Ss	CY,W	S	L		1944	100	6-21-46	P
8dc	George Williams	Du	17	40	W	S	P	D,S	Tco	1.7	1948.7	10.01	6-24-46	
9dd	J. Carpenter	Dr	400	2½	P		CY,W	D,S	L			40	9-16-45	
12ba	Altringer	Du	20.0	24	W		CY	D,S	Tcu	.8		18.40	6-26-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 91 W. cont.													
14ac	O. O. Rudhagen	Du	20.0	36	W		N	N	Tcu	1.2		16.19	6-26-46	
14ca	R. H. Farmer	Du	15.0	36	W		CY	N	Tcu	.9		6.36	6-26-46	
15cb1		Du	24.0	26	W		CY	N	Tco	1.7		7.88	6-25-46	
15cb2	Mrs. Coplin	Dr	700	3	P		CY,W	N						P
17ab		Du	9.0	40	W		N	N	Tcu	1.1	1946.1	8.75	6-24-46	
17dc		B	90	18	W		CY,W	S	Tco	1.0	1960.0	55.00	6-25-46	U
19ba	F. M. Ingle	Dr	53	6	P	S	CY,W	N	Tco	.8	1946.8	32.14	6-24-46	
19db		Dr	170	4	P	Ss	CY,W	N	Tca	1.0	1946.0	100+	6-24-46	
20ab1	Oliver Salmon	Dr		6	P		CY	N,O	Tcu	.0	1931.0	13.30	9-16-45	
20ab2	do.	Dr	100	3	P		CY,W	N	Tca	2.8	1953.8	17.24	6-25-46	
20bc	Leo Pluspat	Dr		6	P		CY,W	N	Tca	.8	1950.8	100+	6-24-46	
20cc1	H. L. Vecker	Dr	130	4	P	Ss	CY,W	S	Tca	.4	1936.4	89.20	6-24-46	U
20cc2	do.	Du		24	P		N	N	Tca	.5	1936.5	12.90	6-24-46	
21aa	U.S. Geological Survey	Dr	170.0	4 3/4	N	X	N	N	L		1939.29	4.11	7- 7-47	
21cc	W. Olson	Dr	280	2	P	Ss	CY,W	S	L			160	6-25-46	U
22ad	F. Anderson	Dr	190	12	P	Ss	CY,W	D,S	L			140	6-25-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 91 W. cont.													
23cd		Dr	368	3	P	Ss	CY,W	N	L			140	6-26-46	
24ad		Du	18	48	W	S	CY,W	D,S,O	Tco	2.6		10.15	9-16-45	
25ad	Nels Baerke	Du	30	48	W		CY	S,O	Tco	1.7		14.02	9-16-45	
26dd	Alfred Bumgardner	Du	30	48	W	S	CY,G	D,S	Tco	1.1		14.48	6-26-46	
28dd	W. Baruad	Dr	165	3	P	Ss	CY,W	S	L			100	6-25-46	P,U
29dc		Dr	180	3	P	L	CY,H	S			1947			P
31ab1	John Grove	B	40	24	T	G	N	D	Tca	1.3	1946.3	11.90	6-24-46	
31ab2	do.	Dr	160	3	P		CY,W	N						
31dc	M., St. P. & S. Ste. M. RR	Du	25	80		G	W	RR				10		
32bc	Howard Nelson	Dr	150	3	P		CY,G	S	L		1946	100	6-25-46	P,U
33ba	Anton Nygaard	B	52	12	T		CY,W	D,S	L			32	6-25-46	
34bd	H. Marston	Dr	179	4	P		CY,W	N	Tca	1.0		38+	6-26-46	P
35aa	Henry Peterson	Dr	274	4	P	Ss	CY,W	S	L			60	6-26-46	P,U
35cd	T. Foshal	Dr	100	5	P	Ss	CY	D,S,O	Tca	1.5		14.15	9-15-45	P
36cd	Jens N. Koster	Du	23	36	W	S	CY,G	D,S	Tco	1.4		9.39	6-13-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 92 W.													
1da1	Mrs. Bratsberg	Dr	211	3	P	L	CY,W	S	L		1952	70	6-21-46	P,U
1da2	do.	Du	25	24	T	G	CY	N	Tco	1.6	1952.6	14.91	6-21-46	
2ba		Dr	175	3	P		CY,W	N			1962			P
3aa1	Carl Rydell	Du		24	T	G	CY	D	Tca	3.5	1951.5	14.50	6-20-46	
3aa2	do.	Du		48	W	G	CY,W	S	Tco	3.8	1949.8	13.77	6-20-46	
4ab	Elmer Granrud	B	75	10	T	S	CY,W	S	Tco	.0	1950	55.90	6-20-46	P,U
4bb	L. Nygaard	Du	32	36	W	S	CY	D,S	Tcu	.2	1948.2	12.09	6-19-46	
4cc	Henry Bratberg	Du	26	36	W	S	N	N	Tcu	1.4	1947.4	16.00	6-19-46	
4dd1	Charles H. Anderson	B	110	12	T	S	CY	S	Tco	.5	1942.5	17.65	6-20-46	P
4dd2	do.	B	26.0	24	T	G	CY	D	Tco	1.1	1941.1	11.11	6-20-46	
5ba	K. E. Reite	B	15	24	T	S	CY	N,O	Tco	3.0	1955.0	27.35	9-12-45	
5cc	do.	B	21.0	16	T	S,G	CY	S	Tco	1.6	1938.6	9.50	6-19-46	
6dd		B	16	16	T		CY	S	Hp	1.5	1941.5	9.17	6-19-46	
9cc1	Samuel Nickey	B	35	18	T		CY	N,O	Tco	.8	1928.8	16.70	9-13-45	
9cc2	do.	B	15	18	T		CY	D			1929	10	9-13-45	
9cc3	do.	Dr	85	6	P	G	CY,W	N			1926			
10ad1	Peter E. Hanson	Dr	250	6	P	Ss	CY,G	S			1942	100	6-21-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 92 W. cont.													
10ad2	Peter E. Hanson	B	35	12	T	G	CY	D			1942	25	6-21-46	
11aa	E. Taylor	Dr	160	6	P	Ss	CY,W	D,S	Hp	0.6	1941.6	73.87	6-21-46	P
11ba1	Taylor Bros.	Dr	260	6	P	Ss	CY,W	S	Tca	.3	1941.3	77.78	6-20-46	
11ba2	do.	B	32	16	C	S	CY	S	Tca	1.4	1943.4	15.66	6-20-46	
12cc1	E. Engstrom	Du	16	24		S	CY	D,O	Tco	1.0	1939.0	11.55	9-13-45	
12cc2	do.	Du	16	36	W	S	CY	S	Tco	.5	1939.5	3.47	6-21-46	
13ba		Dr	70	5	P		CY,W	S	Tco	1.1	1937.1	27.30	6-21-46	
15bb	Mrs. Ruppert	Dr	200	6	P	Ss	CY		Tca	2.0	1929.0	64.51	6-20-46	P
16db1	John Bley	Du	40	24	W		CY	S	Tcu	1.2	1935.2	26.69	6-20-46	
16db2	do.	Du	40	24	W		CY,W	S	Tcu	1.7	1936.7	31.27	6-20-46	
17aa	John Swain	B	60	18	T	G	CY,W	S			1935	56.87	6-19-46	
18ba1	Carl W. Nyreen	B	270	24	W		CY	D	Tco	.5	1927.5	17.05	5-27-46	
18ba2	do.	B	59.0	18	T	S	CY,W	S	Tca	2.0	1932.0	21.07	5-27-46	
18db	M. Kleppen	B	72.0	18	T		CY,W	S	Tca	.0	1930.0	49.80	5-27-46	U
18dc	do.	B	12.5	24	T		CY	N	Tca	.6	1931.6	6.50	5-27-46	
19aa	F. Thorman	Du	30	36	W	S	CY	N	Tcu	2.2	1929.2	17.57	6-19-46	
19ba	Henry Hygaard	B	39.0	12	T	G	CY	D,S	Tco	.0	1932.0	20.06	5-27-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 92 W. cont.													
19cc	A. N. Hoveland	B	105	18	W	G	CY	N			1929			
19da		Dr		5	P		CY,W	N			1925			P
19dd1	J. Probest	B			T		CY	D	Tco	0.2	1927.2	27.47	6-19-46	
19dd2	do.	Dr			P		CY							
20cd1	Robert Campbell	Du	16	24	W	S,G	CY,W	S	Tco	.8	1927.8	9.38	6-19-46	
20cd2	do.	Du	17.0	12	T	S,G	P	D	Tca	.7	1926.7	3.74	6-19-46	
21aa	U.S. Geological Survey	Dr	295.0	4 3/4	N	X	N	N	L		1926.30	7.35	8-25-47	
21cd1	Ouis Nygaard	Du	31	24	C		CY	N	Tco	2.4	1944.4	10.72	6-19-46	
21cd2	Louis Nygaard	Du	12.0	72	W		N	N	Tcu	1.3	1943.3	9.03	6-19-46	
21dc	Jens Ness	Dr	245	6	P	L	CY	D,S	L		1942	100	9-21-46	P
22da	John Schroder	Du	14	48	W	G	CY	D	Tco	.4	1930.4	7.02	6-21-46	
23cd1	Hans Kostad	Dr	212	2	P	Ss	CY	D,S	L		1935	122	6-21-46	
23cd2	do.	Dr	170	3	P		CY,W	D,S						
24aa		Dr	92	3	P	Ss	N	N,O	Tca	.0	1943.0	34.55	9-12-46	
24da	Robert Bley	Du	13	36	W	G	CY	D,O	Tco	.6	1929.6	7.55	9-12-46	
24dd	P. Metzgen	Du	50	36	W	S,G	CY,W	S	Tco	.5	1944.5	43.37	6-21-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 92 W. cont.													
26ad	James Greenfield	Dr	105	4	P	Ss	CY,W	D,S	Tca	1.2	1954.2	23.79	6-21-46	P
26dd	C. A. Ljunggren	Du	40	48	W	G	N	N	Tcu	1.2	1954.2	25.35	6-21-46	
28ba		Dr		4	P		CY,W	N	Tca	2.0	1937.0	22.00	6-19-46	
29db	Henry Berg	B	65	12	T	G	CY,W	N	Tco	1.5	1948.5	16.15	6-20-46	
30cb	J. Campbell	B	28	16	T	G	CY,W	S	Tco	.3		20.98	6-19-46	U
30cc	Carl Nygaard	B	15.0	28	T		CY,W	D,S	Tca	2.0	1943.0	10.09	5-27-46	
31ad	F. A. Beck	B	50	18	T		CY,W	D,S	L		1945	22.	6-19-46	
31dd	A. E. Greenfield	Du	40	30	W	G	N	N	Tco	1.0	1947.0	13.05	9-12-45	
32cc	J. Greenfield	B	48.0	14	W	G	N	N	Tcu	1.0	1953.0	20.50	6- 6-46	
32dd	H. A. Pierce	Du	22	36	W	G	CY	S,O	Tco	.9	1943.9	12.90	9-12-45	
33bb	Margaret Hane	B	52	12	T	S	CY	N	Tca	.0	1934.0	32.34	6-19-46	
33dd	John Glaskey	Du	18.0	48		G	CY	S	Tco	.2		12.50	6- 7-46	
34bb	Joseph Bly	Du	18	48		G	CY,W	D,S	Tco	.4	1942.4	9.55	6-20-46	
35ad	Joe Bly	B	40	24	W		CY,E	S	Hc	.6	1947.6	20.24	6-21-46	U
35cc	A. Martin	Dr		3			CY,W	S	Hp	1.0	1948.0	24.04	6- 6-46	P
35dd	F. C. Falck	B	33	18	T	S,G	CY,W	D,S,O	Tco	2.0	1955.0	17.05	9-12-45	
36bb	Joe Bly	B	40	24	T		CY	N	Tca	.2	1949.2	25.38	6-20-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 92 W. cont.													
36dd	U.S. Geological Survey	Dr	120.0	4 3/4	N	X	N	N	L		1947	5.88	8-15-47	
	T. 163 N., R. 93 W.													
1aa	Federal Land Bank	Du	31.0	24	W	G	CY	D	Tco	1.0	1949.0	14.07	5-27-46	
1cd		B	35.0	12	T		CY	N	Tca	.0	1936.0	21.72	5-27-46	
3bb	Sedelle Brock	Du	60	18		S	CY,W	N,O	Tco	1.6	1910.6	9.36	9-12-45	
3da1	Herman Dams	B	65	12	T		CY,W	S	Tca	.0	1920.0	46.08	5-24-46	
3da2	do.	B	30	12	T		CY	D	Tca	.8	1920.8	22.06	5-24-46	
4cc	James Johnson	B	70	12	W	L	CY,G	S	Tca	2.4	1905.4	31.76	5-23-46	U
5bb1	Carl M. Johnson	B	50	16	T	L	CY,G	S,O	Tca	.6	1901.6	30	9-10-45	
5bb2	do.	Du	14	12	W	G	CY	D	Tcu	2.5	1904.5	10.09	5-23-46	
5cd		Du		36	C			N	Tca		1897	7.03	5-16-46	
6dc	F. Peterson	Dr	255	2	P	Ss	CY,W	S	L		1907	28	5-22-46	P,U
7ba		Dr		2½	P		CY,G,W	S	L		1917	40	9-10-45	P,U
7dc		B	55.0	24	T	S	CY,W	S	Tca	1.5	1919.5	49.86	5-22-46	U
8ad1	Russell Uleberg	Dr	204	5	P	Ss	CY,G	S	Tca	1.8	1918.8	73.08	5-23-46	C,P
8ad2	do.	B	42.0	12	T	S	CY	D	Tca	1.5	1916.5	9.05	5-23-46	
8cb	Henry Tyndall	B	40	18	T		CY,W	D,S,O	Hp	2.0	1913.0	32	9-10-45	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 93 W. cont.													
9da	Levi Nygaard	Dr	60	2	P	L	CY,W	S	L		1912	40	5-24-46	P,U
10ad1	James Murphy	B	65.0	12	W		CY	D,S	Tcu	.0	1905.0	29.26	5-24-46	
10ad2	do.	B	25.0	18	T		N	N	Tca	1.0	1912.0	22.01	5-24-46	
10cb		B	69.0	12	T	S	CY	S	Tca	1.5	1922.5	40.17	5-24-46	
11da	G. Grairud	B	72	12	T		CY	D,S	Hc	.2	1921.2	26.03	5-27-46	
12aa	J. Dewing	B	60	12	T		CY	D,S	L		1922	30	5-27-46	
12bc	Willis Curtis	DD	47	2-18		L	CY,W	D,S	L		1913	20	5-27-46	P
12cd	A. Curtis	B	63.0	18	T		CY,W	D,S	Bp	1.0	1927.0	37.06	5-27-46	
13bd	do.	B	30	18	T	S	CY	S,O	Tco	1.2	1922.2	15.35	9-13-45	
15ba1	J. Stompro	B	50	18	T		CY,W	S,O	Tco	.7	1916.2	32.55	9-13-45	U
15ba2	do.	Dr		3	P		CY,W	S			1918			P
17ad		B		10	T		CY,W	S	Tco	1.1	1917.1	24.99	5-23-46	
18cd		Dr	150	3	P		CY,W	N	L		1926	60	5-15-46	
19bb	E. Kihle	Du	60	36	W	S	CY,W	S	Tco	.0	1921.0	56.16	5-15-46	
19dd	John Salveson	Dr	150	3	P	Ss	CY,W	S	Tca	1.3	1924.3	56.07	5-15-46	P,U
20bb	Reves	Dr	265	3	P	Ss	CY,W	D,S	Tca	1.3	1925.3	56.06	5-23-46	P
20cc1	Selmer Salveson	B	102	12	T	G	CY,W	S	Tca	2.0	1926.0	39.01	5-15-46	U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 93 W. cont.													
20cc2	Selmer Salveson	B	34	18	T		CY	N	Tca	2.0	1927.0	15.30	5-15-46	
21ab		B	23.0	12	W		CY	N	Tcu	.0	1924.0	30.07	5-24-46	
22dd	Henry T. Swenson	B	65.0	12	T	G	CY,W	S	Tca		1924	36.09	5-24-46	
23aa	U.S. Geological Survey	Dr	255.0	4 3/4	N	X	N	N	L		1913	10.82	8-25-47	P
24cd	Earl Bronin	B	18	T			CY,W	S,O	Tco	1.7	1928.7	33.80	9-11-45	U
24da	Mads Dahl	Dr		4	P		CY,W	D,S	Hp	1.6	1925.6	80.50	5-27-46	P
25cc1	Burte Campbell	Du	20.0	36	W		CY	S	Bp	.0	1933.0	10.20	5-27-46	
25cc2	do.	B	24.0	24	T		CY	D	Tca	1.0	1935.0	8.60	5-27-46	
26cc1	John Nygaard	Du	34	24	C	S	CY,G	D,S	L		1929	14	5-24-46	
26cc2	do.	B	38.0	18	W	S	CY	S	Tcu	3.0	1933.0	12.08	5-24-46	
27da		B	44.0	12	T		N	N	Tca	1.2	1930.2	8.08	5-24-46	
28ab	George Wanamaker	B	40	6	L		CY	D,O	Bp	.3	1928.3	17.55	9-11-45	
28cd		Dr		2	P		CY,H	D,S						P
28dc	E. Ely	B	54.0	12	T		CY	S	Tca	.0	1927.0	15.07	5-24-46	U
28dd	H. Ringwall	Dr	110	4	P		CY	D,S	L		1932	18	5-24-46	P
29cd	Alfred A. Koppenlslon	Dr	200	5	P		CY,W	S	Tca	.0	1927.0	36.07	5-23-46	P
29dd	Mrs. Z. Kvnernum	B	82.0	12	T		CY,W	D,S	Tca	.0	1929.0	28.09	5-23-46	C,P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 93 W. cont.													
30bb	O. Hanson	B		18	W		CY	D,S	Tco	0.0	1917.0	15.62	5-22-46	
31aa	Clarence Shepstad	B	24	24-12	T	S,G	CY	D,S	Tcu	1.0	1927.0	16.13	5-22-46	
31ba1	Charles Darras	B	39.0	24	W		CY,W	S	Tcu	.5	1923.5	16.04	5-22-46	U
31ba2	do.	B	38.0	12	T		CY	S	Tca	1.5	1924.5	12.02	5-22-46	U
31dd	G. Auran	Du	18	36	W		CY	D,S	L		1931	14	5-22-46	
32ba		Du	20	120	C	S	N	D						
32bb		Dr	160	6	P	L	CY	N	Tco	.5	1925.5	9.28	9-11-45	
32bd	Town of Columbus	Dr	270	6	P	Ss	CY,W	D			1928			C,P
33ab	Bonasness	B	40	18	T	S	CY	S	L		1932	36	5-24-46	P,U
34ba	U. S. Geological Survey	Dr	150.0	4 3/4	N	X	N	N	L		1925.60	5.99	8-25-47	
34cc1	Anton Vigen	Du	18.0	48	W		CY	S	Tco	1.1	1936.1	13.09	5-27-46	
34cc2	do.	B	22.0	18	W	S	N	N,O	Tcu	1.0	1936.0	16.00	5-27-46	
35cc	T. A. Vigen	B	40	18	P	S	CY,W	D,S	L		1937	20	5-27-46	
35dc	O. B. Ulsrud	B	33.0	18	T	S	CY,G	D,S	Tco	.8	1938.8	13.50	5-27-46	
36dd	U. S. Geological Survey	Dr	105.0	4 3/4	N	X	N	N	L		1945.94	9.70	8-15-47	
	T. 163 N., R. 94 W.													
1dd	M. O. Kjos	Dr		2½			CY,W	N			1913			

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 94 W. cont.													
2cd1	Conrad Burg	B	16	18	T	S	CY	D	Tca	1.0	1906.0	12.70	4- 9-46	
2cd2	do.	Dr	110	5	P	Ss	CY,W		L		1902	50	9-10-45	P
3aa	Oscar Koester	Dr	200	5	P	Ss	N	N			1901			
3cc1	P. A. Mallum	B		12	T		N	N	Tca	.0	1904	12.76	5-21-46	
3cc2	do.	Du	23	36	W	G	L	N	Tcu	1.3	1904.3	16.25	5-21-46	
4ba1	Hendrickson	Du	15				CY	D	L			10	9-10-45	
4ba2	do.	Dr	300	3	P		CY,W	S	L			60	5-17-46	P,U
4dd		B		12	T		CY,W	N	Tca	1.8		10.08	5-17-46	
6aa1	J. Fawcett	Dr	125	5	P	Ss	CY,W	D,S	Tca	1.1		89.20	5-16-46	P
6aa2	U.S. Geological Survey	Dr	170	4 3/4	N	X	N	N	L		1902		6-19-47	
6bb		Dr	73.0	5	P		N	N,O	Tca	.7		71.80	9-10-45	
6cb	Kemp and Walters	Dr	260	6	P		CY,W	D,S	Tca	.0		54.50	5-16-46	
7aa1	Normal Sims	Du,B	70	36-18		L	CY,W	S	Tca	.0		31.16	5-17-46	
7aa2	do.	Du	15	24	T	S	CY	D	Tca	.5		9.16	5-16-46	
9ab1	Robert Slater	B	22		N	G	N	N	L			21	5-20-46	
9ab2	do.	B	60	14	T	S	CY	N	Tca	.8		25.66	5-20-46	
9ab3	do.	Du	18	36	W	G	CY	N	Bp	1.5		11.40	5-20-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 94 W. cont.													
9ab4	Robert Slater	B	48	14	T	S	CY,W	D,S	Bp	2.2		17.25	5-20-46	
10cd1	A. B. Peterson	Du,B	46	36-18	T	S	CY,W	D,S,O	Tca	.0	1903.0	24.25	9-10-45	
10cd2	do.	B	38	18	W		CY	S	Tco	1.8	1905.8	20.75	5-21-46	
11ab	L. Sorum	Dr	125	4	P		CY,W,G	S	Hc	.2	1920.2	85.43	5-21-46	P,U
12dc	O. Brenno	Dr	96			Ss	CY,W	S	Hp	2.4	1917.4	78.28	5-22-46	P,U
13dd	Anton Brenno Estate	B	23.0	18	T		N	N	Tca	.0	1922.0	15.50	5-22-46	
14aa	John Brenno	Du	20	12	T	S	CY,W	D,S	Tca	.0	1917.0	16.50	5-22-46	P
14cc		Dr		5	P		CY	N	Tca	1.4	1913.4	62.21	5-21-46	
14cd		B	34.0	12	T		CY	N	Tca	1.8	1928.8	15.66	5-24-46	
15ba	A. B. Peterson	B	23	12	T	S	CY	D	Tca	.5	1910.5	20.33	5- -46	
15cc	Amos Peterson	Dr	150	2½	P	Ss	CY,W	S	L		1903	65	5-21-46	P,U
15da1	Carl Sorum	Dr	280	3	P		CY,W	S	Tca	2.0	1909.0	77.41	5-21-46	P
15da2	do.	B	30	12	T		CY	S	Tca	.0	1910	24.75	5- -46	
15dd	U.S. Geological Survey	Dr	166.0	4 3/4	N	X	N	N	L		1907	18.16	8-25-47	
17da1	Anton Starr	Dr	160	2½	P	Ss	CY,E	S	L			60	5-17-46	P,U
17da2	do.	B	25	24		G	CY	D	Bp	1.6		10.02	5-17-46	
18dd	W. Brendt	B	40	14	T	S	CY	N	Tca	.0		41.08	5-16-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 94 W. cont.													
19cc	Louis Somerness	B		18	W	S	CY,W	S	Bp	1.0		29.33	5-16-46	
20ca1	G. Dahl	Dr	240	6	P	Ss	CY,W	D	L			65	5-17-46	P
20ca2	do.	B		18	T		CY	D	Tca	.0		18.76	5-17-46	
21bc	State of North Dakota	Du	55	36-14	T		CY,G	D,S	Hp	.0		50.66	5-17-46	
21cb1	J. Dalebout	B	100	14	T		CY	D	Tca	.0		41.50	5-17-46	
21cb2	do.	Dr		3	P				L			50	5-17-46	
21dd		Dr	113	3½	P		N	N	Tca	1.1		35.75	5-21-46	
22cc	Lars Horntvedt	Dr	198	2½	P	Ss	CY,W	D,S	L		1911	48	5-21-46	P
22db		Dr	98	3			CY,W	S	Tca	.0	1912.0	55.09	5-21-46	P,U
23ab	E. O. Brenell	B	110	18	T		CY,W	S	Tca	.0	1927.0	67.60	5-22-46	P,U
23ba	Henry Gurerhan	B	86	18	T		CY,G	S	Tca	1.0	1923.0	65.08	5-21-46	U
23cd	U.S. Geological Survey	Dr	231.0	4 3/4	N	X	N	N	L		1918	32.80	8-25-47	
23db1	Julian O. Shefstad	Du	28	36-24	W	S	CY	S	Tcu	.0	1918	17.75	5-22-46	
23db2	do.	Du	26	18	W		CY	D	Tcu	1.3	1908.3	17.40	5-22-46	
24aa	Anton Brenno Estate	Dr	200	4	P		CY,E	S	Tca	1.0	1917.0	94.08	5-22-46	P,U
25ba	Leroy Iverson	Du	22.0	36	W	S	CY	D,S	Tcu	.0	1919.0	11.50	5-22-46	
26ba1	Harold Gunlock	Du	20	36	W		CY	S	Tcu	.0	1916.0	7.33	5-22-46	U

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 94 W. cont.													
26ba2	Harold Gunlock	B	29	18	W		CY	S	Tcu	1.2	1918.2	7.10	5-22-46	U
26cb	Jacob Kleppen	Dr	90	5	P		CY,W	S	Tca	1.0	1917.0	52.08	5-21-46	P
26dd1	John Iverson	B	30	18		S	CY	D	Bp	.0	1918.0	12.09	5-22-46	
26dd2	do.	Du	14.0	36	W	S	CY	N	Tcu	.0	1919.0	12.82	5-22-46	
28ad1	Martin Tandberg	Du	25			S	CY,G	D,S,O	Tco	3.7		10.95	9-10-45	
28ad2	do.	Dr	125	5	P	Ss	CY,W	N				Dry	5-21-46	
28cd1	W. Kleinert	B	22	14	T	S	CY	D	Tca	1.1		14.08	5-17-46	
28cd2	do.	Du	12	48	W	S	CY	N	Tcu	2.2		5.25	5-17-46	
30ad	C. Darras	Dr	309	4		Ss	CY,W	D,S	Hp	.0		47.01	5-16-46	P
31dc1	A. F. Shefstad	B	25	24			CY	S,O	Tco	2.0		14.90	9-11-45	
31dc2	do.						CY	S	L			13	9-11-45	
31dc3	do.						CY	D	L			13	9-11-45	
32bd	Hans Rolie	B	30	18-3	P		CY	S	L			1	5-17-46	U
32dd	Lincoln Fire Ins. Co.	B	47	12	W	L	CY	N	Tca	2.0		14.66	5-17-46	
33aa1	Hans Nordrum	Dr	270	2½	P		CY,W	S	L			40	9-10-45	C,P,U
33aa2	do.	B	15.0	12	T		CY	D	Tca	1.1		7.08	5-17-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 94 W. cont.													
34aa	Otto Pasche	B	74.0	24	W	G	CY,W	S	Hc	1.1	1926.1	63.67	5-21-46	
34cd1	Frank Myers	Dr	48	2	P	S	CY,W	S	L			20	5-24-46	U
34cd2	do.	B	52.0	10	T		CY	N	Tca	.0		11.57	5-24-46	
34cd3	do.	Du	12	36	W		CY	D	Bp	1.2		6.05	5-24-46	
34dd	Westly Brenno	B	51.0	18	T		CY,E	S	Tca	.90	1927.9	39.58	5-23-46	U
	T. 164 N., R. 88 W.													
31ba		Dr		4	P		CY	S	Tca	.9		63.80	7-25-46	P
31dd	Ottis Nolting	Dr	100	4	P		N	N						
32bc	T. W. Ryan	Dr	156	4	P	Ss	CY,W	S	Hc	1.2		67.40	7-25-46	
33bc	Clarence Tenderhold	Dr	140	3	P	Ss	CY,W	S	L		1853	47	7-25-46	P
35dd	Dale Olney	Dr	285	4	P	Ss	CY,W	D,S	Tco	1.8	1871.8	40.82	7-25-46	P
	T. 164 N., R. 89 W.													
30dd1	United States Customs	Dr	135	4½	P	Ss	CY,G	D	L		1343	60	9-17-45	P
	and Immigration Distrist													
30dd2	Carl Wolen	Du	22				CY,G	D	L		1344	18	9-17-45	
31ac	Hugh McGilliruay	Dr	156	2	P		CY,G	D,S	L		1872	79	7-17-46	P
31ad		Dr	165	2	P			D			1367			P
31bd		Du			W		N	N	Tco	.7	1372.7	13.00	7-17-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 89 W. cont.													
32ad		Dr	175	2	P		CY	N			1842			
32bb1	E. McIntel	Dr	140	2	P	Ss	CY	D,S	L		1847	80	9-17-45	
32bb2	Great Northern RR	Dr	325	6	P	L		RR						
32bc	do.	Dr	186	6-8	P		CY	S,O	Bp	1.9	1860.9	58.45	9-17-45	P
32dd		Dr	90	2	P	L	CY,W	S	L		1856	25	7-18-46	P
33bc	Henry Irving	Dr	200	3	P		CY	N	Tp	3.6	1844.6	5.90	9-17-45	
34cd	Carl Heile	Dr	150	2	P	Ss	CY,W	D,S	L		1841	40	7-19-46	P
36dd		Du	12.6	84			N	N	Tco	1.8	1851.8	Dry	9-17-45	
	T. 164 N., R. 90 W.													
25dc1	Paul Tafelmeyer	Dr	152	4	P	Ss	CY,W	S	L		1865	90	9-17-45	P
25dc2	do.	Du	20	30	C		CY	D	Tca	.5	1866.5	12.26	7-16-45	
26dc	Herman Kanskap	Dr	170	4	P	Ss	CY,G	D,S	L		1873	110	7-17-46	P
30cc	Myron Wheeler	Du	30	36	C,W	G	N	N	Tcu	1.1		11.77	7-25-46	
32dc	B. L. Wilson	Dr	200	2	P	L	CY,W	S	L			150	6-27-46	P,U
33cc	A. O. Merrill	Dr	85	4-2	P	S	N	N	Tca	2.5	1918.5	27.18	6-27-46	
34cc1	F. Wolkenhauer	Dr	200	6	4	L	CY,G	S	Hp	1.0	1897.0	96.02	6-27-46	P
34cc2	do.	Du	10	26	P	S	P	D	Tca	.6	1893.6	7.41	6-27-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 90 W. cont.													
35dc	H. G. Holtz	Dr	160	2	P	Ss	CY,W	N			1892			
	T. 164 N., R. 91 W.													
28dd	Herman Klitzke	Du	14.5	36	C		CY	N	Tca	1.2		14.00	6-24-46	
31aa	S. O. Crosby	Dr	360	6	P		CY	N	Hp	2.2	1951.2	100+	6-24-46	
31bc		Du		36	W		N	N	Tco	1.1	1951.1	11.20	6-24-46	
32ab1	James Green	Du	18	48-36	W	G	CY	D,S	Tcu	1.9	1942.9	9.71	6-24-46	
32ab2	do.	B	50	24	W		N	N	Tcu	2.2	1944.2	9.48	6-24-46	
32dc1	Bank of North Dakota	Dr	362	1¼-3	P	Ss	CY,G	S	L		1950	125	6-24-46	P
32dc2	do.	Du	16	36		S	CY	D	L		1952	15	6-24-46	
33ba1	T. Tate	Du	30	36			CY	S	Tcu	.9		9.68	6-24-46	
33ba2	do.	Du	30	24	T		CY,W	D,S	Tca	1.0		26.30	6-24-46	
34dc	A. Lund	Dr	56	2	P	S	CY,W	D,S	L			26	6-25-46	P
35dd	Mrs. M. Lanthorn	Du	30	48	W	S	CY	D,S,O	Tco	.7		22.10	9-16-45	
36bb	Leonard Wheeler	Du	18	49	W	S	CY	N	Tcu	2.0		10.06	6-25-46	
	T. 164 N., R. 92 W.													
25cd1	Phillip Stark	B		24	W		CY	S	Tco	1.4	1950.4	12.78	6-24-46	
25cd2	do.	Du	14	48		S	CY	D	Tco	1.3	1959.3	9.50	6-24-46	

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 92 W. cont.													
25dd	M. St. P., & S. Ste. M. RR	Dr	708	8	P	Ss,X	A,E	Railway			1950		9-12-45	P
26dc		Du		26	W		CY	N	Tco	1.0	1965.0	12.25	6-21-46	
31ba		Du	25	36	W	S	H	D			1958			
34db		Dr	400	3	P		CY,H	N						P
34dc1	John Ruppert	Du	54	36	W	S	N	N,O	Tco	1.0	1962.1	8.78	9-12-45	U
34dc2	do.	Dr	345	4	P		CY,G	S			1959			
36ac	Walter S. Weimers	B		18	T		CY	N	Tco	.2	1950.2	9.55	9-12-45	
36dd	U.S. Geological Survey	Dr	265.0	4 3/4	N	X	N	N	L		1950	6.60	8-25-47	
	T. 164 N., R. 93 W.													
26cd		Du	45.0	24	P		N	N	Tca	.0	1966.0	40.08	5-24-46	
27cc1	John A. Larson	Du	18.0	36	W	S	CY,W	S	Tco	.4	1930.4	16.66	5-23-46	
27cc2	do.	Du	25.0	12	W	S	CY,W	D	Tcu	.0	1924.0	15.66	5-23-46	
31dd	U.S. Geological Survey	Dr	50.0	4 3/4	N	X	N	N	L		1903	9.92	8-25-47	
33cd	G. Percy	Du	10.0		N	L	CY,W	N	L	.0	1912.0	8.08	5-23-46	
35dc	O. J. M. Olson	Du	26	36	W	S	CY,W	D,S,O	Tco	1.1		23.27	9-12-45	
	T. 164 N., R. 94 W.													
32cc		Dr	125	4	P		CY,W	D,S	L		1907	70	5-16-46	P

Burke County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 94 W. cont.													
33ad	David Early	Dr	110	3	P		CY,G	D,S	L		1905	100+	5-17-46	P
33dd	J. B. Knudson	Dr	160	6	P		CY,W	D,S	L		1900	40	9-10-45	
34cc1	State of North Dakota	Dr		4	P		N	N			1895			
34cc2	do.	Du	15.0	48	W	G	CY,G	S	Tcu	2.26	1900.7	2.50	5-17-46	
35bc		Dr		2½	P		CY	N	Tca	2.9	1891.9	62.25	5-21-46	
35dd1	Cora Johnson	B	16.0	18	T		N	N	Tca	1.0	1898.0	14.30	5-21-46	
35dd2	do.	Dr	200	5	P	Ss	CY	N			1895			

Table -- Record of Wells in Divide County, North Dakota

Well number 1/	Owner or tenant	Type of well 2/	Depth of well (feet) 3/	Diameter of well (in.)	Type of casing 4/	Character of water-bearing material 5/	Method of lift 6/	Use of water 7/	Measuring point: Description 8/	Measuring point: Distance above land surface (feet)	Measuring point: Height above mean sea-level (feet)	Depth to water level below measuring point (feet) 9/	Date of measurement	Chemical analysis 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 97 W.													
4aa		Du		48	W		CY,H	N	Bp	0.0		4.94	7-11-47	
6cd		Dr		4	P		CY,H	N	Bp	.9		48.96	7- 9-47	
7cc	T. N. Jorgenson	Dr	225	2	P	Q	N	N	Tca	1.3		43.25	7- 9-47	
8cd	J. P. Swendeck	Dr	135	6	P	S	CY,W	D,S	Bp	1.6		46.55	7-11-47	
16ad1	Olin Torgenson	Du	7.0	40	W		N	N	Tca	2.2		3.26	7-11-47	
16ad2	do.	Dr	300	4	P	CY,H	N							

Footnotes:

1. Location number: Well numbers give the location of wells according to General Land Office Surveys and according to the following formula: Township--Range--Section, 160-acre tract within that section, and the 40-acre tract within the quarter section. If two or more wells are located within a 40-acre tract, the wells are numbered serially according to the order in which they were inventoried. The 160-acre and 40-acre tracts are designated a, b, c or d in a counter-clockwise direction beginning in the northeast quarter. For example: Well 162-96-5cd1 is located in SE¼, Sec. 5, T. 162 N., R. 96 W., and was the first of two or more wells inventoried in that 40-acre tract. In this tabulation, the numbers representing the township and range have been omitted in the column headed "Well number".

2. B, bored well; DD dug and drilled well; Dn, driven well; Dr, drilled well; Du, dug well; Sp, spring.

3. Reported depths below the land surface are given in feet; measured depths are given in feet and tenths below measuring points.

4. C, concrete (brick tile or pipe); P, iron or steel pipe; T, clay tile; W, wood.

5. Cl, clay, and sandy clay; Clb, blue sandy clay; Cly, yellow sandy clay; G, gravel; L, lignite; Q, quicksand; R, rock undifferentiated; S, sand; Sh, shale; Ss, sandstone; X, see well logs.

6. Method of lift: C, horizontal centrifugal; Cy, cylinder; F, natural flow; N, none; P, pitcher pump; S, submersible turbine; T, turbine; VC, vertical centrifugal.
Type of Power: B, butane; E, electric; G, gas engine; H, hand operated; T, tractor; W, windmill.
Flow given in gallons a minute.

7. D, domestic; I, irrigation; In, industrial; N, not being used; O, observation; P, public supply; S, stock.

8. Bp, base of pump; Hp, hole in pump base; Hc, hole in casing; L, land surface; Tca, top of casing; Tco, top of cover; Tcu; top of curb; Tp, top of pump.

9. Measured depths to water level are given in feet, tenths and hundredths; reported depths to water level are given in feet.

10. P, partial analysis; C, complete analysis; U, reported as not suitable for domestic use.

Divide County, cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 97 W. cont.													
17dc		B	160	16	T	S,G	CY,W	N	Bp	0.3		48.72	7-11-47	
18dd	Calmer Wendsted						CY,W	D,S						
19da	A. Hay	B	87	18	T	S	N	N	Tca	2.2		78.93	7-11-47	
20ab	Duncan Hay	Dr	150	5	P	G	CY,W	D,S						P
21ad		B		24	W		CY,W	D,S						
21cc1	K. O. Koch	Du	14	48	W	S	N	N						
21cc2	do.	B	78	18	T		CY,H	D,S	Bp	.3		49.04	7-11-47	
29bb	E. O. Redkin	B	112	18	T	S,G	CY,G	D,S	Bp	.3		83.17	7-11-47	
30aa	O. C. Redkin	B	127	18	T	S	CY,G	D,S	L			87		
31ad	John Larson	B	103	18	T	G	CY,H	N	Tca	.6		40.15	7-11-47	
31dd	C. F. Bissonnetle	B	90	12	T	Q	CY,E	D,S						
32cd	R. H. Points	B	28	24	T	Cl	CY,H	N	Tca	.4		18.62	7-11-47	
	T. 161 N., R. 98 W.													
1ad		Dr	105	6	P	S	CY,G	S						
2bb		Du	24.0	60	W		CY,G	D,S	Tca	3.0		8.92	7-11-47	
2dc		Dr	132	3	P		CY,H	N						

Davide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 98 W. cont.													
3cd	Nels Twedt	Dr	350	4	P	Q	CY,W	N						
5ad	J. Steenson	B	80	18	W		CY,W	D,S						
8cc		B	18	18	T		CY,H		Bp	0.1		16.12	7-10-47	
9aa	Fieldstad Estate	Dr	325	2	P		CY,W	N	Bp	.6		50.58	7-10-47	
9dc1		B		18	W		CY,H	N	Bp	.5		8.85	7-10-47	
9dc2		Du	16.0	48	W		CY,H	N	Tca	1.3		8.11	7-10-47	
9dc3		Dr		4	P		N	N						
10ab	Mrs. Johanna Johnson	B	100	18	T	G	CY,W	D,S				35		
11cc	U.S. Geological Survey	Dr	500.0	4 3/4	N	X	N	N	L		2077.11	55.0	6-27-47	
11dd		B		18	T		CY,W	N	Bp	1.0		51.10	7- 9-47	
12aa	T. Martin	Dr	95	4	P		CY,W	N	Bp	1.3		46.65	7- 9-47	
12bc	O. Olson	Dr	465	1½-4	P	S	CY,W	N						
13aa	W. N. Munbell	Dr	65	4	P	S	CY,H	N						
13ba1	Axel Sorbo	B	60	18	T	G	CY,H		Tca	.2		26.47	7- 9-47	
13ba2	do.	B	40	18	T	S	N	N	Tca	.0		11.47	7- 9-47	
13ba3	do.	Du		36	W		CY,H	D						

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 98 W. cont.													
13dd	M. Joyce	B	30	18	W	G	CY,W	N	Tco	0.8		13.02	7-10-47	
14ab		B		18	T		CY,G		Bp	.8		41.30	7- 9-47	
14ba		B		18	T		CY,W	N	Bp	.3		41.35	7- 9-47	
15bb	H. B. Borrows	Dr	130	3 to 4	P	G	CY,W	D,S						P
16bb		B		24	W		CY,H	D	Bp	1.4		9.62		
17aa	Dwayne Lindsay	Du	14	48	W		CY,G	S	Tco	.9		7.05	7-10-47	
18cd	A. U. Anderson	Dr	320	3	P	S	CY,G	D,S						
18da1	B. Nelson	Dr	300	3	P	S	CY,W	D,S						P
18da2	do.	B		18	W		CY,H	N	Tco	1.9		5.78	7-10-47	
19bb	Otleson Estate	Dr	100	4	P		CY,H	D,S				10		
20aa	A. M. Nelson	Dr	160	3	P	Q	CY,H	N						
20bb1	Nels Sandburg	Dr	224	2-4	P	S	CY,E	S	Bp	1.6		39.72	7-10-47	P
20bb2	do.	B	96	16	T		CY,H	D	Bp	1.5		4.79	7-10-47	
21cc	S. Spelhaug	Dr	90	5	P	S	CY,W	S						
21dc		Dr		2	P		N	N	Tca	1.7		37.39	7-10-47	
22aa	L. S. Goldal	Dr	65		P		CY,W	D,S	Bp	2.6		35.33	7-10-47	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 98 W. cont.													
23bd	J. Halvorson	B	40	24	T	S	CY,W	N	Tca	2.3		25.31	7-10-47	
23ca	J. Miller	B	50	24	T	S	CY,W	N						
24aa	J. P. McLaughlin	B	39	18	T	G	F	D,S						
24ba	Gilbert Larsen	B	90	24	T	S	CY,W	N	Tco	1.7		17.78	7-10-48	
25aa	Carl Bentson	Dr	268	5	P	S	CY,G	D,S						
25cb	John Then	B	78	18	T	S	CY,W	N						
25da	Stanley Stauffer	Dr	268				CY,G	D,S						P
27bb	U.S. Geological Survey	Dr	60.0	4 3/4	N	X	N	N	L		2030.29	6.43	6-28-47	
28da	J. Schnell	B	30	24	T	G	CY,W	D,S	Tco	.3		19.38	7-10-47	
30aa	Alfred Hall	B	84	18	T	S	CY,W	S	Bp	1.3		23.69	7-10-47	
30ab	do.	B	21	18	T		CY,H	D,S	Tco	2.2		11.36	7-10-47	
31bc	May Hoffy	Du	4	72	W		F	D,S						
32ab	Mrs. Simms	Du	10	48	W		CY,W	N						
33bc	O. T. Olnus	Du	10	48	W	S	CY,H	D,S						
34dc	John Herland Jr.	B	96	18	T		CY,B	D,S						

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 95 W.													
1bb	Olaf Hagen	B	25.0	18	T	L	CY,H	D,S	Bp	0.5		17.00	8-14-47	
2bb	Eric Brandt	Du	20.0	42	N		P,H	N	L			13.20	8-14-47	
4aa	Town of Noonan	B	35			G	N	N						C
4ad1	do.	Dr	260	5	P	Ss	T,E	P				19	9-11-45	
4ad2	do.	Dr	3.65	5	P	Ss	T,E	S				50	5-15-47	C,P
5ad		Dr	340	6	P	Ss	CY,E	D,S	Tca	.2		57.59	8-14-47	P,U
5cb	Smithberg Estate	B	35+	18	T	S	CY,W	S	Bp	2.2		26.20	8-14-47	U
6bc		Du	10	24	W	S	CY,E	D,S	Tco	1.1		7.94	8-13-47	
7ab	Mrs. Jenny Sorenson	Dr	230	4	P	R	CY,W	D,S				15	8-14-47	P
7cb	Jonas Olson	Du	20	48	W	S	CY,H	S	Tca	1.0		12.09	5- 9-47	
7dd	do.	B	35	24	W	S	CY,H	N	Tca	1.0		31.31	5-12-47	
9ab	G. W. Wilson	B	40	14	T	L	N	N	Tca	.0		20.77	5-12-47	
9cd	do.	B	60	24		S	CY,W	D,S						
9dd	A. F. Kimball	B	100	14	P	S	CY,E	D,S						
10cc	do.	Dr	185	4	P	S	CY,W	N	Tco	1.2		100+	5-12-47	
10dd1	Elmer Taylor	Dr	48	36	W	S	CY,W	D,S	Tco	1.5		18.18	5-12-47	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 95 W. cont.													
10dd2	Elmer Taylor	Du	13	40	W	S	CY,H	D,S	Tco	1.0		3.97	5-12-47	
12da		Du	12				CY,H	N	Tp	3.0		1.00	5-13-47	
13ac	G. Peterson	B	35	18	W		CY,H	N				Dry		
13ca	W. Nordman	B	50	18	W	L	CY,W	N	Tco	.0		32.64	5-12-47	
14cc	F. Hener	Dr	122	4	P	L	CY,W	D,S						C,P
15ab1	do.	Du	21	14	T	G	CY,W	S	Bp	.8		18.91	5-12-47	
15ab2	do.	B	80	14	T		CY,H	D	Tca	1.0		16.11	5-12-47	
15bb	F. B. Kimball	B	45	24	W	S,G	CY,W	D,S	Bp	2.4		35.45	5-12-47	
17cb1	A. Derrandt	Dr	80	6	P	S	CY,W	S						P
17cb2	do.	B	12	8	T		CY,H	N				Dry		
18bd1	Morris D'huyvetter	Du	30	40	W		CY,W	D,S						
18bd2	do.	Dr	80	5	P	S	CY,W	D,S						P
	T. 162 N., R. 96 W.													
1cd	T. Joyce	Du	22.0	24	W	S	CY,W	D,S	Tca	1.3	1973.3	16.03	8-13-47	
1dd	T. Noonan	B	60	18	W	Clb.	CY,G	D,S	Bp	1.1	1973.1	37.07	8-13-47	
2dc	John Krecklau	B	52	18	T		CY,W	D,S	Tca	.8	1981.8	47.94	8-13-47	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 96 W. cont.													
3ba		Du	11.0	60	W		CY,G	S	Tco	1.4	1909.4	10.50	8-23-47	
3cb	M. B. Benson	Dr		4	P	Q	CY,W	N	Tca	.6	2001.6	93.34	8-13-47	
5aa		B		12	T		CY,W	N	Bp	.7	1967.7	22.24	8-13-47	
5dc1	O. Romos	Dr	320	5	P	S	CY,W	S			1954			C,P
5dc2	do.	B	38	12	T		CY,H	D	Tca	.7	1954.7	34.65	8-13-46	
7cb1	Kenneth Granrod	Du	12	24	P		CY,H	N	Tco	1.2		6.44	8-12-46	
7cb2	do.	Du	13	36	W		CY,H	D,S	Tco	1.5		11.44	8-12-46	
7da	Othard Stenerson	B	42	18	T	G	CY,H	D,S	Tca	1.3		40.59	8-12-46	
7dd	Peter J. Haugland	B	70	12	T		CY,W	D,S	Tca	.5		43.53	8-12-46	
8bb	O. Romos	B	25	12	T	S	CY,H	N	Tco	.3	1957.3	17.24	8-13-46	
10ba	J. Noonan	Dr	140	5	P	S	CY,H	N	Tca	.0	2023.0	122.64	8-13-46	
10dd	Vincent Rendal	B	50	24	W	Q	CY,W	S	Bp	1.0		28.12	5- 9-47	
11aa	U.S. Geological Survey	Dr	100.0	4 3/4	N	X	N	N	L		1953.5	5.61	6-30-47	
11cc	Vincent Rendal	Du	17	40	W		N	N		-5.4		6.29	5- 9-47	
12dd	A. Verlindy	Du,Dn	[illegible]	1½-48	P,W		CY,W	D,S						
13ab	Edgar Wilson	Dr	600	4	P		CY,W	D,S						

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 96 W. cont.													
13db	H. Focke	Dr	300	5	P	G	CY,W	D,S						P
15aa1	E. Knicklow	Dr	390	5	P	S	CY,W	S						P
15aa2	do.	Du	10	36	W	G	CY,H	D	Tco	1.5		3.90	5- 9-47	
15bb1	Vincent Rendal	Dr	200	6	P		CY,W	S						P
15bb2	do.	Du	20	48	W	Cl	CY,H	D						
17cc	Mrs. A. Smithberg	B	25	14	T		N	N	Tca	2.0		22.91	5- 9-47	
18bb1	Andrew Lunde	B	57	14	C		CY,H	S	Tca	1.3		21.43	8-12-46	
18bb2	do.	Du	18	40	W	Q	CY,H	D,S				16	8-12-46	
21ba	P. Fry	Dr	115	6	P		CY,H	S						P
30bc	A. Bummer	Dr	150	6	P	S	CY,G	D,S						P
	T. 162 N., R. 97 W.													
1cb		B		12	T	Cl	CY,H	N	Tca	.9		9.40	8-12-46	
1dc		B	40.0	12	T		N	N	Tca	.0		8.84	8-12-46	
2bb		B	33.0	24	T	Cl	N	N	Tco	.3		13.85	8- 9-46	
4bc	C. H. Berg	B	40	18	T	G	CY,W	D,S	L			20	9- 8-45	
5aa	Edwin Peterson	B	30	18	T	S	CY,W	D,S	Tca	.3		25.19	8- 8-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 97 W. cont.													
6da1	Adolf Carlson	B	25	18	T		N	N	Tca	0.5		18.20	9- 8-45	
6da2	do.	B	27		T		CY,W	D,S						
8bc	George Carlson	B	50	18	T	S,G	CY,W	D,S	L			44	8- 3-46	
8cc	A. T. Dolan	Du	52	48	W		CY,W	D,S	Tcu	1.4		34.14	8- 9-46	
9aa	Petra Svangetu	Dr	109	4	P	Q	CY,W	D,S	Tca	.6		32.90	8- 9-46	P
10bb	Nels Lodahl	Dr	322	4	P	Ss	F	D,S				Flow	8- 9-46	P
12ad	Edwin Skar	B	30	18	T	S	CY,H	D,O	Tco	.6		24.80	9- 8-45	
12da	do.	B		18	T	S	CY,H	S,O	Tco			7.60	9- 8-45	
12dd		B		18	T	S	CY,H	S,O	Tco	.1		8.05	9- 8-45	
13aa	Thor Berg	B	40				CY,H	D	Tca	1.5		14.20	8-12-46	
13cd1	Olaf Anderson	B	30	12	T	Q	N	S	Tca	.6		11.37	8-12-46	
13cd2	do.	B	16	24	T	Cl	CY,H	N	Tca	1.3		12.45	8-12-46	
14aa1	Mrs. Hanna Bilstad	Dr	265	6	P	Q	N	D	Tca	2.7		Flow	8-12-46	P
14aa2	do.	Dr	279			Ss	N							
14ba1	Gordon Peterson	Du	10.2	26	W	Q	N	D,S	Tca	1.7		9.94	8-12-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 97 W. cont.													
14ba2	Gordon Peterson	Du	7.0	36	W	Q	CY,H	N	Bp	1.4		6.11	8-12-46	
14cd1	Olaf Wenstead	B	26	18			CY,H	S	Bp	2.1		10.28	9- 8-45	
14cd2	do.	B	85	18			CY,W		L			50		
15bb1	E. E. Bothum	B	50	18	T	G	CY,W,G	S	Tco	2.0		20.65	9- 8-45	
15bb2	do.	B	50		T	G	CY,H	D						
15da	N. Overbo	Du	8	36	T	Cl,S	CY,H	S	Tco	2.2		8.80	8-12-46	
16dd	Public school	B		18	T		CY,H	D	Tco	1.1		22.75	9- 8-45	
17cc	O. Storasli	B	40	18	T	S	CY,W	D,S	L			38	9- 8-45	
18aa	O. N. Norstog	B	57	18	T	S	CY,G	S,O	Tco	1.1		26.15	9- 9-45	
19cc1	Melvin Wenstad	Dr	700	5	P	Ss	N		Tca	1.0		38.81	5-10-46	
19cc2	do.	Dr	350	5	P		CY,W							P
19dd	Alvin Westlie	B	130	18	T		CY,W		Tco	.8		46.05	8- 8-46	
20aa	O. Bakken	B	70	18	T	Q	CY,W		L			20	9- 8-45	
20ba	Kirchhofer	B	78	28	W	Q	CY,W		L			36	8- 8-46	
21aa	Tilda Throntueit	Du	22	36	W		CY,G		Tco	2.0		21.41	8- 9-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 97 W. cont.													
21bb	O. Beaken	B		18	T	Q	CY,W	N,O	Tco	1.3		18.15	9- 8-45	
22bc	Raymond Schwanz	B	40	18	W	Q	CY,W	D,S	Tco	.0		26.60	8- 9-46	
24bb		Du	17	48	W		N	N				Dry		
25bc		B	90	18		Q	CY,W	N	Tp	5.0		42.03	5- 9-47	
28bb	F. W. Hass	B	65	18	T	Q	CY,W	D,S				15	9- 8-45	
28cd	F. H. Gehrke	Du	15	48	W	Q	CY,H	D,S	Tco	.2		9.95	8-12-46	
29ab	J. A. Nordstog	B	50	18	T	Q	CY,W	D,S				32	9- 8-45	
30cc	O. Weimoth	B	90	19	T		CY,W	D,S				18	8-12-46	
31dd	J. W. Murphy	Dr	143	5	P	Q	CY,W	D,S				40	5- 8-47	P
32aa		B		13	W		N	N				Dry		
32ba		Du	16.0	18	P		CY,G	S	Tca	.2		4.65	8-23-46	
32cb		Dr		5	P		CY,H	N						
32dc	T. E. Ebreck	Du	10	60	C		F	D,S	Tca	3.0		.18	5- 9-47	
33dd	M. J. Miller	Dr	192	4	P	Ss,X	CY,W	N	Tp	3.9		7.34	5- 9-47	
34aa	Arnold Jacobson	B	35	24	T	G	CY,W	D,S	Tco	1.5		18.35	5- 9-47	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 97 W. cont.													
34cd		Du	10	48	W	Q	N	N	Tca	1.5		9.71	5- 9-47	
35bb	F. Hass	B	37	24	T	Q	CY,T	D,S	Tca	1.0		15.31	5- 9-47	
36aa	J. M. Lerrick	Dr	184	5	P	S	CY,W	S				100	5-10-47	P
	T. 162 N., R. 98 W.													
1bb	Rex Polling	Dr	300	5	P		Fl.5	S						P
1da1	Herman Larson	Du	19.5	48	W		P,H	D	Bp	.8		18.10	5- 9-46	
1da2	do.	Dr	270	3	P	L	FO.5	S						P
2cd1	Mons Kuale	B	52	24	T	S	CY,G	D,S				30	5- 9-46	
2cd2	do.	B	31.0	24	T		CY,H	N	Tco	1.0		19.25	5- 9-46	
3aa1	S. S. Aubjer	B	60	18	T		CY,G	N	Tco	1.1	2095.1	27.90	8- 7-46	
3aa2	do.	Dr		3	P		CY,H	D,S			2094			P
3cd	Andrew Holm	B	30	24	T	S	CY,G	D,S	Tca	1.8	2115.8	16.80	8- 7-46	
4cb	Mrs. S. K. Unhjem	Dr	109	6	P		CY,W	N			2202	101	8-27-46	
4dc	Andrew Holm	B	60	18	W	Q	CY,G	S	Tco	.5	2188.5	32.78	8-27-46	
5ad	Knute Unhjem	Dr	107	6	P	Q	CY,W	D,S				97	8-27-46	P
6ba	Frank Fay	Dr	307	5	P	L	CY,W	N			2250			P

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 98 W. cont.													
6bb	Frank Fay	B	26	18	W	G	N	N	Tca	2.8	2248.8	11.37	5- 6-47	
6cc		Du	14.0	40	W	G	CY,H	S	Tca	1.4	2249.4	12.69	5- 6-47	
7cc1	Henning Magneson	Du	27.0	36	W		CY,H	N	Tca	1.0		5.92	5- 7-47	
7cc2	do.	B		18	W		N	N	Tca	2.0		4.28	5- 7-47	
8ab	E. Christenson	B					CY,W	D,S			2192			
8da	V. E. Sparks	Du	24	72	C	G	CY,G	D,S				18	8-23-46	
9cd	F. Moe	Du	14	48	W		CY,H	N						
10ba1	Anders Sanderson	Dr	220	4	P	G	CY,G	S	Tca	1.6	2118.6	21.00	8- 7-46	
11bb	D. Minnie	B					CY,G	D,S						
12cb	O. Hille	Dr		3	P	S	FO.5	S				Flow		
12cd	George Thompson	Dr	160	3	P	S	FO.5	D,S				Flow		
12dd	U.S. Geological Survey	Dr	324.0	4 3/4	N	X	F2.5	N	L		2026.62	Flow	6-27-47	
13cd1	G. Westry	B	63.0	18	T	Q	CY,H	D,S	Bp			15.84	5- 9-46	
13cd2	do.	Dr	350	2-3	P	L	FO.1	D,S				Flow		
14ba		Du		28	W		N,H	N	Tca	1.3		6.98	8-27-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 98 W. cont.													
14cc		B	57.0	12	T		N,W	N	Tca	0.3		22.30	8-27-46	
14da1	Aslak Dolan	B	108	18	W	S	CY,H	D,S	Bp	1.0		74.95	5- 9-46	
14da2	do.	Dr	140	5	P		N	N	Tca	.5		2.20	5- 9-46	P
17dd	Grace Tollison	B	60	12	T	G	CY,H	N	Tca	.6		9.04	8-23-46	
18bc	August Wallan	Du	25	48	W	S	N	N						
18cc		B	33.0	18	W		N	N	Tca	2.1		11.39	5- 7-47	
19ab1	Olaf Anderson	Du	14.0	40	W	G	CY,T	D,S	Tca	1.4		8.25	5- 7-47	
19ab2	do.	Du	18	40	W	G	CY,H	D	Tco	1.4		10.06	5- 7-47	
19cd		B	22.0	24	W	S	CY,H	N	Tca	1.0		10.83	5- 7-47	
21cc	Richard Haugenoe	Du	7	36	W	G	P,H	D,S	Tca	3.3		3.99	8-23-46	
22ad	Hans J. Boake	Dr	150	6	P	S,L	CY,H	N	Bp	1.0		33.11	8-27-46	
22cd		B		12	W		CY,H	N	Tca	1.9		19.45	8-27-46	
23cc	U.S. Geological Survey	Dr	367.0	4 3/4	N	X	N	N	L		2077.84	14.34	6-26-47	
23da1	Peter Moe	Dr		3	P		CY,W	N				20	8-27-46	
23da2	do.	B	138.0	14	T		CY,H	D,S	Tca	.6		55.77	8-27-46	
23da3	do.	Dr	400	3	P		FO.1	S				Flow		P

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 98 W. cont.													
24aa	C. P. Prahl	Dr	400	3	P		FO.2	D,S				Flow		P
25aa	Martin Welo	Dr	354	5	P	Q	CY,W	D,S				35	5-10-46	
25ba		B					CY,H	N	Tca	1.0		4.04	5-10-46	
25cd	Julius Johnson	B	86	18	W	S	CY,W	D,S				66	8-23-46	
26ab	H. Moe	Dr	362	2	P		FO.2	D,S				Flow		P
27aa	A. J. Reckner	B	180	12	T		CY,W	S	Tca	1.4		23.10	8-27-46	
28aa	T. Poirier	B	70	12	T		CY,W	D,S	Tca	1.0		27.46	8-27-46	
28ba		B	60	12	T	Q	CY,W	D,S	Tca	1.6		17.03	8-23-46	
29bb1	Oscar Okerlund	Du	18	60	W	S,G	CY,H	N						
29bb2	do.	Du	10	48	W	Q	N	N	Tco	2.7		2.32	5- 8-47	
30cb	O. H. Holte	Du	10	60	W	S	N	N	Tca	1.5		1.93	5- 8-47	
31aa1	C. Olson	B	20	12	T		CY,H	D						
31aa2	do.	B	65	18	T		N	N	Tca	1.0		14.37	5- 8-47	
31aa3	do.	Dr	365	4	P		CY,W	S						P
31bd	Clifford Olson	B	67	12	T		CY,W	D,S						

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 98 W. cont.													
22bb	M. Overland	Dr	380	3	P	Q	CY,W	S						P
33cb1	Mrs. G. Swanson	Dr	297	3	P	Q	N	N	Tca	1.5		24.29	5- 8-47	
33cb2	do.	B	100	18	T		CY,H	S	Tco	1.8		19.35	5- 8-47	
34ba		Dr		3-6	P		N	N	Tca	2.4		2.42	8-23-46	
35cc		Dr	297	3	P		CY,W							P
35dd	C. Bendickson	Dr	105	5	P		CY,W	D,S						P
	T. 162 N., R. 99 W.													
1bb1	A. Holmquist	B	62	30	W	G	CY,W	S	Tca	2.0	2263.0	14.25	5- 2-47	
1bb2	do.	Du	12	48	W	G	CY,H	N	Tco	1.0	2252.0	9.02	5- 2-47	
2aa	do.	Dr	330	4	P		CY,W				2290			
2ac		B		30	W		CY,H	D,S	Tca	3.0	2297.0	7.84	5- 2-47	
2da	Olaf Faldalen	Du	10	30	W		N	N	Tca	2.0	2270.0	3.86	5- 7-47	
2dd	do.	Dr,B	87	6-18	P,W	G	CY,W	S	Bp	4.0	2288.0	42.84	5- 7-47	
11aa1	Julius Lystad	B	28	24	W	Cl,S	CY,H	S	Bp	1.4	2288.4	17.39	5- 7-47	
11aa2	do.	B	25	18	T	Cl	CY,H	D	Tca	.5	2280.5	11.25	5- 7-47	
11aa3	do.	B		24	W	Cl	CY,H	S	Tco	1.2	2281.2	5.13	5- 7-47	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 99 W. cont.													
11bb1	S. Larson	Dr		18	W		CY,H	D,S	Tco	1.8		19.62	5- 7-47	
11bb2	do.	Du	13.0	48	W		N	N	Tca	1.0		.30	5- 7-47	
13aa1	Eliof Anderson	B	30	18	W		CY,H	D	Bp	1.8		10.61	5- 7-47	
13aa2	do.	B	67	18	W	Cl	CY,H	N	Tca	1.0		17.70	5- 7-47	
14ad		Du		40	W									
14dd1		B	90	18	W		CY,H	N	Bp	1.0		17.52	5- 7-47	
14dd2		B	40	18	W		CY,H	N	Bp	2.4		11.34	5- 7-47	
24cb		B	17	24	W	S	CY,T	D						
25dd	Otto Johnson	Du	2.5	72	C	Cl,S	N	N	Tco	1.5		2.50	5- 8-47	
34da	E. Ellingson	Dr	508	2-3	P	S	CY,W	S				100	5- 1-47	P
35aa1	Arne Bjorntredt	B	21	36	W	S	CY,H	D,S	Tca	.8		9.91	5- 8-47	
35aa2	do.	B	21	36	W	S	N	N	L			7.89	5- 8-47	
35aa3	do.	B	37	18	W		CY,H	N	Tca	1.0		8.58	5- 8-47	
35bb	J. L. Ellingson	B	82	18	T	G	CY,H	N	Bp	.5		8.48	5- 8-47	
35db	L. O. Anderson	B	54	24	C	S	CY,H	N	Bp	1.0		11.88	5- 8-47	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 95 W.													
1da		Dr	190	6	P		CY,W	S						P
1dd	J. Joos	Dr		3	P		CY,W	D,S				55	8-20-46	
2aa		B		18	T	Cl,G	CY,W	S	Bp	1.2		40.33	8-20-46	
3cc	Henry Minne	B	60	18	T	S	CY,W	S,O	Tco	1.0		21.30	9-10-46	
4ad	Devrios	B	50	12	T	G	CY,W	N	Bp	.7		23.47	8-21-46	
4bd1	Emil Caussyn	B	90	24	W	G	CY,W	S	Tco	1.2		37.74	8-21-46	
4bd2	do.	B	45	12	W-T		CY,H	D	Bp	.7		26.47	8-21-46	
4bd3	do.	Dr	190				N					Dry	8-21-46	
4ca	K. C. Dolbout	Dr	70	5	P		N	N	Tca	1.2		14.79	8-21-46	
5ba	Curtis Anderson	Dr	149	5	P	Ss	CY,W	D,S	L			20	9- 9-45	
5cb		Du		36	W		N	N	Tcu	1.1		14.36	8-21-45	
5cc		B		30	W		N	N	Tco	.3		17.63	8-21-45	
7cb	John L. Baker	Du	35	36	W	G	CY,H	D,S	Tco	.8		32.77	8-21-45	
8bc	State School Land	B	36	24		G	CY,H	S,O	Tco	.7		18.75	9- 9-45	
10da	O. Davis	Dr	80	5	P	Ss	CY,W	N						
12bd1	Oscar Monseth	Dr		3	P		N	N	Tca	1.2		3.58	8-20-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 95 W. cont.													
12bb2	Oscar Monseth	B	110	28	W	S	CY,W	N	Tco	1.0		78.72	8-20-46	
14cd	Orville Moline	B	65	12	W	S	CY,H	N	Bp	1.6		28.18	8-21-46	
14da	Albert Moline	Dr	120	6	P	L	CY,W	S	Tca	1.0		31.36	8-20-46	P
15dd1	F. Wheeler	Dr	200	5	P		CY,H	N	Tca	.6		29.19	8-21-46	
15dd2	U.S. Geological Survey	Dr	100.0	4 3/4	N	X	N	N	L		1907			
18ba	State School Land	B	90	12	W		CY,W	S	Bp	1.3		41.77	8-21-46	
17ba1	Orrin Lion	B	47	24	W	L	N	N,O	Tca	1.9		21.30	9- 9-45	
17ba2	do.	B	43	16	T	L	CY,W	D,S	L			20	8-21-46	
18ad	W. Swenson	B	82	12	T	G	CY,H	N	Tco	.3		16.47	8-21-46	
18bc	Milo Dahlke	Dr	143	6	P	Ss	CY,W	D,S	Bp	.8		15.08	8-21-46	P
20cc	John Derrick	Du	22	48		G	CY,W	S,D	Tco	1.5		8.15	9- 8-45	
23bc	Joe Schmelz	Dr	120	3	P		CY,W	S	L			50	8-21-46	P,U
24bb		Dr		8	P		N	N						
24cc1	C. P. Anderson	B		12	T	S	CY,W	N	Tca	.4		10.47	8-20-46	
24cc2	do.	B		24	W		CY,H	N	Tco	1.2		14.33	8-20-46	
24cc3	do.	B	70	18			CY,H	N	Bp	.2		8.86	8-20-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 95 W. cont.													
26ba	Otto Burve	Dr		6	P		CY,W	N	Bp	1.2		22.60	8-20-46	
27bd1		Du		60	W		N	N	Tcu	2.2		6.35	8-20-46	
27bd2	Northwest Oil Co.	Dr	2235			X		N						
29cc1	N. P. Loucks	B	42	18	T		CY,W	D,S	L			32	8-14-46	
29cc2	do.	B	28	24	C		CY,H	D,S	Tcu	1.6		18.19	8-14-46	
29dd	U.S. Geological Survey	Dr	130.0	4 3/4	N	X	N	N			1916			
30dd	Clayton B. Loucks	B	38	18	C		CY,G	D,S	Tcu	.8		20.09	8-14-46	
31cd1	Henry Lion	B	44	18	W		CY,H	D,S	Tca	1.0		17.37	8-14-46	
31cd2	do.	B	40	22	W		CY,W	S	Tca	1.0		19.80	8-14-46	
31da1	Henry Derras	Du	80	48	W		CY,W	D,S	Bp	.2		37.63	8-14-46	
31da2	do.	Du	47.0	24	W		CY,H	N	Tco			37.58	8-14-46	
32bc		Dr		8	P		CY,W	D,S,O	Tco	1.5		27.50	8-11-45	
32dd	Bainy Barras	Dr	61	8	P	G	CY,G	D,S	Tca	.8		43.31	8-14-46	C,P
33ab	Emma Ringdahl	Du	20				CY,W	D,S	Bp			15.00	8-14-46	
33cb		Du	36		W		CY,H	N	Tco	.7		29.35	8-14-46	
33dd	Margaret Engelka	Du	15.0	36	W	S	N	D	Tcu	.5		11.20	8-13-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 95 W. cont.													
34bc	A. S. Lomsden	Du	16	12	T		CY,W	D,S	Tca	0.2		12.32	8-14-46	
34dc	Rudolph Johnson	Du	50	60	C	S	CY,G	S	Tco	1.1		13.80	8-14-46	
35ca	Curtis Anderson	Du	18	48	W	S	CY,H	D,S	Tcu	1.3		16.48	8-14-46	
	T. 163 N., R. 96 W.													
1cd1	John Kostek	Dr	237	6	P		CY,G	S	L			40	8-22-46	P
1cd2	do.	B	25	24	W	G	CY,H	D	Tco	1.4		21.39	8-22-46	
2aa	Miller Brothers	Du	7	24		G	N	D,S	L			.0	8-20-46	
2cd1	Clarence Anseth	Du	180	36	W		CY,H		Tcu	1.0		14.49	8-22-46	
2cd2	do.	B	30	24	T		CY,G	S	L			26	8-22-46	
2cd3	do.	B	26	12	T		CY,H	S	Tca	.5		11.62	8-22-46	
3dd1	Rosenquist Brothers	Du	22	12	T	S	CY,H	D	Tco	.4		20.58	8-22-46	
3dd2	do.	Du	19.0	24			N	N	Tco	.5		17.95	8-22-46	
4dd	M. B. Trusx	B	40	18	T	G	CY,H	D,S	Tca	.5		21.09	8-23-46	
5aa	U.S. Geological Survey	Dr	200.0	4 3/4	N	X	N	N	L		1881.54	8.58	6-16-47	
5ab	Emil Hector	B	88	18	T		CY,H	N	Tcu	.8		61.98	8-18-46	U
5cc	Carl Gudvangen	B	50	18	T	G	CY,H	D,S,O	Tco	.6		28.65	9-11-45	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 96 W. cont.													
6aa	Godfred Johnson	Dr	205	6	P	Ss,X	CY,W	D,S	L			25	8-16-46	P
6da	Austin Anderson	Du	5	48	W	S	CY,H	N	L			6	8-16-46	
7ab1	J. C. Aaberg	B		12	T		CY,E	D,S	Tca	1.1		20.28	8-16-46	
7ab2	do.	Du	30	30		G	CY,H	N				Dry	8-15-46	
7ab3	do.	B	60	12	W		CY,W	N	Bp	.4		36.38	8-15-46	
8cc	Bank of North Dakota	Dr	150	5	P	S,X	CY,W	D,S	L			30	9-11-45	P
10cd		Du	8.0	36	W		CY,H	N	Bp	.5		5.68	8-22-46	
11cc	Joe Kostek	Du	30	48	W	G	CY,W	D,S	Tco	.9		22.75	8-22-46	
12ba1	Andrew Kostek	B	30	24	T	S	CY,W	D,S	Tco	.9		15.41	8-22-46	
12ba2	do.	B	50	18	T	S	CY,E	S	Bp	1.1		38.98	8-22-46	
13da	Edwin Dahlke	Dr	105	5	G,P	Ss	CY,W	D,S	Bp	1.0		16.74	8-21-46	C
14ab1	George Rait	Du	25	48	W	S	CY,H	D	Tco	1.0		15.66	8-22-46	
14ab2	do.	Du	14	18-24	W	S	CY,H	S	Tco	1.0		11.68	8-22-46	
14dd1	Federal Land Bank	B		12	W		CY,W	S	Tco	1.4		23.60	8-22-46	
14dd2	do.	B		12	W		N		Tca	1.8		17.88	8-22-46	
15ba		B		12	W		CY,H	D	Tca	.00		30.87	8-22-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 96 W. cont.													
15dd1	U.S. Geological Survey	Dr	430.0	4 3/4	N	X	N	N	L		1905.99	1.05	6-17-47	
15dd2	J. Rait	B	35	12	T		CY,H	N	Bp	0.5		16.07	8-22-46	
18ab1		Dr	150	6	P		N	N	Tca			37.70	8-15-46	
18ab2		B	80	12	W		CY,H	N	Tca	.6		18.41	8-15-46	
19bb1	Ben Huset	Dr	480	3	P	Ss	N	N	Tca	.90		22.99	8-15-46	
19bb2	do.	Du	35	36	W		CY,H	N	Tca	.50		10.16	8-15-46	
20bb1		B		24	W		CY,H	N	Tca	.8		14.03	8-15-46	
20bb2		Dr			P		N	N						
23cb	E. Long	Du	18	24	W		CY,W	S	Bp	.9		11.76	8-23-46	
24ba		Du	30.0	24	W		N	N	Tcu	.0		8.63	8-21-46	
25ad	J. P. Larson	Du	24	24	W	S	CY,G	D,S	Tco	1.2		16.10	8-15-46	
26bc		B	21.0	18	W		CY,H	N	Bp	.5		11.88	8-25-46	
27ad	L. Jensen	Du	13	28	W	S	CY,H	S	Tco	1.6		10.13	8-23-46	
27da		Du	11.0	24	W		N	N				Dry	8-23-46	
29ad	Clem V. Brady	Dr	218	6	P	Ss	CY,W	D,S,O	Tco	.4		27.90	9- 9-45	
29cd	Leroy Brady	Du	24	28	W	G	CY,H	S	Tco	.6		15.64	8-13-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 96 W. cont.													
29dc	L. J. Brady	B	35	18	T	S,G	CY,W	D,S,O	Tco	1.4		27.45	9- 8-45	
29dd	U.S. Geological Survey	Dr	336.0	4 3/4	N	X	N	N	L		1904.75	2.98	8-16-47	
31cc	A. J. Jacobson	B	42	18			CY,G	D,S	L			35	8-12-46	
31db	Henry & Harold	B	50	18			CY,W	D,S				30	9- 8-45	
31dc1	Harold E. Jacobson	B	50	18	T		CY,W	S				35	8-12-46	
31dc2	do.	B	50	18	T		CY,H	D				35	8-12-46	
35cc		Du	15.0	42			CY,G	S	Tco	2.9		12.41	8-13-46	
35cd	Federal Land Bank	B	50.0	18		S	CY,H	N	Bp	1.0		27.50	6-14-46	
	T. 163 N., R. 97 W.													
3ac	S. B. Knudson	B	44.0	14	T	G	CY,G	D,S	Tca	.0		24.45	8-15-46	
3cb1	Mrs. Anna Erickson	B	84	18	T	G	CY,E	D,S				20	8- 7-46	
3cb2	do.	B	62	18	T		CY,H	S	Hp	.9		15.85	8- 7-46	
4ad	Jannie Wilson	B	30	18	T	S	CY,H	D,S	Tca	.40		13.80	8- 7-46	
4cb	Lowel Knudson	Dr	320	4	P	Ss	F3	D,S				Flow	8- 8-46	P
5ac	City of Crosby	Du			T		CY,H	D						
5cc	Olaf Ojevig	Dr	250	8	P	Ss	F,CY,H	D	Tca	3.0		Flow	9- 8-45	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 97 W. cont.													
6cc1	Miller	Dr	264	4	P		FO.2	N		2.8		Flow	6- 8-46	P
6cc2	do.	Dr		5	P		FO.1	N	Tca	2.0		1.43	5- 8-46	P
6dc	R. Brunis	Dr	242	5	P	Ss	F3	N	Tca	7.2		Flow	5- 8-46	C,P
7dd	Nels Thompson	Dr	162	4	P	L,Ss	FO.5	D,S	Tca	3.5		Flow	5- 8-46	P
8dd	G. C. Gilbertson	Dr	230	2	P	L,Ss	FO.1	D,S	L			Flow	9- 8-45	P
							CY,H							
10bb		B		12	T		CY,H	N	Bp	2.1		13.40	8-15-46	
10cc1	S. Beroski	B	32	12	T		CY,H	D,S	Tca	.5		12.34	8- 8-46	
10cc2	do.	Du	12	36	W	S,G	CY,H	S	Tco	1.6		8.96	6- 9-46	
10dd		Dr		2	P		CY,H	N						
11bb							CY,H	N	Tco	.0		14.52	8-15-46	
12aa1	Evans & Duck	B	30	12	T	G	CY,H	N	Tco	.6		10.91	8-15-46	
12aa2	do.	B	70			G	CY,W	N						
12cc	Hamlin University	B	70	12	T		N	N	L			10.20	8-11-45	
13cc	U.S. Geological Survey	Dr	457.0	4 3/4	N	X	F4	N	L		1913	Flow	6-15-47	C
14aa	James Gallagher	B	60	12	T		CY,G	D,S	L			30	9-11-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 97 W. cont.													
14cb1	Alfred Peterson	Du	12	T			CY,H	N	Tca	1.0		4.20	8- 9-46	
14cb2	do.	Du		48	W		CY,H	N	Tcu	.0		4.59	8- 8-46	
15bb	George M. Mitchell	Du	15	48	W	G	CY,G	S	Tco	.2		8.45	8- 9-46	
17ad	Herman Johnson	Dr	290	6	P	L	F	D,S				Flow	8- 7-46	
17cd	Ben Elsbernd	Dr	370	5	P		FO.1	D,S				Flow	8- 7-46	P,U
17dd	S. Burner	Dr	327	6	P	Ss	CY,H	N	Tca	.0		18.60		
18ad	William Elsbernd	Dr	221	3	P	Ss	FO.1	N	Tca	1.0		.14		P
18bb	Evans & Buck	Dr	275	2	P		FO.5	D,S	Tca	3.3		Flow		P
19ad1	S. S. Semingson	B	38.0	18	T		CY,W	D,S,O	Tco	2.0		33.00	9- 8-45	
19ad2	do.	Du	32.9	36	W	S		S	Tco	1.0		30.35	5- 8-46	
19cc1	C. M. St. P. & S. Ste.	Du		120	T	G	CY,H	In						
	M. Ry.													
19cc2		B	41.0	12	T	G,S	CY,W	D,S	Tco	.6		22.27	5- 8-46	
19da1	P. M. Semingson	B	41.0	12	T		CY,W	D,S	Tco	1.0		30.59	5- 8-46	
19da2	do.	B	55.0	12	T	S	CY,G		Tca	.4		59.60	5- 8-46	
19da3	do.	Du		48	W		N	N						

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 97 W. cont.													
19da4	P. M. Semingson	Dr		4	P	S,G,X	N	N	Tca	1.1		0.33	5- 8-46	
20aa1	S. Burner	B	30	24	T	G	CY,H	D,S	Tco	1.5		7.34	8- 7-46	
20aa2	do.	B	33	18	T	G	CY,H	N	Tca	1.0		11.62	8- 7-46	
21bc	William Mitchell	B	80	18	T		CY,H	S,O	Tco	1.8		15.40	9- 8-45	
22cd1	J. M. Johnson	B	28.6	24	T	S	CY,H	S,O	Tca	2.2		17.44	5-28-43	
22cd2	do.	Du	17.2	42	W		N	N,O	Tco	.6		15.13	5- 4-38	
22cd3	do.	B	23.9	18	T		CY,G	D,S	Tcu	.7		14.30	5- 4-38	P
23dc	R. G. Jovig	Du	31	48	W	S	CY,G	S,O	Tco	1.7		26.30	9-11-45	
26bb	U.S. Geological Survey	Dr	438.0	4 3/4	N	X	F3.5	N	L		1944.05	Flow	6-19-47	P
27cc1	Frank Winhofer	B		18	T		N	N,O	Tca	.9		11.85	9- 8-45	
27cc2	do.	Dr	455	3	P	Ss	FO.1					Flow	4- 8-46	P
							CY,G							
28ab	H. S. Saterlie	B		18	P		CY,H	N	Tco	1.0		12.94	8- 9-46	
28bc		B		12	T		CY,H	D	Tca	1.1		13.80	8-19-46	
29aa1	Jonas Johnson	B	50	12	T	S	CY,H	S	Bp	.4		13.31	8-19-46	U
29aa2	do.	B	70	24	T	G	CY,G	S	Bp	.5		18.24	8-19-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 97 W. cont.													
29bc1	City of Crosby	Du	25.0	96	C			P	Tcu	3.0		11.81	5- 9-46	
29bc2	do.	Du	43	96		G		P						
29bc3	do.		610			Ss,X								C
29ca	do.	Du	30			G	N							C
29cb	do.	Du	14.4	96	C		N	PS	Tcu	1.0		8.13	5- 9-46	
29da	do.	Dr	775			Ss	N							C
29db	do.	Dr	600	6	P		C,E	D						P
30cc	Gust Olson	B	43.0	15	T	S	CY,H	D,S	Tco	.5		38.21	5- 9-46	
30dd		Du		24	W		CY,H	S				17	8-29-46	
31bc	Elsie Peterson	Dr	350	3	P	Ss,X	FO.5	D,S	Tca	3.0		Flow	5- 9-46	C,P
							CY,H							
32aa		B		12	T		CY,H	N	Bp	.1		9.21	8-19-46	
33bd	Arthur Bakken	B		12	T		CY,W	S	Tca	.3		18.18	8- 9-46	U
33cc	U.S. Geological Survey	Dr	521.0	4 3/4	N	X	N	N	L		1977.17	1.74	6-25-47	
33dd	Tom Granrud	B	45	18	W	S	CY,H	S,O	Bp	1.1		19.15	9- 8-45	
34aa1	City of Crosby	Dr	270	8	P		F5 T,E	P					9-10-45	P

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 97 W. cont.													
34aa2	City of Crosby	Dr	296			X	F					Flow	1941	
34cd	Rainhart Olson	Du	35	24	W	S	CY,W	S	Tco	.2		20.72	8- 9-46	
34dc	do.	B	16	24	T	S	CY,H	D	Tca	.9		8.88	8- 9-46	
35ba	Andrew Bolkmenn	Dr	275	2	P	Ss	F5	D,S				Flow	8- 9-46	C,P
	T. 163 N., R. 98 W.													
1ad	Ralph Wanner	Dr	280	6	P	L	F6	D,S				Flow	8- 7-46	P
1bb1	Peter Jasper	Du	19.0	36	W	G	N	N	Tca	3.4		16.23	8- 8-46	
1bb2	do.	B	14.0	18	T		N	D,S	Tca	.8		9.47	8- 6-46	
2aa	E. Salors	B	28.0	12	T	G	CY,H	N	Tca	1.8		10.98	8- 6-46	
3ad	Duke Matz	Du		12	W		CY,G	D,S	Tco	1.8		22.40	8- 6-46	
4bc	Emil Hanson	B	32	30	W	G	CY,W	N				28	8-28-46	
4dc	Ralph Ericksmoon	B	20	24	W	S	CY,E	D,S	Tca	1.4		16.79	8-27-46	
5bc	Carl Ebasin	B	52	30	W		CY,H	D,S	Tca	1.4	2005.4	34.54	4-29-47	
5cc	K. Toreson	B	50	30	W		CY,T	D,S	Tca	.8	2002.8	6.76	4-29-47	
8ab	Martin Hagen	Du	30	36	W		CY,H	D	Tca	.2		6.36	8-27-46	
9ba	Matthew Wirtz	B	30	24	W	G	CY,H	S	Tca	.0		14.98	8-27-46	U

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 98 W. cont.													
10ab1	Pedro Hagen	Dr	300	6-4	P	Ss	FO.5	D,S	Tca	2.9		Flow	8-28-46	
10ab2	do.	Du	30	24	W		CY,H	D,S				21	8-28-46	
10dc	J. Miller	Du	15	30	W	S	N	N	Tca	.9		11.40	8-28-46	
11aa	Christ Wannar	Du	18.0	48	W		CY,G	S	Tco	1.3		10.46	8- 6-46	U
11dd	F. C. Miller	B	17.8	18	T	G	N	N	Tco	.7		17.40	8- 6-46	
12dd	A. Austinson	B	21	8	T	S	N	N	Tca	.5		15.13	5- 8-46	
14cc		Du	7.8	36	W		CY,H	D	Tca	1.0		7.36	8- 6-46	
14cd	B. O. Paulson	Du,B	36	48-18	T		CY,G	D,S	Tco	.7		14.03	8- 6-46	
15ad	Henry Ericksmoon	Du		36	R	S	CY,H	D,S	Tco	4.4		10.95	8- 6-46	
15ba	Martin Fossum	B	22	24	R		CY,H	D,S	Tco	.5		18.42	8-28-46	
17aa	R. W. Block	Dr	216	5	P	Ss	CY,W	N	Bp	2.0		95.22	8-27-46	C,P
17bb	S. Knutson	Dr	183	3	P	S	N	N	Tca	1.5	2103.5	12.98	5- 2-47	
18cd1	Olaf Henning	B	35.0	24	T	S	CY,H	D	Tca	1.1	2156.1	14.91	4-30-47	
18cd2	do.	Du	21.0	48	W		CY,H	D,S	Tca	1.7	2151.7	15.46	4-30-47	
18cd3	do.	Du	21.0	30	W		N	N	Tca	2.8	2155.8	15.64	4-30-47	
19aa	Carl S. Peterson	B	41.0	30	W		CY,H	D,S	Bp	1.3	2176.3	31.62	5- 1-47	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 98 W. cont.													
19bb	H. Aslakey	B	21	24	W		CY,H	S	Tca	2.0	2164.0	12.41	4-30-47	
19da	O. E. Simms	Dr	384	5	P		CY,W	S						P
20dc		B	49	18	W		CY,H	S	Bp	1.0	2157.0	38.75	5- 6-47	
21bb	Edward Simms	Dr	60	6	P	S	CY,W	D,S			2145	40	8-27-46	P
21dd	George Haugland	Du	21.0	36	W		CY,G	S	Tca	2.5	2084.5	16.64	8-28-46	
22ba1	Carl Hansen	Du	34	36	W		CY,W	S	Tco	1.3	2048.3	9.20	8-28-46	
22ba2	do.	Du	14	14	C		N	N	Tco	1.5	2046.5	10.88	8-28-46	
22dd	W. Christianson	B	78	14	T	S	CY,G	D,S	Tca	.9	2043.9	36.27	8- 6-46	
23ad1		B	40	24		G	CY,W	D,S	Tco	1.5	1970.5	16.68	8- 6-46	
23ad2		B	41	24		G	CY,H	N	Tco	.9	1969.9	8.30	8- 6-46	
23dd	F. P. Thompson	Dr	320	6	P	R,X	F	D,S			2017			P
24dd1	Hans Lukin	B	6.0	18	T		N	N	Tca	1.0	1961.0	5.39	5- 8-46	
24dd2	do.	B		12	T		CY,W	D,S	Bp	1.0	1981.0	27.20	8-28-46	
25aa	Mervin Kroshos	B	61			G	CY,W				2000			
25bb	John Melgaard	Dr	318	2	P	Ss	FO.3	D,S			2000			P
26bb	K. H. Knutson	Du	14	48	W	G	CY,G	D,S	Tc	1.4	2003.4	12.59	8- 6-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 98 W. cont.													
26cd	Johan Neilson	Dr	280	2	P	Ss	FO.8	D,S			2054			
27cd		Dr	90	6	P		CY,H	D,S			2103	10	8-23-46	
28bc	Kenneth Haugland	Du	7.0	48	W		CY,H	D	Tco	2.0	2132.0	3.78	3-27-46	
29cc	J. Peterson	B	83	18	T	G	CY,W	S			2210			
30ab	Julia Rve	Dr	160	6	P		CY,W	D,S	Bp	1.7	2173.7	65.47	5- 6-47	P
30ba	Paul Hammer	Dr	180	6	P	G	CY,W	D,S			2184			P
31ba1		Dr	500	4	P	S	N	N	Tca	2.6	2213.6	61.22	5- 6-47	
31ba2		B	34	18	T		CY,H	D,S	Bp	.0	2211.0	31.96	5- 6-47	
31dd		Du	18	48	W	S	CY,W	N	Bp	1.0	2231.0	4.00	5- 6-47	
32ab1	L. O. Haugo	B	82	12	T	G	N	N	Tca	.9	2187.9	61.99	8-26-46	
32ab2	do.	Dr	498	3	P		CY,W	S			2189	75	8-26-46	P
32ab3	do.	B	32	14	T		CY,H	D	Tca	1.5	2192.5	17.84	8-26-46	
33ad		Du		36	W		N	N			2139	Dry		
33da		B	99	24	P	S	CY,H	N	Tca	.2	2151.2	54.18	8-26-46	
35ab	Emil Oien	Du	13	24	W	S	CY,W	D,S	Tco	.7	2032.7	12.67	8- 6-46	
35cc	Hulda Endahl	B	40	18	T		CY,W	D,S	Tco	.6	2083.6	23.94	8- 7-46	
35dd	Rex Poling	Du		54	W	S	CY,G	D,S			2057			

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 98 W. cont.													
36cc	Rex Poling	B	45.0	18	W		CY,H	S	Tca	1.6	2052.6	21.35	5- 9-46	
	T. 163 N., R. 99 W.													
1ad1	O. Turbett	B	26	12	T	Cl	CY,H	D	Hc	1.0	2022.0	3.32	4-29-47	
1ad2	do.	B	33.0	36	W	Cl	CY,H	N	L		2022	9.67	4-29-47	
1cc		B					CY,H				2040			
2cd		Dr	509	5	P	CY,H	N							
2dd1		Du	17.0	60	C		CY,H	D	Tco	1.1	2040.1	10.89	4-29-47	
2dd2		Dr	327	4	P	S	FO.5	S			2041.0		3- 1-47	P
11ba1	Raymond Ness	B	30	12	T		N	N	Tca	1.8	2033.8	13.35	4-29-47	
11ba2	do.	B	14.0	30	W		CY,H	N	Tca	1.8	2033.8	13.08	4-29-47	
11cd1		Dr	260	4	P		F4	D,S			2036.4			P
11cd2		Dr	178	6	P	S,G	N	N			2030	Dry		
12bd		B		30	W		CY,W	N	Bp	1.0	2047.0	6.93	5- 2-47	
12ca	Town of Ambrose	Dr	400	6	P		FO.1	N			2041			P
12cb		Dr	308	1¼-2	P		FO.5	D			2042			P
13ba	B. Norby	Dr		5½	P		F1	S			2079.8			P

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 99 W. cont.													
13bb		B		30			CY,W	S	Bp	1.6	2072.6	3.14	5- 2-47	
14ca	John Bakke	Dr	365	5	P	G	CY,W	N			2133			
23aa	R. A. Stuxness	Dr	419	4	P	S	CY,W	D,S			2158			P
23db		Du					CY,H	N			2181			
24bb		Dr	400	2	P	L	CY,W	S			2164			P
26cd		B	22.0	30	W	S	CY,H	N	Bp	1.0		14.93	5- 2-47	
26da		Du		48	C		CY,W	S			2220			
35da1		Du		48	W		CY,W	S	Tco	2.0	2254.0	14.64	5- 2-47	
35da2		Du		12	T			D			2252			
	T. 164 N., R. 95 W.													
27cc	U.S. Customs and	Dr	165	6	P		CY,G	D				50	9-10-45	
	Immigration Station													
28dd	do.	Dr	163	6	P		CY,E	D				50	9-10-45	P
29cc		Dr	138	5	P		CY,W	D,S				50	5-15-47	P
31aa	J. Burner	Dr	130	4	P		CY,W	D,S				60	8-20-46	
33ad	Henry Jacobs	Du	25	36	W		CY,E	D,S	Tca	.6		15.57	8-20-46	

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 95 W. cont.													
33dd	Julius C. Anderson	Dr	140	3	P	S	CY,W	S				30	8-20-46	P
34ad	Nels Gausuick	B	45	24	W	S	CY,W	D,S	Tca	.7		39.68	8-20-46	
34dd		Dr		6	P		CY,W	N,O	Tca	1.4		31.94	8-20-46	
35bd	John Matz	Du	45	36	C,W	S	CY,H	D,S	Bp	1.9		31.94	8-20-46	
35dd	Lars Dalger	Dr	130	5	P	S	CY,W	S	Bp	.5		60.03	8-20-46	P
36dd	Joseph Lukach	Dr	90	3	P		CY,G	D,S				50	8-20-46	P
	T. 164 N., R. 96 W.													
29da	Carl Wendel	Dr	200	6	P		CY,W	D,S			1900	60	5- 9-47	P
31dc		B					CY,W	N	Bp	1.6	1910.0	20.52	8-22-46	
32dc1	Roland Knufson	Du	23	36	C		CY,H	N			1892.4	21	8-16-46	
32dc2	do.	Du	23	13to24	W		P,E	D	Tcu	-10.0	1882.4	11.00	8-16-46	
34aa	Mrs. Lars Borrson	Dr	84.0	4	P		CY,E	D,S	Tca	1.3		48.78	8-16-46	P
34cd	Francis Bacon	Dr	120	6	P		CY,W	D,S	Tca	.8	1902.8	46.75	8-16-46	P
36dc		Du	9.0	24	W		CY,W	N	Tca	.2		7.07	8-20-46	
	T. 164 N., R. 97 W.													
31bc	E. J. Hattel	Dr	228	4	P	S	FO.2	D,S		Flow	1905.5			P

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 97 W. cont.													
32dc		Dr	210	2	P	S	N	N			1912			
33bc	Lievy Landstron	Dr	185	2	P		CY,G	D,S	L		1917	0	8- 7-46	P
35dc1	R. R. Schutz	B	30	18	W	G	CY,G	S	Tca	1.9	1915.9	14.72	8-15-46	
35dc2	do.	B	30	30	W	G	CY,H	D			1913	15	8-15-47	
	T. 164 N., R. 98 W.													
31ac1		B	39	14	C	L	CY,H	D			2000			
31ac2		Du	26.0	40	W		CY,H	S	Tca	.6	2000.6	19.54	5- 2-47	
31cc		B	47	24		S	N	N	Tca	1.0	2003.0	15.29	4-29-47	
31db	H. H. Lohmeyer	Du	19	48	W	Q	CY,H	D	Bp	.5	2004.5	8.39	4-29-47	
32cb1	M. Kostek	B	60	30	W	G	CY,W	S			1997			
32cb2	do.	B	40	30	T	G	CY,H	D	L		1997	38.96	5- 2-47	
34cd		Dr	250	6	P	S	FO.2	N			1951.18	Flow		P
35ad1	Peter Hagen	Dr	365	2	P	S	F	D,S			1920	Flow		
35ad2	do.	B	50	24	T		CY,H	N			1920	25	8- 6-46	
	T. 164 N., R. 99 W.													
35ad		Dr	440	6	P	S	CY,E	S			2015			P

Divide County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 99 W. cont.													
35cb	O. R. Coffrey	Du	12	48	W		N	N	Tca	3.0		6.33	4-29-47	
35dd		Dr	65	4	P	G	CY,W	N	Tca	1.0	2027.0	59.73	4-29-47	

Table -- Record of Wells in McHenry County, North Dakota

Well number 1/	Owner or tenant	Type of well 2/	Depth of well (feet) 3/	Diameter of well (in.)	Type of casing 4/	Character of water-bearing material 5/	Method of lift 6/	Use of water 7/	Measuring point: Description 8/	Measuring point: Distance above land surface (feet)	Measuring point: Height above mean sea-level (feet)	Depth to water level below measuring point (feet) 9/	Date of measurement	Chemical analysis 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 153 N., R. 79 W.													
6dc		Dr		4	P		CY,E							P
7ab1	Henry Seibel	Du	12	48	W		CY	N	Tcu	1.4		9.32	8-14-46	
7ab2	do.	Dr	119	4	P		CY,E	D,S	L			54	8-14-46	P
	T. 153 N., R. 80 W.													
1ba	Olav Overvold	Du	45	48	W		CY,W	D,S	Tcu	.5		39.39	8-14-46	
2bb	R. McDaniel	B	45	12	T	S	CY,W	D,S	Tca	1.0		17.05	8-14-46	

Footnotes:

1. Location number: Well numbers give the location of wells according to General Land Office Surveys and according to the following formula: Township--Range--Section, 160-acre tract within that section, and the 40-acre tract within the quarter section. If two or more wells are located within a 40-acre tract, the wells are numbered serially according to the order in which they were inventoried. The 160-acre and 40-acre tracts are designated a, b, c or d in a counter-clockwise direction beginning in the northeast quarter. For example: Well 162-96-5cd1 is located in SE¼, Sec. 5, T. 162 N., R. 96 W., and was the first of two or more wells inventoried in that 40-acre tract. In this tabulation, the numbers representing the township and range have been omitted in the column headed "Well number".

2. B, bored well; DD dug and drilled well; Dn, driven well; Dr, drilled well; Du, dug well; Sp, spring.

3. Reported depths below the land surface are given in feet; measured depths are given in feet and tenths below measuring points.

4. C, concrete (brick tile or pipe); P, iron or steel pipe; T, clay tile; W, wood.

5. Cl, clay, and sandy clay; Clb, blue sandy clay; Cly, yellow sandy clay; G, gravel; L, lignite; Q, quicksand; R, rock undifferentiated; S, sand; Sh, shale; Ss, sandstone; X, see well logs.

6. Method of lift: C, horizontal centrifugal; Cy, cylinder; F, natural flow; N, none; P, pitcher pump; S, submersible turbine; T, turbine; VC, vertical centrifugal.
Type of Power: B, butane; E, electric; G, gas engine; H, hand operated; T, tractor; W, windmill.
Flow given in gallons a minute.

7. D, domestic; I, irrigation; In, industrial; N, not being used; O, observation; P, public supply; S, stock.

8. Bp, base of pump; Hp, hole in pump base; Hc, hole in casing; L, land surface; Tca, top of casing; Tco, top of cover; Tcu; top of curb; Tp, top of pump.

9. Measured depths to water level are given in feet, tenths and hundredths; reported depths to water level are given in feet.

10. P, partial analysis; C, complete analysis; U, reported as not suitable for domestic use.

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 30 W. cont.													
3aa1	Oscar Johnson	Du	18.0	12	T	S	CY	D	Tca	0.7		6.45	8-13-46	
3aa2	do.	Dr	314	2	P		CY,W	S				30	8-13-46	P
3ba		Du	14.9	48	W		CY	N	Tco	1.0		8.39	8-13-46	
3cc1	N. Larson	B	50	12	W	G	CY	D	Tcu	.4		30.90	8-13-46	
3cc2	do.	B	48.3	12	W		N	N	Tco	.9		30.70	8-13-46	
4dd	J. Thomas	B	55	13		S	CY,G	D	L			18	1944	
5aa	Mrs. Hiestad	B	40	12		G	CY,W	N	Bp	.9		25.98	8-14-46	
5dd	Andrew Fondness	B	54.0	12	T	S	CY	N	Tca	.8		49.10	8-13-46	
6dc	J. N. Early	Du	68.6	36	P	G	CY,W	N	Tcu	.7		66.95	10-21-45	
7ad	C. W. Hemickson	Dr	295	3½	P	Ss	CY,W	D,S	L			100	10-21-45	P
7bc1	L. G. Rintoul	Dn	22		P		CY,E	S						
7bc2	do.	Dn	26		P		CY,E	D						
8aa	H. G. Mamm	Du	48	18	T	G	CY,W	D,S	L			43	10-21-45	
8cb	B. Leibhan	Du	52	18	T	S	CY,G	D,S	L			50	10-21-45	
9ca	P. W. Miller	Du		24	W	S	CY,W	S	Tco	1.0		25.26	8-13-46	
10aa	George Sigman	B	74	12	T	S,G	CY	N	Tco	.5		59.48	8-13-46	
11aa		Du	32.6	48	C		CY,W	D,S,O	Tco	1.0		15.30	10-21-45	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 153 N., R. 80 W. cont.													
11cb	R. Willis	Dr	200	2	P	Ss	CY	N						P
12ab	Phillip Thomas	B	62	12	T	S	CY,G	D,S	Tca	0.4		48.05	8-13-46	
13ba		B	39.2	14	T		CY	N	Bp	1.4		23.65	8-13-46	
14ab	Davenport	Dr	65	2	P	S	CY,G	S						
14bb	Michael J. Doyle	Du	34.2	48	W		CY	N				Dry	8-13-46	
14cc	Davenport	Dn	65	2	P		CY,G	D						P
15dd	Tony Swedlung	Dn	50	2-4	P	S	CY,G	D,S						P
22da	Town of Velva	Dr	341	6	P	S,G,X		P						
26ab	do.	Du	20			S		P						C
	T. 154 N., R. 78 W.													
4ba	A. Larsen	B	50	24	W		CY,W	D,S	Tco	1.4		17.45	8-23-46	
4cc		Du					CY,W	S					8-27-46	
5bb1	R. R. Songer	Dr	96	5	P	S,G	CY,W	D,S,C	Bp	1.3		29.45	10-27-45	
5bb2	do.	Dn	16	2	P		P		L			10	10-27-45	
5cd							CY,W	S					8-27-46	
6cc1	L. Sevlend	B	60	18	T		CY	D	Tco	.7		50.45	8-23-46	
6cc2	do.	Dr	148	3	P		CY,W	D,S	L			50	8-23-46	P

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 78 W. cont.													
8cd	Gust Wolhowe	Du	10.0		W		CY,E	D,S	Tcu	0.4		7.75	3-27-46	
18aa1	Bank of North Dakota	Du	8.4	48	W		CY	N				Dry	3-27-46	
18aa2	do.	Dn	15		P									
18dd	Selvert Larson	Du	20	24	P		CY	D,S	Tcu	1.9		11.68	3-27-46	
30bb1	Anton Deidert	Dn	7		P		P	D						
30bb2	do.	B	47	4	P	S,G	CY,W	S	L			20	8-26-46	
30ca	Mrs. Sigrid Wolhowe	Dr	175	2-3	P	Ss	CY,E	D,S	L			5	8-27-46	P
	T. 154 N., R. 79 W.													
1aa	O. P. Stalheim	Du	10.5	23	P		N	D	Tca	.4		9.10	3-23-46	
1ca	Kline Jacobson	Dr	156	6	P		CY	D,S						P
2bc	Ray Sitter	Du	11	6	P		CY	D,S						
2bd	do.	Du	12	24	W		CY	N						
2cc	Jens Hagen	Du	26.0	24	W		CY	N				Dry	8-23-46	
2da1		B	53.3	12	T		CY	D,S,O	Tca	1.2		44.10	10-20-45	
2da2		Du	13.2	48	W		CY,W					Dry	10-20-45	
3bb1	Joe Neuhalfen	Du	11	48	W		C,G	S	Tco	2.4		11.02	8-20-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 79 W. cont.													
3bb2	Joe Neuhalfen	Dn	15	4-2	P		P							
5bb	Mrs. Gerhard Peterson	B	50	12	T		CY	S	Tca	0.9		15.85	8-20-46	
5cb	S. O. Miller	Dr	144	4	P		CY,W	S						C,P
6ba	Andrew Strandding	B	75	12	T		CY,W	S	L			33	8-20-46	
6cc		B	65	12	T		CY	N	Tco	1.5		15.97	8-21-46	
6dc	Oswald Trona	Dr	185	4	P		CY,G	D,S	L			80	10-22-45	P
7aa	Ole J. Trona	Dr	115	4	P		CY,W	D,S	L			80	10-22-45	P
7cb1	John Astad	Du	40	24	W		CY,E	D,S	L			28	8-21-46	
7cb2	do.	B	75	12	T		CY	N	Tco	.0		15.22	8-21-46	
7dd	Andrew Anderson	B	40	18	T		CY,E	D,S	Tco	.3		21.62	8-21-46	
8cd	C. McDaniel	B		24	W		CY,E	D,S	Tcu	1.2		28.33	8-22-46	
9ad	Edwin Larsen	Du	18	24	T		N	N	Tca	1.7		11.29	8-22-46	
10bb	A. J. Loftesness	Dr	103	3½	P		CY,W	D,S	L			15	10-20-45	P
10dd	Harvey Henson	Dr	140	5	P		CY,E	D,S	L			60	8-23-46	P
11ab	N. Sitter	Dr	283	4	P		CY	S	L			60	8-23-46	P
11dc	A. Feist	Dr		4	P		CY,W	D,S						P
12da	J. Bergstead	Du	32.0	30	W		CY	N	Tco			28.05	8-23-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 79 W. cont.													
12dc	Antone Ell	B	100+	12	T		CY,W,G	S	Tca			67.98	10-20-45	
13ad		Du	6.0	48	W		CY,W	S	Tcu			5.62	8-23-46	
14aa	Moody Fiskuik	Dr	130	4	P		CY,E	S						P
15ad	Elmer Everson	Dr	150	4	P		CY,W	D,S						P
15bb	Oscar Everson	Dr	180	5	P		CY,W	D,S	L			40	8-22-46	P
15cb	Edwin M. Larsen	Dr	120	5	P		CY,W	D,S	L			90	8-22-46	P
17aa	Earl Everson	Du	60	30	W		CY,E	S	Tco	.6		48.95	8-22-46	
17dd	Norman Moen	B	40	12	T		CY,W	D,S	Tca	1.3		40.58	8-21-46	
18ad	P. A. Johnson	Du	34.7	48	W		CY	N,O	Tco	1.7		22.55	10-21-45	
18bc		Du	6.0	24	N		CY,W	N				Dry	8-21-46	
18cb	Ole Ringsaker	Dr	110	4	P		CY,E	D,S						P
18da		B	40	18	T		CY	N	Tca	.5		35.20	8-21-46	
18dd1		B	40			S	CY,H	P				25		
18dd2	Great Northern RR	Dr	30			S		RR				20		
19ab1	E. W. Frohmader	Du	30	16	T		CY	S	Tco	.9		14.70	8-22-46	
19ab2	do.	B	60	6	P		CY	D	Tco	.8		26.35	8-22-46	
20aa	Harold Hanson	Du	22	48	W		CY	D,S	Tco	1.1		16.76	8-21-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 79 W. cont.													
20cc	Swan Odland	Du	34	30	W		CY,E	D,S	Tcu	0.8		27.70	8-21-46	
21ad	Edwin Larsen	B	40	18	T		CY	N	Tco	1.3		28.59	8-22-46	
21bb	Jacob Pfeilshiefer	Dr	140	4	P		N	N	Tca	.7		81.64	8-21-46	
21cb1	do.	Dr	215	3	P		CY	N	Tca	.6		98.80	8-21-46	
21cb2	do.	Du	20	48	C	S	CY	D,S	Tco	1.6		14.85	8-21-46	
22aa	Old Everson	Dr	114	4	P	S	CY,W	D,S						P
22ad		Dr	125	3	P		CY	N						
22cb	C. Peterson	Dr	250	3	P		CY,W	D						P
23cb	Rose Jacobson	Dr	200	3½	P		CY,W	D,S	L			40	10-20-45	P
23dd		Dr		4	P		CY	N	L			100+	8-20-46	
24bb	A. L. Orth	Dr	170	3	P		CY,E	D,S	L			100+	8-20-46	P
25cb		Dr		2	P		CY	N						
26bc	Emil Judson	Du	34	48	C		CY,W	D,S	Tco	.2		32.30	10-20-45	
27cb	Gust Berger	Dr	200	3	P		CY,W	D,S	L			100	10-21-46	P
28bb	Nelson	Dr	90	4	P		CY	N	Tca	2.9		64.32	8-21-46	P
28dd1	John Oland	B	30	18	W		CY	D	Tco	.3		22.90	8-21-46	
28dd2	do.	Dr	175	4	P		CY,W	S	L			75	8-21-46	P

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 79 W. cont.													
30aa1	S. Brekke	Dr	121	4	P	S	N	N	Tca			67.91	8-21-46	
30aa2	do.	B	68	18	T		CY,E	D,S	L			42	8-21-46	P
30cc1		B	50	12	T		CY	N	Tco	.2		45.49	8-14-46	
30cc2		Du	25.0	43	W		N	N				Dry	8-14-46	
30dd	Lars Wold	B	60	13	T		CY	N.O	Tco	2.0		35.85	10-21-45	
31ab	E. Faddness	B	46	14	T		CY	D,S	L			30	6- -46	
31bb	A. K. Fadness	Du	46	43	W		CY,E	D,S	Tco	1.0		33.75	10-21-45	
33bc		Du	6	43	W		CY	N				Dry		
34cb	Hans Thorson	Du	30.0	36	W		CY,E	S	Tco	.9		20.95	8-20-46	
34dd	Christ Bakken	B	63	24	W		CY,E	D,S						
36ca	Norman Gjelstad	Dr	111	2	P		CY,E	D,S						P
	T. 154 N., R. 80 W.													
1aa		Du	10.6	48	N		N	N				Dry	8-20-46	
1bc	John Kvame	Dr	200	6	T,W		CY,W	D,S	Tcu	1.4		29.20	8-20-46	P
1cc	Vernon Shipman	B	50	12	T		CY,E	D,S	Tcu			25	8-16-46	
2ac	L. Stienberg	Dr	140	8	T,W		CY,W	D,S	Tcu			30	8-20-46	P
2cd		B		12	T		N	N						
2dc	U.S. Geological Survey	Dr	200.0	4 3/4	N	X	N	N	L		1548	7.07	8- 8-47	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 30 W. cont.													
3cc	P. Moen	B	30	12	P		CY	D,S	L			25	3-16-46	
4ad	O. L. Ness	Du	10	48	W	S	CY	S	L			6	10-22-45	
5bb	R. W. Simmons	Dr	214	4	P	Ss	CY,W	D,S	L			80	10-22-45	P
5bc	Magnus Hystad	B	42	18	T	S	CY,H	D,S	L			35	10-22-45	
5cb	Harry Fry	B	60	18	W		CY,E	D,S	Tco	1.1		21.60	3-16-46	
6aa	Great Northern RR	Dr	340			Ss,X		RR						
6ad	Kenneth Finneseth	Dr	240	4	P		CY,E	D,S	L			40	3-16-46	P
7ad	Hiram Finneseth	Dr	280	4	P		CY,W	S	L			70	3-15-46	
8bb	S. N. Hillerud	Dr	240	4	P		CY,E	S	L			72	3-15-46	P
8dd	Jerry Horness	B	38.0	12	T	S	CY,W	N	Tco	1.0		15.66	3-15-46	
10aa		Du	15				CY	N	L			10	10-22-45	
10cd	Henry Kaylor	B	27	36	T	G	CY,E	D,S	Tco	1.6		21.80	3-16-46	
11bb		Du	4	48	W		N	N	L			2	3-16-46	
11da1	C. L. Spilde	B	60	12	T	S	CY	N	Tca	.9		15.27	3-16-46	
11da2	do.	B	60	12	T		CY,E	D,S	Tco	1.2		20.34	3-16-46	
13ca	John M. Kvame	B	100+	12	T		CY	N	Tca	1.6		23.52	3-16-46	
14dc1	Albert Jensen	Du	45	36	W	S	CY,G	D,S,O	Tco	1.0		41.70	10-22-45	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 80 W. cont.													
14dc2	Albert Jensen	B	12.3	6	P		CY	S,O	Tca	1.0		9.75	10-22-45	
15bb	L. Harness	B	64	12	T		CY,G	S	Tco	.3		27.60	8-16-46	
15dc	Jerry Harness	B	45	24	W		CY,E	D,S	Tco	1.1		33.86	8-16-46	
17bc1	W. E. Morey	B	45.3	14	T		CY	N,O	Tco	.1		9.10	10-22-45	
17bc2	do.	Dr	245		P		CY,W	S						P
17cb1	Irving Lee	Dr	239	4	P		CY,E	D						P
17cb2	do.	B	46.0	18	P	S	CY	N	Tcu	.6		15.85	8-15-46	
18ad	E. J. Morey	Dr	190	4	P		CY,W	S						P
18dd		Dr	200	4	P		CY	N						
19dd	Dorence Olson	B	65	18	T		CY,E	S	L			39	8-15-46	
20cc	Isak Hystad	B	50.0	12	T		CY,E	D	Tco	1.2		39.20	8-15-46	
20dd1	Hans Hystad	Dr	206	4	P	Ss	CY,E	S	L			120	8-15-46	P
20dd2	U.S. Geological Survey	Dr		4 3/4	N	X	N	N	L		1599.17	18.90	8- 8-47	
21cb	Mons Hystad	B	34.7	12	T		CY,W	S,O	Tco	0.3		14.05	10-22-45	
22dd		B	32.5	12	T		CY,W	N,O	Tco	1.3		41.75	10-22-45	
23ab		B	20.0	12	T		CY,W	N	Tco	1.3		9.73	8-16-46	
23cb	F. L. Fisk	B	40.0	12	T		CY	S	Tca	.8		27.06	8-16-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 80 W. cont.													
24aa	H. O. Sollid	B	44.0	12	T	S	N	S	Tca	0.0		33.90	3-16-46	
25aa		Du	40.5	36	W		CY,W	N,O	Tco	.4		33.17	10-22-45	
25cc		B		12	T		CY	N	Tco			31.95	3-14-46	
26cc	Nels Sotthem	B	50.0	12	T		CY,G	S	Tca	.5		40.49	3-14-46	
26dd	George Hammar	B	56	24			CY,E	D,S	L			50	10-22-45	
27ad		Du	12	36	W		CY,E	D,S	Tco	1.9		3.35	3-15-46	
27cd	August Pretser	Dr	42	2	P		CY,E							
28bc	Mrs. Barbara Hage	Dr	265	3	P	Ss	CY,W	N						P
28dc	Ole Harness	Dr	313	4	P		CY,W	D,S	L			80	10-22-45	C,P,U
29ad	Oscar Watne	B	54	12	T	S	CY,E	S	Tco	.9		35.54	3-15-46	
30aa		B	55.0	12	T		CY,G	S	Tco	.3		44.23	3-15-46	
30cc1	John Lee	B	54	18	T	S	CY,E	S	Tco	2.5		20.03	3-15-46	
30cc2	do.	Dr	244	4	P	Ss	CY,E	D	L			190	3-15-46	P
30dd	F. Heistrom	B	43	18			CY,E	S	Tco	.0		39.07	3-15-46	
31ad		Du	7.0	43	W		CY	N				Dry	3-14-46	
31cc1	Jerome Effertz	Du	60	12	T	S	CY	D	L			37	3-14-46	
31cc2	do.	Du	70	36	W		CY,E	S	Tco	1.1		33.93	3-14-46	U

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 80 W. cont.													
31cc3	Jerome Effertz	Du	75	36	W		CY,E	S	Tco	1.4		37.65	8-14-46	U
32ac	Jens Watne	B	50	12	T	S	CY,E	D,S	Tca	.9		31.19	8-14-46	
32bc		B	37.8	12	T		CY,W	N	Tca	.6		23.61	8-14-46	
32da		Du	16.8	30	W		N	N				Dry	8-14-46	
34aa	Archie Sullivan	Du	30	24	P	S	CY,E	S	L			24	8-14-46	
34dd	Harold Hammer	B	34	24	T	S	CY,W	S,O	Tco	1.0		13.10	10-27-45	
35bb	Therse Gran Munson	Du	27.0	30	W	S	CY,E	S	Tco	.4		22.35	8-14-46	
36dd	Paul Overvold	Du	41	48	C	S	CY,E	D,S	L			35	10-21-45	
	T. 155 N., R. 78 W.													
6cc1	Otis Lee	Du	12	36	W	S	CY,G	S	Tco	1.4		9.72	8-27-46	
6cc2	do.	Dn	8		P	S	P	D						
6dd1	Adolph Minert	Dn	18		P	S	CY,W	D,S						
6dd2	do.	Dn	16		P	S	CY,W	D,S						
7aa1	do.	Du	4.4	12	T		P	D	Tca	-3.8		2.70	8-27-46	
7aa2	do.	Du	8.8	36	P	S	CY,W	S	Tca	1.6		7.82	8-27-46	
7bb	E. Frey	B	19.0	12	T		CY	S	Tco	.7		11.99	8-27-46	
8aa	E. B. Freeman	Du,Dn	8.2	30	P	S	CY,W	S	Tco	1.4		7.60	8-27-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 78 W. cont.													
17cc		Dn	15		P		CY,W	S	L			10	10-27-46	
19ab	M. J. La Valley	Du	14	24	W		CY,W	D,S	Tcu	1.0		3.95	10-20-45	
30dd	Harold Brabandt	Dn	15	1½	P		CY,W	D,S	L			12	10-27-45	
31cb	R. R. Senger	Du	35	12	T		CY,W	D,S,O	Tca	1.0		24.40	10-27-45	
31dc	Sever Stalheim	Dr	120	4	P		CY,W	D,S	L			50	8-23-46	P
	T. 155 N., R. 79 W.													
1bd	Albert Botz	Dn	15		P	S	F	D,S	L			10	10-19-45	
1cc	U.S. Geological Survey	Dr	200.0	4 3/4	N	X	N	N	L		1494	4.39	8- 6-47	
2ca		Du,Dn	10.0	48	W		F	S	Tco	1.10		5.30	8-27-46	
2dc1		B	30	12	T		CY,G		Tca	.9		27.68	8-27-46	
2dc2		Du	26.0	48	C		CY,W	S,O	Tcu	.9		14.20	10-20-45	
3aa		Du,Dn	13.0	24	W		CY	D,S				Dry	8-27-46	
3bb1	J. M. Dammen	Dn			P		P	D						
3bb2	do.	Dn			P		CY,W	S						
3cc		Dn		6	P		CY,W	S		1.0		7.00	10-19-45	
4aa	do.	Dn	18		P		F	D,S						
4ca1	M. R. Youngs	Du	32.5	24	T		CY,W	S	Tco	.1		7.94	8-27-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 79 W. cont.													
4ca2	M. R. Youngs	Du,Dn	9.5	24	W		CY,E	D,S	Tco	0.8		9.00	8-27-46	
6ba	Mrs. M. Lydon	Du	40	12	T		CY,W	D,S	Tp	4.2		11.11	8-28-46	
7bd	Anton Meyer	Du	30	12	T		CY	D,S	Tco	1.1		24.42	8-28-46	
8aa	Dr. Kolb	Dr	103			S,G		D						C
8cd	Frank Barnett	Dr	106	4	P	G	CY,W	D,S	L			20	8-28-46	P
8da1	E. Barkov	Dr	112	4	P		CY,G	S	L			15	8-28-46	P
8da2	E. Barker	Du	40	12	T		CY	D	Tco	.4		21.73	8-28-46	
9cb	do.	Dr	106	4	P		CY,W	N	L			20	8-28-46	P
10da1	Ray Mahon	Du	9.0	20	P		CY,W	S	Tca	.6		5.72	8-27-46	
10da2	do.	Du,Dn	14	1¼	P		T	D						
11aa		Dr	120	3½	P		CY,G	D,S	L			14	10-20-45	P
11cd		Du,Dn	6	48	W,P		CY,W	S				Dry	8-27-46	
12ab		Dr		4	P		CY,W	S						P
13dc1	Frank Deibler	B	40	4	P	S	CY,W	S						P
13dc2	do.	Du,Dn	8.5	48	W		CY	S	Tcu			7.01	8-28-46	
14aa	Walter Thanea	Du	27.0	18	T	S	CY,W	D,S	Tcu	.7		6.97	8-27-46	
14bc	C. J. McCabe	B	18.2	12	T	G	CY,W	D,S,O	Tca	1.0		10.55	10-20-45	
14dd		Du	85.0	24	W		N	N	Tcu	2.5		6.34	8-28-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 79 W. cont.													
15ab	Fred Widmayer	Dr	115	4	P		CY,W	D,S	L			15	8-28-46	P
17aa	Edward Kemp	Dr	112	4	P	G	CY,W	D,S	L			15	8-29-46	P
17cc1	Walter Gillespie	Dr	90	4	P	G	CY,W	D,S	L			15	8-23-46	P
17cc2	do.	B	40	12	T	S	CY	S	Tco	.6		12.22	8-23-46	
13aa		B	42.0	12	T		CY	D,S	Tco	.9		7.02	8-23-46	
19bb		B	30.7	12	T		CY,W	N,O	Tca	1.0		6.85	10-20-45	
20aa	Andrew Haverlock	Dr	160	4	P		CY,W	D,S	L			60	10-20-46	P
20ba1	E. E. Hamilton	Dr	188	4	P	Ss	CY,W	D,S	L			20	8-23-46	P
20ba2	do.	Dr	240	4	P	Ss	CY,W	D,S	L			20	8-23-46	P
21da		Dr	100+	4	P		CY,W	N	Tca	.1		16.98	8-23-46	P
22cd	M. L. Loftesnes	B	35	18	T		CY,W	D,S	Tco	1.0		19.30	10-21-45	
23aa1	D. F. Boutelier	Dr	137	5	P		CY,W	D,S	L			32	8-23-46	P
23aa2	Peter Boutalier	Dr	137	3	P		CY,G	D,S	L			32	8-23-46	P
25bb	M. McMahon	Dr	70	4	P	S,G	CY,W	D,S						P
25cb	Leo McMahon	Dr	100	4	P	S	CY,W,G	D,S						P
25da	Claire Brown	B	39.4	12	T		CY,W	D,S,O	Tco	1.0		9.40	10-27-45	
26aa	D. M. Boutelier	Dr	150	4	P		CY,W	D,S	L			50	10-20-45	P

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 79 W. cont.													
27dc	H. H. Drabanet	Du	30	36	W		CY,W	D,S,O	Tco	2.3		23.45	10-21-45	
28cb	George Griffin	B	34	24	W		CY,W	N	Tcu	.0		15.76	8-28-46	
29aa	U.S. Geological Survey	Dr	200.0	4 3/4	N	X	N	N	L		1502	5.57	8- 8-47	
31aa	Jay R. Strombirg	Dr	125	4	P		CY,W	S						P
31bb	Lester G. Murphy	Dr	150	6	P		CY,W	D,S	L			25	8-28-46	P
31ca	Andrew Strombirg	B	60	12	T		CY,W	D,S	L			25	8-28-46	
32aa	M. Haberlack	Dr	185	4	P	Ss	CY,G	D,S	L			50	8-28-46	P
32cc1	C. H. Miller	B	60	12	T		N	N	Tca	.0		15.95	8-28-46	
33cc2	do.	Dr	145	4	P		CY,W	S	L			20	8-28-46	P
33bc1	Vernon Bacon	Du	15.5	24	W		CY,W	N	Tco	.0		12.32	8-28-46	
33bc2	do.	Dr	110	4	P		CY,G	S	L			20	8-28-46	P
33cd		Dr	150	3½	P		CY,W	D,S	L			50	10-20-45	P
34bb	Clarence Loftesnes	Dr		6	P		CY,G	D,S						P
	T. 155 N., R. 80 W.													
1cb	H. L. Nicholas	Dr	160	3½	P		CY,G	D,S	L			60	10-25-45	P
1da	Mrs. Lester McClaskey	Dr	160	6	P	Ss	CY,W	D,S						P
2bc	George Olson	Dr	135	4	P	Ss	CY,W	D,S	L			45	8-30-46	P

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 80 W. cont.													
2cc	C. H. Olson	Dn	8		P		P	D,S						
3cc	Gertrude Stookke	Dr	140	4	P	Ss	CY,W	D,S	Tca	0.5		21.22	8-30-46	P
3dc	Mrs. Anna Gotvaslee	Dr	160	4	P	Ss	CY,W	D,S						P
5cc	Ameil Peterson	Dr	187	4	P	Ss	CY,W	D,S						P
6ac1	Mrs. Hilda Hovey	Dr	167	4	P	Ss	CY,W	S						P
6ac2	do.	Du	22	18	P		N	D	Tca	.5		15.38	8-30-46	
6bc	Mrs. Wendle Schaon	Dr	300+	2	P		CY,W	D,S						P
6dd	Sebastian Leibhan	Dr	270	4	P	Ss	CY,W	D,S						P
7ac	Marie Kringlee	Dr	140	4	P		CY,W	D,S						P
7cb	Perry Aus	Du	30	30	P		CY,W	D,S	Tco	1.5		8.15	8-30-46	
8cc1	J. L. Bolstad	B	38.0	30	P	S	CY,W	D,S	Tco	1.0		20.45	8-30-46	
8cc2	do.	Dr	180	6	P		CY,E	D,S	L			30	8-30-46	P
9aa	O. M. Ottem	Du	20		C,T	S,G	CY,W	D,S	Tco	1.0		7.40	10-23-45	
10ab	Anna Gotvaslee	B	50	24	C		CY,W	D,S	Tcu	2.5		30.80	8-20-46	
10dc	Mrs. Aamoth Estate	Du	12.0	36	C		CY,W	D,S	Tcu	1.4		7.26	9- 4-46	
11ba	C. C. Johnson	Dr	100	4	P		CY,W	D,S	L			36	8-30-46	P
13aa		B	12.0	12	C		CY	D	Tca	.7		7.07	8-20-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 80 W. cont.													
13bb	J. H. Salled	Du	10.0	24	P		P	S	Tco	1.5		8.82	8-29-46	P
13bd		B	24.0	12	T		CY,G	S	Tca	1.0		8.20	8-29-46	
14aa	do.	Dr	120	4	P	S,G	CY,G	D,S	L			65	8-29-46	P
14ad		Dn			P		P	D,S						
15da		B	18.0	20	W		N	N	Tcu			10.50	9- 4-46	
16cb	Martin Nelson	Dr	150	5	P		CY,W	D,S	L			30	9- 4-46	P
17ba1	Mrs. Mary Payne	Du	30	30	P		CY,W	D	Tco	1.1		20.38	8-30-46	
17ba2	do.	Dr	121	4	P		CY,G	S	L			20	8-30-46	P
17bb	W. B. Hanson	Dr	110	4	P		CY,G	D,S	L			15	9- 4-46	P
17bc		Du		30	C		P	D	Tcu			8.55	10-23-45	
17cb1	Town of Norwich	Dr	146			Ss		P						
17cb2	Norwich Public School	Dr	128			Ss		P						
17bd		Du	8	24	W		CY	D	L			8	9- 4-46	
18bb	N. Fimreile	B	39	18	T		CY,W	D,S,O	Tco	.3		26.00	10-23-45	
18dd	Bank of North Dakota	Dr	150	6	P		CY,W	S	Tca	1.1		86.20	9- 4-46	P
19cc	Llyn Whittad	B	32	18	T		CY,G	D,S	L			8	9- 4-46	
19da		Dr		4	P		CY	N	Tca	1.7		36.11	8-30-46	P

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 80 W. cont.													
20aa	E. L. Buffhan	Dr		5	P		CY,W	N	Bp	1.5		34.15	10-20-45	
20bb	Levi Bulsau	Dr	240	4	P		CY,W	D,S						
21ab		Dr		2	P		CY,W	N	L			28	8-29-46	
22bc	Wendhylm Buakhard	Dr		6	P		CY	S						P
23aa	J. O. Bergstad	Dr	225	6	P		CY,W	D,S	L			80	10-20-45	P
23cc	S. Elston	Dr	120	4	P		CY,W	D,S	L			80	8-29-46	P
26aa	Peter Kraft	Dr	200+	4	P		CY,W	N	L			80	8-29-46	P
26bb	Luther Ness	Dr	360	4	P		CY,W	S						P
26cc	Ambrose Wald	Dr	200	6	P	Ss	CY,W	D,S	L			75	8-29-46	P
27bb	Luther Ness	Dr	360	4	P		CY,W	S						P
27dc		Du	19.0	12	W		N	N	Tcu	.0		13.42	8-29-46	
28bb		B	51.0	12	T		N	N	Tca	.7		17.01	8-29-46	
28da1	do.	Du	32	32	W		CY,G	D,S	Tco	1.3		14.46	8-29-46	
28da2	do.	Du	64	24	W		CY,G	D,S	Tco	1.9		25.95	8-29-46	
29aa	Peder Woster	Dr	90.0	4	P		CY	N	Tca	.5		27.84	8-29-46	P
29da1	W. H. Wagner	Du	10	72	B		CY	D,O	Tco	.2		6.95	10-22-45	
29da2	do.	Du	12	48			CY,W	S	Tco	.5		7.45	8- 6-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 80 W. cont.													
33bb		Du		24	W		CY,G	S	Tco	1.0		9.98	8-29-46	
33cc	Bjarne Gotvaslee	Dr	180	4	P	Ss	CY,W	D,S						P
34bb		Dr	150	4	P		CY,W	N						P
34cb		B	32.0	12	T		CY,W	N	Tco	.5		12.62	8-29-46	
35ad		B	60	12	T		CY,W	S	Tca	1.0		49.36	8-29-46	
	T. 156 N., R. 79 W.													
3dd	U.S. Geological Survey	Dr	97.0	5	N	S,X	N	N	L			6.59	7- 9-46	C
4bb		Du	16.0	42	C		CY,W	D,S	Tca	.6		9.03	9-10-46	
6bb	R. F. Feiler	B	60	18	T		CY,G	D,S	Tco	.7		10.60	10-24-45	
5dc	Garth Thomas	Dr	165	4	P		CY,W	D,S	L			20	9-10-46	P
5bb		B	50	12	T		N	N	Tca	1.4		7.38	9-10-46	
6cd1	A. W. Johnson	Dn,B	16		P		CY,G	S	L			10	9-10-46	
6cd2	do.	Dn,B	16		P		P	D	L			10	9-10-46	
7cd	George Mueller	B	35	18	W		CY,G	S	Tco	.5		11.03	9-10-46	U
8cd	Felix Marck	B	46.0	18	T		CY	S	Tca	.1		8.95	9-10-46	
10aa1	U.S. Geological Survey	Dr	102.5	5	N	S,X	N	N	L			4.65	7- 3-46	
10aa2	do.	Dr	121.0	5	P	S,X	N	N,O	Tca	3.0		7.8	7-16-46	C

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 79 W. cont.													
10aa3	U.S. GeologicalSurvey	Dr	95.0	5	N	S,X	N	N	L			12.0	6-22-46	
10ad	do.	Dr	100.0	5	N	S,X	N	N						
16cc		Dr	200+	4	P		CY,G	S	L			10	9-10-46	P
19cd1	E. A. Olson	B	77	12	T		N	N	Tca	1.3		11.52	9-10-46	
19cd2	do.	Dr	232	3	P		CY,W	D,S	L			3	9-11-46	P
20aa		Du	6.5	44	P		N	N	Tca	3.4		5.43	9-10-46	
20ad	Mrs. H. J. Sheridan	Du	15	24	B,W		CY	D,S	Tcu	1.10		10.63	9-10-46	
20dd	Mrs. Donald Wintermute	Dr	180	4	P		CY	D,S	Tca	.9		13.90	9-10-46	P
22dd	E. C. Hills	Dr	114	4	P		CY,W	D,S	L			15	9-10-46	C
23cc	Ralph Covell	Du	10.3	12	T		N	D,O	Tca	2.0		9.10	10-23-45	
27ab		Dn	8		P		CY,W	D,S						
27da		Du	5.1	48	W		N	N	Tcu	.9		3.05	10-23-45	
28ad1	Jessy Heacox	Dn	10		P		P	D						
28ad2	do.	B,Dn	18		P		P	S						
28dd	C. A. Stubbins	Dr	110	4	P	Ss		D						
29ad	C. L. Rollman	Du	7.6	48	W		CY	S,O	Tco	1.5		6.00	10-23-45	
29cd1	Barney Wierowski	Dn,Du	23.4	42-30	B		CY,W	D,S	Tco	.5		23.40	10-23-45	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 79 W. cont.													
29cd2	Barney Wierowski		60				CY	S						
29dd	Clair Hills	Dn,B					F,CY,G	D,S						
31bd	F. W. Jurgen	Du	50	24	W	S	CY,G,W	D,S	Tco	0.5		28.65	9-11-46	
31cc	Alva Moffatt	Dr	110	6	P	Ss	CY,W	D,S	Tca	.4		15.51	9-11-46	P
32dd1	Mrs. Hilbert Ritterbach	Du	30	24	W		CY,G	S	Tcu	.7		11.05	9-11-46	
32dd2	do.	Dn,B		6	P		P	D						
33bc	S. J. Vogel	Dr	100	4	P		CY,W	D,S	L			18	9-11-46	P
33cc		B	38.0	12	T		N	N	Tca	2.0		11.71	9-11-46	
34aa	O. M. Peterson	Du,Dn		36	W		CY,W	D,S	L			15	10-23-45	
34dc1	Gordon Rollman	Du,Dn	12	24-48	C,F,P		CY,W	D,S	Tco	1.21		6.45	9-11-46	
34dc2	do.	Dn			P		P	D						
34dc3	do.	Du,Dn	14	30	W,P		CY	S						
34dd	E. Van Jensen	Du,Dn	7.7	36	W,P		CY,W	D,S				Dry	9-11-46	
	T. 156 N., R. 80 W.													
1bc	R. C. Peterson	Du	12.0	24	P	S	CY,W	N,O	Tca	.8		9.10	10-24-45	
1cc1	F. Fredrickson	Dn	10		P	S	P	S						
1cc2	do.	B	55	12	T		CY,W	D,S	Tca	.0		18.35	9-10-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 80 W. cont.													
1dd		Dn	15		P		CY,W	S						
2bb	Henry Hiney	Dn	12		P		CY,W	D,S						
2cc1	H. Jacobson	Dn	8		P		P	D,S						
2cc2	do.	Dn	8		P		CY,G	S						
2dd	L. Stenseth	B	50.0	12	T		CY,W	D,S	Bp	0.6		23.25	9-10-46	
5bd	John Wiltse	Dr	100+	4	P		CY,W	S	Tcu	.9		25.59	9- 9-46	P,U
5dd	Chris Mattern	Dr	160	4	P		CY,W	S	Tcu			30	9- 9-46	P
6aa		Dr		3	P		CY	N	Hp	3.5		31.09	9- 9-46	
6ab		Dn			P		CY,G	S						
8bd1	C. E. Torgrinson	Dn	14		P		P	D	L			12	9- 9-46	
8bd2	do.	Dr	175	4	P	Ss	CY,W	S						
10aa1	H. Jacobson	B	45	12	T		CY,W	S	Tco	.9		23.81	9- 9-46	
10aa2	do.	Dn			P		P	D						
10bb	John Holum	Dn	15		P		CY,G	S						
11aa	L. Stenseth	Dn	10		P		CY	D						
12aa	Claire Hjatt	Dn	15		P		CY,W	N						
12bb1	E. E. Woodall	B,Dn	12		P		P	D	L			7	9-10-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 80 W. cont.													
12bb2	E. E. Woodall	B	60	12	T		CY,W	S	Tco	1.2		12.93	9-10-46	
12dd	Claire Hiatt	Dr	196	3	P		CY,W	S	L			35	9- 9-46	P
14aa1	J. A. Lund	Du	9.2	36	W		CY,W	S,O	Bp	.0		7.30	10-24-45	
14aa2	do.	Dn			P		P	D						
14aa3	do.	Du	8					N						
15bc		Du,Dn	14				P	D						
15cc	Walter Hovde	Dr		6	P		CY,W	D,S	Tca	1.6		24.30	9- 5-46	P
16cd		B		18	W		CY,W	N,O	Tcu	.5		19.77	10-25-45	
17ad	Andrew O. Folden	Dr	220	3	P	Ss	CY,E	D,S						P
17dd1	N. A. Kringlie	Dr	400	2	P		CY,W	D,S						P
17dd2	do.	Du,Dn	10		P	S	CY,P	D						
18dd	Julian Johnson	Du	14.0	36	W	S,G	CY,G	D,S	Tco	1.2		10.15	9- 5-46	
21ad	W. C. Johnson	Dn	22		P		P	D						
21bc	Joe Havdestead	Dr	160	3	P	Ss	CY,W	D,S	L			27	9- 5-46	P
21cc	Mrs. Betsy Nestingen	B	84	18	T	G	CY,W	D,S	Tca	.5		43.30	4- 5-46	
21da	W. C. Johnson	Dr	100+	3-4	P		CY,G	S	Hp	2.4		29.65	9- 5-46	P
21dd1	S. Anderson	B	80	18	W		CY,W	D,S,O	Tco	1.5		33.90	10-25-45	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 80 W. cont.													
21dd2	S. Anderson	B	14.0	12	T		CY	N	Tca	.8		7.44	9- 5-46	
22bb	Halvor Johnson	Dr	160	3	P		CY,W	D,S	L			27	9- 5-46	P
22cb		Du		36	W		CY	N	Tp	4.3		14.00	9- 5-46	
23aa		Dr	120	3	P		CY,G	D,S	Tp			50	10-24-45	P
23ca	Justin Lorro	Dr	100+	2	P		CY,W	D,S						P
24bc1	G. J. Lund	Dn	6		P		P	D						
24bc2	do.	Dr	150	2	P	Ss	CY,W	S						P
24cc1		Dr	140	3½	P		CY,W	D,S	L			60	10-25-45	P
24cc2		Dn			P			S						
24dd		Dr	100+	4	P		F	N	L			+0.5	9- 9-46	P
25cd	Kenneth Cross	B	50	18	T		CY	D,S	Tca	1.1		17.52	9- 9-46	
26ad	Milton Tranar	B	40	18	T		CY,W	S	L			20	9- 9-46	U
26bb		Du	8.8	15	P		N	N,O	Tca	1.5		6.90	10-25-45	
27cc	George Erlandson	B	54.0	15	T	S	CY,W	N,O	Bp	2.1		17.15	10-23-45	
27dd	Mrs. Emma Folden	Dr	181	4	P		CY,G	D,S						P
28cd	John Jonason	Du	30.0	42	W	S	CY,G	S	Tco	.9		18.46	9- 5-46	
28dd	T. L. Fretz	Dr	167	4	P	Ss	CY,W	D,S						P

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 80 W. cont.													
29cd		B	55	12	T		CY	N	Tca	0.0		23.00	9- 5-46	
32cc		Dr	100+	4	P		CY,W	N	Hp	3.6		25.48	9- 4-46	
32dd		Du	33.0	24	W		CY,W	N	Tco	.2		26.93	9- 4-46	
33ba	K. Smith	Du	27.0	24	R		CY,G	D,S	Tco	.5		21.18	9- 5-46	
33dd	Peter Kinzell	B	65	24	W	G	CY,W	D,S	Tco	.8		20.75	9- 4-46	
34aa		Dr	160	6	P		CY	N	Tp	4.4		10.10	9- 5-45	
34bc1		B	20.0	6	W		CY	S	Tco	.0		11.47	9- 4-46	
34bc2		Du	27.0	24	R		N	N	Tco	.5		12.17	9- 4-46	
35dd	Adolph Stokke	Dr	140	6-18	T,P		CY,W	D,S	Tco	.5		10.98	9- 5-46	P
36ba		Du		30	C		CY,W	S,O	Tcu	1.5		8.60	10-23-46	
36dd		Dn	12		P		CY,W	S						
	T. 157 N., R. 79 W.													
5cb1		Dr		6	P		N	N						
5cb2		Dr			P		N	N						
6ad		Dr	24.2	6	P		N	N	Tca	1.0		23.80	9-19-46	
6dc	A. G. Mueller	Dr	80	6	P	S	CY,G	D,S	Bp	2.4		27.60	9-19-46	C,P

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 79 W. cont.													
7ad		Dr		6	F		CY	N	Hc	0.8		16.40	9-19-46	
8bc	~~Christ Witmayer~~	Dr	150	6	F	Ss	CY,W	S	Tca	1.6		42.12	9-19-46	
8cb	Fred Conkil	Dr	200	6	F		CY	S	Hp	2.2		28.41	9-19-46	
8dd	Stanley Kitzman	Du	26.1	24	F,B		CY,W	D,S	Tca	.6		17.85	9-19-46	
18ba	Edwin C. Erickson	Dr	250	5	F	Ss	CY,W	S	Bp	2.8		31.87	9-19-46	P,U
19aa	D. J. Bailey	Du	10.1	24	P		CY,W	D,S,O	Tco	.8		7.43	10-24-45	
20bc	C. O. Johnston	Du,Dn	10	1½	P	S	CY,W	D,S						
20cc		Dn	10		P		CY	D,S						
27bc	Pearl Leach	Du	14.0	54	C	S	N	N	Tco	.3		8.51	9-13-46	
28aa	Edward Pruitt	Du	13.3	36	W		N	N	Tco	2.2		10.28	9-13-46	
28ba	Bose Jergussen	Du	11.5	48	B		CY	D,S,O	Tcu	.5		10.00	10-24-45	
28dd1	B. Phillips	Du	12.5	36	W		CY	D,O	Tco	.1		7.93	10-24-45	
28dd2	do.	Du	14		W		CY,W	S	L			10	10-24-45	
31bb	Henry F. Speiser	Du,Dn	25	1¼	P	G	CY,W	D,S	L			9	9-12-46	
31cc		Dn	15		P		CY,W	S	L			10	10-24-45	
32cc1	T. L. Horgeshimer	Du,Dn	12	24	W,P		CY	D,S						
32cc2	do.	Dn	9.4		F		N	N	Tca	.0		9.03	9-12-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 79 W. cont.													
32dd1	George Wintermute	Dn	12		P		CY,W	S	L			10	9-10-46	
32dd2	do.	Du	13	50	B		CY,G	D,S	L			8	9-10-46	
34dd	W. G. Brunmond	B	84	18	T		CY,W	D,S	L			30	9-12-46	
	T. 157 N., R. 80 W.													
2ab	J. E. Hall	Dr	114	6	P	S	CY,W	D,S	L			12	9-18-46	P
2bc1	Edward E. Brandt	Du	15	48	W	G	CY,W	D,S	L			9	10-25-45	
2bc2	do.	Dr	260	5	P		CY,G	S	L			55	9-18-46	
2cc	Able Beaton	Dr	220	5	P		CY,W	S	L			50	9-18-46	P,U
4bc1	Ole Mogard	Dn	12	2	P		CY,G	S	L			12	9-17-46	
4bc2	do.	Dn	12	2	P		P	D	L			12	9-17-46	
5bb1	Lester Hansen	Du	8.9	24	W		CY,W	S	Tco			6.29	9-17-46	
5bb2	do.	Dn	15	2	P		CY	D	L			14	9-17-46	
6aa		Du	9.3	24	R		CY	S,O	Tcu	2.0		7.20	10-26-45	
6dc1	Robert Erickson	Dr	80	3	P		CY,W	S	Bp	1.2		23.04	9-17-46	P
6dc2	do.	Dn	10	2	P		P	D						
7cd	Detlee H. Hansen	Dr	180	6	P	Ss	CY,W	D,S	L			50	9-16-46	P
7da	Muriel Hansen	Du	15	30	P		CY,W	S	Tco	2.2		9.20	10-26-45	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 80 W. cont.													
8ba	Palmer Mogard	Dn	12	2	P		CY,W	D,S						
8cb		Dn	11.0	2	P		CY,W	N	Tp	3.70		9.90	9-17-46	
8dc		Du	12,2	24	W		N	N	Tcu	1.3		9.80	10-25-45	
9ba1	Oscar Simmons	Dr	110	3½	P		CY,W	D,S	L			60	10-25-45	P
9ba2	do.	Dn	8	2	P		P	D						
10aa	T. Olson	Dr	110	6	P		CY,W	S	Tca	1.2		46.24	9-18-46	P,U
12bb	U.S. Geological Survey	Dr	145.0	4 3/4	N	X	N	N	L		1502	7.02	8-12-47	
12cd		Dr	100+	6	P		N	N	Tca	1.7		15.86	9-18-46	
13aa	B. F. Ratliff	Dr	145	5	P		CY,G	S	L			20	9-18-46	P
13bb		Dr	180	3½	P		CY,W	D,S	L			60	10-25-45	P
14aa		Dr	100	5	P		CY,G	S,O	Tca	1.8		19.95	10-25-45	
15aa	B. R. Salvey	Du	18	36	P		CY,W	D,S	Tca	1.2		7.75	9-18-46	
16bb		Du	5.2	24	P		N	N	Tca	.9		3.28	9-17-46	
16cc	Delbert Wiltse	Dr		5	P		CY,W	D,S	Bp	1.0		38.22	9-17-46	P
18da	O. C. Haug	Dr	210	5	P	Ss	CY,W	D,S	L			120	9-17-46	P
19cb		Du,Dn	9.2	24	P		CY,W	S	Tca	.3		8.40	9-16-46	
19dd1		Dn	11	2	P		P	D						

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 80 W. cont.													
19dd2		Dn	11	2	P		CY,W	S						
20ab1	Edward Fisher	Dr	200	6	P		CY,W	S	Tca	1.2		41.08	9-17-46	
20ab2	do.	Du	12.5	24	W		N	S	Tcu	2.1		9.03	9-17-46	
21ad	George Johnson	Dr		4	P		CY,W	N	Bp	.7		27.35	10-23-45	P
21cc	U.S. Geological Survey	Dr	145.0	4 3/4	N	X	N	N	L		1.528	13.16	8-12-47	P
22bd1	L. Anderson	B	79.6	24	P		CY,W	D,S	Tca	1.6		34.08	9-18-46	
22bd2	do.	B	27.0	18	C		CY	S	Bp	1.4		19.77	9-18-46	
22bd3	do.	Dr	110	5	P		N	N	Tca	1.2		25.32	9-18-46	
23ad		Dr	120	3½	P		CY,W	D,S	L			60	10-24-45	P
24aa	Charles Fredrickson	Du	8.9	60	W		CY	S	Tco	.1		7.50	9-18-46	U
25cc1	Stephen Boyd	Du	12	36	W		CY	S	Tco	.2		7.35	10-24-45	
25cc2	do.	Du	14			S	CY,W	N						
27cd	R. Van Loon	Dr	200	4	P		CY	D,S						P
27dd	C. Brown	Du,Dn	13.2	36	W		CY	S	Tco	1.2		12.13	9-12-46	
28bc	Melvin Nerem	Du,Dn	11	36-2			CY,G	D,S						
29ba	Leonard Hatley	Du	13.4	36-24	P		CY,G	S	Tco	1.3		9.24	9-17-46	
30aa	Town of Deering	Du	18.9	48	C		CY	D,O	Tco	7.8		13.70	10-19-45	C

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 80 W. cont.													
30ac		Dr	300	3½	P		CY,W	S	L			50	10-19-45	P,U
30ca	R. J. Hatley	Dr	296	6-3	P		CY,W	S	L			40	9-16-46	U
30dd	Fred H. Miller	Dr	168	4	P		CY,W	S	Bp	0.9		49.80	9-16-46	P,U
31bb	Rolland Pfeifer	Dr	100+	6	P		CY,W	D,S	Tco	1.1		44.48	9-12-46	
31cc	U.S. Geological Survey	Dr	130.0	4 3/4	N	X	N	N	L		1560.5	11.51	8-12-47	
31dc	Anton Everson	Dr	193	4	P		CY,W	D,S	L			80	9-12-46	P
32bb	Harold L. Buck	Dr	265	6	P		CY	N	Tco	1.6		31.13	9-12-46	P
33aa	C. G. Allen	Du,Dn	7.0	36	P		CY,W	S				Dry	9-12-46	
33bc	Jane Wilse	Dr		6	P		CY,W	D,S	L			40	9-12-46	
34bb		Du	8.3	22	P		N	N	Tca	.2		5.65	10-24-45	
34ca	G. W. Fry	Du	12.8	48	P		CY	D,S	Tca	1.5		9.82	9-12-46	
35ca	Gilbert Mueller	Dn,B	10.8	12	T		CY,W	D,S	Tco	.9		8.98	9-12-46	
	T. 158 N., R. 79 W.													
18bb1	A. Grondahl	Dr	180	3	P	Ss	CY,W	S	Tca	1.0		16.17	9-19-46	P
18bb2	do.	B	18.1	6	P		CY	D	Tca	1.9		13.10	9-19-46	
18dd1	W. H. Smith	Dr	155	4	P	Ss	CY,W	D,S						P
18dd2	do.	B	15.5	18	T		CY	D	Tca	.3		10.50	9-19-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 79 W. cont.													
19dd		Du	17.2				CY	D,S	Tco	0.4		13.68	9-19-46	
20cc	Bertha De Vinna	Dr	210	6	P	Ss	CY,W	S	Tca	2.8		23.70	9-19-46	P,U
30da	School District	B		12	T		CY	N						
30dd	Martha Logan	Dr	190	6	P	Ss	CY,G	S	Bp	1.7		44.28	9-19-46	P
31cd		Dr		4	P		CY,W	D,S	Tca	2.1		20.38	9-19-46	P
32cb	Henry Zeretzke	Dr	400	6	P	Ss	CY,W	D,S	Tca	1.8		18.30	9-19-46	P
	T. 158 N., R. 80 W.													
1bd	H. F. Niewoehner	Dr	215	3	P	Ss	CY,W	D,S	L			20	9-26-46	P
3bc		Dr	222	4	P	Ss	CY,G	D,S	L			20	10-26-45	P
6aa1	Walter Herdt	Dr	210	4	P	Ss	CY,W	S	Tca	2.0		34.90	9-20-46	P
6aa2	do.	Du	22				CY	D	Tp	3.4		17.90	9-20-46	
6bc	Fred Hermel	Dr	190	3	P	Ss	CY,W	S						P,U
7cb	Irving Johnson	Du	3.4	24	P	G	C,G	S	Tca	-6.0		3.00	9-20-46	
7da	H. Card	Du	5.6	48	W	S	N	N	Tcu	2.0		4.40	10-26-45	
7dd		Du	14.9	24	B		CY	N	Bp	1.8		10.53	9-20-46	
8aa	U.S. Geological Survey	Dr	165.0	4 3/4	N	X	N	N	L		1478	6.06	8-12-47	
8bc1	Norval Norsby	Du	11.7	40	W		CY,E	S	Tco	1.6		10.63	9-20-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 80 W. cont.													
8bc2	Norval Norsby	Dn	9	2	P		CY	D						
8dd	Fred Desilets	Dn	11	2	P	S	P	D						
9ab	J. Sommers	Du	12	48	W		CY,G	D,S,O	Tcu	1.0		8.45	10-26-45	
9bb		B	37.0	28	W		N	N	Tcu	1.2		14.17	9-20-46	
10cc	Leo Mueller	Dr	210	3	P	Ss	CY,W	S	L			50	9-24-46	P,U
11ad	Arthur Grandal	Dr	200	3½	P	Ss	CY,W	S	L			60	18-26-45	P,U
11ba	Anton Olson	Dr	204	3	P	Ss	CY,W	D,S	Tca			3.35	9-25-46	P
11cc1	Louis Stroebel	Du	22	36	W		CY	D	Tco	.5		18.10	10-28-46	
11cc2	do.	Dr	195	3	P	Ss	CY,W	S	Tca	1.5		44.90	9-25-46	P
12bc	Lars Sanvick	Dr	200	3	P	Ss	CY,W	S	Tca	.8		26.60	9-25-46	P
12cd	W. Johnson	Dr	175	6	P		CY,W	D,S	L			25	9-25-46	P
12dc	Josephine Johnson	Dr	180	4	P		CY,W	D,S	L			20	9-19-46	P
13aa1	U.S. Geological Survey	Dr	100.0	5		S,G,X	N	N	L			48.0	8- -46	
13aa2	do.	Dr	110.0	5		S,G,X	N	N	L			52.0	8- - 46	
13aa3	do.	Dr	75.0	5		S,G,X	N	N	L			24.7	8- -46	C
13ad1	do.	Dr	90.0	5		S,G,X	N	N				Dry		

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 80 W. cont.													
13ad2	U.S. GeologicalSurvey	Dr	90.0	5		S,G,X	N	N	L			72.0	8- -46	
13dd	Frank De Vinna	Dr	90	4	P	S	CY,W	D,S	Tca	.5		18.70	9-19-45	P
14aa		Dr	150	4	P		CY,W	S	Hc	.0		26.10	9-25-46	
15ab1	A. Niewoehner	Du	14	36	W	S	CY	D	L			10	10-26-45	
15ab2	do.	Dr	225	4	P	Ss	CY,W	S	L			50	4-24-46	P
17aa1	F. Deslits	Dn	10			S	P	D	L			7	10-26-45	
17aa2	do.	Dn	10			S	CY,W		L			7	9-20-46	
18bc	W. G. Bolles	Du	11.6	36	W		CY	N	Tco	2.2		8.83	9-20-46	
18cb	Mrs. Kate Brown	Dn	12			S,G	CY,G	D,S	L			6	10-26-45	
19aa	R. L. Clapper	Du	13.9	48	R	G	CY	S,O	Tco	1.6		8.95	10-26-45	
19cc	C. W. Westom	Du	10.3	36	B		N	N	Tcu	1.8		7.66	9-20-46	
20dc1	Richard Albright	Dr	275	6	P		CY,W	S	L			9	9-24-46	P
20dc2	do.	Du	18	36	B		CY	D	L			15	9-24-46	
21aa	Adrian Hageman	Du	14.6	24	B	S	CY	D	Tcu	.2		14.20	9-24-46	
21cd		Dr		6	P		CY,W	S	Tca	.6		7.82	9-24-46	P
21db	W. R. Hageman	Du	10.4	28	B	S	CY	N	Tcu	.4		7.93	9-24-46	
22ab	Adrian Hageman	Dr	176	4	P	Ss	CY,W	S	L			18	9-25-46	P,U

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 80 W. cont.													
22bb	Adrian Hageman	Dr	176	6	P	Ss	CY,W	S	L			18	9-24-46	P
22da	Clarence Grilley	Dr	125	6	P		CY	N	L			15	9-25-46	
23bb		Dr		4	P		CY,W	N	Tca	1.6		14.50	9-25-46	
23cb	John J. McDonald	Dr	200	6	P	Ss	CY,W	S	Tca	-6.0		12.55	9-25-46	U
24bb1	George Switzer	Du	24	36	W	S	CY	D,O	Tco	.1		15.30	10-26-45	
24bb2	do.	Du	24	48	W	S	CY	D						
24bb3	do.	Dr	190	4	P	Ss	CY,W	S	L			9	9-25-46	P
24dd		Dr		6	P		CY	N	Tca	1.7		26.10	9-25-46	
25ad	Alvin Thompson	Dr	200	6	P		CY,G	D,S	Hc	1.0		24.60	9-25-46	
25cb		Dr	11.0	30	Br		CY,W	S	Tcu	.3		5.90	9-26-46	
26bc	Clarence Grilley	Dn	17	4	P	G	CY,W	D,S	L			11	9-25-46	
27ad1	T. E. Grilley	Du	12	42	P		CY,G	D	Tca	.0		6.75	10-25-45	
27cc	S. Borreson	Du	17	36	W		CY,G							
28bc	Chester Kingsley	Dn	12	2	P		CY,G	I						
29ad1	do.	Dr	176	6	P		CY,W	S	Tca	2.7		49.28	9-24-46	P
29ad2	do.	Dn	12	2	P		CY	D				Dry	9-24-46	
30cd		Du	7.8	24	P		CY	S	Tco	.4		4.90	9-20-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 80 W. cont.													
31bb		Du	9.5	60	W		CY,W	S	Tcu	2.0		8.65	9-20-46	
31cc	B. Rudland	Dr	160	3	P	Ss	CY,W	S	L			50	9-16-46	C,F
31da1	E. L. Hance	Du	20	48	W		CY	S	Tco	1.5		11.45	9-25-46	
31da2	do.	Du	10.8	36	W		CY,W	S	Tco	2.7		8.05	9-20-46	
33aa	J. V. Stromberg	Dr	160	6	P	Ss	CY,G	S	Hc	.8		20.00	9-24-46	P,U
33ba	F. N. Pierson	Du	9.3	24	W,F		CY	S	Tca	.8		7.35	9-24-46	
34ba	Hollis L. Grilley	Dn	8		P		CY,G	D,S	L			5	9-24-46	
36bc1	John J. Fitchner	Dr	193	6	P	Ss	CY,P	S	Bp	.6		11.78	9-25-46	P,U
36bc2	do.	Du	15.4	36	W		P	N	Tco	.6		9.12	9-25-46	
36dd	Robert Johnson	Dr	235	5	P	Ss								
	T. 159 N., R. 80 W.													
8cc1	Walter J. Finke	Dr	250	4	P		CY	N	L			15	9-26-46	
8cc2	do.	B	60	28	W		CY,G	D	Tco	1.1		18.08	9-26-46	
18aa1	W. Finke	Dr	250	4	P	Ss	CY,W	S	L			11	9-26-46	P
18aa2	do.	Du	30					D	L			20	9-26-46	
19dd	Joe Mathes	Dr	300	3½	P	Ss	CY,W	D,S	L			8	10-26-46	P
20bc		Dr		3	P		N	N	Tco	2.0		13.53	9-26-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 80 W. cont.													
20cc	Mathes Bros.	B	23	6	P		CY	D	L			21	9-26-46	
21aa	Chris Evercher	B	80	12	T		CY,W	D,S	Tca	1.2		17.05	9-26-46	
22dc	Oscar A. Johnson	B	90	18	T		CY	D,O	Tcu	1.0		21.45	10-26-45	
26dd	O. Herschlip	Dr	174	5	P		CY,W	D,S	L			3	9-25-46	P
27aa		Du	32.2	24	W		CY	N	Bp	.3		11.11	9-26-46	
28cc		Dr		2	P		N	N	Tca	3.0		16.58	9-26-46	
28da1	Sherman Welstad	Dr	140	6	P		CY,W	S	Bp	1.1		23.83	9-26-46	P,U
28da2	do.	B	43.5	24	W		CY	N	Tcu	1.4		14.47	9-26-46	
28da3	do.	B	86.3	12	T		CY	S	Bp	.7		15.05	9-26-46	
31ad1	Edwin Finke	B	80	24	W,P		CY,G	D,S	Tca	.5		46.10	9-26-46	
31ad2	do.	Dr	180	4	P		CY	S	L			20	9-26-46	
31dc		Dr		5	P		CY,W	N	Bp	2.2		27.70	9-20-46	P
32cd1	B. Norsby	Dr	190	3	P		CY,W	S	Bp	.8		14.75	9-20-46	P
32cd2	do.	B	20	6	P		CY	D	L			18	9-20-46	
32dc		Dr		2	P		CY,W	S	Hc	.0		12.20	9-20-46	P
33ad		Du	15.8	18	P		CY	N,O	Tca	.6		9.85	10-26-45	
33cd		Dr	174.1	3	P		N	N	Tca	1.0		16.32	9-24-46	

McHenry County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 80 W. cont.													
33dc	August Ehlke	Dr	170	3	P		CY,W	D,S	Bp	1.3		20.83	9-24-46	P
34dd	O. Herschlip	Dr	200	4	P		CY,W	S	L			4	9-25-46	P
35da1	J. E. Neuman	B	90	18	W		CY	D,O	Tco	0.4		19.45	10-26-45	
35da2	do.	Dr	190	3	P		CY,W	S	L			20	9-25-46	P
35da3	do.	B	15	6	P		CY	N	L			13	9-25-46	

Table -- Record of Wells in Renville County, North Dakota

Well number 1/	Owner or tenant	Type of well 2/	Depth of well (feet) 3/	Diameter of well (in.)	Type of casing 4/	Character of water-bearing material 5/	Method of lift 6/	Use of water 7/	Measuring point: Description 8/	Measuring point: Distance above land surface (feet)	Measuring point: Height above mean sea-level (feet)	Depth to water level below measuring point (feet) 9/	Date of measurement	Chemical analysis 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 81 W.													
1ad	C. Christianson	Dr	200	2	P	Cl,G	CY,E	S	L			80	8-12-47	P
1cd	O. Torde	Dr	180	4	P		CY,W	D,S	L			40	8-12-47	P
2ad	A. Severson	Dr	180	6	P	Cl,S	CY,W	D,S	L			50	8-12-47	P
2bb		Dr	125	3	P		CY,W	D,S	L			50	10-10-45	U
2cd	A. Kjenos	Dr	180	4-6	P	Cl,G	CY,W	S	L			40	8-12-47	P
3cd		Dr		3	P		CY,H	N	Tp	4.4		23.96	8-12-47	

Footnotes:

1. Location number: Well numbers give the location of wells according to General Land Office Surveys and according to the following formula: Township--Range--Section, 160-acre tract within that section, and the 40-acre tract within the quarter section. If two or more wells are located within a 40-acre tract, the wells are numbered serially according to the order in which they were inventoried. The 160-acre and 40-acre tracts are designated a, b, c or d in a counter-clockwise direction beginning in the northeast quarter. For example: Well 162-96-5cd1 is located in SE¼, Sec. 5, T. 162 N., R. 96 W., and was the first of two or more wells inventoried in that 40-acre tract. In this tabulation, the numbers representing the township and range have been omitted in the column headed "Well number".

2. B, bored well; DD dug and drilled well; Dn, driven well; Dr, drilled well; Du, dug well; Sp, spring.

3. Reported depths below the land surface are given in feet; measured depths are given in feet and tenths below measuring points.

4. C, concrete (brick tile or pipe); P, iron or steel pipe; T, clay tile; W, wood.

5. Cl, clay, and sandy clay; Clb, blue sandy clay; Cly, yellow sandy clay; G, gravel; L, lignite; Q, quicksand; R, rock undifferentiated; S, sand; Sh, shale; Ss, sandstone; X, see well logs.

6. Method of lift: C, horizontal centrifugal; Cy, cylinder; F, natural flow; N, none; P, pitcher pump; S, submersible turbine; T, turbine; VC, vertical centrifugal.
Type of Power: B, butane; E, electric; G, gas engine; H, hand operated; T, tractor; W, windmill.
Flow given in gallons a minute.

7. D, domestic; I, irrigation; In, industrial; N, not being used; O, observation; P, public supply; S, stock.

8. Bp, base of pump; Hp, hole in pump base; Hc, hole in casing; L, land surface; Tca, top of casing; Tco, top of cover; Tcu; top of curb; Tp, top of pump.

9. Measured depths to water level are given in feet, tenths and hundredths; reported depths to water level are given in feet.

10. P, partial analysis; C, complete analysis; U, reported as not suitable for domestic use.

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 81 W. cont.													
6dc1	R. Anderson	Du	14	36	P	S	CY,W	D,S	L			10	8-12-47	
6dc2	do.	Du	14	36	W	S	CY,H	S	Tco	0.3		9.83	8-12-47	
7ab1	E. Christianson	Du	12	36	W	S	CY,W	D,S	L			9	8-12-47	
7ab2	do.	Du	6	30	W	S	CY,H	S	Tco	.3		2.19	8-12-47	
7dd	O. Cords	Dr	212	5	P	Cl,G	CY,W	D,S				-		P
9bc1	Andrew Johnson	Dr	350	4	P	Cl	CY,W	S	L			35	8-12-47	P
9bc2	do.	Du	18	36	P		CY,H	D	Tco	.4		10.83	8-12-47	
11cc	N.D. State Hiwy Dept.	Du	10.3	48	W	Cl,G	CY,H	I,D	Tco	3.5		6.70	10-10-45	
11dd		Du	9.1	36	W		CY,H	D,O	Tco	2.0		8.18	10-10-45	
12aa	L. Johnson	Dr	80	5	P		CY,E	D,S	L			30	8-12-47	P
14ac	Jerry O'Leary	Du	14	48	C	S	CY,H	D,S	Tca	2.4		10.90	8-12-47	
16bb	M. Christianson	Du	12	36	W	G	CY,W	D,S	Tco	1.8		5.32	8-12-47	
17aa1	C. Olson	Du	12	40	P	G	CY,W	S	Tcu	.6		8.34	8-12-47	
17aa2	do.	Du	12	36	W	G	CY,H	D	L			8	8-12-47	
17ba	Ludwig Alstadt	Du	15	36	P		CY,H	D,S,O	Tco	.6		10.65	10-10-45	
18cc	E. L. Kochel	Du	7			G	CY,G	D,S,O	Tco	3.4		7.25	10-10-45	
19bb	Lyle Walton	Dr	320	5	P		CY,H	D,S	L			80	8-12-47	P
20bb	G. Bolms	Dr		6	P	Sh	CY,G	D,S	L			70	8-12-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 81 W. cont.													
21ba		Du	8.2	48	W		CY,W	N,O	Tcu	3.0		6.65	10-10-45	
23dd	L. Christianson	Dn	18	1½	P	S	CY,H	S	L			18	8-12-47	
24dd		Du		28	C	Cl,G	N	N	Tcu	.0		7.82	8-12-47	
25cc		Du	10.1	36	W		N	N,O	Tcu	2.0		7.22	10-11-45	
26ba1	E. Miller	Du,Dn	13		P	G	CY,H	S	L			13	8-12-47	
26ba2	do.	Dn	12	1½	P	G	P,H	D	L			12	8-12-47	
28cb		Dr	135		P	Ss								
30ac	M. Rose	Dr	300+	6	P	Sh	CY,E	D,S	L			40	8-12-47	P
30dd	C. E. Colcord	Dr	212	3	P	Cl,G	CY,H	N,O	Bp	1.0		37.45	10-11-45	
36bd	School District	Du,Dn	14	2	P	S	CY,W	S	L			10	8-12-47	
	T. 158 N., R. 82 W.													
1bb	Amanda Kunkel	Du	9.6	48	W	G	CY,H	S,O	Tco	1.5		6.95	10-10-45	
2aa	B. H. Hartman	Du	14	14	T	S	CY,W	D,S	L			12	8-14-47	
2ca	D. L. McElroy	Dr	250	3	P	Sh	CY,H	N	L			40	8-14-47	
3db	A. V. Sorenson	Dr	180	4	P	L	CY,W	D,S	L			100	8-14-47	P
5ad	Leonard Backer	Dr	200	3	P	Sh	CY,E	D,S	L			30	8-14-47	P
6cc	Mrs. Bruner	Du	20	40	C	G	CY,G	D,S	Tco	1.3		9.45	10-17-47	
7cc	J. T. Phillips	Du	12	36	P		CY,G	S,O	Tco	1.7		6.65	10-12-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 82 W. cont.													
7dd	A. Nelson	Dr	345	3	P		CY,E	D,S	L			100	8-14-47	P
8dc	J. Larson	Dr	275	2	P		CY,W	D,S	L			40	8-14-47	P
9ab	George Rhodes	Dr	275	3	P		CY,W	D,S	L			8	8-14-47	P
10ad	L. L. Smith	B	40.6	24	W	Cl	CY,G	D,S	Tcu	0.8		18.42	8-14-47	
10ba	C. F. Englehart	Du	275	2½	P	Sh	CY,W	D,S	L			18	8-14-47	P
10cd	C. Klosterman	B	75	24	T	G	CY,W	D,S	L			40	8-14-47	
11bc	D. L. McElroy	Dr	150				CY,G	D,S						P
11cd1	E. Palmer	Dr		6	P		CY,E	D,S						P
11cd2	Great Northern Ry.	Du	16					RR						
11dc	Town of Glenburn	Du				G	CY,G	D	L			20	10-11-45	
12bb	C. M. Reigvom	Dr	336	4	P	Ss	CY,W	D,S	L			50	10-10-45	U
13bb1	Mrs. E. Braderson	Dr	365	4	P	S	CY,W	D,S	L			40	8-14-47	P
13bb2	do.	B	17	14	T		CY,H	D,S	Tcu	3.1		3.02	8-14-47	
13bb3	do.	Dn	18	2	P	S	P,H	D	L			14	8-14-47	
13dc	Mrs. Carlson	Du	12	36	W		CY,G	S	Tco	3.8		10.24	8-13-47	
14ba	Town of Glenburn	Dr	407					Fire						
14da		Dr	380				CY,W	D,S	L			14	10-11-45	
15a		Du	8.9	72	W		N	N,O	Tco	.0		6.15	10-11-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 82 W. cont.													
17ab	D. Z. Rhodes	Dr	250	4	P	S	CY,W	D,S	L			50	8-14-47	P
17cc	U.S. Geol. Survey	Dr	180.0	4 3/4	N	X	N	N	L		1566.21	6.37	8- 9-47	
19ad	John Stowe	Dr	341	2-3	P	Sh	CY,E	D,S	L			80	8-13-47	P
20aa	Howard Randall	Dr		4	P		CY,W	D,S	Tcu	0.3		53.47	8-13-47	P
21cd	Mrs. A. Rhodes	Dr	218	4	P	S	CY,W	D,S	L			70	8-13-47	P
22aa	V. J. Peskey	Dr	208	4	P	Sh	CY,W	D,S	L			30	10-12-45	
22cd	Mrs. Rosa Koll	Dr	200	3	P	S	CY,W	D,S	L			35	6-14-47	C,P
23cb	L. Peskey	Dr	300	4	P	Sh	CY,W	D,S	L			50	8-13-47	P
24ab	Mrs. Carlson	Dr	230	4	P	Sh	CY,W	D,S						P
24cc	G. Moldenhauer	Dr	250	4	P	Sh	CY,G	D,S	L			60	10-11-47	P
25cb	Howard Randall	B	40	24	W		CY,H	N	Tco	2.1		21.67	8-13-47	
25dc1	J. C. Randall	Dr	211	4	P	Sh	CY,W	D,S	L			60	8-13-47	P
25dc2	do.	B	16	14	T	G	CY,H	D	Tcu	.9		13.86	8-13-47	
26dc	T. G. Hamilton	Dr	180	4	P		CY,W	D,S	L			30	8-13-47	P
28cd	M. B. Talley	Du	34.5	36	C	S	CY,H	D,O	Tco	.8		22.23	10-12-45	
28da	N. A. Hart	Du	6	36	W	G	CY,H	D,S	Tco	2.1		4.13	8-13-47	
30bc	F. Christopher	Dr	270	4	P	Sh	CY,W	N	L			120	8-13-47	P
30cd	F. W. Schaefer	Dr	341	4	P	G	CY,W	D,S	Tca	.0		57.56	8-13-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 82 W. cont.													
32ab1	W. B. Talley	Du	11.0	36	W		CY,H	D,O	Tco	0.6		10.60	10-12-45	
32ab2	do.	Dr	275	4	P		CY,W	S	Tca	1.2		63.74	8-13-47	P
32cb	O. Bradley	Dr	400	3	P		CY,H	N						P
35da1	G. Runder	Du	10	48	W		CY,H	D,S	L			6	8-13-47	
35da2	do.	Dr	230	4	P	G	CY,H	N	Tp	3.2		15.02	8-13-47	
36cc	G. Christianson	Du	20	36	W	S,G	CY,W	D,S	L			10	8-13-47	
	T. 158 N., R. 83 W.													
2ad	Albert Smitland	Dr	362	4-6	P		CY,W	D,S	L			30	10-17-47	P
3da	Harry Saling	Du	16	48	W		CY,H	S	Tco	1.3		9.41	10-13-47	
3dd1	Claude Bradley	Du	8.1	48	W	Cl	N	N,O	Tco	1.6		6.15	10-12-45	
3dd2	do.	Dr	325	4	P		CY,W	S						P
4ab	H. P. Peterson	Dr	401	3-4	P	G	CY,W							P
6da	Harry Jevney	Dr	500	2-3	P	G	CY,G	S						P
7dc1	Irvin Johnson	Du	12	36	W	S	CY,H	S	Tco	.4		6.92	10-13-47	
7dc2	do.	Dn	15	1½	P	S	P,H	D						
8dd1	Jevney	Du		48	W		CY,H	N	Tco	1.1		11.26	10-13-47	
8dd2	do.	Dr		4	P		CY,G	S						
10aa	George Hanson	Dr	280	2	P	S	CY,W	N						P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 83 W. cont.													
10da	Henry C. Hanson	Dr	332	2	P	S	CY,W	D,S						P
11aa	Clarence Bean	Du	20	48	W	G	CY,W	S						
12dd	William Phillips	Dr	293	2	P	S	CY,W	S						P
14ba		Dr		3½	P		CY,H	N,O	Bp	1.6		51.70	10-12-45	
14dc	J. Rothgard	B	30	24	W	G	CY,G	D,S	L			22	8-18-47	
15ba1	Charles Rutledge	Du	12.4	18	W		CY,H	D,O	Tco	1.0		10.00	10-12-45	
15ba2	do.	Dr	300	2-4	P		CY,W	S						P
17aa		Du	60	40	W		CY,W	S	Tco	1.1		33.02	10-13-47	
17cb		Du	12.0	48	W		CY,H	D,S,O	Tco	.3		7.77	10-12-45	
17dc		Du		36	W		CY,H	N	Tcu	.3		4.31	8-18-47	
18cb	Herman Ketter	Du	13.0	48	W		CY,H	D,O	Tco	1.6		8.45	10- 6-45	
19da		Du		36	W		N	N	Tcu	1.4		9.53	8-18-47	
20ab	H. M. Johnson	Du	10	36	W		C,G	S	L			8	8-18-47	
20cc		Du	18.4	48	W		CY,H	N,O	Tco	.5		8.05	10-12-45	
21ab	Frank Fuchs	Dr	325	4	P	G	CY	D,S	L			70	8-18-47	
21dd	J. H. Christopher	Dr	458	3-4	P	Sh	CY,W	D,S	L			50	8-18-47	P
22cc		Du	16.3	24	W		P,H	D,O	Tco	1.3		8.52	10-12-45	
22dd	Louis Larson	Dr	10.1	24	P	S	CY,H	D,S,O	Tcu	.0		8.20	10-12-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 83 W. cont.													
23ab	J. Rothsgard	B	30	18	W		CY,H	D,S	L			20	8-18-47	
23dc	M. Hanson	Dr	350	3	P	Sh	CY,W	N	Tcu	0.1		2.92	8-18-47	P
24db	William Hanson	Dn	23	2	P	S	CY,G	D	L			18	8-13-47	
24dd	do.	Dr	250				CY,E	D,S	L			60	8-13-47	P
25ad	M. Hanson	Dr	330	4-6	P	G	CY,W	D,S	Tca	2.6		62.36	8-13-47	P
26cb1	R. J. Armstrong	Dr	328	6	P		CY,W	D,S	L			30	8-18-47	P
26cb2	do.	Du	28	48	C		P,H	D	L			17	8-18-47	
27cc		B		18	W		CY,W	D,S	Tco	1.7		11.68	8-18-47	
27dd	George Stevens	Dr	280	4	P		CY,W	D,S	L			35	8-18-47	P
29ac1	A. A. Johnson	Dn	14	2	P	S	CY,H	D,S	L			10	8-18-47	
29ac2	do.	B	50	24	W	G	CY,H	N	L			48	8-18-47	
29cd	do.	Du	30	36	W	G	CY,E	S	Tcu	.7		5.47	8-18-47	
31aa	J. L. Atlen	B	50	18	W	G	N	N	Tcu	.2		19.42	8-18-47	
31cd	H. D. Loveland	B	60	30	W		CY,G	S	Tco	1.1		23.51	8-18-47	
32ba	F. Frey	B	50	18	W		CY,H	D	L			35	8-18-47	
32ca1	do.	Dr	518	3-4	P	Ss	CY,W	S	L			180	8-18-47	P
32ca2	do.	Du	18	24	W		CY,H	D	L			10	8-18-47	
34cb	H. E. Palmer	B	50	18	W	G	CY,W	S	Tco	.2		24.43	8-18-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 83 W. cont.													
35ad	U. S. Geol. Survey	Dr	165.0	4 3/4	N	X	N	N	L		1586	15.01	8-12-47	
35cb1	P. D. Norton	Du	12	18	P		N	N	Tco	1.3		6.43	8-18-47	
35cb2	do.	Du	14	36	W		N	N	Tco	2.1		8.14	8-18-47	
	T. 158 N., R. 84 W.													
1ba		Du		40	W		CY,H	N	Tco	1.0		4.27	9-25-47	
1dd1	I. Nelson	Du	14	48	W		CY,H		Tco	2.0		12.89	9-27-47	
1dd2	do.	Du					CY,W	N	Bp	.0		5.32	9-27-47	
3aa	U. S. Geol. Survey	Dr	225.0	4 3/4	N	X	N	N	L		1696	1.40	8-25-47	
3ab	John Dufner	B	55	18	W	G	CY,E	S	Tco	2.0		41.00	10- 6-45	U
3dc	James Sinclair	B	67	24	W	G	CY,E	S	Bp	.6		45.79	9-27-47	
8ad		Dn	14	1½	P	S	CY,H	D						
11ba		Dr		3	P		CY,W	N	L			79+	9-27-47	
11cd	E. F. Hubbard	Dr	525	3-4	P	S	CY,W							
12aa	Carl Nelson	Du	10.0	48	W		CY,H	S,O	Tcu	1.0		6.05	10- 6-45	U
12cd	Henry Jevens	Dr	495	2-3	P		CY,W	S	L			80	9-27-47	
13cd	George Phillips	B		8	T		P,H	S,O	Bp	2.8		8.75	10- 6-45	
13dd	Ketter	Dr	515	3-4	P	S	CY,W	S						
14cc	John Backes	Dr	354	2-3	P	S	CY,W	S						

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 84 W. cont.													
15ab		B		24	W		N	N	L	0.0		11.22	9-27-47	
15bc	George Backes	Dr	460	3	P	S	CY,W	N						
19bb1	John Blooms	Du	18	36	W	G	CY,G	S	Tca	1.4		12.32	9-29-47	
19bb2	do.	Du	15	8	P	G	CY,H	D						
19cb1	Peter Sauer Est.	Du	14	40	W	S	CY,H	D	Tcu	.8		12.82	9-29-47	
19cb2	do.	Du	10	48	W	S	CY,G	S	Tco	1.2		7.86	9-29-47	
22ad		B		24	W		CY,H	N	Tco	.8		20.00	9-27-47	
23dc1	Anna Englehardt	B	70	24	W	Cl,L	CY,H	D	Tca	1.8		20.23	9-29-47	
23dc2	do.	B	70	24	W		CY,W	S	Bp	.8		24.75	9-29-47	
23dc3	do.	B	150	18-24	W		N	N	Tca	1.0		8.45	9-29-47	
24ba		Du		40	W		N	N	Tca	2.5		8.22	9-27-47	
24bc	Martha Englehardt	B	35	24	W	S	CY,W	N	Tca	1.1		15.42	9-27-47	
25ab	Haldi	Dr		3	P		CY,H	N						
25cc1	Hubert Streitz	Dr	398	3-4	P	S	CY,W	S						
25cc2	do.	B		24	W		CY,G	S	Tco	1.1		54.27	9-27-47	
25dc1	J. F. Almann	B	60	24	W	S	CY,G	D,S	Tca	.6		28.02	9-27-47	
25dc2	do.	B	60	24	W	S	CY,H	N	Bp	.5		25.11	9-27-47	
26ad	State School Land	B	54	12	C		CY,W	S	Tco	.6		22.08	9-27-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 84 W. cont.													
27aa1	J. Eckert	B	74	18-24	W	S,G	CY,W	N	Bp	0.2		11.53	9-29-47	
27aa2	do.						CY,E	S						
28aa	Parker	Dr	326	4-8	P	S,G	CY,W		L			100	10- 6-45	C,U
33ad1	Quaren Fuchs	Du	5	48	W		C,E	S	Tco	.7		2.64	9-29-47	
33ad2	do.	B	27				CY,H	D						
33ad3	do.	B	32	24	W		CY,G	S	Tco	3.0		24.93	9-27-47	
33dd	E. Albert	B	60	18	C	S,G	CY,G	S	Tca	1.0		22.14	9-29-47	
34ad1		B	100	24	W	G	CY,W	S	Tca	.8		25.16	9-29-47	
34ad2							CY,G	D,S						
34bc	Turin Fuchs	B	63	24	W	G	CY,G	S						
35aa1	Andrew Nett	B	72	24	C	S	CY,W	N	Tca	.3		18.26	9-27-47	
35aa2	do.	B	68			S	CY,G	S						
35ba	George Middendorf	B	90	24	W	Cl,G	CY,W	S	Tca	.4		24.04	9-27-47	
35dd	H. J. Linnards	B	52	18	P	G	N	N,O	Tcu	.5		23.95	10-6-45	
	T. 158 N., R. 85 W.													
3cd	Martin Helseth	B	40	24	W		CY,H	D	Tco	.6		14.06	10- 3-47	
4cc		Dr					N	N						
6cb1	Kenneth Johnson	Dr	[illegible]	2-3	P		CY,W	S						P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 85 W. cont.													
6cb2	Kenneth Johnson	Du	18	8	P		CY,H	D	Bp	1.2		10.87	10- 2-47	
7da	A. Jenson	Dr	580	2-3	P		CY,W	S						
8aa1	Peter Hanson	Dr	435	2-3	P	S	CY,W	N						
8aa2	do.	Du		40	W		CY,H	N	Tco	.6		9.74	10- 3-47	
9cc	Victor Brians	Du	25	40	W		CY,H	S						
13da1	Clementich	Du	30	18	W		CY,G	D,S	Bp	.6		6.21	9-29-47	
13da2	do.	Du	17.0	40	W		CY,H	S	Tcu	.8		4.46	9-29-47	
15cc		Dr	600+	2-3	P		CY,W	S						P
18cd	Axrese Estate	B	26	18	W		CY,W	S	Bp	.6		22.48	10- 3-47	
18dc1	do.	B	25	24	W		CY,H		Bp	1.5		10.81	10- 3-47	
18dc2	do.	B	30	24	W		CY,H	N	Bp	.4		8.33	10- 3-47	
19cd		B		24	W		CY,H	S	Tco	.7		11.55	10- 3-47	
20cd	B. O. Suldahl	Dr	442	2-3	P	Sh	CY,W							
21ad	Sore Brothers	Dr		3	P		CY,W	S						P
22bc	Mrs. John Everson	Dr	428	2-3	P	Ss	CY,W	S						P
23bb	O. Lee	Dr	420	2-3	P	Ss	CY,W	N						
26cc	John Idness	Du	20	36	C		CY,H	S	Tco	.0		7.76	9-29-47	
26dc	E. W. Erickson	Dr	592	2-3	P	Sh,L	CY,W	S						C

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 85 W. cont.													
27aa		Du	34.5	20	W		N	N,O	Tcu	2.5		14.75	10- 5-45	
27bb		Du		48	W		P,H	S,O	Tco	1.5		10.25	10- 5-45	
27cc	John Vaagin Est.	Dr	430	2-3	P	Ss	CY,W	S						
27dc1	Carl Anderson	B	65	18	W	S	N	N	Tca	.0		10.70	10- 3-47	
27dc2	do.	Dr		5	P		CY,H	N						
28bb		Du	18.4	48	W		H	D,O	Tcu	2.2		12.80	10- 5-45	
28cd1		Du					CY,H	N	Tco	.0		11.22	10- 3-47	
28cd2		B		24	W		N	N	Tca	.8		11.90	10- 3-47	
29aa	S. Helseth	Dr					CY,W	S						P
29cc	D. Danielson	Du	18	40	W	G	CY,H	S	Bp	1.8		14.21	10- 3-47	
30cc1		B					CY,G							
30cc2		B	16.0				CY,H	N				Dry	10- 2-47	
32aa1	E. Thompson	B	52	24	W		CY,G	S	Tco	1.0		13.60	10- 3-47	
32aa2	do.	Du		40	W		CY,H	D						
33ab	S. O. Vaagin	Do	32	24	P		CY,G	S	Tca	1.8		17.98	10- 3-47	
33bb	A. Wooster	Dr	535	2-3-6	P		CY,W	S	L			150	10- 3-47	P
34cc	Hector Mason	Dr	700	2-3	P	Sh	CY,W	S						
34dc		Du		48	W		CY,H	S	Tca	1.4		9.96	10- 3-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 86 W. cont.													
13ab1	H. Stienberger	Dr	600	2-4	P	S	CY,W	S						P
13ab2	do.	Du	19	18	T	S	CY,H	D	Tca	1.2		9.61	10- 2-47	
13cd	M. Vanerstrom	Dr	680	2	P	S	CY,W	S						
14dd1	Harold Maguire	Dr	280	2-3	P	S	CY,W	S						P
14dd2	do.	Du		24	T		CY,H	D	Tca	1.5		10.01	10- 2-47	
15bc1	Frank Hilbern	Dr	440	3	P	Ss	CY,W	S						P
15bc2	do.	Du		40	C		CY,H	N	Tcu	1.1		12.22	10- 2-47	
15dd	J. Geiselmann	Dr	500	3	P	S	CY,W	N						
16dd	White Ash School	Do					CY,H	D,O	Tp	3.5		14.70	10- 4-45	
20aa	U. S. Geol. Survey	Dr	200.0	4 3/4	N	X	N	N	L		1913.23	8.50	8-14-47	P
21bb	Frank Johnson	Dr	250	3	P	S	CY,W	S						P
21cb1	Clifford Erickson	Du	30	40	C	S,G	CY,H	D						
21cb2	do.	Dr	300	2½-4	P		CY,W	S						P
21db	Einer Sandberg	Dr	250	3	P	S	CY,W	S						P
22aa1	Gilberg	Dr	350	2-3	P		CY,W	S						P
22aa2	do.	Du	35	40	W	Cl	CY,H	N	Tco	.0		10.18	10- 2-47	
24da		Du	11.5	48	W		P,H	S,O	Tcu	.0		9.03	10- 5-45	
25ad	Hector Mizeur	Dr	500	2-4	P		CY,W	S						P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 85 W. cont.													
35ba	George Lilliness	B	35	24	W		CY,H	S	Tca	0.8		28.76	9-29-47	
35cd	McGinley and Behlmer	B	60				CY,W	S	Tca	.4		19.62	9- 4-46	
	T. 158 N., R. 86 W.													
1ad1	S. H. Hanson	Dr	600	2-3	P	Ss	CY,W	S						P
1ad2	do.	B	40	24	W	G	CY,H	N						
3cb	Ernest Schultz	Dr	230	3	P	G	CY,W	S						P
3dd	Herman Borneke	Dr	180	4-6	P		CY,W	N						
4ad	L. Stienberger	Dr	250	2-3	P	S,Cl	CY,W	S						P
4bc		Dr		4	P		CY,W	N	Tca	2.6		87.79	9-15-47	
8bb	Harold Miller	Dr	315	3	P	L	CY,W	S						P
8dc		B	11.7	12	P		CY,H	N,O	Bp	.5		8.95	10- 8-45	
9cc1	A. G. Erickson	Du	30	40	W		CY,H	N	Bp	1.5		12.25	10- 2-47	
9cc2	do.	Dr	400	2-3	P	Ss	CY,W	S						P
10bc	Leo Pollak	Du	14.5	20	P		H	S,O	Tca	1.1		11.90	10- 4-45	
10dd	F. Sandberg	Dr		3	P		CY,W	D,S						P
11bb	U. S. Geol. Survey	Dr	245.0	4 3/4	N	X	N	N	L		1865.44	6.22	8-14-47	
12cc1	Claude Johnson	Dr	500+	2-3	P		CY,W	S						P
12cc2	do.	B	20	24	W		CY,H	D	Tca	.1		13.53	10- 2-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 84 W. cont.													
9ad		Du	9.0	40	W		N	N	Tca	2.0		5.97	9-25-47	
9cd		B		24	W		CY,H	N	Tca	.6		10.75	9-24-47	
10aa	V. J. Lemke	Du	12	48	P		CY,G	D,S,O	Tcu	.4		7.90	10- 2-45	
10cd	J. O. Bolander	Du	12				CY,W	D,S,O	Tco	.5		7.65	10- 6-45	
12aa		Du		48	C		N	N	Tco	.7		6.58	9-24-47	
14cc		Dn		1½	P		CY,H	N						
14cd	W. L. Williams	B	40	24	W	G	CY,H	N	Tco	1.0		14.27	9-25-47	
15ab	Adrian Busch	Du	16	40	W	G	CY,H	D,S	Tco	.7		6.59	9-24-47	
17bb		B		24	W		CY,G							
18da	Mark Fields	Du		8	P		CY,G	D						
19ab	M. J. Veikley	Du	23.3	20	W		H	D,O	Tcu	2.3		22.30	10- 6-45	
19cd	J. B. Myers	Du	12	48	W		CY,W	D,S	L			10	10- 6-45	
20ab		Du	15.5	48	W		CY,H	N,O	Bp	1.3		11.70	10- 6-45	
20cc	U. S. Geol. Survey	Dr	225.0	4 3/4	N		N	N			1815	Caved	8-14-47	
21ab	Otto Gangerish	Dr	500	3-2	P	Sh	CY,W	S						
21ba	Randolph Brothers	Dr	430	3-2	P	S,G	CY,G	S						P
23ad	Mary Homan	Du	18	40	W	G	CY,G	D,S	Tco	1.0		10.39	9-25-47	
23ba	James Douglas	Du	13	18	W	G	CY H							

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 86 W. cont.													
25bc	E. L. Price	B	50	24	W	L	CY,H	N	Tco	.6		12.32	10- 2-47	
26ad		B		30	W		N	N	Tca	2.5		9.67	10- 2-47	
36dd1	Rose Due	B	27	24	W	G	CY,W	S	Tca	2.0		10.97	10- 2-47	
36dd2	do.	B	32	24	W	G	CY,H	N	Tca	.0		9.89	10- 2-47	
	T. 159 N., R. 84 W.													
1bb1	Ford Timms	Du	12	48	W	G	CY,H	S	Tca	1.4		7.59	9-23-47	
1bb2	do.	Du	5.4	40	W	G	N	N	Tca	2.7		6.69	9-23-47	
1dd		Du	14.5	48	W	G	CY,H	D,S,O	Tco	2.5		10.90	10- 2-45	
2aa1	Grant Huntson	Du	10	36	T	G	CY,H	D	Tca	.7		8.43	9-24-47	
2aa2	do.	Du	12	40	W	G	CY,W	N	Tco	.9		9.63	9-24-47	
3bc	Albert Sather	Dn		1½	P		CY,H	D,S						
3dd	Alvin Auter	Dr	490	2-3	P		CY,W	S						
4dd	Walter Vensel	Dr	400+	2-3	P		CY,G	S						P
5dc	John French	B	32.2	12	W	S	CY,H	N,D	Tcu	1.3		13.05	10- 2-45	
7cb1	Carl Koppe	Du	20	24	P		N	N	Tca	1.9		15.43	9-24-47	
7cb2	do.	B	71	24	W		CY,G	S	Tco	1.0		20.28	9-24-47	
7cb3	do.	B	70+	24	W		CY,H	N	Tca	1.0		21.17	9-24-47	
7dc		B		24	W		CY,H	N	Tco	4		15.51	9-24-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 84 W. cont.													
24bc	Mary Homan	Du		48	W		CY,G	D,S	Hc	1.0		10.87	9-25-47	
25bc	Nettie Undlin	Dr	416	6	P	Sh	CY,W	S						
25dd	J. Undlin	Dr	450	4-6	P	Sh	CY,W	S	L			100+	10- 6-45	C,U
26dc		Du		40	W		N	N	Tco	.7		7.79	9-25-47	
27da	M. Milkeg	Dr	580	3	P	Sh	CY,W	N						
34bb	David Lemke	Dr	593	2-4	P	Sh	CY,G	S						
35bd	Livingston	Du		40	W		CY,H	D,S	Tcu	.8		5.56	9-25-47	
35ca	do.	Du	12	48	W		CY,H	S						
	T. 159 N., R. 85 W.													
1ad		Dr		3	P		CY,W	S						
1bc	Martin Vendsel	Dr	450	3	P		CY,W	D,S	L			60	10- 2-45	U
6dc	Clark Hedberg	Dr	703	2-4	P		CY,W	N						
7bc1	Ralph Johnson	B		18	T		CY,H	D,O	Tco	1.3		17.60	10- 5-45	U
7bc2	do.	Dr	646	2-3	P		CY,W	S						P
7dd	Alton Block	Dr		2-3	P		CY,W	S						P
8aa1	Rueben Borman	Du	12	40	W		CY,H	D	Tca	1.5		7.13	8-29-47	
8aa2	do.	B	75	24	W		CY,H	S	Tco	.5		12.15	8-29-47	
8cc		Dr		3	P		N	N						

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 85 W. cont.													
8dc		Du	49.6	48	W		N	N,O	Tco	1.8		10.50	10- 5-45	
9dd		Du					CY,H	D,S,O	Tco	1.3		22.90	10- 5-45	
10ac	U. S. Geol. Survey	Dr	105.0	4 3/4	N	X	N	N	L		1605.9	6.00	8-14-47	
12aa1	J. P. Lundberg	Du	14	36	C		CY,H	D,O	Tco	.3		10.45	10- 2-45	
12aa2	M.,St.P., & S.Ste.M.Ry	Dr	634		P	Sh	CY	RR						
12bb	Town of Grano	Du	20			G	CY,H	D,O	Tco	1.2		13.15	10- 2-45	C
17cb		Dr		3	P		CY,W	N	Bp	1.3		93.22	8-29-47	
17db1	Victor Satterland	Du	15.0	24	P		CY,G	S	Tca	1.4		7.28	8-29-47	
17db2	do.	Du	17	40	W		CY,H	D						
18ab	C. O. Elberg	Dr	620	2-3	P		CY,W	S						P
19aa	D. Lopinga	Dr	428	2-3	P		CY,W	N						
19dc	Arthur Emerson	Dr	600	2-3	P		CY,W	S						P
20cc	U. S. Geol. Survey	Dr	225.0	4 3/4	N	X	N	N						
20cd		B		24	W		N	N	Tca	1.7		10.42	8-29-47	
21aa1		B	33.1	20	W		CY,H	N,O	Tco	1.3		19.55	10- 5-45	
21aa2		B	35	20	W		CY,H	N,O	Tco	.3		18.98	10- 5-45	
21cd		Dr	600+	2-3	P		CY,W	S						P
24aa	Robert Bryans	Du	22			S	CY,G	D,S	L			20	10- 6-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 87 W. cont.													
27cc1	M. Elberg	Dr	525	2-4	P		CY,W	S	L			160	10- 3-47	P
27cc2	do.	B	87	18-24	W		CY,H	S	Tca	0.4		18.03		P
28dd	John Lewis	Dr	367	2-3	P	Ss	CY,W	S						
29bb	George Geyer	Dr	608	2-3	P		CY,W	S	L			150	8-29-47	P
29cc	Harry Smith	Dr	400	2-3	P		CY,W	S						P
30bc	O. Bue	Du	22	20	P		CY,H	D,S,O	Tco	1.0		15.67	10- 5-45	
31bc	C. Ward	Dr	600	2-3	P		CY,W	S						P
31da	Mrs. Grace Helmers	Du		40	W		N	N	Tcu	5.0		6.59	8-29-47	
32bb	Russel Thompson	Du	18	40	W		CY,H	S	Tco	1.2		14.42	8-29-47	
33bd		Du			C		CY,G							
33dd1	E. Thompson	Dr	387	2-3	P		CY,W	S						P
33dd2	do.	B	45	24	W		CY,H	D						
34aa	Emil Anderson	Du	21	40	W		CY,E	S	Tca	.6		9.66	10- 3-47	
34bb	S. Swift	Dr	738	2-3	P		CY,W	S						P
34cc	Conrad Skophamcer	Du	30	48	W		CY,G	D,S,O	Tco	1.3		13.85	10- 5-45	
35ac1	F. Brians	Dr	570	2-4	P		CY,W	S						P
35ac2	do.	Du	25	24	P		CY,H	D	Tca	.6		13.81	10- 3-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 87 W.													
1cc	Guy Triplet	Dr	618	2-3	P		CY,W	S						P
2cd	V. Triplet	Dr		2-3	P		CY,W	S						P
4cb1		Dr		3	P		CY,W	S						
4cb2		Du		48	W		CY,H	D	Bp	1.7		8.84	8-28-47	
4dc	Mrs. Charles Meyers	Dr		2-3	P		CY,W	S						P
5ad	Mrs. Marie Rasmussen	Dr		3	P		CY,W	S						P
6cc1	T. Hanson	Dr	360	2-3	P		CY,W	S						
6cc2	do.	Du	18	10	P		CY,H	D	Tco	1.0		8.73	8-26-47	
6dc		Dr		3	P		CY,W	N						
7ad		Dr	300	3	P		CY,W	D,S	L			80	10- 4-45	U
7bb1	Robert Grey	Dr		3	P		CY,W	S						P
7bb2	do.	Du		8	P		CY,H	D	Tca	.7		7.41	8-26-47	
9ad	Otto Boehrs	Dr	780	3	P		CY,W	D,S	L			80		U
9bb	do.	Dr	800	2-4	P		CY,W	S	L			75	8-28-47	P
10cd	Slaamod	Dr	390	6	P		CY,W	S	L			30	8-28-47	D
10dd	F. Boehrs	B	23	8	P		CY,H	N						
11ab	Snyder	Dr					CY,W	S						P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 86 W. cont.													
12dd1	Axel Hedberg	Dr	700	2-3	P		CY,W	S						P
12dd2	do.	Du	25	24	P		CY,H	N	Tca	0.5		6.24	8-28-47	
13ba		Dr					CY,W	S						P
14ba	Brunness	Dr	600	3	P		CY,W	S						P
15ad	Mrs. Sorenson	Dr	380	2-3	P		CY,W	N						
17aa		Dr		2-4	P		CY,W	N						
17ad		Dr		8	P		CY,W	S	Tca	.8		7.94	8-28-47	P
17ba		Dr		3	P		CY,W	N						
17cc	Marna Jergensen	Du	20				CY,H	N,O	Tp	4.0		12.70	10- 4-45	
18cc	Charles Harold	Dr		2	P		CY,W	S						P
18bc1	Richard Erickson	Dr	230	2-3	P		CY,W	S						P
18bc2	do.	B	50	24	W		CY,H	N	Tco	.3		4.86	8-26-47	
19dd		Dr	300+	2-3	P		CY,W	S						P
20bc		Dr		2	P		CY,W	N						
21dc		Du					N	N				Caved	8-21-47	
22bc	J. Boltz	Du	15	12	P		P,H	D,O	Bp	1.6		8.55	10- 4-45	
23bc	Erickson	Dr	300+				CY,G	S						
25ad1	Anton Deidland	Du	20	40	C		CY,H	D	Tco	.6		8.73	9-15-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 86 W. cont.													
25ad2	Anton Deidland	Dr	464	2-3	P		CY,W	S						
25cc1	Frank Bernard	Dr	450	2-3	P		CY,W	S						
25cc2	do.	Du	25	40	W		N	N						
26cc	F. Herzberg	Dr	448	2-3	P		CY,W	S						
27bb	Olaf Slaamod	Du	15				CY,H	N	L			12	10- 4-45	
28cc		Dr	200	4	P		CY,W	S						P
29bc1	Mrs. Mary Miller	Dr					CY,W	S						P
29bc2	do.	Du		40	W		CY,H	D						
30da1	R. Patterson	Dr	600		P		CY,W	S	Hp	3.5		94.00+	9-16-47	P
30da2	do.	Du	28	48	C		CY,H	D	Tcu	.2		9.05	9-16-47	
31aa1	R. G. Chaffin	Du	14.6	36	P		CY,G	D,S,O	Tco	1.6		8.75	10- 4-45	
31aa2	do.	Dr		3	P		CY,W	S						P
31cd1	William O'Hara	Dr		3	P		CY,W	S						P
31cd2	do.	Du					CY,H	D						
32bc		Dr		3	P		CY,W	N						
33bc1	Helmer Helmers Jr.	Du	14	36	T		CY,H	D	Tca	1.2		9.09	9-15-47	
33bc2	do.	Dr	185	3	P		CY,W	S						P
34ad	Leslie Herzberg	Dr		2-3	P		CY,W	S	Tca	2.6		82.00+	9-15-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 86 W. cont.													
34dc1		Dr					CY,W	S						P
34dc2		Du		24	W		CY,H	D						
35bc		Dr		3	P		N	N						
36ad	Ellingson	Dr		3	P		CY,W	S						P
	T. 160 N., R. 84 W.													
1cd1	R. McClain	B	40	24	W		CY,H	N	Tca	0.8		13.70	9-23-47	
1cd2	do.	Du	20	48	C	S,G	N	N	Tco	1.5		7.42	9-23-47	
1cd3	do.	Du	20	48	W	S,G	P,H	N	Tca	.0		6.36	9-23-47	
2ab1	Milton Armstrong	Du	12	36	T		C,G	S	Tco	.0		5.78	9-23-47	
2ab2	do.	Dn	12	1½	P		CY,H	D						
3aa	R. B. May	Dr	400	2-3	P	S	CY,G	S	L			30	9-23-47	P
3da	Bascom May	Du,Dn	11	1½-36	P-W	Cl,S	CY,H	S						
4aa1	Lural Keith	Du	16	40	W	S,G	P,H	S	Tca	1.4		9.17	9-22-47	
4aa2	do.	Du		24	P		CY,G	D	Tca	.7		11.86	9-22-47	
4bb	C. Thompson	Dr	400	3	P	S	CY,W	S						P
4dd	Clarence Kingsley	Dr	275	2-3	P	S	CY,W	S						P
5ad	Harry Hineland	Dr	350	2-3	P	S	CY,W	S						P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 84 W. cont.													
5cd		Dn		1½	P		P,H							
5dc		Du	14	40	W		P,H	S	Tcu	0.7		12.48	9-18-47	
6dd	Selmer Erickson	Dn	12	1½	P		P,H	D,S						
7cc	Murray Bros.	Dr	375	2-3	P	S	CY,W	S						P
7cd	Marston Fitzgerald	Du	7	48	W	Cl	CY,G	D,S,O	Tco	3.0		7.48	10- 8-45	
8da	Lynn May	Du	11	40	W	G	CY,W	D,S						
9bb	Bryan Miller	Dr	280	2-3	P	S,G	CY,E	S						P
9cd1	Marvin Iverson	Dn	16	1½	P		CY,H	S						
9cd2	do.	Dn	15	1¼	P	G	CY,G	D						
10bc	Grant May	Dr	300	3	P	S	CY,W	S	L			30	9-19-47	P
2ba1	R. McClain	Du	14	36	W	S	CY,W	S	Bp	1.7		9.37	9-23-47	
2ba2	do.	Du		40	W		P,H	D	Tca	2.5		7.45	9-23-47	
3aa		Dr	265	5	P		CY,W	N,O	Bp	1.0		45.05	10-2-45	
4dc	Edward Sanders	Dr	600	2-3	P		CY,W	S	L			80	9-23-47	P
6da	U. S. Geol. Survey	Dr	270.0	4 3/4	N	X	N	N	L		1626	2.21	8-14-47	P
7aa	R. McClain	Dr	400	2-3	P		CY,W	S						P
9aa		B		18	W		N	N	Tca	.2		7.64	9-22-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 84 W. cont.													
19dd		Dr	400+	2-3	P		CY,W	S						C
21aa1	Lee Miller	Du	10	48	W	G	CY,H	S,O	Tco	0.5		6.70	10- 2-45	
21aa2	do.	Du	10	48	W	G	CY,H	S,O	Tco	.8		6.35	10- 2-45	
21bb	Lynn Overholster	Dr					CY,W	S						P
22bb	M. Solor	Du	8	36	T		CY,E	D,S	L			6.5	9-24-47	
22dd1	W. Hochsprung	Dn	16	1½	P		CY,H	D						
22dd2	do.	Du	20	40	W	S,G	CY,H	S	Tca	.0		7.92	9-23-47	
22dd3	do.	Du	12	40	C	S,G	CY,H	S	Tcu	.7		8.81	9-23-47	
23dd	Bruce May	Dr					CY,W	S						P
24ab	Roy Otto	Du	15.0	48	W		CY,G	D,S,O	Tco	1.4		9.15	10- 2-45	
26bc		Du		48	W		CY,W	D,S						
27ad		Du		40	W		CY,W	N	Bp	1.0		6.92	9-23-47	
27cb1	L. McClung	Du	18	48	W		CY,W	D,S	Tco	1.2		6.16	9-24-47	
27cb2	do.	Du	8	48	C		CY,H	N	Tco	.3		5.34	9-24-47	
27cc		Du	11.9				CY,H	S,O	Tco	.8		8.40	10- 2-45	
28ac	Christianson	Dr	384	2-3	P		CY,W	S	L			36	9-23-47	
28dd	W. Mickelberry	Dr	286	2-3	P		CY,W	N	Lc	1.8		34.15	9-24-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 84 W. cont.													
30aa		Dr		3	P		CY,W	S						P
30ad	Davidson	Dr	442	3-4	P		CY,G	S						
30cc		Du		18	W		CY,H	N,O	Bp	0.5		17.95	10- 8-45	
31cc	Grove Sampson	Dr	406	2-4	P	S,G	CY,W	S						
33aa	F. Mickelberry	Du	19.4	48	W	G	P,H	D,S,O	Tco	1.9		10.70	10- 2-45	
33da1	L. N. Oberholzet	Du	10	40	C	G	CY,H	S	Hp	1.8		7.69	9-24-47	
33da2	do.	Du	10	40	W	G	CY,W	S	Tco	.5		6.75	9-24-47	
34cc	Albert Hurst	B	22	16-30	W	G	CY,W							
35ab	B. Timms	Dr	300				CY,W	D,S	L			60	10- 2-45	
35ba	Glen May	Du	14	40	W	G	CY,W	D,S	Tco	1.5		7.23	9-23-47	
35cc	R. B. Atkins	Dr	375	2	P	S	CY,W	S	L			35	9-24-47	
	T. 160 N., R. 85 W.													
1cd		Dr		4	P		CY,W	N						
2db1	A. H. Trutna	Dr	540	2½-4	P		CY,W	S	L			70	9-18-47	P
2db2	do.	Dr	380	4	P		N	N						
3ab	Thompson	Dr	240	3	P		CY,W	S						P
9cc		Du	18	18	W		P,H	D,O	Tco	.6		10.85	10- 2-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 85 W. cont.													
9dd	Charles Shong	Dr		3	P		CY,W	S						
10bb	W. Randash	Dr		3	P		CY,W	S						P
11dd		Dr		3	P	G,Sh	CY,G	S						
12cc	R. S. Wright	Du	25	24	W		CY,H	D,O	Tco	1.0		20.40	10- 2-45	
13bb	John Townsend	Dr	320	2-3	P	G,Sh	CY,W	S						P
15ba	Garfield Larson	Dr		3	P		CY,W	S	Tca	.5		81.+	8-19-47	P
15cc	Stuart Elliot	Du	18	36	W	S	CY,G	S	Tco	.5		6.87	8-19-47	
17da	Harold Yale	Dr	380	2-3	P	S,G,Sh	CY,W	S						P
18da		Du	13.4	36	P		N	N,O	Tcu	1.5		8.20	10- 2-45	
20aa	Richard Brust	Dr	335	2-3	P	G,Sh,Cl	CY,W	S						
20bb		Du	14.6	48	W		CY,H	D,S,O	Bp	.8		14.15	10- 2-45	
21cc	Steven Emerson	Dr		3	P		CY,W	S	Bp	.6		83.85	8-19-47	P
23ad	Robert Burbidge	Dr					CY,W	S						P
23cd1	Harold Levitt	B	51.9	20	W		N	N,O	Tcu	1.6		10.95	10- 2-45	
23cd2	do.	Dr		3	P		CY,W	S						P
25ba1	Herbert Ring	Dr	382	3-4	P	Ss,Sh	CY,G	S						
25ba2	do.	B	28.0	24	W		CY,H	D	Tca	.5		22.84	9-22-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 85 W. cont.													
26ab	T. A. Burbidge	Dr	382	2-3	P	Ss,Sh	CY,W	S						P
26cc	G. Vensel	Dr		3	P		N	N						
26dd		Dr					CY,W	S						P
27aa	Andrew Benston	Dr		3	P		CY,W	S						P
30bb	Town of Greene	Du	10		W		CY,H	P						
31bb	C. A. Larson	B		12	P		CY,W	D,S,O	Tco	0.2		60.40	10- 5-45	
35cc1	Miller	Dr		3	P		CY,W	S						
35cc2	do.	B		6	P		P,H	D	Tca	.0		8.31	9-24-47	
36aa	U. S. Geol. Survey	Dr	265.0	4 3/4	N	X	N	N	L		1732	7.56	8-14-47	
	T. 160 N., R. 86 W.													
5bb	Carl Raap	Du	30	40	W	Cl	CY,G	D,S	Tco	.8	1851	6.29	8-19-47	
5cb	Ignatius Zeltinger	Dr	557	2-3	P		CY,W	S			1867			P
5dc	C. E. Rhodes	Dr	416	3	P	Sh	CY,W	N			1855			
6ab1	Jane Barr	Dr	606	2-3	P		CY,W	S			1851			
6ab2	do.	Du					CY,H	N			1850			
7ad	C. C. Resch	B					CY,H	S	Tcu	.5	1860.5	9.46	8-19-47	
7bb		Du		48	W		N	N,O	Tcu	2.3	1843.3	11.65	9-26-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 86 W. cont.													
7cb	Jacob L. Welsh	Dr	329	3	P	S	CY,W	N			1845			
8bc1	John Dillinger	Du	25.0	48	W	S	CY,H	N,O	Tco	0.2	1862.2	17.55	10- 4-45	
8bc2	do.	Dr	296	2-3	P		CY,W	S			1862			P
9bb1		B	90	24	W	Cl	CY,W	S	Bp	1.1	1832.1	33.63	8-19-47	
9bb2		Dn		1½	P		P,H	D			1831			
10cc1	August Maun	Dr	682	2-3	P	Cl,S	CY,W	S	L		1823	.75	8-19-47	P
10cc2	U. S. Geol. Survey	Dr	317.0	4 3/4	N	X	N	N	L		1824	6.23	8-14-47	
10dd	D. C. Alexander	Dr	725	2-3	P	Sh	CY,W	S			1793			P
11bc1	Lester Seibert	B		6	P		P,H	N,O	Tco	1.7		13.55	10- 5-45	
11bc2	do.	Dr	580	3	P	Sh	CY,W	S						
11cc		B		6	P		P,H	D,O	Bp	3.0		15.80	10- 4-45	
16cc	Henry Saracko	Dr	300+	2-4	P		CY,W	S			1856			P
17bb	J. Resch	Dr	486	3-4	P	Sh	CY,W	S			1846			P
17cb	T. P. Frank	Dr	410	3	P	Cl,S	CY,W	N			1841			
19cd	Carl Gates	Dr	300	2-3	P	S	CY,W	S			1844			P
21ab		B		24	W		CY,H	N	Tco	.9	1845.9	10.18	8-27-47	
22aa	Louis Doctor	Dr	360	2-3	P		CY,W	S	L		1839	150	8-27-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 86 W. cont.													
22cb	Thomas Brothers	Dr	627	2-3	P	G	CY,W	S			1842			
22dc	C. M. Fink	B	30	18	W		CY,H	D,O	Tco	1.4		12.85	10- 4-45	
23cb	Manda Lundgreen	Dr	520	2-3	P	Sh	CY,W	N						
24dc	W. B. Seibert	Dr	611	2-3	P	Sh	CY,W	S	L			100	8-28-47	P
25bc	Arthur O'Clair	Dr	475	2-3	P	Sh	CY,W	S	L			80	8-28-47	P
27ab	W. P. Celley	Dr	682	2-3	P	G	CY,W	N			1835			
28cc1	S. Duman	Dr	625	2-3	P	Sh	CY,W	S			1842			
28cc2	do.	Du	15	40	W		CY,H	D	Tco	1.1	1843.1	5.21	8-27-47	
28dc		Dr	400	3	P		CY,W	N	Tca	1.5	1844.5	36.77	8-27-47	P
29aa1	Henry Murray	Dr	662	2-3	P		CY,W	S			1843			
29aa2	do.	Du	12	36	C		CY,H	D	Tca	.9	1843.9	9.01	8-27-47	
30ab1	T. Maglicia	Dr	400	3	P	S,Sh	CY,W	S			1845			P
30ab2	do.	B		24	W		N	N	Tca	1.7	1846.7	9.87	8-25-47	
30cc		Dr		3	P		CY,W	N	Hp	2.2	1859.2	34.43	8-21-47	
31ba1	J. E. Bass	Dr	375	3	P	Sh	CY,W	S			1858			
31ba2	do.	Du		12	C		CY,H				1858			
31cc	Ingeburg	Dr	350	4	P		CY,W	S			1864			P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 86 W. cont.													
34bb		Dr		3	P		CY,W	N			1847			
35ab	Axel Hedburg	Dr	627	3-4	P	Sh	CY,W	S						P
35cb	N. J. Snider	Du	23.0	40	W	Cl	CY,H	N	Tco	1.4		3.37	8-28-47	
36bb		Du	9.0				CY,H	N	Tcu	1.5		Dry	10- 4-45	
36cd	Richard Neuback	Dr	600	2-3	P	Sh	CY,W	S						P
	T. 161 N., R. 84 W.													
1bd	Melvin Duerre	Dn	12	2	P	S	CY,H	D,S			1612			
1dd		Du		60	C		CY,H	D			1604			
2aa	A. O. Gilseth	Du	12	48	W		CY,H	S,O	Tco	3.0	1614.0	9.15	9-29-45	
3dd	Peter Nelson	Dr	343	2-3	P		CY,W	S	L		1647	15	6-17-47	C
4bb1	George Strandberg	Dr	492	2-3	P		CY,W	S	Tca	.3	1661.3	2.08	6-18-47	P
4bb2	do.	Du	12.0	48	C		CY,H	D	Tco	.9	1660.9	10.03	6-18-47	
5ab	John Newstrom	Dr	492	2-3	P		CY,W	S			1661			P
5cb	G. Johnson	Du	10	48	W		CY,H	S	Tco	1.0	1668.0	3.76	6-17-47	
5cc	do.	Du	14	48	W		N	N	Tca	1.5	1677.5	1.06	6-17-47	
6cb		Du		48	W		CY,G	D,S,O	Tcu	1.2	1688.2	9.35	9-29-45	
7cd	Einer Norkiel	Dr					CY,W	S			1697			

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 84 W. cont.													
9aa	Clifford Co.	Dr					CY,G	S			1655			P
10dd1	W. Zimmerman	Du	7.0	40	W		N	N	Tca	2.5	1652.5	1.83	6-17-47	
10dd2	do.	Du	14.0	40	W		N	N	Tco	.8	1650.8	6.46	6-17-47	
11ad1	Wm. Connole	Dr		3	P		CY,W	N	Tca	.5	1634.5	25.11	6-18-47	
11ad2	do.	Du	13.0	36	W		N	N	Tca	1.2	1636.2	4.79	6-18-47	
11cd	W. Zimmerman	Dr		4	P		CY,W	S	Tca	1.2	1642.2	35.20	6-25-47	
12cd	O. Witteman	Dr		3	P		CY,W	S	Tca	.0	1634.0	22.20	6-25-47	P
12da	Frank Gehringer	Dr	294	2-3	P	Sh	CY,G	S						P
13cd1	F. Paris	B	13.2	18	T		N,O	N,O	Tca	.0		11.64	7-19-40	C
13cd2	do.	Dr	343		P	Ss								C
14db1	George Barcus	Dr	375	4	P		CY,G	S	L		1642	14	7-23-47	P
14db2	do.	Du	21	40	6		CY,H	D	Tcu	.6	1642.6	5.94	7-23-47	
15dd	J. Southam	Dr	270	2-4	P		CY,W	S			1656			P
16dd	John Moberg	Dr		3	P		CY,W	S			1665			P
17aa1	Lloyd Horner	Dr	500	3	P		CY,W	S	Tca	1.6	1671.6	19.30	8- 1-47	P
17aa2	Martin Jacobson	Dr					Y,W	S			1669			
17cc		Dr	300	3	P		CY,W	S	L		1681	50	9-23-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 84 W. cont.													
17dd1	A. R. Jones Oil and Operating Co. No. 1	Du		72	W		N	N,O	Tcu	0.0	1659.0	16.90	9-30-45	
17dd2	do.	Dr	3,872			X	N	N			1659			
18cd	Wendel Bohen	Dr	390	4	P		CY,W	S	L		1691	70	7-22-47	P
18dc	Louis Erickson	Dr		3	P		CY,W	S			1683			
20aa1	A. Bruduik	Du	16.0				CY,H		Tco	.0	1667.0	1.48	6-29-47	
20aa2	do.	Dr	330	4	P	L,Ss								
20ba	Elmond Lundgreen	Dr		2	P		CY,W	N			1682			
21aa	Paul Gehringer	Dr	350	3	P		CY,G	S			1662			
21ba	Great American Oil and Gas Co.	Dr	350	6¼		X	N	N	L		1661	30	9-23-45	
21bb1	Burduik	Dr	350		P		CY,W				1658			P
21bb2	do.	Du	14	40	W		CY,H	D	Tco	1.0	1659.0	8.98	6-29-47	
22aa	D. Gehringer	Dr	300	2-3	P		CY,W	S	L		1656	30	9-23-45	P,U
22bb	Henry Skordal	Du	21.0	40	W		CY,H	N	Tco	.0	1662.0	2.41	6-29-47	
23dd		Du		36	C		CY,G	D,S			1643			
24ab	J. D. Taylor	Du	15.2	48	B	S	CY,H	N,O	Tcu			11.04	7-19-40	
24cb	George Capranos	Dr		3	P		CY,W				1646			
25cb	Palmer Asheim	Dr					CY,W	S						

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 84 W. cont.													
26aa1	Mrs. A. H. Sleeper	Dr	316	3	P		CY,W	S						
26aa2	do.	Du	16	72	C		CY,H	D						
28bc		Du	9.2	72	W		P,H	S,O	Bp	0.0		5.30	10- 6-45	
28dd	Swartz	Dr	300	2-3	P	S	CY,H	N						P
29aa	LeRoy Allen	Dr		3	P		CY,W	S						P
29dc	Roy Hoke	Dr	383	2-4	P		CY,E	S	L			100	7-23-47	P
31ad		Dr					CY,E	S						
32cc1		Dr	300	3	P		CY,W	N	L			80	10- 2-45	
32cc2	Roy Hoke	Dr	363	2-4	P	Sh	CY,W	N	L			60	7-23-47	
33aa		Dr	300	3	P		CY,W	D,S	L			80	10- 2-45	U
36ba	R. Nelson	Du	14	36	P		CY,W	D,S,O	Tco	1.0		7.75	10- 6-45	
	T. 161 N., R. 85 W.													
1aa1	J. Burrell	Du,Dn	12	1½-8	P		CY,H	D						
1aa2	do.	Du	12	40	W		CY,H	S	Bp	.3		3.79	6-18-47	
1aa3	do.	Du,Dn	14	1½-8	P		CY,H	S	Hp	1.4		5.66	6-18-47	
2bd	Albert Mattern	Du	5	36	W		N	N	Tca	.5		2.21	6-13-47	
2db	Osterberg	Du	16	36	W		CY,G	D,S	Tco	1.1		7.72	6-13-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 85 W. cont.													
3cc	Olaf Johnson	Dr	321	2	P	S	CY,W	D,S	L			60	10- 1-45	U
3dc	Oscar Anderson	B	58	15	W		CY,H	D	Bp	1.3		19.20	6-12-47	
4cd		Du	13.3	48	W		CY,H	N,O	Tco	1.7		7.55	10- 1-45	
5bc		Du					P,H	N,O	Tp	4.5	1765.5	12.55	10- 1-45	
5cc		Du	21.0	36	C		N	N	Tca	1.7	1756.7	3.05	6-12-47	
6bc1	Monrad Ness	Du	18	72	C		N	N	Tco	2.0		11.14	6-12-47	
6bc2	do.	Du		48	C		N	N	Tco	1.5		9.00	6-12-47	
6bc3	do.	Du		40	C		N	N	Tca	2.5		12.50	6-12-47	
7aa1	Selmer Olson	Dr	500	2-3	P	Sh	CY,W	S						P
7aa2	do.	Du	10.0	36	C		N	N	Tco	1.7		5.30	6-19-47	
8ad	S. E. Olson	Dr	500	4	P	Sh	CY,W	N	Tca	.5	1761.5	83.37	6-12-47	
8bc	Provident Life Ins. Co.	Dr	400	3	P	G	CY,W	S			1761			P
9da	Haus Locken	Dr	425	3	P	G	CY,W	S						
10ba	Knute Haarsager	Dr	320	2-3	P	G	CY,W	S						
11ad	Osterberg Estate	Dr					CY,W	N						
12bb	Roy Becker	Dr	350	2-3	P		CY,W	S	Hp	1.8	1707.8	97.34	6-12-47	
13cc		B	18.5	24	T		N	N,O	Tca	1.2	1727.2	11.20	9-23-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 85 W. cont.													
14bc	Olaf Locken	Dr	400	3	P		N	N	Tca	0.0		4.98	6-12-47	
14cc		B	12.7	9	P		N	N,O	Tca	2.1		Dry	9-23-45	
15aa	do.	Dr	400	2-3	P		CY,W	S						P
15bc	S. Aalund	Dr	300	3	P	G	CY	N						P
15da	Dewey Robey	Dr	400	2-3	P	G	CY,W	S						P
16ba	Palmer Johnson	Dr	397	4	P	S	CY,W	S	L			28	6-12-47	P
18ad		B	35.0	18	W		CY,H	N	Tca	.7		5.15	6-12-47	
18dc		Dr		4	P		CY,H	N,O	Tca	1.3		12.85	9-23-45	
20aa	R. G. McDonald	Dr		3	P		CY	N,O	Tp	4.2		36.93	4- 9-47	
23ab	Frank Sandberg	Dr	300		P		CY,W	S			1742			C,P
23cb	A. B. Stromswold	Dr	369	1½-3	P	S	CY,W	S			1751			
23dd	Peter Peterson	Dr	435	2-3	P	Sh	CY,W	S			1741			P
24aa	U. S. Geol. Survey	Dr	260.0	4 3/4	N	X	N	N	L		1679.95	6.04	8-14-47	
24cb		Dr	400	2-3	P		CY,W	N	L		1732	50	10- 6-45	
25ba	John Mortenson	Dr		2	P		CY,W	S						P
26bb	Robert Schilling	Dr	265	2	P		CY,W							
27ab	T. Heily	Dr	310	2	P	S	CY,W	S						

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 85 W. cont.													
27bc	S. Aalund	Dr	300	3	P		CY,W	S						
28aa	Ingebretson	Dr	504	3	P	Sh	CY,W	S						P
29aa	G. O. Wilcox	Dr	480	2-3	P	S	CY,W	N						
29bb	E. Mattern	Dr	450	3	P		CY,W	S	L			65	8-1-47	P
34bc	Walter Klatt	Dr	434	2-3	P		CY,W	N	L			100	10-6-45	
34cc1	Harry Klatt	B	24	18	W		CY,H	D,O	Tco	1.0		13.15	10-6-45	U
34cc2	do.	Dr	293	3	P	S	CY,W	N	L			100	10-6-45	
35bb	Oscar W. Johnson	Dr					CY,W	S						
35dd		Dr	350	3-4	P	G	CY,W	D,S	L			80	10-6-45	
	T. 161 N., R. 86 W.													
1da	Arne Ness	Dr	390	2-3	P		CY,W	S			1764			
2cc1	Souris River State Park	Du		40	W		CY	N	Tco	.1	1610.1	6.08	6-13-47	
2cc2	do.	Du					CY,H	D			1610			
6bc1	Lillian L. Bass	Du	20	18	C		CY,H							
6bc2	do.	Dr	400	3	P	Cl,Ss	CY,W	S	Tca	1.7		85.52	5-26-47	C,P
13dd	Carl Aalund	Dr		3	P		CY,G	S			1710			
15cc		Du	10.7	72	P		N	N,O	Tco	3.0	1821.0	9.15	9-23-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 86 W. cont.													
15da	L. C. Butts	Dr	463	2-3	P	Cl,S,Ss	CY,W	S	L		1767	70	8- 4-47	P
18bb1	O. Tveedt	Du	12	36	C		CY,H	D	Tco	0.7		3.42	5-26-47	
18bb2	do.	Dr	396	2-3	P	Cl,S,Ss	CY,G	S	L			60	5-26-47	P
19cd1	Frank Gustafson	Du	20	8	P		P,H	D	Tca	.5		1.39	6- 3-47	
19cd2	do.	Dr	375	3	P	Sh,L	CY,W	D,S	Tca	1.5		55.60	6- 3-47	P
19dc	G. Ostlund	Dr	365	2	P	G,Cl,L	CY,W	S			1841			P
19dd		Du		24	C		CY,H	D			1840			
20ba	Arthur Prachel	Dr	340	2-3	P	S,G	CY,W	D,S	L		1851	80	9-30-47	P,U
20cd		Dr		2-3	P	Cl,G,Ss	CY,H	N			1848			
20dd		Du	22	48	W	S,Cl	CY,H	N	L		1847	4	6- 3-47	
21ad	Ida Schroeder	Dr	300+	2-4	P	Cl,G	CY,W	D,S			1831			
21dc1	Carl Raap	B	22.3	8	C		CY	N	Tca	.2	1838.2	8.85	6- 3-47	
21dc2	do.	B	28.0	24	W		CY,T	S	Tco	.7	1838.7	8.86	6- 3-47	
22bc	F. W. Schroeder	Dr	315	2-3	P		CY,W	N			1832			
24dd1	Harold Nelson	Dr		3	P		CY,W	S			1704			P
24dd2	do.	Du	18.0				P,H	D	Bp	.5	1703.5	5.36	6- 3-47	
24dd3	do.	Du	13.0	36			N	N	Tco	.2	1710.2	4.10	6- 3-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 86 W. cont.													
26cb1	Oscar Johnson	Dr	360	3	P	Cl,S	CY,W	S	L			90	8- 4-47	P
26cb2	do.	Du	17	18	C		CY,H	D	Tca	0.9		4.87	8- 4-47	
26cb3	do.	Du	7.0	36	C		N	N	Tco	.4		4.14	8- 4-47	
28cc	W. Ostlund	Dr	530	3	P	Ss	CY,W	D,S						P
28da	Mary Murray	Dr	310	3	P	Cl,G,Ss	CY,W	S						
28dd	N. Johnson	Du	20				CY,G	D,S,O	Tco	.9		13.18	9-26-45	
29dd1	Murray Brothers	Dr	440	2-3	P	Cl,S,Sh	CY,W	S						P
29dd2	do.	Du	20	12	C		P,H	D	Tco	.5		1.41	6- 3-47	
30ba1	Alvin Swanson	Dr	400	2-3	P	Cl,S,Ss	CY,W	N						
30ba2	do.	B					CY,H	N	Tco	.0		6.72	6- 3-47	
30cc	N. Swanson	Dr	425	2-3	P	Cl,G,Ss	CY,W	S						P
31aa	Raymond	Dr					CY,W	D,S	L			80	9-26-45	P
31cc1		Du					CY,H	D						
31cc2		Dr	400	3	P	Cl,S,Ss	CY,W	S	Tco	1.6		81.00+	6- 4-47	P
31cc3		Du	18	24	T		CY,H		Tca	1.4		3.83	6- 4-47	
33aa		Du	16.3	48	W		H	S,O	Tco	1.6		15.70	10- 4-45	
34aa	Adolf Davidson	Dr	485	2-3	P	Cl,G,Ss	CY,W	N						

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 87 W.													
1aa	W. Clifford	Du	7.5	36	W		N	N,O	Tcu	1.0	1847.0	Dry	9-30-45	
1bc	M. C. Edwardson	Dr	426	2-3	P	Cl	CY,W	D,S	L		1844	80	9-30-45	C,P,U
3dc1	Frank Nelson	Dr	435	2-3	P		CY,W	N			1847			
3dc2	do.	Du	17.0	30	C		N	N	Tco	1.2	1848.2	11.12	5-23-47	
4cc	John McEwen	Dr	360	3	P		CY,W	N	Hp	2.5	1867.5	.25	5-22-47	
5cb	Christin Nelson	Dr	360	2-3	P	Cl,G	CY,W	S			1867			P
6aa	M. T. Mucland	Dr	375	2-3	P	Cl,G	CY,W	D,S			1863			P
6cc	S. P. Bird	Dr	235	4	P		CY,H	D,S			1869			P
6dd	Marcus Peterson	Du	20.0	40	W		CY,W	N	Tco	.3	1870.3	12.41	5-22-47	
7bc	J. J. Martin	Dr	275	4½-6	P	Cl,Ss	CY,W	S	Hc	1.2	1878.2	63.23	5-21-47	P
8bc1	Andrew Hanson	Dr	326	2-3	P		CY,W	S	L		1872	40	5-22-47	P
8bc2	do.	Du	20	10	W		CY,H	D	Bp	1.6	1873.6	9.97	5-22-47	
9ad	A. Jacobson	Dr	620	3	P		CY,W	D,S	Hp	2.6	1856.6	79.00	5-23-47	P
9cc		B	22.0	24	W		CY,E	S	Tca	1.3	1864.3	17.97	5-22-47	
10ac	C. H. Clausen	Dr	352	2-3	P	Cl,G	CY,W	S			1856			P
10bc	N. Jergenson	Dr	330	2	P		CY,W	D,S	L		1848	50	5-23-47	P
11cd1	Perlie Lee	Dr	289	4	P		CY,W	S			1851			P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 87 W. cont.													
11cd2	Perlie Lee	Du	30	24	C		CY,H	D	Tca	3.2	1851.2	3.41	5-23-47	
11cd3	do.	Dr	525	2-3	P	Cl,G	N	N			1849			
12ad1	T. Swanson	Du		8	P		CY,H	D	Tca	.7	1844.7	6.31	5-26-47	
12ad2	do.	Dr	800	2-3	P		CY,W	S			1845			P
12dd	U. S. Geol. Survey	Dr	285.0	4 3/4	N	X	N	N	L		1837	3.10	8-14-47	
14dc	B. Ramsdell	Dr	400	4	P		CY,W	S	L		1851	25	9-23-45	
16cd1		Dr	350	3	P		CY,W	S			1877			
16cd2		Du	24	24	W		CY,H	D	Tp	3.0	1880.0	14.74	5-23-47	
17ad	A. Huber	Dr	325	2-3	P	Cl	CY,W	D,S	Hp	3.0	1874.0	57.50	5-22-47	P
17bc1	Marian Peterson	Dr	320	4	P		CY,W	D,S	L		1878	50	5-22-47	
17bc2	do.	Dr	315	3	P		CY,W	D,S			1880			C,P
17dc	Albert Brown	B	18	18	W		P,H	D,O	Tcu	1.5	1874.5	9.80	9-23-45	
18ac	Sidney Pierce	Du	14	40	W		CY,E	D,S	Tco	1.2	1878.2	11.45	5-22-47	
18bc1	Reuben Nelson	Dr	242	4	P		CY,W	D,S			1880			P
18bc2	do.	Du	17	40	W		CY,H		Tca	.5	1879.5	2.47	5-21-47	
18dc	E. W. Jenson	Dr	295	2-3	P		CY,W	S	L		1887	40	5-23-47	P
19aa1	Mrs. J. Andersen	Du	23	36	W		P,G	S	Tca	1.6	1891.6	19.87	5-21-47	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 87 W. cont.													
19aa2	Mrs. J. Anderson	Du	30	36	W		P,H	S	Tco	2.2	1892.2	18.66	5-21-47	
20dd		Du	10.0	36	W		N	N	Tca	.7	1876.7	6.31	5-21-47	
21cc	Virgil Nelson	Dr	350	2-3	P		CY,W	N	Bp	1.6	1878.6	58.24	5-21-47	
22ab	F. Turnell	Dr	350	2-3	P		CY,W	D,S	L		1869	20	5-23-47	P
22bb1	G. Ramsdell	Dr	382	2-3	P		CY,W	S	L		1876	30	5-23-47	P
22bb2	do.	B		18	W		N	N	Tca	1.6	1878.6	6.50	5-23-47	
22dd1	Mrs. Ellen Peterson	Dr	382	2-3	P	Cl,S	CY,W	S			1858			P
22dd2	do.	Du	16	24	C		CY,H	D	Tco	1.8	1860.8	6.23	6- 4-47	
23cc1	Soren Hanson	Dr	300	3	P		CY,W	S	L		1854	30	6- 4-47	P
23cc2	do.	B	20	24	W		N	N	Tca	1.3	1856.3	5.39	6- 4-47	
23dd	Louis E. Johnson	Dr	365	3	P	Cl	CY,W	D,S			1852			P
24ab		B		18	W		CY,H	D,O	Tco	1.0	1847.0	16.05	9-23-45	
25bc		Dr		4	P		CY,W	N						
25cd		Dr		3	P		CY,W	N						P
26ad1	George Erickson	Dr	350	3	P		CY,W	S						P
26ad2	do.	Du	18.0	24	W		CY,H		Bp	.6		5.53	6- 3-47	
27cd		Du	7.0	48	W		N	N	Tcu	1.0		Dry	9-26-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 87 W. cont.													
28cc	John McQuillan	Dr	167	3	P		CY,W	D,S	L			70	6- 4-47	P
28dc	John Faklen	Dr	330	2-3	P		CY,W		Bp	1.3		60.00	6- 4-47	P
29cc	P. Peterson	Du		24	W		CY,H	D,S,C	Tco	1.0		13.10	9-26-45	
29dc1		B	15.0	24	W		N	N	Tco	1.7		10.62	6- 4-47	
29dc2		Du	13.0	36	W		N	N	Tca	.8		8.05	6- 4-47	
30dd1	Magda Nelson	Du	24.0	40	W		CY,E	S	Tca	1.8		10.87	5-21-47	
30dd2	do.	Du	22	40	W		CY,H	D	L			6	5-21-47	
31bb	M. A. Madson	Dr	300	4	P		CY,W							P
31cd	Henry Ostlund	Dr	320	2-3	P	Cl,L	CY,W	N						P
31dc		Dr	323	2-3	P	Cl,L	CY,W	N						
32aa	U. S. Geol. Survey	Dr	255.0	4 3/4	N	X	N	N	L		1884	6.89	8-14-47	
32dd	Mrs. N. P. Larson	Dr	400	2-3	P		CY,W	S						P
33ad	John Carlson	Dr	300	2-3	P	Cl,G	CY,W							P
33bc	John Faulkner	Du		24	P		CY,H	D,O	Tcu	1.5		12.30	9-26-47	
34aa1	Irvin Hanson	Dr	300	2-3	P		CY,W	D,S						P
34aa2	do.	B	17.0	24	W		N	N	Tca	2.0		11.47	6- 4-47	
34cc	D. P. Meline	Dr	303	3	P		CY,W	D,S						P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 87 W. cont.													
35bb		Dr	300	3	P		CY,W	N	L			80	9-26-45	
35cd1	John Welsh	Dr	369	3	P		CY,W	S	L			20	6- 4-47	P
35cd2	do.	B	23	24	W		N	N	Tca	1.0		8.04	6- 4-47	
	T. 162 N., R. 84 W.													
2aa		Du	11.3	48	C		N	N,O	Tcu	2.5		8.95	10- 1-45	
2da	G. Lohse	Du	9	48	C	S	CY,H	S,O	Tcu	1.0		8.15	10- 1-45	
3bb	Martin Burgeson	Dr	400	2-4	P	Sh	CY,H	D	L			8	7-22-47	P
4dc	A. LaCrosse	Du	10	40-72	W		CY,H	D	Tco	1.0		4.22	7-21-47	
5bb	F. Eldred	Dr	490			S,Sh	CY,W	S	Tca	.0		24.55	8-18-47	P
8da	John Gates	B	10	24	W	S,G	CY,E		Tca	1.2	1634.2	6.81	6-18-47	
9cd		Du	19.1	72	C		N	N,O	Tco	1.0	1637.0	19.55	9-29-45	
9da1		Du	7.0	72	W		CY,G	S,O	Tcu	1.0	1614.0	4.35	9-28-45	
9da2		Du					CY,H	D,O	Tco	1.2	1616.2	8.90	9-28-45	
9dc1		Du		48	W		CY,H		Tco	1.4	1627.4	8.38	7-31-47	
9dc2		Du		40	W		CY,H				1626			
9dc3	Great Northern Ry	Du	13			G								
10ad	John Bohn	Dr	400	3	P		CY,H	N	Bp	.4	1627.4	25.85	7-21-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 84 W. cont.													
10bc	F. Motlong	Du	10.0	48	C	S	CY,H	N	Tco	0.6	1621.6	7.01	7-21-47	
10cd		Du					CY,W	S,O	Tco	.5	1621.5	7.78	9-28-45	
11bc	John Bohn	Dr	400	2-3	P		CY,W	S			1627			
12ac	H. Mueller	Dr	300	3	P		CY,W	S			1613			P
12dd	P. R. Stene	Dr	415	3	P	Sh	CY,W	D,S						
13ab		Du		48	W		CY,G	D,S	Tco	2.0	1603.0	10.77	7-31-47	
14ba	Lee Gates	Dr		3	P		CY,W	S	Tca	.4	1620.4	29.10	7-21-47	P
14cb	M. Sheridan	Dr	400	2-3	P		CY,W	N			1622			
15bc	Folkers and Raff	Dr	426	3	P	Ss	CY,W	S			1637			P
15cb	Robert Gates	Dr	500	3	P	Sh	CY,W	S			1635			P
17dd	Frank Gates	Dr	390	4	P	Sh	CY,W		Tca	1.2	1654.2	31.66	6-18-47	P
18aa	Robert Gates	Du	15.0	36	W		N	N	Tca	1.2	1652.2	2.42	6-18-47	
19ba	Harry Gates	Du	18	40	W	S,G	CY,W	S	Tca	1.0	1672.0	8.03	6-18-47	
20dc	George Willey	Du					CY,E	D,S			1667			
21cc	Wallace Becker	Dr	415	2-3	P	Sh	CY,W	S			1650			C,P
23bd	A. Crooks	Du	10.0	40	C		N	N	Tco	1.3	1611.3	7.36	7-21-47	
24dd		Dr	423		P	Ss								

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 83 W. cont.													
25ad		Du	14	36	W	S	CY,G							
25bb	Frank Bohn	Du	12	48	P	G	CY,H	S	Tco	0.3	1607.8	9.43	7-18-47	
25dd1	U. S. Geol. Survey	Dr	105.0	4 3/4	N	X	N	N	L		1588	4.30	8-14-47	
25dd2	do.	Dr	255.0	4 3/4	N	X	N	N	L		1588	4.79	8-14-47	
26cd	Clark Kelly	Du	9	48	W		CY,E	S	Tco	.6	1614.6	9.55	6-18-47	
26dd	A. Crooks	Dr	400	3	P	S,Sh	N	N	Tca	.0	1617.0	13.17	7-18-47	
27ba1	George Kraus	Dn		1½	P		CY,W	D,S			1627			
27ba2	do.	Du	12	48	W	G	N	N			1627			
28bc	J. Prin	Du	12.0	36	W	S	CY,H	N	Tcu	.5	1660.5	Dry	10- 8-45	
28cc	Roy Eldred	Dr	418	2-3	P		CY,W	S	Tca	1.3	1667.3	41.09		P
29ab	John Willey	Du	16.0	60	C	S,G	CY,E	S	Tco	.3	1667.3	10.15	6-18-47	
29ba	C. J. Carlson	Du	15.0	48	W	G	CY,H	D,S	Tco	1.5	1666.5	12.09	6-18-47	
30ba	C. J. Tuor	Dr	413	2-3	P		CY,W	S			1665			P
31bb1	Shoenberg	Dr	370	2	P	Sh	CY,W	S			1632			P
31bb2	do.	Du		40	C		CY,H	D	Bp	.0	1632.0	2.94	6-18-47	
31da		Dr	350	2-3	P	Sh	CY,W	N			1669			
32ad1	Jesse Powell	Dr	350	2-3	P		CY,W	S	Tca	1.4	1664.4	15.46	6-18-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 84 W. cont.													
32ad2	Jesse Powell	Dr	320	3	P		N	N			1663			
32ad3	do.	Dr	300	3	P		N	N			1663			
32ba1	Albert Keup	Dr	338	2-3	P	Sh	CY,W	S			1660			P
32ba2	do.	Du	10.0	36	C		CY,H	D	Hp	1.3	1660.3	4.30	6-13-47	
32dd1	Alfred Newstrom	Du	15	43	W		CY,H	D,O	Tco	.5	1660.5	8.60	10- 3-45	
32dd2	do.	Dr	364	2-3	P	Sh	CY,W	S			1660			P
33bc	Orville Witteman	Dr	325	2-3	P	Sh	CY,W	S			1665			
33cd	A. H. Trutna	Dr	400	2-3	P	Sh	CY,W	S	Tca	.2	1661.2	36.59	6-13-47	P
34cd	George Capronos	Dr					CY,W	N	Tca	.4	1642.4	27.71	6-13-47	
35dd1	Lloyd Snyder	Du	11	36	W	G	CY,H	D			1612			
35dd2	Lloyd Snyder	Du		43-72	W	G	CY,H	S	Tco	.6	1612.6	7.67	7-13-47	
36bb	Glenn Wade	Du	10	43	W	G	CY,H	D,S			1613			
	T. 162 N., R. 85 W.													
1aa	G. Peterson	Dr	200	3	P		CY,G	D,S	L			60	9-23-45	
1bb1	E. Heller	Du	13	40	W		CY,E	S						
1bb2	do.	Dn	10	1½	P		CY,H	D						
2ad1	E. B. Minne	Du	14	40	W		CY,H	S	Bp	1.7		10.57	8- 7-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 85 W. cont.													
2ad2	E. B. Minne	Dn	12	1½	P		CY,H	D						
2bb	Clara Budky	Dr	386	3	P		CY,W	S						
3dd	Marville Loomis	Dr	400	2-3	P		CY,W	S						P
6ad	J. Knutson	Dr	447	2-4	P		CY,W	S			1739			P
7ad	Lars Larson	Dr	424	2-3	P		CY,W	S						
7cd	Robert Bower	Du		40	C		N	N	L			5.51	6-19-47	
7dd	T. Stromstad	Dr	400	2-3	P		CY,W							P
8bc	A. Lundin	Dr	423				CY,W							P
8cc		Du		40	W		N	N	Tca	1.7	1743.7	5.94	6-19-47	
8dd		Du	16.4				CY,W	S,O	Tco	1.2	1712.2	7.55	10- 1-45	
9aa	Rene Lakefield	Dr	420	2-3	P	Ss	CY,W	S						P
9cd		Dr	480	3	P		CY,W	D,S	L		1712	60	9-29-45	U
10ab1	B. Armstrong	Dr	416	2	P		CY,W	S						P
10ab2	do.	Du	12	3	P		P,H	N	Tca	1.9		7.48	6-19-47	
10ba1	J. Armstrong	Dr	640	2-3	P		CY,W	S	Tca	1.7		-30.00	6-19-47	
10ba2	do.	B	20	24	W		N	N	Tca	.7		6.09	6-19-47	
10cd1	W. Armstrong	Dr	640	2-3	P		CY,W	S	Tca	.6		64.25	6-19-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 85 W. cont.													
10cd2	W. Armstrong	Du	15.0	30-48	P		N	N	Tcu	0.9		4.69	6-19-47	
10dc		Dr					CY,H	N						P
11cb		Dr	408	2-3	P		CY,W	S	Bp	1.6		42.00+	6-19-47	
13aa		Du					CY,W	D,S,O	Tcu	2.0	1670.0	10.90	9-28-45	
16cd	O. Solheim	Dr	493	2-3	P		CY,W	S						P
17ab	F. Zarbug	Dr	452	2-3	P		CY,W	S			1731			
17bb1	W. Stromstad	Dr	468	2-3	P		CY,W	N			1753			
17bb2	do.	Du	15	12	C		CY,H	N	Tca	1.6	1753.6	10.38	6-19-47	
17dd1	Herbert Luebky	Dr	497	2-3	P		CY,W	S	Tca	1.7	1738.7	83.29	6-13-47	
17dd2	do.	Du	18	40	C		CY,H	N	Tco	.5	1737.5	3.43	6-13-47	
19dd		Dr	400	3	P		CY,G	D,S	L			100	10- 1-45	U
20bb		Dr	426	2-3	P		CY,W	N	Tca	.6	1761.6	44.71	6-19-47	
21ab		Du	20	48	W		CY,H	D,O	Tco	.2		9.10	10- 1-45	
22ac	R. Krzebtkowski	Dr	500	2-3	P		CY,W	S			1715			
23ba	James McCory	Dr	336	3	P		CY,W	S			1693			
23cb	Glenn Horner	Dr	400	2-3	P		CY,G	S	Tca	.6	1705.6	56.33	6-13-47	P
23dd	E. Krzebtkowski	Dr	500	2-3	P		CY,W	S	Tca	.6	1694.6	53.50	6-13-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 85 W. cont.													
25cc1	J. O'Conner	Dr	440	2-3	P		CY,W	S			1699			P
25cc2	do.	Du	18	12-24	W		CY,H	D			1701			
29bb		Dr		2-3									9- 8-47	C
29dc		Dr	365	2-3	P		CY,W	N	Hp	2.3	1763.3	63.82	6-12-47	
31bb	Elmer Strand	Dr	400	2-3	P		CY,W							
31cc	O. K. Hellelourt	Dr	512	2-3	P		CY,W	S	Tca	1.7		76.48	6-12-47	
33ad	J. P. Larson	Dr	425	2-3	P		CY,W	S			1746			
33cc	N. Lunde	Dr	535	2-3	P		CY,W	S	Hp	3.0		60.18	6-12-47	
34ab		Du	11.6	48	W		N	N	Tco	1.5	1709.5	Dry	10- 1-45	
34da1	J. P. Lorenzen	Du	20				CY,H	D,O	L			11	10- 1-45	
34da2	do.	Dr	560		P	S,Sh								
36dc	J. Burrell	Du	16	8	P		CY,H	S						
	T. 162 N., R. 86 W.													
1cb		Dr					CY,W	N	Tca	2.9	1762.9	64.63	3-14-47	P
2ab	Ada Smith	Dr	350	3	P		CY,G	S			1765			
2db	Mrs. Walker	Dr	400	2-3	P	Cl	CY,W	S			1767			
3bc	K. Rontledge	Dr		3	P		CY,W	S			1755			

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 86 W. cont.													
4ad		Dr					CY,W	N			1764			
5da1		Dr					CY,W	S			1767			P
5da2		Du	15	36	W		CY,H	D			1769			
8dc	Marie Sorwell	Du	18	36	C		CY,H	D	Tco	1.0	1696.0	10.58	6-11-47	
9cd1	Norman Evanger	Dr	460	2-3	P		CY,W				1773			
9cd2	do.	Du	20	40	W		N	N	Tca	1.2	1774.2	13.00	6-11-47	
10aa	C. A. Olson	Dr	417	2-3	P		CY,W	S			1775			
10bc1	Mrs. M. Atwood	Dr	420	3	P		CY,W	S			1789			P
10bc2	do.	Du	20				P,H	D			1790			
11bc	Thorstonson	Dr		3	P		CY,W	S			1774			P
11cc	R. Krenz	Dr	475	2-3	P		CY,W	S	L		1771	40	8- 4-47	P
11dd1	Mrs. Wm. Bahl	Dr	450	3	P		CY,W	S			1774			
11dd2	do.	Du		12	C		CY,H	N	Tca	.3	1774.3	7.96	3- 4-47	
12cc	H. H. Veslage	Dr	418	2-3	P		CY,W	S	L		1772	100	8- 4-47	P
12dd	U. S. Geol. Survey	Dr	317.0	4 3/4	N	X	N	N	L		1755.86	10.47	3-14-47	
13ab1	August Bahl	B	15	10	P		P,H	N,O	Tca	1.4	1766.4	10.65	9-29-47	
13ab2	do.	Dr					CY,W	D,S			1765			

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 86 W. cont.													
14ba	R. Krenz	Dr		3	P		CY,G	S			1772			
14cb1	Amelia Swartz	Du	25	12			CY,H		Tca	0.3	1773.3	6.69	8- 4-47	
14cb2	do.	Du	10	24	P		N	N	Tca	.4	1772.4	1.94	8- 4-47	
14cb3	do.	Dr	360	2-3	P		CY,W	S			1771			P
16bc1	Mrs. McCarral	Du	25		C		CY,H	D			1770			
16bc2	do.	Du	25				CY,H	N			1770			
16da		Dr		3	P		CY,W	N	L		1795	16+	9-29-45	
20ca	N. Olson	Du	25	8	P		CY,H		L		1613	12	5-28-47	
22ba	Walter O'Clair	Dr	350	3	P		CY,W	S			1783			P
22cc	Ruben Harmoning	Dr	400	3	P		CY,W	D,S	L		1772	80	9-29-45	U
24bb1	Ray Atwart	Dr	410	2-3	P		CY,G	S			1774			
24bb2	do.	Du	17	48	C		CY,H		Tco	.6	1774.6	12.51	6-13-47	
25ad		Dr	400	3	P		CY,W	D,S	L		1774	60	10- 1-45	U
25ba1	Clarence Ness	Dr	400	3	P		CY,W	N			1775			
25ba2	do.	Du	10						L		1775.0	1.96	6-13-47	
26ad	A. Hellebust	Dr	500	2-3	P		CY,W	S			1772			P
26dd1	Ray Atwart	Dr	625	2-3	P		CY,W	S			1771			P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 86 W. cont.													
26dd2	Ray Atwart	Du	16	36	C		CY,H	D	Tca	0.7	1770.7	9.73	6-13-47	
28cc	U. S. Geol. Survey	Dr	125.0	4 3/4	N	X	N	N	L		1618	10.42	8-14-47	
31bb1	John Poege	Dr	192	3	P		CY,W	D,S						P
31bb2	do.	Du	10.0	48	W		N	N	Tcu	1.7		5.32	5-26-47	
32cd	Tymen J. Meekna	Dr	400	4	P		CY,W	S			1822			
	T. 162 N., R. 87 W.													
2aa		Dr		3	P		CY,W	S			1768			P
2bb	W. S. Cook	Du		36	W		CY,H	D,S,O	Tco	.6	1803.6	21.95	9-30-45	
2dc		Du	41				CY,H	N	Tp	3.8	1810.8	18.02	5-28-47	
3bb1	H. A. Strrach	Du	52	54	C		P,H				1831			
3bb2	do.	Du	58	54	C		P,E	S	L		1829	30	5-27-47	
3bb3	do.	Du		54	C		N	N	Tca	.4	1831.4	5.49	5-27-47	
3cd1	Odell Zimmer	B	21.0	24	W		CY,H	S	Tco	1.2	1833.2	18.32	5-28-47	
3cd2	do.	Dr		3	P		N	N	Tca	1.2	1833.2	61.20	5-28-47	
3cd3	do.	Du		48	W		CY,E	S	Tca	.9	1832.9	33.12	5-28-47	
4bc	Leonard Zimmer	B	72	24	W		CY,H	S	Tco	1.0	1856.0	17.53	5-27-47	
4cd		Dr			N		N	N	Tco	.0	1852.0	10.44	5-26-47	
5cd1	Oscar Melm	Du	50	48	W		CY,H	S	Tco	1.7	1852.7	18.61	5-27-47	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 87 W. cont.													
5cd2	Oscar Melm	B	35	18	W		N	N	Tcu	2.1	1854.1	19.42	5-27-47	
6dd1	Mrs. Hans Larson	B		24	W		CY,H	D	Tcu	.7		5.92	5-27-47	
6dd2	do.	Dr	390	2-4	P	Sh	CY,W	S	L			20	5-27-47	P
8ad	Robert Larson	Dr		3	P		CY,W	S			1858			P
8cc1	Mrs. M. Peterson	Dr	75	3	P		CY,W	S	L		1855	20	5-26-47	P
8cc2	Mrs. Martin Peterson	B	32	18	W		N	N	Tca	1.7	1854.7	15.50	5-26-47	
8cc3	do.	B	28	18	W		N	N	Tca	2.7	1854.7	18.00	5-26-47	
10aa		B		24	W		CY,W	N	Tca	.4	1826.4	17.05	5-28-47	
10bc		Dr		3	P		CY,W	S			1846			
11cb		Du	19.0	30	W		N	N	Tcu	1.6	1825.6	14.10	9-30-45	
11dc		B		18	W		N	N	Tco	.5	1816.5	16.14	5-28-47	
13ab1	John Lee	B	32.0	18	W		CY,E	S	L		1801.0	8.95	5-28-47	
13ab2	do.	B	34.0	18	W		N	N	Tca	1.3	1803.3	5.33	5-28-47	
13ab3							N	N			1803			
14bb1	Keith Knutson	B	24	24	W		P,H	D	Tco	2.1	1841.1	5.57	5-28-47	
14bb2	do.	Dr	700	4	P		CY,W	S			1838			P
14cd		Dr	360	3	P		CY,W	S	L		1846	75	5-26-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 87 W. cont.													
15ad	George Fristad	Du	11.6	36	W		P,H	N,O	Tcu	1.0	1341.0	10.30	9-30-45	
17aa		Du	30.4	48	W		CY,G	D,S,O	Tco	1.5	1350.5	21.30	9-24-45	
17ba	Oscar Jenson	B	40	18	W		CY,H	S	Tco	1.2	1347.2	17.20	5-26-47	
17cc1	Alvin Johnson	Du	30	36	W		CY,H	D,S	Bp	.6	1353.6	3.46	5-22-47	
17cc2	do.	B	15.0	24	W		CY,H	N	Bp	.2	1357.2	11.44	5-22-47	
18dd	Elvin Johnson	Du,Dn	15	1½-36	P-W		CY,W	D	Tco	1.5		9.42	5-26-47	
19da	Louis Knutson	Du		40	W		CY,W	S	Tco	1.2		18.33	5-22-47	
20bc	T. Knutson	Du	26	36	W	G	CY,W	N	Tca	.6	1356.6	15.74	5-22-47	
20cc		Dr		3	P		CY,W	N			1374			
21ac		Dr	605	2-3	P		CY,W	N			1345			
21bb	T. Jensen	Dr	600	3	P		CY,W	S			1350			P
21cc	Lloyd Brekhus	Dr	610	2-3	P		CY,W	S			1341			P
22ad	S. Johnson	Dr	715	2-3	P		CY,W	S	L		1351	100	5-26-47	P
22bc		Du	12.0	36	W		N	N	Tcu	1.4	1350.4	1.61	5-26-47	
23ad	N. Mugas	Dr	710	2-3	P		CY,W	S			1342			P
23cb	Arthur Brekhus	B	60	18	W	G	CY,W	S	Tca	.7	1344.7	26.63	5-23-47	
24ab	Henry Johnson	Dr	450	2-3	P		CY,W	S			1325			P

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 87 W. cont.													
24bc	O. Johnson	Dr	465	3	P		CY,W	S			1839			P
25ab	O. Knutson	Dr	400	3	P		CY,W	S	L		1835	80	5-28-47	P
25cb1	J. Brekhus	Dr	655	3	P	G	CY,W	S			1852			P
25cb2	do.	Du		36	C		CY,H	N	Bp	0.8	1852.8	7.69	5-26-47	
26aa	Knute Knutson	Dr	600	3	P		CY,W	S			1849			
26bb1	Martin Jensen	Dr	555	5	P		CY,W	D,S	Hp	2.0	1854.0	62.93	5-23-47	P
26bb2	do.	Du	20	18			CY,H	N	Tca	.0	1851.0	4.12	5-23-47	
26bc	Oscar Jensen	Dr	550	3	P		CY,W	D,S			1848			P
26dc	Julius Brekhus	Dr	555	3	P		CY,W	S			1847			P
27bb		Du	6.4				N	N	Tco	2.5	1841.5	Dry	9-30-45	
27dd	Thomas Larson	Dr	640	2-3	P		CY,W	S	Tca	1.7	1843.7	48.95	5-23-47	P
28aa		Dr		3	P		CY,W	N,O	Tp	4.4	1841.4	27.78	9-30-45	
28cc1	N. P. Jensen	Dr	430	2-3	P		CY,W	D,S			1862			P
28cc2	do.	Du	17.0	24	C		N	N	Tco	1.7	1864.7	12.42	5-22-47	
28cc3	do.	Du	11.0	18	W		CY,H	N			1863	Dry	5-22-47	
28dd	Johannes Johnson	Dr		5	P		CY,W	D,S	Hp	1.4	1839.4	28.60	5-23-47	P
29dd1	Hans Scott	B	30	18	W		CY,H	S,O	Tco		1860	10.68	9-24-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 162 N., R. 87 W. cont.													
29dd2	Hans Scott	Du	20	36	W		CY,H	D,S,O	Tco	1.0	1860.0	11.30	9-24-45	
30dd		Du		36	W		CY,H	N	Tco	.5		2.34	5-22-47	
31dd1		Dr		4	P		CY,W	S						P
31dd2		Du	20.0	36	W		CY,H	D	Tcu	1.0		7.25	5-22-47	
32aa	Louis Witteman	Du	13	40	W		CY,H	D,S	Tco	.9	1856.9	13.93	5-22-47	
32ba1	Raymond Nelson	Dr		4	P		CY,W	S	Tca	2.2	1874.2	65.27	5-22-47	P
32ba2	do.	Du	22	24	C		CY,H	D	Tca	2.2	1873.2	15.64	5-22-47	
33bb		Du	18.5	48	W		CY,H	N,O	Tco	1.4	1858.4	14.20	9-24-45	
34ad1	F. Peterman	Dr	670	3	P		CY,W	S			1847			P
34ad2	do.	B	30	18	W		CY,H	D	Bp	.6	1846.6	3.78	5-23-47	
35ad		Dr		3	P		CY,W	N,O	Hp	34	1854.4	13.85	9-30-45	
35dc		Dr		3	P		CY	N	Tp	3.9	1857.9	39.30	5-26-47	
	T. 163 N., R. 84 W.													
2dd	Sidney Sauderson	Dr	400	2-3	P		CY,W	S	Tca	1.5		47.89	8-13-47	P
3bd1	Henry Sorenson	Dr	314	2-3	P	Sh,L	CY,W	S						P
3bd2	do.	Du	15	40	W		CY,H	D	Tco	1.4		6.53	8-18-47	
3db	Charles Saunderson	Dr	300+	3	P		CY,W	S						

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 84 W. cont.													
4cd	Mrs. K. O. Holte	Du	13	36	W		CY,H	S,O	Tco	1.2		8.36	9-28-45	
5ba	U. S. Geol. Survey	Dr	245	4 3/4	N	X	N	N	L		1623	10.75	8-14-47	
5cc	Conrad Holte	Dr	400	3	P		CY,G	S						P
5dc	Harry Sorenson	Du	12	36	W	S	CY,H	D,S,O	Tco	2.0		9.15	9-28-45	
6ddl	do.	Dr	400	2-3	P	Sh,L	CY,W	S	Tca	1.2		25.60	8-16-47	P
6dd2	do.	Du	15.0	24	W	Cl,S	P,H	D	Tcu	1.5		7.95	8-16-47	
6dd3	do.	B	33.0	24	W		N	N	Tca	1.0		7.99	8-16-47	
7bb		Du					CY,H	D,O	Tco	1.0		7.70	9-28-45	
8dc	E. Neuhouse	Dr	256	4	P		CY,W	S						P
9abl	Elmer Magneson	Du	10.0	48	W	S,G	CY,H	N	Bp	.4		6.70	8-16-47	
9ab2	do.	Dn	12	1½	P		P,H	D						
9dd		Du		96	W		P,H	N	L			10	9-28-45	
11ad	S. O. Dragge	Dr	320	3	P	Sh,L	CY,W	N						
11bb		Dr		3	P		CY,W	N,O	Tca	1.8		18.20	9-28-45	
13bb	Bartholomew Est.	Dr		3	P		CY,H	S						P
14ab	Robert F. Allen	Dr	416	2-3	P		CY,W	N						
14bb	Charles Sanderson	Dr	370	2-3	P	Sh	CY,W	S						P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 84 W. cont.													
15bb1	Willard Wigness	Du	8	36	W		CY,H	N,O	Tco	1.5		4.60	9-28-45	
15bb2	Eden Valley School	Du	6.0	48	W		E	D,O	Tco	-5.0		1.75	9-28-45	
17bb	Lyle Neuhouse	Dr		3	P		CY	N						
17db		Du	10.0	60	W		N	N	Tcu	1.7		5.42	8-18-47	
19ba	L. O. Beckadahl	Dr	356	2-3	P	Sh	CY,W	S	L			8	8-16-47	P
21cd	Walter Thompson	Dr	280	2-3	P	Sh	CY,W	S						P
22cd1	D. Krause	Du	13.0	40	W		N	N	Tcu	1.7		13.12	7-22-47	
22cd2	do.	Du	4.0	40	W		N	N	Tco	2.0		1.91	7-22-47	
22dc	John Wherley	Du	20	40	W		CY,H	D,S	Tca	1.0		4.70	7-22-47	
23cc	Mrs. Shong	Dr	325	2-3	P	Sh	CY,G	S						P
24aa	John Krause	Dr	300	2-3	P	Sh	CY,W	S						P
25bb	Hayes Stewart	Du	11.2	48	W	S,G	H	S,O	Tcu	3.3		8.35	9-28-45	
26bb1	Neubauer	Dr	320	3	P	Sh	CY,W	S	Tca	.9		23.60	8-18-47	
26bb2	do.	B	60				CY,H	S	Bp	1.2		9.87	8-18-47	
26cc	Frank Heftor	Dr	280	2-3	P		CY,W	S	L			10	7-15-47	P
27bb		Dr	520	2-3	P	Sh	N	N	Tca	3.5		12.11	7-22-47	
28ab1	David Walker	Dr	400	2-3	P		CY,W	S	L			18	7-22-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 84 W. cont.													
28ab2	David Walker	Du	18	40	C		CY,H	D	Tca	1.6		6.32	7-22-47	
28ba		Dr	390	2-3	P	Sh,L	CY,W	N						
28dc		Du	17.0	72	C	Cl,S	CY,H		Tco	1.1		10.66	7-22-47	
29ab		Du	10.4	48	W		CY,G	D,S,O	Tco	2.0		8.10	9-28-45	
29dd		Du	7.0	48	W		CY,H		Bp	5.4		7.35	7-22-47	
30ab		Du		48	W		CY,H	D,S,O	Tco	4.7		12.40	10- 1-45	
30cc	Esther Males	Dr	325	2-3	P	Sh	CY,W	S	Hp	2.5		17.23	8- 5-47	P
31bb	Trout	Du		48	W		CY,H	S	Bp	1.5		5.98	8- 5-47	
33cd	J. Mayer	Du	12	40	W		CY,H	S	Tco	3.0		6.42	7-22-47	
34bb	Glaude Coutts	Dr	380	2-3	P	Sh,L	CY,W	S	Tca	1.2		18.14	7-22-47	
	T. 163 N., R. 85 W.													
1aa		Du		48	W		CY,H	N,O	Tco	1.5		13.45	9-28-45	
1bb		Du		36	C		CY,W	D,S	Bp	3.2		12.80	8- 5-47	
1cd	N. O. Nelson	Dr	400	3	P		CY,W	S	L			20	8- 5-47	P
2cc	William Rusch	Du	13.0	72	W		CY,G	D,S	Tco	3.0		2.66	8- 5-47	
3cc		Du	27.6	48	W		CY,H	S,O	Tco	1.7		16.95	9-29-45	
3da1	Frank McCrury	Dn	12	1½	P		P,H	N						

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 85 W. cont.													
3da2	Frank McCrury	Du	12	48	W		CY,G	D,S	Tco	1.7		8.07	8- 5-47	
4dc	W. R. Hanson	Dr					CY,W							P
5ad		Dr	425	2-3	P		CY,H	N			1689			P
5cd	George Eitz	Du	19.3	30	W		CY,H	N,O	Tco	1.5	1699.5	12.25	9-29-45	
6ad1	J. Corrigan	Dr	452	2-3	P		CY,G	S	L		1704	30	8-13-47	P
6ad2	do.	Du	20	36	C		CY,W	D,S	L		1702	7	8-14-47	
6ad3	do.	Du	18	36	C		N	N	Tco	2.5	1701.5	6.43	8-14-47	
7aa	Frank Eltz	Dr	376	3	P		CY,W	S			1708			P
8aa		Dr		3	P		CY,W	S			1706			
8bb1	Morris Welch	Dr	378	3	P		CY,W	S	Tca	1.0	1705.0	27.00+	8- 6-47	P
8bb2	do.	Du	20	36	C		CY,H	D	Tco	1.3	1705.3	6.96	8- 6-47	
10ba	G. Chaptalain	Dr	375	2-3	P		CY,W	S	Tca	1.2		34.17	6-14-47	C
11ad		Dr	382	2-3	P		CY,W	N	Hc	1.4		27.41	8- 7-47	
12ac1	Town of Sherwood	Dr	340			L,Ss		P						
12ac2	do.	Dr	372			L,Ss		P						
13cc	Gilbert Gahn	Du	12				E	D,O	Tco	2.3		8.35	5-17-46	
13da		Dr		5	P		CY,W	N,O	Bp	.5		12.70	9-23-45	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 85 W. cont.													
14ba1	A. Deslaurier	Du	12	30	T		CY,E	S	L			8	8- 5-47	
14ba2	do.	Dn	12	1½	P		P,H	D						
14dc		Dr	450	2-3	P		CY,G	S						
15cd	Walter Hasken	Dr	350	3	P		CY,W	S						P
15dd		Du					CY,H	D,S,O	Tco	0.5		11.80	9-29-45	
16bb1		Du	7.0	8	P		CY,H	N	Tca	.0	1699.0	5.13	8-14-47	
16bb2		Du	11.0	40	W		N	N	Tco	.2	1699.2	4.63	8-14-47	
19cd	John Aga	Dn	12	1½	P		CY,G	D,S						
21ba		B	20±				H	D,S	L			15	9-29-45	
21da	Larson Brothers	Dn	15	1½	P		CY,G	D,S						
22cd	A. Haugen	Dn	25	1½	P		CY,W	D,S						
23dd	Francis Hazelton	Du	18	40	W		CY,G	D,S	Tco	.3		10.47	8- 8-47	
24ad		Dr					CY,W							
25ba		Dn		1½	P		CY,H	N						
26bb	U. S. Geol. Aurvey	Dr	310.0	4 3/4	N	X	N	N	L		1665	3.68	8-14-47	
27ab	Max Eckhardt	Dn	25	1½	P		CY,H	D,S						
27da	George Lakefield	Du	30	40	G		CY,E	D,S	Tco	1.3		12.38	8- 7-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 85 W. cont.													
29cd	L. O. Smith	Dr	500+	3	P		CY,W				1721			C,P
31aa		Du					CY,W	S,O	Tcu	2.0	1718.0	10.75	10- 1-45	
31bc	Clarence Ritter	Dr	350	2-3	P		CY,W	S						P
31cc1	John Roland	Dr	500	3	P		CY,G	S						P
31cc2	do.	B	12	24	W		N	N	Tca	1.5		8.30	8- 4-47	
32ab	C. Christianson	Dr	400	3	P		CY,W	S	L		1719	48	8- 8-47	P
32bd	A. Wilkie	Du	8.0	40	W		CY,H	D	Tco	1.1	1717.1	5.87	8- 8-47	
32ca	do.	Du	15	40	W		CY,W	S	Bp	1.2	1714.2	6.05	8- 8-47	
34aa1	Mrs. B. Olson	Du	12.0	40	W		CY,G	D,S	Tco	1.5		6.45	8- 7-47	
34aa2	do.	Dn	12	1½	P		P,H	D						
34cb		Dr	402	2-3	P		CY,W	S						P
35bb		Du		48	W		CY,G	D,S,O	Tco	2.0		10.50	10- 1-45	
36aa		Du					P,H	S,O	Tco	1.0		8.55	9-28-45	
	T. 163 N., R. 86 W.													
1da		Dr					CY,W	S			1720			P
2dc	Henry Deslaurier	Dr					CY,W				1742			P
3cb1	R. McDermott	Du		24	C		N	N	Tca	3.3	1756.3	11.53	6- 6-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 86 W. cont.													
3cb2	R. McDermott	Dr		3	P		CY,W	S			1755			P
3da	Harry Fuller	Dr	390	2-3	P		CY,W	S			1744			
4ad1	S. H. Teeters	Dr					CY,W	S			1751			P
4ad2	do.	Du	13.0	24	C		N	N	Tco	2.1	1751.1	8.66	6- 6-47	
4bc	Verl McDermott	Du	12.5	36	P		CY,H	D,O	Tca	2.0	1768.0	9.32	9-29-45	
4cc	W. M. McDermott	Dr	398	3	P		CY,W	N			1776			
5cb1		Du	16.0	48	W		CY,H	N	Tcu	1.3	1777.3	2.13	6- 6-47	
5cb2		Du	14.0	48	W		N	N	Tcu	1.3	1777.3	2.16	6- 6-47	
5cd		Du		40	W		CY,H	N			1754			
7bc	Irwin Beckadahl	Dr		3	P		CY,W	S						
8aa	Mrs. K. Olson	Du	14	40	W		CY,H	N	Bp	.3	1760.3	1.21	6-11-47	
9aa		Du		36	W		CY,H	D,O	Tco	2.8	1762.8	13.70	9-29-45	
9cb1	Lawrence Olson	Dr	480	3	P		CY,W	S	Tca	1.5	1774.5	85.05	6-11-47	
9cb2	do.	Dr	600+	3	P		N	N	Tca	1.4	1773.4	31.56	6-11-47	
9dc	John Völk	Dr	889	2-3	P		CY,W	S			1767			
10aa	Wm. Krueger	Dr					CY,W	S			1748			P
10cd		Dr		3	P		CY,W	N			1771			

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 86 W. cont.													
11bc	Louis Deslaurier	Dr	500	2-3	P		CY,W	S	L		1747	100	8-13-47	P
12bb	E. Keller	Dr		3	P		CY,W	S			1738			P
13ad	John Meyers	Dr		3	P		CY,W	S			1733			P
13bb1		Dr					CY,W	S			1741			
13bb2		Du		36	C		CY,H	S	Tco	1.4	1742.4	7.38	8-13-47	
14bb	Harold Ritter	Dr					CY,W	S			1754			P
16cc	Robert M. Olson	Dr	400	3	P		CY,G	S			1767			
17bb1	William Aaby	Dr	716	3	P		CY,G	S			1773			
17bb2	do.	Du		36	C		CY,H	D	Tcu	1.2	1778.2	7.32	6- 6-47	
19cd	Roy Foss	Dr	590	3	P		CY,W	D,S						
20aa1	W. Peterson	Du	14.0				CY,H	S	Tco	.0	1772.0	10.70	6-11-47	
20aa2	do.	Du	10.0	24-48	W		N	N	Tca	.0	1774.0	7.21	6-11-47	
20cd	H. C. Bluel	Dr	492	2-3	P		CY,W	S	L		1792	64	6-11-47	P
21ad	L. Volk	Dr	900	2-3	P		N	N	Tca	1.9	1769.9	73.91	6-11-47	
21bd		Du		48	W		N	N	Tco	.6	1770.6	6.84	6-11-47	
21db	Earl Mattern	Dr	500		P		CY,W	S			1772			
23ba	Ritter Brothers	Dr					CY,W	S			1752			P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 86 W. cont.													
24ba		Du					CY,G	S			1738			
25ab	N. Reito	Dr	375	2-3	P		CY,W	N	L		1753	40	8- 8-47	
25cc	Hugo Keel	Dr		3	P		CY,W	S			1750			P
25dc		Dr		3	P		CY,W	N	Tca	1.4	1750.4	88.92	8- 4-47	
26cc	Halvorson	Dr	382	2-3	P		CY,W	D,S			1766			P
27aa	E. Nelson	Dr	378	2-3	P		CY,W	S	L		1771	75	8- 8-47	P
27cc	Leonard Smith	Dr					CY,W				1777			P
27dd	Johnson	Dr					CY,W	S			1770			P
28dd	John Anderson	Dr					CY,W	D,S			1768			
33dd	Mrs. N. H. Tvetan	Du	18				CY,H	D,S,O	Tco	1.0	1751.0	12.65	9-29-45	
34ba	Hans Raap	Dr	365	2-3	P		CY,W		L		1776	100	8- 8-47	P
34cc	O. Tveef	Dr					CY,W	S			1764			P
35bc	Melvin Ritter	Dr		4	P		CY,W	S			1773			P
	T. 163 N., R. 87 W.													
1bc	Carl Knutson	Dr	406	3	P		CY,G	S			1798			
2cd		Du	7.0	40	W		CY,H	N	Tco	1.0	1751.0	4.58	6- 6-47	
2dd		Dr		3	P		CY,G	D,S	L		1808	80	9-29-45	P,U

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 87 W. cont.													
5bc		Dr		3	P		CY	N			1812			
5dc		Du	14.5	36	W		CY,H	S,O	Bp	2.5	1813.5	7.05	9-24-45	
6bc1	William Emmel	Du	11.0	40	W		CY,G	S	Tca	.4	1833.4	5.64	5-29-47	
6bc2	do.	Du	18.0	24	W		CY,H	S	Tca	.2	1833.2	6.92	5-29-47	
6cd	O. Reisky	Du	25	18	C		CY,H	S	Tca	.8	1824.8	7.94	5-29-47	
6dd		Du					CY,H	D,S			1826			
7aa	August Emmel	Du	20	24-36	W		N	N	Tco	1.5	1812.5	4.38	5-29-47	
7ad		Du	24	24-36	W		CY,G	S	Tco	2.8	1824.8	2.39	5-29-47	
8ac	Olaf Ness	Du	10	36	W		CY,E	S	Tco	1.3	1807.3	2.05	5-29-47	
8dd1	O. Hanson	B	15	24	W		N	N	Tca	1.8	1805.8	5.52	5-29-47	
8dd2	do.	Du	17.0	40	W		CY,H	S	Tco	1.1	1805.1	5.44	5-29-47	
9bc		Du	10.2	48	W		CY,H	S,O	Tco	1.0	1805.0	6.65	9-20-45	
9cc		B	22.0	24	W		CY,H	S	Tco	1.4	1803.4	4.98	5-29-47	
11ba		Du		36	W		CY,H	N			1781			
17ad1	Jacob P. Shaver	Du	24	40	W		CY,H	D	Tco	.9	1803.9	11.95	5-29-47	
17ad2	do.	Du		60	C		CY,H	N	Tca	1.3	1805.3	13.96	5-29-47	
17bb1		Du	17.0	40	C		CY,H		Tco	1.3	1824.3	12.83	5-29-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 87 W. cont.													
17bb2		Dr	502	2-3	P		CY,W	S			1825			P
18ad		Du		40	W		N	N	Tca	2.0	1822.0	2.72	5-29-47	
20dc1	Otto Hidde	B	46	24	W	Cl,S	CY,W	S	Tca	1.6	1845.6	25.95	5-29-47	
20dc2	do.	Du	23	40	C	Cl,S	N	N	Tco	.8	1847.8	12.96	5-29-47	
20dc3	do.	Du		40			CY,H	D			1845			
21ab	Simon Moen	B	23.0	24	W		CY,H	N	Bp	.0	1805.0	3.73	5-29-47	
24da		Dr	512	2½-4	P	S	CY,W	S			1801			
27dc1	James Assels	B	35	18	W		N	N	Tca	1.4	1802.4	2.00	5-27-47	
27dc2	do.	B	30	18	W	Cl,S	N	N	Tca	2.6	1801.6	13.55	5-27-47	
28bc		Du		48	W		CY,H	N,O	Tp	2.0	1842.0	15.62	9-24-47	
28cc		Du	49.6	48	W		CY,H	N,O	Bp	.5	1845.5	15.13	9-24-47	
29cc	Melvin Johnson	B	60	18	W		CY,W	S	Tca	1.5	1864.5	21.89	5-29-47	
30dd	Mrs. Robert Manke	B	25	24	W		CY,H	D			1865			
31dd1		B	40	18	W		N	N	Tca	.6	1856.6	17.81	5-27-47	
31dd2	U. S. Geol. Survey	Dr	255.0	4 3/4	N	X	N	N	L		1853.04	6.51	7-21-47	
32ab	Glen O'Neil	B	40	24	W		CY,W	S	Tca	1.2	1862.5	20.18	5-29-47	
32cc		B					CY	N	Tca	.9	1852.9	13.68	5-27-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 163 N., R. 87 W. cont.													
32dc	L. St. Croix	Dr	400	3	P	S,G	CY,E	S			1867			P
33ad1	Lester Lindblad	Dr		3	P		CY,W	S			1826			P
33ad2	do.	Du		18	C		N	N	Tca	3.2	1829.2	5.08	5-27-47	
33ad3	do.	Du	14.0	36	W		N	N	Tcu	2.4	1828.4	3.33	5-27-47	
33cd1	Paul Overton	B	53	24	W	S	CY,E	S	L		1854	20	5-27-47	
33cd2	do.	B	50	24	W	S,G	N	N	Tco	.8	1853.8	22.02	5-27-47	
33cd3	do.	Du	18	36	W		CY,H	D	Tco	.2	1854.2	13.96	5-27-47	
34cb1	Harold Lindblad	Dr	500	3	P		CY,W	S	L		1823	80	5-27-47	P
34cb2	do.	Du	20	18	C		N	N	Tca	1.4	1825.4	2.54	5-27-47	
	T. 164 N., R. 84 W.													
31ac	Hurdlebrink	Du	12	24	W		CY,H	D	Tco	.7		6.29	8-18-47	
32cd1	Emma Hurdlebrink	Du		40	W		CY,H	N	Tco	1.2		9.70	8-18-47	
32cd2	do.	Dn	17	1½	P		CY,H	D						
32dd		Du	7.0	40	W		N	N	Tca	2.1		6.29	8-18-47	
	T. 164 N., R. 85 W.													
25dd	United States Customs and Immigration Sta.	Dr	400	3	P		CY,G	D	L			100+	9-28-45	U
32bc		Dr		3	P		CY,W	S			1698			P
33aa1	Ferguson	Du	12	40	W		CY,H	S	Tco	2.0		10.80	8-14-47	

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 85 W. cont.													
33aa2	Ferguson	Dn	16	1½	P		CY,H	D						
33aa3	do.	Du	12	48	W		CY,H	N						
34ca1	Raymond Beckadahl	Dn	5	1½	P		P,H	D						
34ca2	do.	Du	8	48	W		CY,H	S	Tco	1.3		7.11	8-14-47	
34ca3	do.	Du	16	48	W		CY,H	S	Tco	.9		7.88	8-14-47	
34dc1		Du	12.0	48	W		CY,W	D,S	Tco	.8		9.28	8-14-47	
34dc2		Du	16.0	48	W		CY,H	D,S	L			8	8-14-47	
35aa	Otto Stoll	Dr		3	P		CY,W	S						P
35dc1	Carl Beckadahl	Dr		3	P		N	N	Tca	1.8		11.78	8-14-47	
35dc2	do.	Du	12.0	40	W		CY,H	N	Tco	1.6		9.28	8-14-47	
36aa		Du	8.9	48	W		N	N,O	Tcu	3.0		6.55	9-28-45	
36bb	Otto Stoll	Du	20.0	40	W		CY,W	S	Tco	1.5		11.65	8-14-47	
	T. 164 N., R. 86 W.													
31ac	C. Lindemood	Dr	450	4	P		CY,W	D,S	Hp	1.7		47.63	6- 6-47	P
33bc		Dr	400	3	P		CY,W	N	Hc	.3	1764.0	70.61	6- 6-47	
33cc	Harlan Scheumark	Dr	400	2-4	P		CY,W	S	L		1766	70	6- 6-47	P
33dd	H. P. Anderson	Dr	400	3	P		CY,W	S	L		1762	70	6- 6-47	P

Renville County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 164 N., R. 86 W. cont.													
34dd		Dn	20	1½	P		CY,H	D,S			1745			
35cd		Du		40	W		CY,G	S	Tco	2.8	1743.8	8.67	8-14-47	
	T. 164 N., R.87 W.													
32cc	O. Gilbertson	Du		48	W		N	N	Tcu	3.9	1802.9	5.84	5-29-47	
32cd1	do.	Du	25	40	W		CY,H	D	Tca	1.0	1808.0	9.46	5-29-47	
32cd2	do.	Du	15	40	W		CY,W	S	Tco	2.4	1807.4	5.16	5-29-47	
32cd3	do.	Du	14.0	40	W		CY,H	S	Tco	1.8	1808.8	7.01	5-29-47	

Table -- Record of Wells in Ward County, North Dakota

Well number 1/	Owner of tenant	Type of well 2/	Depth of well (feet) 3/	Diameter of well (in.)	Type of casing 4/	Character of water-bearing material 5/	Method of lift 6/	Use of water 7/	Measuring point: Description 8/	Measuring point: Distance above land surface (feet)	Measuring point: Height above mean sea-level (feet)	Depth to water level below measuring point (feet) 9/	Date of measurement	Chemical analysis 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 153 N., R. 81 W.													
1aa	U.S. Geol. Survey	Dr	307.0	4 3/4				X	L			47.0	8-8-47	
11ba	do.	Dr	247.0	4 3/4				X		0.0		13.44	8-8-47	
	T. 154 N., R. 81 W.													
2aa		B	50	18	W		CY,G	S,O	Tco	.8		13.65	10-17-45	
3bb		B		12	T		CY,H	N	Bp	.2		15.69	6-18-47	
4cc	A. S. Klein	B	40	18	W		CY,W	D,S	L			16.66	6-18-47	

Footnotes:

1. Location number: Well numbers give the location of wells according to General Land Office Surveys and according to the following formula: Township--Range--Section, 160-acre tract within that section, and the 40-acre tract within the quarter section. If two or more wells are located within a 40-acre tract, the wells are numbered serially according to the order in which they were inventoried. The 160-acre and 40-acre tracts are designated a, b, c or d in a counter-clockwise direction beginning in the northeast quarter. For example: Well 162-96-5cd1 is located in SE¼, Sec. 5, T. 162 N., R. 96 W., and was the first of two or more wells inventoried in that 40-acre tract. In this tabulation, the numbers representing the township and range have been omitted in the column headed "Well number".

2. B, bored well; DD dug and drilled well; Dn, driven well; Dr, drilled well; Du, dug well; Sp, spring.

3. Reported depths below the land surface are given in feet; measured depths are given in feet and tenths below measuring points.

4. C, concrete (brick tile or pipe); P, iron or steel pipe; T, clay tile; W, wood.

5. Cl, clay, and sandy clay; Clb, blue sandy clay; Cly, yellow sandy clay; G, gravel; L, lignite; Q, quicksand; R, rock undifferentiated; S, sand; Sh, shale; Ss, sandstone; X, see well logs.

6. Method of lift: C, horizontal centrifugal; Cy, cylinder; F, natural flow; N, none; P, pitcher pump; S, submersible turbine; T, turbine; VC, vertical centrifugal.
Type of Power: B, butane; E, electric; G, gas engine; H, hand operated; T, tractor; W, windmill.
Flow given in gallons a minute.

7. D, domestic; I, irrigation; In, industrial; N, not being used; O, observation; P, public supply; S, stock.

8. Bp, base of pump; Hp, hole in pump base; Hc, hole in casing; L, land surface; Tca, top of casing; Tco, top of cover; Tcu; top of curb; Tp, top of pump.

9. Measured depths to water level are given in feet, tenths and hundredths; reported depths to water level are given in feet.

10. P, partial analysis; C, complete analysis; U, reported as not suitable for domestic use.

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 81 W. cont.													
4dd		B		12	T		CY,W	N	Bp	0.1		22.84	6-18-47	
5ad	B. Berg	B	65	12	T			N	Tcu	.8		15.68	6-18-47	
5dd	do.	B	60	18	W		CY,E	D,S				25	6-18-47	
6aa1	T. W. Kitter	Dr	365	4	P		CY,W	S				90	6-18-47	P
6aa2	do.	B	80	18	W		CY,E	D				22	6-18-47	
6ba	J. B. Withers	B	50	16	W			N,O	L			12.70	10-18-45	
6cd	T. W. Kitter	B	60	18	W							20	6-18-47	
7aa	Earle Yoder	Dr	285	4	P		CY,E	D,S				130	6-18-47	P
8ad	E. O. Grasby	Du	38.2	48			CY,W	D,S,O				23.30	10-18-45	
8ba	H. Templeman	Dr	300	2½	P		W	N						
8bc1	Andrew Strand	B	80	18	W		CY,H	D	Tcu	.6		64.08	6-18-47	
8bc2	do.	B	65	18	W		CY,E	S	Tcu	.3		40.62	6-18-47	U
11ab1	H. K. Skadeland	Dr	250	4	P		CY,W	S				100	6-18-47	P
11ab2	do.	B	16	12	T		P,H	D	Tcu			14.06	6-18-47	
11cc	A. J. Kittelson	B	50	18			CY,W	D,S,O	Tco	.6		26.65	10-17-45	
12cc	A. Andreyson	Dr	310	3	P		CY,W	D,S				100	6-18-47	P
13bb		B	48.1	18	W		CY,W	N,O	Tco	1.2		18.60	10-17-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 81 W. cont.													
14bb	K. Witten	B		12	T		CY,W	N	Tco	0.7		50.48	6-18-47	
14da	Kyle Witted	Dr	180	4	P		CY,W	N						
15bc1	O. Hanson	Dr	350	4	P		CY,E	D,S						
15bc2	do.	B		12	T		CY,W	S	Tcu	1.4		32.33	6-18-47	
17da1		B		20	W		CY,H	D	Tcu	1.4		11.52	6-18-47	
17da2		Dr	300	4	P		CY,W	S						P
18cc1	R. N. Witted	B	20	12	P		CY,E	D				10	6-19-47	
18cc2	do.	B	40	30	TP		CY,E	S	Tco	1.1		14.52	6-19-47	
19ac1	V. Teets	Dr	200	4	P		CY,E	D,S				80	6-19-47	P
19ac2	do.	Du	35	18	P		CY,H	D				30	6-19-47	
22aa1	R. Abrahamson	Du		48	W		CY,H	D,O	Tco	1.2		20.65	10-17-45	
20ae2	do.	Dr	305	4	P		CY,E	D,S				150	6-19-47	
22bb		B		12	T		CY,H	N	Bp	.9		13.62	6-18-47	
22dd	L. Finneseth	B	60	18	W		CY,E	S	Tco	.1		50.53	6-19-47	U
23ca	H. Templeman	Du	60	36	C		CY,H	N	Tco	.7		35.62	6-19-47	
23dd	E. I. Witted	B	45	12	T		CY,E	S				30	6-19-47	U
24cb1	E. Finneseth	B	70	24	W		CY,W	S	Tco	.2		11.35	10-17-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 81 W. cont.													
24cb2	Arvith Finneseth	Dr	225	4	P		CY,E	D,S				90	6-19-47	P
24dd	O. N. Johnson	B		18	W		CY,W	N	Tcu	0.4		20.33	6-19-47	
25bb	L. Witted	Dr	250	4	P		CY,W	D,S				50	6-19-47	P
25dd1	O. N. Johnson	B	60	18	W		CY,E	D,S				25	6-19-47	
25dd2	do.	B	60	12	T		J,E	S				20	6-19-47	
26bc	H. Templeman	B	62	24	W		CY,E	D,S				55	6-19-47	
26dc	T. McGrew	B	60	24	W		CY,E	D,S						
27dd	A. M. Foss	Du	30	48	W		CY,H	D,O	Tco	1.5		21.85	10-17-48	
29db	L. Bectter	Du	17	48	W		CY,H	N	Tcu	1.3		9.11	6-19-48	
30da	J. J. Brandt	Dr	275	4	P		CY,H	D				10	6-19-48	P
34dd	A. Genetszky	Dr	160	3½	P		CY,W	D	L			80	10-17-45	
35ad	F. Templeman	B	60	24	W		CY,E	D;S				25	6-19-47	
	T. 154 N., R. 82 W.													
1aa		B						N	Tco	.6		18.21	6-17-47	
1ba		Dr	30	3	P		CY,H	N	Hp	2.96		9.76	6-17-47	
2bb	D. Reinarts	Dr	150	4	P		CY,W	S	Tca	.0		100+	6-17-47	
13ad		Du	29.1	48	W		CY,H	N,O	Tco	1.1		20.85	10-18-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 154 N., R. 82 W. cont.													
24aa	T. Saugstead	B	26	12	P		CY,H	D				23	6-19-47	
	T. 155 N., R. 81 W.													
1ad	E. O. Hestikend	Dr	180	6	P		CY,W	D,S				15	5-26-47	
2cc		B	22.9	18			CY,H	N,O	Tco	0.6		14.05	10-16-45	
2dd	Carl Olson	Dr	200		P		CY,W	D,S				12	5-26-47	
3bc	Earl Rafmuson	B	20.0	18	W		CY,G	D,S	Tcu	1.3		10.50	10-16-45	
3da1	Carl Swartwold	Du	25	36	W		CY,H	D,S	Tco	1.2		6.58	5-26-47	
3da2	do.	Dr		18	T		W	N	Tcu	.8		5.62	5-26-47	
4cc	Harold Dickinson	Du	65	22	W		CY,W	D,S	Tca	1.1		34.54	5-26-47	
5ad	D. E. McAllister	B	60	24			CY,G	S				10	5-26-47	
6aa		B	14.1	14			CY,H	S,O	Tco	.5		6.95	10-16-45	
6ba	Lena Von Berg	B	40	24	W		CY,H	S				34	5-26-47	
6bd	do.	Du	10	36			CY,H	S				9	5-26-47	
6cd	John Kauffman	Du	11.9	30	P		CY,H	S,O	Tca	3.2		10.00	10-16-45	
7ad	S. M. Sheets	Du	13	42	W		CY,E	D,S				10	5-27-47	
7ba	A. Korgel	B	13	16	T		P,H	D,S	Tcu	1.6		3.68	5-29-47	
7bd	Joe Korgel	B	78	16	T		CY,W	D,S				55	5-29-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 81 W. cont.													
7cd		B		24	P		CY,H	S	Tco	1.1		2.52	5-29-47	
7dd	Walter Elker	Du	15	36	W		CY,G	D,S				6	5-27-47	
8aa		B					CY,H	N	Tp	3.0		17.45	10-16-45	
8bc	Ed Luxinger	B		24	P		CY,H	D,S	Tcu	.4		12.92	5-29-47	
8cc1	Joe Erb	Du	15	48	C		CY,G	D	Tcu	.6		5.04	5-27-47	
8cc2	do.	Du	9	6	W		CY,W	D,S	Tcu	2.4		6.8	5-27-47	
9ac	Harold Dickinson	B	100	24	W		CY,G	D,S				50	5-26-47	
9cc	Carl Elker	Du	11	48	C		CY,G	D,S				6.4	5-27-47	
9dd	Jean Zook	Du	16	36	W		CY,G	D,S	Tcu	1.62		9.17	5-27-47	
10bb1	Francis Hoye	B	65	20	W		CY,G	S				45	5-26-47	
10bb2	do.	B	65	20	W		CY,H	D				45	5-26-47	
10da	E. L. Warner	Du					F		L	.0				P
10dd	do.	Du	12	36	W			N	Tcu	2.1		4.6	6-4-47	
11aa	Carl Olson	Du	10.6	20	W		CY,W	S,O	Tco	.7		9.90	10-16-45	
11dc	E. J. Burgess	B	12	2	P		P,H	D,S				2	5-27-47	
11dd1	do.	Du	30	30	W		CY,H	N,O	Tco	.2		11.62	10-23-45	
11dd2	do.	B	65	24	W		CY,H	S	Bp	2.2		17.34	5-27-47	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 81 W. cont.													
12bb	Benton Haskin	Dr	200	3	P		CY,W	D,S				10	5-27-47	
12dd	Tony Merck	Du	65	20	W		CY,W	D,S	Tcu	1.4		38.74	5-27-47	
13aa	U. S. Geol. Survey	Dr	106	4 3/4					L		1574	19.09	8-12-47	
14ad1	Hershel Hadler	Dr	10	1 1/4	P		P,H	D	L			8	6-4-47	P
14ad2	do.	Dr	10	1 1/4	P		P,H	D,S				8	6-4-47	
14ad3	do.	Dr	10	1 1/4	P		P,H	S				8	6-4-47	
14ad4	do.	Du		36	W		F	S	L			0	6-4-47	
14ad5	do.	Du		36	C		F	S	L			0	6-4-47	
14ad6	do.	Du		36	W		F	S	L			0	6-4-47	
14bb1	James Lochthoed	Du	10	36	W		CY	D,S	Tcu	1.2		11.60	6-4-47	
14bb2	do.	Du	10	48	W		P,H	N	Tco	.8		4.02	6-4-47	
14bb3	do.	Dr					F	S	L			Flow		P
14da	Mrs. Willerat	Dr	200	6	P		CY,W		L			75	6-4-47	P
15aa	Fred Sorg	B	84	20	W		CY,G	D,S				64	6-4-47	
15bb1	S. Dougall	Du	15	48	W			S	Tco	.4		1.6	6-4-47	
15bb2	Fred Sorg	Dr	300	4	P		W	N				100	6-4-47	
15dc		B	22.3	20	W			N,O		.0		12.30	10-17-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 81 W. cont.													
16bb	Joe Erb	Dr	67	24	W		CY,G	D,S				8	6-4-47	
16bd	do.	Du	25	36	W		CY,G	S				7	6-4-47	U
16cd		Du	8.6	48	W			N,O	Tcu	1.0		6.20	10-17-45	
17bc	O. Herbroson	B	75	18	W		CY,E	S	Bp	1.3		24.11	5-29-47	
17cc	L. Andre	Dr	135	4	P		CY,E	D,S						P
17dc	T. Elsberry	Dr	118	4	P		CY,E	D,S				36	5-29-47	
18ba	Greslivold	Du	10	7	P		P,H	D,S	Tco	1.4		0	5-29-47	
18bd	do.	Du		48	W		CY,H	S	Bp	1.1		9.31	5-29-47	
18cd	G. Heger	B	30	24	P		CY,H	N	Tco	.2		9.49	6-12-47	
18dc1	D. E. Benell	B	65	20	C		CY,E	D				10	6-4-47	
18dc2	do.	Dr	365	4	P		CY,E	D,S,In						P
19aa1	P. A. Yoder	B	25	14	P		CY,H	D				15	6-6-47	
19ab1	Surrey Township	Du	40	48	C		CY,H	D				20	6-6-47	
19ab2	G. B. Hardy	Du	23	24	T		CY,H	D				8	6-6-47	
19ab3	Lewis Cook	B	55	18	W		CY,H	D	Tcu	.7		26.48	6-6-47	
19ac1		Du	10.0	48			CY,H	S	Tco	1.0		8.55	10-27-45	
19ac2	A. C. Withun	B	55				CY,E	D				20	6-6-47	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 81 W. cont.													
19ac3	City of Surrey	B	25	12	T		CY,H	D				20	6-6-47	
19ac4	Dave Stake	Dr	9	6	P		CY,H	N	Tcu	0.2		14.32	6-6-47	U
19ac5	Tom Zook	B		16	T		CY,H	D	Tcu	.2		13.32	6-6-47	
19ad1	Surrey School Dist.	Dr	133	2½	P		CY,H	D						P
19ad2	T. Stein	B	24	36	W		CY,H	D,S	Tcu	.2		4.42	6-10-47	
19ad3	J. Styer	B	50	18	T		CY,H	S	Tcu	.5		22.56	6-10-47	
19ad4	A. L. Dompkin	B	20	6	P		CY,H	D				12	6-6-47	
19ad5	W. J. Connors	B	60	18	T		CY	N	Tco	.8		29.98	6-6-47	
19ba1	P. W. Thom	Dr	1000	4	P		CY,H	D				70	6-6-47	P
19ba2	Great Northern Ry	B	20	12	T		CY,H	D,S				16	6-6-47	
19ba3		Du	20	36	W		CY,H	N				16	6-6-47	
19bd1	Ray Brey	Dr	30	6	P			N	Tco	1.0		14.81	6-6-47	
19bd3	S. Dugle	B	60	24	W		CY,E	S				16	6-6-47	U
19ca	Great Northern Ry	B,Dr	60	6	P		CY,E	D						
19cc	Floyd Kautman	Dr	112	3	P		CY,W	D,S						P
19cd	S. N. Yoder	B	40	18	W		CY,E	D,S				20	6-10-47	
19da1	Stewart Dugle	B	20	24	W		CY,H	S	Tcu	1.8		7.66	6-6-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 81 W. cont.													
19dd	Sam Yoder	B	60	12	T		CY,W	D				32	6-6-47	
20bc	J. Huvinger	B	26	24	T		CY,E	D,S				12	6-10-47	
22cb		Du	32.0	48	W		CY,E	N,O	Tco	0.5		14.90	10-18-45	
22cc	F. Woodiwiss	Du	14	12	T		CY,H	D				8	10-5-47	
23cc1	Joe Wald	Dr	200	3½			CY,W	D,S	L			80	10-17-45	P
23cc2	do.	B	55	20	W		CY,H	S				47	6-5-47	
23dd	F. S. Klein	Dr	200	6	P		CY,W	N				150	6-5-47	P
24aa	J. W. Foley	Du	47	20	W		CY,G	S,O	Tco	1.1		21.04	10-20-45	
24ad	do.	Du	15	36	P		H	D	Tcu	1.2		6.22	6-4-47	
24bc	V. L. Lohn	Dr	160	5	P		CY,W	D,S				20	6-4-47	P
24cd	B. Haskin	B	30	18	T		CY,H	N	Tcu	.7		14.97	6-5-47	
24dd	do.	Du	15	48	W			N	Tco	2.3		4.4	6-5-47	
25dc	A. Kayler	B	32	18	C		CY,W	D,S				8	6-10-46	
26ab1	F. S. Klein	Dr	200	6	P		CY,W	D,S	L			150	6-5-47	P
26ab2	do.	B	60	12	T		CY,H	D	L			40	6-5-47	
26dd1	Peter Kraft	B	60	18	W		CY,H	N,O	Tco	.7		12.77	10-17-45	
26dd2	do.	Dr	185	4	P		CY,E	D,S	L			20	6-5-47	P

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 81 W. cont.													
27bb	F. Woodiwiss	B	55	24	W		CY,G	D,S	L			30	6-5-47	
27bd	R. Blay	B	55	18	C		CY,H	N	Tcu	1.6		13.56	6-6-47	
28ba	J. Hauptmann	B	60	14	T		CY,W	D,S	Tcu	.7		25.13	6-10-47	
28cc	John Luchsinger	B	21	18	C		CY,W	D,S	Tcu	1.8		4.70	6-5-47	
28dd	T. Aberle	B		12	T		N	N						
29ab		Du	10.6	48	W		N	N,O	Tcu	3.3		7.85	10-17-45	
29da	L. Guthrie	B	45	12	T		CY,E	D,S	L			20	6-10-47	
30ca	J. V. Thompkins	Dr	96	4	P		CY,W	D,S	L			30	6-12-47	P
30cb	Floyd Kaufman	B	60	12	T		CY,E	D,S	L			20	6-10-47	
31ba	T. C. Anderson	B	65	18	W		CY,E	S	L			20	6-10-47	
32ba1	Marcus Effertz	Dr	358	4	P		CY,E	D,S	L			60	6-10-47	P
32ba2	do.	B	72	18	W		CY,H	S	Tcu	1.7		14.92	6-10-47	
32cb1	T. C. Anderson	B	40	20	W		CY,H	S	Tcu	.7		14.28	6-10-47	
32cb2	do.	Du	15	36	W		CY,H	S	Tcu	1.9		7.32	6-10-47	
33bc	T. Aberle	B	60	18	W		N	N	Tco	.4		13.72	6-5-47	
33dc	Edith Luchsinger	Du,Dn	19	1½-6	P		CY,H	S	L			6	6-5-47	
33dd		Du	39.3	24	W		CY,W	D,S,O	Tco	1.0		17.05	10-13-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 151 N., R. 81 W. cont.													
34dd	H. Seyofert	B	70	12	T		CY,W	D,S	Tco	1.0		27.27	6-5-47	
35ad	Peter Kraft	B	60	20	W		CY,W	S	Tcu	1.1		14.67	6-5-47	
35bb1	A. L. Bouk	Du	40	48	W		CY,G	D,S	L			25	10-17-45	
35bb2	C. J. Vollner	B	45	18	T		CY,H	D	L			40	6-17-47	
35bb3	do.	B	60	18	W		CY,E	S						
36bb	D. C. Lenton	B	60	18	T		CY,W	D,S	L			30	6-5-47	
	T. 155 N., R. 82 W.													
1da	Vessel Kaufman	B	40	18	W		CY,G	S	L			20	6-11-47	
2bd	G. V. Furnam	B	72	18	W		CY,W	S	L			22	6-11-47	
2dc	C. Hamback	B	82.5	24	W		CY,H	N,D	Tco	1.0		27.05	10-16-45	
3ad	G. V. Furnam	B	40	18	W		CY,H	N	L			22	6-11-47	
4aa1	R. Tripp	B	38	18	W		CY,H	N	Tcu	.3		12.35	6-11-47	
4aa2	do.	B	40	24	W		CY,E	D,S	L			14	6-11-47	
4ba	J. Walsh	B	55	18	W		CY,W	S	L			18	6-11-47	
6bc	B. Novak	B		18	W		CY,W	S	Tco	1.3		11.94	6-25-47	
6da	M. Lee	B	46	36	W		CY,H	D,S	L			20	6-11-47	
7ad	H. F. Pargy	B	60	16	W		CY,W	S	L			20	6-11-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 82 W. cont.													
8bd	H. F. Pargy	Du	16	36	P		CY,H	D	L			12	6-11-47	
9ba1	J. L. Walsh	B	35	18	W		CY,G	S	L			18	6-11-47	
9ba2	do.	B	35	18	W		CY,H	D	L			20	6-11-47	
9cc1	O. R. Burns	B	35	18	W		CY,W	S	L			7	6-11-47	
9cc2	do.	Du	35	36	W		N	N	Tco	0.6		20.13	6-11-47	
10aa	Frank Hrdlicka	Du	15	48	W		CY,H	D,O	Tco	3.0		7.60	10-16-45	
10cd	E. Foley	B	25	18	T		CY,H	S	Tcu	1.1		6.32	6-12-47	
11aa	C. Abernathy	B	65	18-24	T-W		CY,G	D,S	L			50	6-11-47	
11cc	M. Swanson	Dr	250	3	P		CY,G	D,S	L			80	6-12-47	C,P
12dd	L. Ellsburg	B	28	18	W		CY,E	S	Tco	.6		20.14	6-12-47	
14dd	John Balerud	Dr	120	4	P		N	N,O	Tca	1.5		40.70	10-17-45	
15bc1	T. Thompson	B	35	18	C		CY,H	S	L			29	6-12-47	
15bc2	do.	B	65	24	W		CY,G	S	L			30	6-12-47	
19aa	U.S. Geol. Survey	Dr	100.0	4 3/4	N	X	N	N	L		1636	Caved in	8-12-47	
20ac	Great Northern Ry.	Du			W		CY,E	D,S						
20cb	Mrs. E. Ehr	Du	28	12	T		CY,E	D	L			12	6-13-47	
20cc1	G. Randall	Du	7	48	W		CY,H	D	L			5	6-13-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 82 W. cont.													
20cc2	G. Randall	B	35	18	W	L,Clb	CY,E	S	Tcu	1.3		12.45	6-12-47	
20dd	R. Kees	Du	24	54	W	L	CY,H	D,S	L			12	6-12-47	
21bc1	John Stipp	B	24	8	P		CY,E	D	L			10	6-12-47	
21bc2	do.	B	24	18	W		CY	N	Tcu	.2		10.22	6-12-47	
21cc1	L. Enger	Du	33	40	W	L	CY,E	D	L			20	6-13-47	
21cc2	do.	Dn	7	1½	P		CY,H	D	L			7	6-13-47	
21cc3	do.	Du	33	48	W		CY,E	S	L			13	6-13-47	
21cc4	do.	Du	7				C,E	S	L			4	6-13-47	
22dd	Woolidge	Du	15	36	W		CY,E	D,S	L			8	10-17-45	
23aa	W. W. Perry	B	63	18	W		CY,H	D	Tco	1.1		28.12	6-12-47	
23cc	B. Mormon	B	78	24	W		CY,E	D,S	L			20	6-12-47	
23cd		Du	8.1	36	W		N	N,O	Tcu	.6		3.55	10-17-45	
25cc	D. G. Kaufman	Dr	120	3	P		CY,E	D,S	L			28	6-12-47	P
26ab	A. F. Glick	Dr	124	4	P		CY,E	D,S	L			30	6-12-47	P
26bb1	C. H. Walhowe	Du	23	18	W		CY,H	D	L			16	6-12-47	
26bb2	do.	B	33	24	P		CY,A	D	L			23	6-12-47	
26da	Earl E. Martin	Dr	90	6	P		CY,E	D,S	L			40	10-18-45	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 82 W. cont.													
28aa	H. J. Cahoul	Du	8.2	36	W		CY,H	N						
29aa	Walter Miller	Du	60	48	W		CY,H	S						
29bd1	Wilfred Ehr	B	31	18	P		CY,H	S	L			21	6-13-47	
29bd2	do.	B	66	8	P		CY,E	D	L			18	6-13-47	
29cb1	W. H. Wendt	B	40	12	T		CY,H	D	L			20	6-13-47	
29cb2	do.	B,Dn	16	2½	P		CY,H	S	L			12	6-13-47	
29cb3	do.	B,Dn	21	2½	P		CY,E	D	L			18	6-13-47	
29cc	J. Hornbacker	B	50	36	W		CY,E	D	L			30	6-13-47	
30ab	Everett Ehr	B	35	18-24	W		CY,E	D,S	L			28	6-13-47	
30ad	G. Ehr	B	28	8	P		CY,E	D	L			24	6-13-47	
30da	Frank Ehr	Dr	75	2½	P		CY,E	D,S	L			30	6-13-47	
30dd	L. Schmidt	Du	40	48	C		CY,E	D,S	L			28	6-13-47	
31aa	E. Kennedy	B	56	18-24	W		CY,E	D,S	L			32	6-13-47	
	T. 155 N., R. 83 W.													
1cb1	F. Linha	B	36	18	T	G,Clb	P,H	D	L			8	7-20-47	
1cb2	do.	B	50	18	W	G,Clb	CY,W	S	Tca	0.3		8.93	8-5-47	
1cb3	do.	Dr	350	4	P		N	N	Tca	1.2		100+	8-5-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 83 W.													
1dc1	F. Bushck	B		18	W		CY,H	N	Tca	1.1		17.11	8-5-47	
1dc2	do.	B		36	P		CY,H	N	Tcu	.8		16.97	8-5-47	
1dc3	do.	B		18	W		CY,H	N	Tco	2.1		16.54	8-5-47	
2cd	J. Bihinna	B	100	12	P		CY,E	D,S	Tco	.2		32.53	8-5-47	
3cb	Haugland	B	98	20	W		CY,E	D,S	L			48	7-15-47	
4bd1	O. Lockthoe	B	73	18	W		CY,E	D,S	Tcu	.6		21.08	8-5-47	
4bd2	do.	B	53	18	W	G	CY,E	S	L			20	8-5-47	
6da	W. Enders	Du	20	36	W		CY,H	D,S	Tco	.2		7.53	8-6-47	
7bb1	C. Hof	Dr	55	1½	P	L	CY,E	S	L			50	8-6-47	P
7bb2	do.	Du	20	36	W		CY,H	D	L			18	8-6-47	
8cc	L. B. Larson	Dr	200	4	P	L	CY,W	D,S	L			15	8-11-47	P
10cc	C. F. Peterson	Dr	370	4	P	L	F 0.5	D,S				Flow	8-6-47	P
10dc1	J. J. Behm	Du	12	36	W	S,G	CY,H	S	Tco	2.4		9.97	8-6-47	
10dc2	do.	Dr	420	8	P		CY,W	D,S	Tca	2.2		100+	8-6-47	P
11dd1	I. Goheen	B	60	24	W	S,G	CY,W	S	L			50	7-15-47	
11dd2	do.	B	45	18	W		CY,G	S	Tco	.4		10.63	8-5-47	
11dd3	do.	B	35	18	W	S,G	CY,H	N	L			15	7-1-47	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 83 W. cont.													
12ac	H. McCullough	B	28	12	T		CY,H	D	Tcu	0.6		19.24	8-6-47	
14cc	City of Minot	Dr	127	4	N	S,G,X	N	N	L	.0		39.58	6-25-45	
14cd1	do.	Dr	161		N	S,G,X	N	N						
14cd2	do.	Dr	158	20	P	S,G,X		P						C
14cd3	do.	Dr	160	5	N	S,G	N	N						
14db1	Minot State Teachers College	Dr	640	6	P	G		I				Flow	1945	
14db2	do.	Dr	200	6	P			I	L	.0		51.02	6-19-45	C
14db3	do.	Dr	197	10	P	G		I						
14dc1	City of Minot	Dr	160	30	P	S,G,X		P						C
14dc2	do.	Dr	163	5	N	S,G								
14dd1	do.	Dr	288	4	N	S,G,X								
14dd2	do.	Dr	145	24	P	S,G								C
15cc1	C. F. Peterson	B	30	18	T		CY,H	D	Tcu	.2		10.27	8-6-47	
15cc2	do.	B	60	18	T	L	CY,G	S	Tcu	.4		28.47	8-6-47	
15cc3	do.	Dr	525	4	P	L	CY,E	S	L			10	6-15-47	P
16cc	J. L. Hauge	B	30	12	C		CY,E	D	Tcu	-6.4		9.52	8-6-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 83 W. cont.													
17ab1	F. Welch	Du	20	36	W		CY,H	D,S	L			15	8-6-47	
17ab2	do.	Du	12	30	P		CY,H	S	Tco	1.9		1.86	8-6-47	
18ac1	W. R. Wallin	B	30	18	T		CY,H	D	L			15	8-6-47	
18ac2	do.	Dr	800	8	P		F 3	S				Flow	8-6-47	P
21aa	Schultz-Dolan Inc.	B	32	16	W		CY	In	Tco	.4		16.39	8-6-47	
21ac	N. D. Concrete Prod.	Dr	365	5	P		F	In	L	1.2		Flow	8-6-47	P
21bb1	C. E. Wood	B	44	18	T		CY,E	D	Tco	-3.6		14.59	8-6-47	
21bb2	do.	B	25	18	W		CY,H	D,S	Tco	1.3		7.56	8-6-47	
21bb3	do.	B	24	18	W		CY,H	D	L			20	8-6-47	
21bb4	Dr. A. M. Carr	B	22	6	P		CY,H	D,S	L			20	7-1-47	
21bb5	do.	B	24	18	W		CY,W	S	Tcu	.9		21.39	8-6-47	
21ca	Carol Bottels	Dr	30	4	P		CY,E	D	Tcu	.6		19.46	8-6-47	
22aa	City of Minot	Dr	178	4	N	S,G,X	N	N						
22ab1	do.	Dr	353	6	N							Flow	1945	
22ab2	do.	Dr	93	2	P	S,G,X	N	O	Tca	.0		41.97	3-8-46	
22ad	do.	Dr	128	4	P	S,G,X	N	O	Tca	2.5				
22cb	Mrs. J. Peterson	B	24	8	P		CY,H	D	L			20	7-1-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 155 N., R. 83 W. cont.													
22da	City of Minot	Dr	90	4	P	S,G,X	N	O						
23ac1	do.	Dr	130	5	N	S,G,X	N	N						
23ac2	do.	Dr	148	5	N	S,G,X	N	N						
23ba1	do.	Dr	155	5	N	S,G,X	N	N						
23ba2	do.	Dr	132	12	P	S,G,X		P						C
23ba3	do.	Dr	130	10	P	S,G,X		P						C
23ba4	do.	Dr	135	5	N	S,X	N	N						
23ba5	do.	Dr	154	5	N	S,G,X	N	N						
23bb	do.	Dr	126	5	N	S,G,X	N	N						
23bc1	do.	Dr		5	N	X	N	N						
23bc2	do.	Dr		5	N	X	N	N						
23bc3	do.	Dr		5	N	X	N	N						
23bd	do.	Dr	133	5	N	S,G,X	N	N						
23cb	do.	Dr	266	4	P	S,X	N	N						
24ba1	Northern States Power Co.	Dr	109			S,G,X		I						C
24ba2	do.	Dr	100			S,G		I						C

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 81 W.													
1bc	P. C. Atlie	Dr	160	6	P		CY,W	D,S	L			100	6-26-47	P
1cc	O. Hatlie	Dr	165	5	P		CY,H	N	L			40	6-26-47	P
2cc	Simonson Bros.	Dr	280	4	P		CY,W	S	L			90	6-26-47	P
2dd	H. Hatlie	Dr	140	4	P		CY,W	D,S	L			120	6-26-47	P
3aa	J. O'Hanlon	Dr	176	6	P		CY,W	D	L			90	6-26-47	P
4aa	Abel Beaton	Dr	185	1½	P		P,H	D,O	Tp	2.9		7.70	10-15-45	
4ba	do.	Dr	380	4	P		CY,W	D,S	L			50	7-1-47	P
4cb	J. J. Frank	Dr	275	5	P		CY,W	S	L			60	7-1-47	P
5ad	C. Reishus	Dr	220		P		CY,W	N						
5da	do.	Dr	250	5	P		CY,W	D,S	L			70	7-1-47	P
6cd	L. Haskins	B	50	24	W		N	N	L			20	7-1-47	
7ca1	J. Horne	B	12	6	P		CY,H	D	L			12	7-1-47	
7ca2	do.	B	12	8	P		CY,G	S	L			12	7-1-47	
7cc1	E. T. Eckeberg	Dr	258	5	P		CY,G	S	L			140	7-1-47	P
7cc2	do.	B	60	18	W		CY,W	N	L			30	7-1-47	
8cb	C. F. Reinier	B	50	24	W		CY,W	S	L			20	7-1-47	
10ac	S. Johnson	B	45	24	W		CY,G	D,S	L			15	6-26-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 81 W. cont.													
11ac	Simonson Bros.	Dr	235	5	P		CY,H	D,S	L			30	6-26-47	P
12dc	William Bartsfield	Du	20	48	C		CY,W	D,S	Tco	1.4		10.58	6-26-47	
14cd	C. Nichols	B	40	24	W		CY,W	D,S	L			15	6-26-47	
15aa	C. Mattern	Dr	200	4	P		CY,W	D,S	L			50	6-26-47	P
16dc		Dn	12	2½	P		CY,W	S	L			8	6-26-47	
17cc1	E. B. Engebritson	B	55	15	T		CY,H	D,O	Tca	.6		13.50	10-15-45	
17cc2	do.	Dr	226	6	P		CY,W	D	L			120	7-1-47	P
17cc3	U. S. Geol. Survey	Dr	138.0	4 3/4	N	X	N	N	L		1583.1	8.34	8-12-47	
19ba	T. O. Barsness	B	55	24	W		CY,W	D,S	Tcu	.4		24.52	7-1-47	
19dd	W. Ofsthun	Dr	303	6	P		CY,W	D,S	L			50	7-1-47	P
20cb1	L. Korgel	B	55	18	W		CY,W	S	L			25	7-1-47	
20cb2	do.	B	20	8	P		CY,H	D	L			16	7-1-47	
21ba1		B	35	12	T		CY,H	D	L			15	6-26-47	
21ba2		Dr	240	5	P		CY,W	N	L			80	6-26-47	
21cb	C. O. Ronnie	Du	15	30	P		CY,W	S	L			10	6-26-47	
22ac1	S. Fouch	B	65	24	W		CY,G	S	L			40	6-26-47	
22ac2	do.	B	40	12	P		CY,H	D	L			20	6-26-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 81 W. cont.													
22bb1	G. Ronnie	Du					CY,G	N	Tp	6.0		9.85	10-15-45	
22bb2	do.	B	40	24	W		CY,H	D	L			35	6-26-47	
22cc1	H. Smith	Du		48	C		CY,W	S	Tco	.7		11.65	10-16-45	
22cc2	do.	B		14	T		CY,H	D	Tcu	.3		1.78	6-26-47	
22dd1	J. Trezek	Dr	305	4	P		CY,W	S	L			90	6-26-47	
22dd2	do.	B	45	24	W		CY,H	D	L			30	6-26-47	
23aa	J. Behrnes	Dr	238	5	P		CY,W	D,S	L			50	6-26-47	P
23bc		Du	20	20	W		CY,H	S,O	Tco	1.5		8.75	10-19-45	
25aa	J. Kupser	Dr	250	4	P		CY,W	D,S	L			50	6-26-47	P
26cd	M. F. Burtch	B	27	5	P	G	CY,W	D,S	L			10	6-26-47	
27bc	J. Davis	Du	20	48	C		CY,W	D,S	L			8	6-26-47	
27cb	C. O. Ronnie	Du	10	8	T		CY,H	D	L			7	6-26-47	
27cd1	S. Bruner	Du	12	48	W		CY,W	D,S	L			8	6-26-47	
27cd2	do.	B	22	6	P		CY,H	D	L			12	6-26-47	
27cd3	do.	Du		48	W		F	N	L	Spring		0.00	6-26-47	
28ab	E. E. Mayo	B	40	18	W		CY,W	S	L			25	6-26-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 81 W. cont.													
29ab1	E. E. Mayo	Dr	365	6	P		CY,W	D,S	L			15	7-1-47	P
29ab2	do.	B	45	18	W		CY,H	N	L			5	7-1-47	
29cc	Robert Keys	B		12	T		CY,H	N	Tcu	0.1		19.29	7-1-47	
30ad	L. Larson	Du	12	36	P		CY,H	S	Bp	1.8		5.84	7-1-47	
30cb	D. Petry	Du	14	36	C		CY,G	D	L			6	7-1-47	
30cc1	do.	B	60	18	T		CY,G	S	L			35	7-1-47	
30cc2	do.	B	47	18	W		CY,H	N	L			45	7-1-47	
32ab	William Phillippe	Du	12	48	W		CY,G	D,S	L			5	7-1-47	
32bc		Du		36	W		CY,H	S,O	Bp	2.0		12.65	10-16-45	
35ad	C. Maurer	Du	11.1	48	W		CY,W	S,O	Tco	2.2		9.25	10-16-45	
	T. 156 N., R. 82 W.													
1ac	S. Pfeiffer	Du	6	42	W		CY,H	D,S	Tcu	.7		3.77	6-20-47	
3dd1		Du	13	36	W		P,H	N	Tco	.9		6.52	6-20-47	
3dd2		Du	10	36	W		CY,H	N	Tco	1.1		4.56	6-20-47	
4ba	Rudolph Helseth	Du	60	48	W		CY,W	S,O	Tco	2.7		25.85	10-15-45	
4dd	W. Clark	B	60	24	W		CY,G	S	L			30	6-20-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 82 W. cont.													
6bc	B. Novak	B		12	T		CY,W	D,S	Tco	0.6		14.93	6-25-47	
6dd1	O. Lindstrom	Dr	132	4	P		CY,W	D,S	L			80	6-20-47	P
6dd2	do.	B	20	24	W		CY,W	D	Tcu	1.1		8.76	6-20-47	
8bd	M. Solberg	B	40	24	W		CY,H	N	Tco	.6		13.14	6-20-47	
10bc1	Roy Tripp	B	35	24	W		CY,H	D,S,O	Tco	.6		22.85	10-15-45	
10bc2	do.	B	70	24	W		CY,G	D,S	L			25	6-20-47	
10cb	G. W. Miller	Dr	330	4	P		CY,W	D,S	L			130	6-20-47	
10dd		B		18	W		CY,W	D,S	Tcu	1.2		19.64	6-20-47	
11dc		B		18	W		N	N	Tcu	1.9		12.26	6-20-47	
12bc		Dr		4	P		CY,W	N						P
12dd		B	40	8	P		CY,W	D,S	Bp	2.1		13.42	6-20-47	
13ab1	Mrs. T. Anderson	B	40	18	W		CY,H	S	Tcu	.7		7.42	6-20-47	
13ab2	do.	Dr	350	4	P		CY,W	D,S						P
13ba1	C. T. Anderson	B	60	18	W		CY,W	S	Tcu	.3		36.28	6-20-47	
13ba2	do.	Du	22	36	W		CY,H	D	Tcu	1.6		8.35	6-20-47	
14aa		B		18	W		CY,G	D,S	Tco	.6		13.53	6-20-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 32 W. cont.													
15ba	G. Solberg	B	41	24	W		CY,W	S	L			12	6-20-47	
15ca		B		12	T		CY,H	D,S	Tco	1.2		14.21	6-24-47	
16cd	C. Frazik	Dr	380	4	P		CY,W	D,S	L			50	6-24-47	
17bb1	E. Vollmer	Dr	550	4	P		CY,W	S	L			200	6-20-47	
17bb2	do.	B	26	18	W		CY,H	D	L			24	6-20-47	
17bc	G. B. Parker	B	20	24	W		CY,W	S	L			15	6-25-47	
17cd	E. Ketasek	Dr	360	4	P		CY,W	D,S	L			10	6-24-47	
18cc1	M. Ketasek	Du	25	36	C		CY,H	D	Tcu	.9		9.45	6-24-47	
18cc2	do.	B	52	18	C		CY,W	S	L			45	6-24-47	
19cc	W. Hambeck	Dr	401	4	P		CY,W	D,S	L			100	6-24-47	
19dd1	S. Sanders	B	44	20	T		CY,H	D	Tco	.6		34	10-15-47	
19dd2	do.	Dr	165	4	P		CY,W	S	L			30	6-24-47	
21ad1	F. Brown	Du	26	42	W		CY,H	D	Tcu	1.8		20.39	6-24-47	
21ad2	do.	Du	18	36	W		CY,H	D,S	Tcu	3.4		10.93	6-24-47	
22dc	H. Milkey	Dr	350	4	P		CY,W	N	L			100	6-24-47	
24dc		B		24	W		CY,W	S	Tco			24.42	6-24-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 82 W. cont.													
25cd	G. Furman	B	35	24	W		CY,G	S	L			15	6-24-47	
26aa1	C. Hambeck	B	20	12	T		CY,H	D	L			5	6-24-47	
26aa2	do.	Dr	350	4	P		CY,W	D,S	L			100	6-24-47	P
26cc	M. Braun	B		24	W		CY,G	D,S	Tco	1.0		11.30	6-24-47	
26dc	Arthur Korgel	Du		48	W		CY,W	D,S,O	Tco	1.0		6.70	10-16-45	
27ba	D. Moffit	Du	14	42	W		CY,H	S	L			6	6-24-47	
27cb1	do.	B	35	24	W		CY,G	D,S	L			28	6-24-47	
27cb2	do.	B	54	24	W		CY,H	N	L			38	6-24-47	
27cb3	do.	B	47	24	W		CY,H	D,S	L			12	6-24-47	
28dc1	S. Laskowsky	Du	25	48	W		CY,H	S,O	Tco	1.3		13.05	10-16-45	
28dc2	do.	Dr	300+	4	P		CY,W	D,S	L			50	6-25-47	P
29bb	Irvin Larson	B	68	18	W		CY,W	S	Tcu	.6		20.32	6-24-47	
30bb1	Mrs. E. Estlick	Dr	342	4	P		CY,W	D,S	L			80	6-24-47	P
30bb2	do.	B	25	12	T		CY,H	D	L			8	6-24-47	
30dd	E. Larson	Dr	300	3	P		CY,W	D,S	L			100	6-25-47	P
31ad	H. Lorenz	Du	15	40	W		CY,W	N	Tco	.8		3.16	6-25-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 82 W. cont.													
31cb1	A. Korgel	B		24	C		CY,H	D	Tco	1.2		9.92	6-25-47	
31cb2	do.	Du		36	W		CY,G	S	Tco	1.1		3.11	6-25-47	
32ad	C. H. Kendal	B	38			G	CY,W	D,S	L			25	6-25-47	
32cc1	H. Lorenz	B	40	24	W		CY,H	S	L			25	6-25-47	
32cc2	do.	Du	24	36	W		CY,W	S	L			18	6-25-47	
33bb1	F. Busek	B	35	18	W		CY,H	D	L			30	6-25-47	
33bb2	do.	B	90	18	W		CY,E	S	L			60	6-25-47	
33dc1	W. Wemer	B	90	18	W		CY,W	S	L			60	6-25-47	
33dc2	do.	B	40	18	W		CY	N	L			10	6-25-47	
34ab1	H. Hamilton	B	60	18	W		CY,G	D,S	L			25	6-25-47	
34ab2	do.	B	24	30	W		CY,H	N	Tco	.2		14.26	6-24-47	
34ab3	do.	B	55	18	W		N	N	Tcu	.1		27.32	6-24-47	
34dd	U. S. Geol. Survey	Dr	126.0	4 3/4	N	X	N	N	L		1618	12.02	8-12-47	
35cb	C. P. Peterson	B	67	18	W		CY,H	D,S	L			30	6-24-47	
35dc	W. Korgel	Dr	300	4	P		CY,W	S	L			80	6-24-47	P
36bc	O. Solberg	Dr	325	4	P		CY,W	D,S	L			80	6-24-47	P

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 83 W.													
1bc1	W. H. Donnell	Dr	340	4	P		CY,W	D,S	L			60	6-20-47	P
1bc2	do.	B	100	24	W		CY,H	N	Tcu	1.4		8.38	6-20-47	
2ab	H. Palmer	B	80	18	W		CY,H	N	L			60	8-5-47	
3db1	H. J. Lashkowski	B	52	18	T		CY,E	S	L			20	8-5-47	
3db2	do.	Du	17	16	T	G	CY,W	S	L			8	8-5-47	
4dc	N. Livingstone	Dr	260	4	P		CY,W	N	Tco	3.1		9.11	8-5-47	
5bb	Wm. Lashkowski	Dr	580	4	P		CY,W	D,S	L			80	8-5-47	P
6ad	T. Lade	B	50	18	W		CY,W	S	Tco	1.3		26.17	8-5-47	
7bc	I. Donnell	Dr	435	4	P		CY,W	D,S	L			105	8-7-47	P
7cc1	Elmer Werner	B	50	24	W		N	N,O	Tco	.6		13.10	10-14-45	
7cc2	do.	Dr	535	2	P		CY,W	S	L			95	8-7-47	P
7cc3	do.	B	25	14	W		CY,H	D	L			13	8-7-47	
8db	R. Livingstone	Dr	216	4	P		CY,W	D,S	L			60	8-5-47	
9cc1	E. K. Livingstone	Du	13	48	W		CY,W	S,O	Tco	1.5		6.65	10-14-45	
9cc2	do.	B	35	18	W		CY	S	Tco	.7		10.92	8-5-47	
9cc3	do.	B	40	18	W	S,G, Clb	CY,E	S	L			20	8-5-47	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 83 W. cont.													
10ad		Du	25	43	W		CY,W	N	Tco	0.7		9.57	8-5-47	
11ba	A. Korgel	B	45	13	W	G	CY,W	S	L			20	8-5-47	
12dc	J. C. Watson	Dr	290	3	I		CY,W	D,S	L			90	8-5-47	P
13bb	J. H. White	B	40	24	W	G,Cl	CY,H	D,S	L			9	7-31-47	
13cd1	F. M. Hambeck	Dr	271	3	P	L,R	CY,W	D,S	L			30	7-31-47	P
13cd2	do.	B	40	24	W	S,G,Clb	CY,H	S	L			20	7-31-47	
14aa	Marie Selfors	B	50	20	W		N	N,O	Tco	1.2		30.30	10-14-45	
14bb1	P. Michealtz	Du	10.9				N	N,O	Tcu	1.0		9.05	10-14-45	
14bb2	do.	B	24	24	W	S	CY,G	D	L			20	8-5-47	
14bb3	do.	B	35	13	W	S,G	CY,W	S	L			35	8-5-47	
14dd	C. P. Lee	B	35	24	W	G	CY,H	D,S	L			33	7-31-47	
15ad1	G. Thompson	B	30	13	W		CY,G	D,S	Tcu	.5		19.36	8-5-47	
15ad2	do.	Du	12	43	W		CY,G	S	Tco	2.1		6.11	8-5-47	
16cb	J. Bonness	B	50	13	W	G,Clb	CY,W	S	L			35	8-4-47	
17da	do.	B	60	13	W	G,Clb	CY,E	S	L			40	8-5-47	
17dc		B	45	13	W		CY,H	N	Tco	1.9		23.46	8-5-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 83 W. cont.													
18bc	B. H. Olson	B	55	13	W		CY,H	N	Tcu	0.7		22.42	8-7-47	
18cc1	R. A. Eckert	B	70	24	W	S	CY,G	S	L			40	8-6-47	
18cc2	do.	B	70	24	C		CY,E	D,S	L			25	8-6-47	
18dd		B	60	24	W		CY	N	Tcu	.8		16.71	8-6-47	
19bc1	D. Olson	B	32.8	30	W		CY,H	N,O	Tco	1.7		12.01	10-14-45	
19bc2	do.	B	45	24	W		CY	N	Tco	2.4		16.73	8-6-47	
19dd	H. Varberg	B	70	13	W		CY,G	S	Tco	.6		23.25	8-6-47	
21ba	B. Olson	B	35		N		CY,H	N	Tco	.8		16.09	8-5-47	
21cc1	H. J. Nelson	Du	20	36	W		CY,H	D	L			18	8-5-47	
21cc2	do.	Dr	415	4	F		CY,W	S	L			90	8-5-47	
22ad1	A. L. Rahn	B	60	18	W	Cl,G, Q	CY,W	S	L			35	7-31-47	
22ad2	do.	B	40	13	P	Cl,G	CY,H	D,S	L			30	7-31-47	
22ad3	do.	B	35	24	W	S,G	CY,H	S	L			5	7-31-47	
24cc1	F. Parizek	Du	14	43	W		CY,G	D,S	L			12	7-25-47	
24cc2	do.	B	50+	24	W		CY,H	N	Tco	.4		14.61	7-25-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 83 W. cont.													
25ad1	V. Carlson	Dr	365	3-4	P		CY,W	S	L			36	7-24-47	P
25ad2	do.	B	25	18	T	G	CY	D	Tco	0.1		9.48	7-31-47	
25ba	J. Korgol	Du	14	48	W		CY,G	D,S	L			12	7-25-47	
25cd	John Parizek	Du	12	48	W		CY,W	S,O	Tco	1.4		8.05	10-15-45	
25dc	M. Finberg	Du	60	48	W		CY,W	S,O	Tco	.5		17.45	10-15-45	
26ba	M. Korge	B	47	18	W		CY,W	D,S	L	.		10	7-10-47	
27da	J. Parizek	B	40	18	W	G,Clb	CY,W	D,S	Tco	.2		19.47	7-31-47	
28ad1	J. A. Pitner	B	90	18	W	G,S, Clb	CY,E	D,S	L	.		70.	8-5-47	
28ad2	do.	B	80	18	W	G,S	CY,W	D,S	L	.		70.	8-5-47	
28dd	C. J. Linnertz	Dr	707	4	P	Ss	CY,E	D,S	L	.		150.	10-14-45	P
29bd1	B. H. Olson	Dr	365	3	P		CY	N	L			120	8-6-47	
29bd2	do.	B	90	12	T		CY,H	D	L	.		40.	8-6-47	
30bc	Mrs. A. Sys	B	67.6	24	W		CY,H	N,O	Tco	1.4		34.15	10-14-47	
31ccl	A. Novak	B	45	14	T		CY,H	D,S	Tcu	1.3		21.56	8-6-47	
31cc2	do.	Dr	365	4	P		CY,W	S	L			150	8-6-47	P

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 83 W. cont.													
31cc3	A. Novak	B	35	18	W		CY,H	N	Tco	0.3		24.27	8-6-47	
32dd1	O. Lockhoe	Dr	415	4	P		CY,W	D,S	L			50	8-5-47	P
32dd2	do.	B	24	18	W		CY,H	D	Tcu	.6		15.46	8-5-47	
33ba	O. G. Varberg	B	70	18	W		CY,E	D,S	L			35	8-5-47	
33dd	C. W. Linnertz	Dr	407	4	P		CY,W	D,S	L			54	8-5-47	P
34bc	Mrs. R. Geobel	B	90	18	W		CY,E	D,S	Tcu	1.1		76.79	8-5-47	
35aa1	R. Erb	B	50	24	W		CY,W	S	L			20	7-30-47	
35aa2	do.	B	60	24	W	S,G,Cl	CY,H	S	Tcu	.7		9.91	7-30-47	
35aa3	do.	B	50	24	W	G,Cl	CY,G	S	L			20	7-30-47	
35aa4	do.	B	36	24	T	G,Cl	N	N	Tcu	1.2		18.31	7-30-47	
35aa5	do.	B	20	24	W	G	N	N	L			15	7-30-47	
35bd	do.	B	48	24	W		CY,W	N	L			15	7-30-47	
35da1	A. C. Erb	B	60	24	W		CY,W	S	L			25	7-30-47	
35da2	do.	B	75	24	W	G,Cl	CY,G	S	L			30	7-30-47	
35da3	do.	B	30	24	W	G,Cl	CY,H	S	Tco	.4		4.81	7-30-47	
35db	do.	B	36	24	W	G	CY,W	S	L			15	7-30-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 84 W.													
1cc	E. Miller	B		18	W		CY,H	S	Tco	0.3		17.67	8-7-47	
2ad1	T. P. Mulek Est.	B	22	24	W		CY,H	D	L			12	8-1-47	
2ad2	do.	B	54	20	W		CY,E	S	L			19	8-1-47	
2cd	R. S. Durbin	B	47	24	W		CY,E	S	Tcu	.9		26.66	8-7-47	
3bb		Du	42	36	W		CY,H	S,O	Tco	.7		26.00	10-13-47	
3da	E. Mattson	B	40	30	W		CY,W	S	L			25	8-7-47	
4cd	P. Smith	Du	30	36	W		CY,H	D	Tcu	.6		14.52	8-7-47	
9ad	W. Harrington	B	30	26	W	S	CY,W	D,S	Tcu	.8		7.72	8-7-47	
12cb1	J. Sys	Dr	438	4	P		CY,H	N						
12cb2	do.	B	36	16	T		CY,H	D	Tcu	.2		12.72	8-7-47	
12cb3	do.	B	48	18	W		CY,G	S	L			8	8-7-47	
12cb4	do.	B	24	18	W		CY,H	D	L			16	8-7-47	
13ca1	R. Hoelsher	B	65	24	W		CY,G	D,S	Tco	1.3		61.27	8-7-47	
13ca2	do.	B	60	24	W		CY,G	S	Tco	1.1		36.64	8-7-47	
15da1	Mrs. J. Larson	B	28	18	W	S	CY,H	D	L			22	8-7-47	
15da2	do.	Dn	24	1 3/4	P		CY,E	D	L			24	8-7-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 156 N., R. 84 W. cont.													
23ab1	A. K. Larson	B	28	18	W		CY,H	N	L			20	8-7-47	
23ab2	do.	Du	24	36	C		P,H	D	L			19	8-7-47	
25ca	H. W. Wilson	B	60	18	W		CY,H	D,S	Tcu	1.3		21.66	8-7-47	
26cc	L. G. Wilhelm	B	36	18	W		CY,H	D	L			18	8-7-47	
	T. 157 N., R. 81 W.													
2cb	D. Hoiland	Du	10	36	P		CY,W	D,S	L			7	8-11-47	
3ca	G. T. Walseth	Dr	165	5	P		CY,W	D,S	L			20	10-14-45	
3da	G. Holman	Dr	170	5	P	R	CY,G	D,S	L			20	8-11-47	P
4aa	S. Hall	Dr	175	6	P		CY,W	D,S	L			55	8-11-47	P
4bc	H. Holman	Dr	210	5	P		CY,G	D,S	L			90	8-11-47	P
4dc	W. S. Pace	Dr	160	6	P		CY,W	S	L			30	8-11-47	P
5ad	Glen Pace	Dr	180	6	P		CY,W	D,S	L			80	8-11-47	P
7aa1	John Peck	Du	8	36	W		H	D,O	Tcu	2.0		5.35	10-14-45	
7aa2	do.	Du	10	24	P	G	CY,W	S,O	Tcu	.5		6.30	10-14-45	
7bb	E. Solbacken	Dr	184	5	P		CY,H	D,S	L			25	8-11-47	P
8aa		Dn	12	2	P		P,H	D	L			12	8-11-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 81 W. cont.													
8ca	Nels Greeley	Dr	235	5	P		CY,G	D,S	L			68	8-11-47	P
8da	W. W. Taley	Dr	270	4	P		CY,W	D,S	L			120	8-11-47	P
10bc1		Du	10	48	W		CY,H	D	Tco	1.4		7.82	8-11-47	
10bc2		Du	10	48	W		CY,W	D,S	Tcu	2.0		9.62	8-11-47	
11ab	C. V. Amundsen	Dr	150	3	P		CY,G	D,S	L			40	10-14-45	
11ba	Hans Hogum	Dr	200	5	P		CY,W	D,S	L			40	8-11-47	P
12cc	Olaf Salseg	Dr	194	6	P		CY,W	D,S	Tco	1.6		36.24	8-11-47	P
13dd	George Parisek	Du	10.1	48	W		CY,W	S	Tco	1.0		7.35	10-14-45	
14ca		Du	16	36	W		CY,H	D,S	Tcu	2.1		8.32	8-8-47	
15ac1	A. Harstad	Du	20	36	P		CY,H	S	Tco	.1		8.42	8-8-47	
15ac2	do.	Dn	14	1½	P		P,H	D	L			14	8-8-47	
15cd	L. Greeley	Dr	230	5	P		CY,W	D,S	L			45	8-8-47	P
15dd	Mels Thorson	Dr	250	5	P		CY,W	D,S	L			30	8-8-47	P
17aa	F. Peck	Dr	250	5	P		CY,W	S	L			45	8-8-47	P
20dd		Du	16.4	48	W		C,G	S	Tcu	1.4		5.54	8-8-47	
21ad	A. A. Bortzfield	Dr	250	5	P	R	CY,W	S	Tca	2.5		62.38	8-8-47	P

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 81 W. cont.													
21bc	Eris Sagen	Dr	910	6	P	R	CY		L			60	8-8-47	
21dd	Mae Reiste	B	55	18	C		CY,W	D,S	Tco	0.6		28.33	8-8-47	
23cc	A. T. Thomas	Dr	305	5	P		CY,W	D,S	L			60	8-8-47	P
23dd	Sara Stebleton	Dr	290	5	P		CY,W	D,S	L			60	8-8-47	P
24ad	J. W. Gleason	Du	10	30	W		CY,W	D,S	L			.72	8-8-47	
24da	do.	Dn	9	2	P		P,H	S	L			5	8-8-47	
25bc	H. Mattson	Dr	320	3	P		CY,W	S	L			80	8-8-47	
25cc	M. Snowberger	Dr	304	5	P		CY,W	D,S	L			60	8-8-47	P
25da	W. A. Dunlap	Dr	250	5	P		CY,W	S	L			85	8-8-47	P
26da	Opal Olndof	Dr	340	3	P		CY,W	D,S	L			108	8-8-47	P
27cb1	L. E. Hasking	Dn	16	2	P		C,G	D,S	L			12	8-8-47	
27cb2	do.	Dn	18	2	P		CY,W	S	L			14	8-8-47	
29ab		Du	12.4	48	W		CY,W	D,S,O	Tco	1.0		9.60	10-14-45	
30dc	E. Wenzel	Dr	300	4	P		CY,W	D,S	L			75	8-8-47	P
31bb	V. F. Carlson	Dr	425	4	P		CY,W	D,S	L			88	8-8-47	P
31cd	Marian Rearick	Dn	38	24	P		CY,H	D,S,O	Tco	2.2		18.72	10-15-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 81 W. cont.													
33cd	E. R. Pfeiffer	Dr	480	3	P		CY,W	N	L			160	8-8-47	P
34dd	Howard Haskins	Dr	285	5	P		CY,W	S	L			75	8-8-47	P
	T. 157 N., R. 82 W.													
1cb	H. M. Gawin	Dr	180	5	P		CY,W	D,S	L			30	8-11-47	P
1da1	B. Dahl	B	11	12	T		CY,E	D	L			9	8-11-47	
1da2	do.	Du	9	20	P		CY,H	S	L			7	8-11-47	
1dd	Benny O. Dahl	Du	10	24	P		P,H	D,S	L			6		P
2ac	A. Anderson	B	5	2	P		CY,G	D,S	L			5	8-11-47	
2da	H. M. Gowin	B	38	26	W		CY,H	N	L			30	8-11-47	
8ad	O. R. Rankens	Du	18	36	W	S	CY,G	S	Tco	2.8		11.23	8-7-47	
8ca1	H. G. Detloff	Dr	44	2	P	S	CY	D	L			42	8-7-47	
8ca2	do.	Dr	380	4	P		CY,E	S	L			50	8-7-47	P
9cc	O. H. Mathwich	Dr	477			Cl	CY,G	D,S	L			50-60	8-7-47	P
9dc	J. W. Mann	Dr	265				CY,W		L			77	5-1-45	P
10dd1	Mary Matson	Dr	300	6	P		CY,W	S	L			100	8-7-47	P
10dd2	do.	B	20	14	P		CY,H	D	L			15	8-7-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 82 W. cont.													
11ad	L. F. Anderson	Dr	220	4	P		CY,W	D,S	L			65	8-11-47	P
11bc	C. Matson	Dr	150	3	P		CY,W						8-7-47	P
11cc		B		30	C		CY	N	Tcu			11.66	8-7-47	
12cb1	A. A. Donnelly	Dr	216	6	P	Cl	CY,W	D,S	L			80	8-11-47	P
12cb2	do.	B	45	26	W			N	Tcu	0.4		14.54	8-11-47	
12da	A. Walton	Dr	385	5	P		CY,W	D,S	L			35	8-11-47	P
15bb	H. Erb	Dr	600	3	P		CY,G	S	L			150	8-7-47	P
15dd	H. Michelson	Dr	290	4	P		CY,W	S	L			70	8-7-47	P
17da	W. Blume	B	45				CY,W	S	Tcu	2.4		38.82	8-7-47	
19aa	W. Peters	Dr	383	4	P		CY,W	D,S	L			50-60	Fall'46	P
20bc	E. Lawrence	Dr	368	3	P		CY,W	D,S	L			70	10-14-45	
21bb	H. Erber	B	40	24	W		CY,G	D,S	L			12	8-7-47	
21da1	H. Eck	Du	10	36	W		CY,H	D	Tco	.1		2.87	8-7-47	
21da2	do.	B	35	24	W		CY,G	S	Tcu	1.3		18.61	8-7-47	
22aa1	M. Birkland	B	30	12	C		CY,H	D	Tcu	1.4		9.82	8-7-47	
22aa2	do.		320	4	P		CY,W	S	L			20	8-7-47	P

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 82 W. cont.													
22dd		Du		4			CY,W	N,O	Tcu	1.0		12.85	10-14-45	
23ad	P. R. Johnson	Dr	285	4	P		CY,W	D,S	L			20	8-8-47	P
23dc	G. Anderson	Dr	290	6	P		CY,W	D	L			80	8-8-47	
24bc	Kart Mathwick	Dr	285	4	P		CY,G	D,S	L			20	8-8-47	P
24cd	A. J. Vangeness	Dr	290	4	P		CY,W	S	L			12	8-8-47	P
25ab	Mrs. Pearson	Dr	300	2	P		CY,W	D,S	L			50	8-8-47	P
25bc	E. Johnson	B	25	24	W			N	Tcu	1.1		8.62	8-8-47	
25cb1	H. J. Vangness	B	30	24	W		CY,H	N	Tcu	1.1		8.27	8-8-47	
25cb2	do.	Du	16	36	W			D	Tcu	2.2		8.29	8-8-47	
26ab	R. M. Anderson	Dr	312	2	P		CY,W	D,S	L			70	8-8-47	P
28aa1	H. Eck	B	30	12	C		CY,H	D	L			10	8-7-47	
28aa2	do.	Du	12	48	W		CY,G	S	L			3	8-7-47	
28cc1	Mrs. Dendinger	Dr	320	3	P		CY,W	D,S	L			80	8-7-47	P
28cc2	do.	B	30	18	W		CY	N	Tp	3.4		12.72	8-7-47	
28dd	U. S. Geol. Survey	Dr	210.0	4		X			L			9.52	8-13-47	
30dd	Hazel Peters	Dr	485	4	P		CY,E	D,S						P

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 82 W. cont.													
31ddl	Ruthville Texaco Sta.	B	20	18			CY,H	D,In,O	Tco	1.5		8.75	10-14-45	
31dd2	A. Palmer	Dr	310	4	P		CY,E	D,S						P
32cb	H. Roles	Dr	480	3	P		CY,W	D,S						
33dc		Dr	320	3			CY,W	D,S	L			100	10-15-45	
34dd	Mrs. Wilson	Dr	360	4	P		CY,W	D,S	L			60	8-7-47	P
35be	D. Stafking	Dr	386	3	P		CY,W	D,S	L			80	8-8-47	P
	T. 157 N., R. 83 W.													
1bal	O. L. Avery	Du	11.20	36	C		D	Tca	.6			8.28	9-13-46	
1ba2	do.	Du	14	36	W		CY,W	S	Tca	1.0		7.20	9-13-46	
1cc		Dr		3	P		CY,W	S	Tca	1.1		57.10	9-13-46	
1da	A. A. Boettger	Du	9.00	36	W		CY,W	S	Bp	1.2		8.08	9-13-46	
1dd	do.	B	56.30	24	W		CY,G	D,S	Tca	.0		29.64	9-13-46	
2bc1	John Wilson	B	40.90	24	W		CY,G	S	Tca	.9		27.71	9-13-46	
2bc2	do.	Du,Dr	11.05	28	W		CY,G	D,S	Tca	3.0		9.12	9-13-46	
3ad	T. H. Wilson	B	65.40	24	W	Cl	CY,G	S	Tca	.5		44.60	9-13-46	U
4aa		B	42.45	18	P		CY,H	N	Tco	.1		18.86	9-12-46	
4cb	Leo Juergens	Dr	590	4	P		CY,G	D,S	Tca	2.2		91	9-12-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 83 W. cont.													
4da	William Amrein	Dr	88.0	5	P		CY,W		Bp	1.0		49.37	9-12-46	
5ca		Dr	197.70	4	P		CY,H	N	Tca	1.6		74.98	9-12-46	
6bc		b		14	W			N	Tcu	.8		12.98	9-5-46	
6cc			14.60	36	W			N	Tcu	5.6		10.42	9-13-46	
7dd1	H. A. Kluver	Du	20.5	24	W		CY,H	N,O	Tco	.3		17.30	9-12-46	
7dd2	do.	Du	30	20	C		CY,H	S,O	Tcu	1.3		21.10	10-12-45	
8ad1		B	37.10	24	W		CY,H	N	Tco	2.4		18.27	9-11-46	
8ad2		B	48.35	24	W			N	Tcu	1.4		14.97	9-11-46	
8da1	Harold Sanders	Du	10.65	36	C		CY,H	D	Tco	.1		8.10	9-11-46	
8da2	do.	Du	12.50	36	W		CY,W	S	Tco	.3		8.20	9-11-46	
9bc		B	67.80	24	W		CY,W	N	Bp	2.2		19.45	9-11-46	
9cc	U. S. Geol. Survey	Dr	210.0	4		X					1687			
9da		Du	8.05	24	P		CY,W	S	Tco	.8		6.80	9-11-46	
11bb		Dr	28	3	P		CY,W	N						
12aa	Arthur Reinke	Du	14.40	48	W		CY,G	S	Tco	2.5		11.40	9-13-46	U
13da	William Lazarus	Dr	190	2	P		CY,W	D,S	L			10	9-13-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 83 W. cont.													
14da	G. R. New	Du	12.4				P,H	D,S,O	Tcu	2.0		9.50	10-13-45	
15cc		B	41.95	20	W			N	Tca	.7		18.56	9-12-46	
15dd		B	43.45	24	W		CY	N	Tca	1.8		12.80	9-12-46	
16bc	Otto Petschke	B	29.90	24	W	Q	CY,G	S	Bp	.9		17.38	9-11-46	U
16cc	Verne Parris	B	36.70	24	W		CY,E	S	Tca	1.6		24.08	9-11-46	
17bc	Arthur L. Huizenga	B	50	24	W		CY,G	S	L			24	9-11-46	U
17dc		B	44.10	24			CY,W	S	Bp	1.0		18.75	9-11-46	
18ad	do.	B	52	24	W		CY,W	S	Tco	.2		34.40	9-11-46	
18ba		B	58.75	24	W		CY,H	N	Bp	.0		13.77	9-11-46	
18dc1	Elmer Kind	B	43.65	12	W		CY,W	D,S	Bp	.6		16.40	9-11-46	
18dc2	do.	Du	70	28	W		CY,G	D,S	L			20	9-11-46	
19aa1	Henry A. Paris	B	75	12	C		CY,H	D	L			20	9-11-46	
19aa2	do.	B	39.25	12	P		CY,W	D,S	Tca	1.6		22.46	9-11-46	
19cb1	Albert Durbin	B	70.40	18	W		CY,G	S	Tcu	.78		32.16	9-10-46	
19cb2	do.	Du	32.40	18	C		CY,H	D	Tco	1.1		13.20	9-10-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 83 W. cont.													
19cc		Du	3.50	36	W			N	Tcu			8.25	9-13-46	
20bb1	Nell Rose	B	70	20			CY,W	S,O	Tco	1.5		16.77	10-13-45	
20bb2	do.	Dr	355	3	P		CY,W	D,S	L			200	9-11-46	
21bc	J. H. Freidag	B	25.25	24	W			S	Bp	.0		18.24	9-11-46	U
21cc		B	52.1	20	W		CY,H	N,O	Bp	1.8		13.45	10-13-45	
21dc		B	23.6	20	W		CY,G	S,O	Tco	1.0		13.07	10-13-45	
23aa	Ralph Anderson	Dr		4	P		CY,E	D,S						
24da		Du	14.65	48	W			N	Tco	1.2		8.75	9-13-46	
25aa1	Emil Lade	B	75	18	W		CY,G	D,S,O	Tco	.5		51.80	10-13-45	
25aa2	do.	B	12.05	8	C		CY,H	S	Tca	.5		10.12	9-13-46	
26aa		Dr	43.35	5	P		CY,H	N	Bp	1.2		15.57	9-13-46	
26dd1	Bruce Rooks	Du	54.00	24	W		CY,G	D,S	Tcu	.0		51.82	9-13-46	
26dd2	do.	B	23.35	24	W			N	Tcu	1.8		15.00	9-13-46	
26dd3	do.	Du	16.45	36	W			N	Tcu	2.3		7.61	9-13-46	
28bc		Dr		3	P		CY,W	S						
29bc1	Nick Clouse	B	32.35	14	W		CY,H	S	Tcu	.6		15.14	9-11-46	U
29bc2	do.	B	23.00	24	W		CY,W	S	Tcu	1.1		14.54	9-11-46	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 83 W. cont.													
29bc3	Nick Clouse	B	20.70	24	W			N	Tcu	1.3		14.47	9-11-46	
29bc4	do.	B	21.65	24	W			N	Tcu	.8		11.80	9-11-46	
30ad		B	34.10	18	W		Bp	D	Bp	.9		11.35	9-11-46	
30bb	U. S. Geol. Survey	Dr	245	4 3/4		X			L		1760	6.17	8-13-47	
30cd1	D. J. Sanders	B	24.45	24	W		CY,H	D	Tcu	1.5		12.56	9-10-46	
30cd2	do.	Dr	465	3,2	P	R	CY,W	D,S	L			250?	9-10-46	U
31aa	Carl Lade	Dr		3	P		CY,W	D,S	Bp	.6		16.80	9-10-46	U
32cb1	Walter Yuly	Dr	400	3	P		CY,W,G	S	L			200	9-10-46	
32cb2	do.	B	28	23	W		CY,H	D	Tcu	.6		11.34	9-10-46	
32dc1	W. E. Parris	B	34.20	24	W		CY,E	D,S	Tcu	.3		10.94	9-12-46	
32dc2	do.	Dr		3	P		CY,W	S						
33bc1	George Loveland	B	51.25	24	W		CY,H	D,S	Tco	.4		19.33	9-12-46	
33bc2	do.	B	48.05	24	W			N	Tcu	.4		17.56	9-12-46	
33cc1	Lawrence Schimmepfennig	Du	46.1	48			CY,G	S,O	Tco	.4		22.35	10-13-45	
33cc2	do.	B	21.45	24	P		CY,H	D	Tca	.6		13.14	9-12-46	
34bb	Carl Grosche	Dr	366	3,2	P	Q	CY,W	D,S	L			90	9-11-46	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 83 W. cont.													
34dd	E. F. Gruenberg	Dr	400			Q	CY,W	S	Bp	2.1		103.80	9-12-46	U
35bc	Ernest Schimmelpfennig	B	35.35	24	W		CY,G	D,S	Tcu	.5		17.36	9-12-46	
36dc		Du	12.3	48	W		H	S,O		1.9		3.85	10-13-45	
	T. 157 N., R. 84 W.													
1ba	Emil Ahmmen	B		24	W		CY,W	D,S	Tco	1.0		35.74	9-5-46	
2cc	Albert Roggenbock	Du					CY,G	S	Bp	1.0		15.73	9-5-46	U
3ab		B		24	W			N	Tco	.0		13.33	9-5-46	
3ba	Ernest Albers	B	60	24	W		CY,E	D,S	L			40	9-5-46	
3dc	Fred Ahmaan	B	43	24	W		CY,W	D,S	Tcu	1.5		25.16	9-5-46	
11bd	J. J. Degree	B	54.72	24	W		CY,G	S	Tco	1.1		44.73	9-10-46	U
12bd1	Frank Vicha	B	60	24	W		CY,G	S	L			40	9-10-46	U
12bd2	do.	B	53.62	24	W		CY,H	N	Bp	.0		26.37	9-10-46	
13bb		Du	42.25	24	P		CY,H	N	Bp	2.0		17.17	9-10-46	
14aa1	M. Greman	Du	25.0	43	W	S	CY,W	S	Tcu	.2		21.95	10-12-45	
14aa2	do.	Du		36	W		CY,H	D						
13bc	O. Rastead	Du	25	43			CY,G	S,O	Tco	.5		17.50	10-13-45	U
13cc1	Alouis Braun	Dr	439	3	P		CY,W	S	L			280	9-5-46	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 34 W. cont.													
18cc2	Alouis Braun		15	43	C		CY,H	D	Tco	0.6		11.05	9-5-46	
18dd	[illegible]	B	24	24	W			N	Tcu	1.5		17.41	9-5-46	
19db1	F. Sorer	Du	[illegible]	36	W		CY,H	D,S	Tco	[illegible].0		22.31	9-5-46	
19db2	do.	Du		23	W		CY,G	D,S	Tcu	.3		20.03	9-5-46	
20cc	Public School	Du	30		C		CY,H	N,O	Bco	3.0		27.0	10-13-45	U
22ad	A. M. Bock	Du	24				CY,G	D,S,O	Tco	1.2		10.30	10-12-45	
23dd1	N. Galvin						CY,G	S						U
23dd2	do.	B	40.50	W				N	Tcu	1.0		13.19	9-10-46	
25ad		B	34.35	24	W		CY,H	N	Tco	2.1		3.73	9-10-46	
30ad	Julia Schulz	Du	20.5	43	W		H	S,O	Tcu	1.7		7.05	10-13-45	U
35cd	U. S. Geol. Survey	Dr	135.0	4 3/4		X			L		1730	9.60	8-13-47	
	T. 157 N., R. 35 W.													
1cc		B		24	W			N	Tco	.6		14.96	9-4-46	
2ba		B		10	W			N	Tcu	1.4		3.93	9-4-46	
2cc		B		10	W			N	Tco	.3		13.61	9-4-46	
5ad1	G. F. Carson	B	30	24	W		CY,H	S	Tcu	.5		14.91	9-5-46	
5ad2	do.	Du	25	36	W		CY,H	D	Tco	1.0		10.22	9-5-46	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 157 N., R. 85 W. cont.													
5bb	Merrill Dahle	Du	30	43	W		CY,H	D,O	Tco	1.0		20.60	10-5-45	
5cb	Art Meland	Dr	494	3,2	P		CY,W	S				100	9-5-46	
9ab		Dr		4	P		CY	N						
10aa	Johnson	Du	19.9	43	W		CY,W	N,O	Tcu	1.6		11.35	10-13-45	
11cc1	Lyle Gelly	Dr	280	6	P		CY,W	S	Tco	.0		6.37	9-4-46	U
11cc2	do.	Du	20	48	W		CY,H	N	Tco	.0		7.72	9-4-46	
11dc		Du	21.9	48	W			N,O	Tcu	1.5		14.70	10-13-45	
12bb	John L. Eide	Dr	400	3	P		CY,W	S	L			140	9-4-46	
12cc		Du		24	W		CY,H	D,S	Tco	.5		19.78	9-4-46	
12dc1	Engwald Pederson	B	22	28	W		H	D,S	Tcu	2.1		12.65	9-4-46	
12dc2	do.	Du	20	36	W		H	D,S	Tco	1.3		11.88	9-4-46	
13ba	Johana Aarseth	Dr	485	3,2	P		CY,W	S	L			180	9-4-46	U
13cd		Du	40.7	36			CY,H	N,O	Tcu	.8		11.80	10-13-45	
13dd	H. O. Rostad	Dr	465		P		CY,W	S	L			150	9-5-46	
24cd		Du		30	W		CY	N	Tco	.0		16.47	9-5-46	
	T. 158 N., R. 87 W.													
2ad		Dr		3	P			N						

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 158 N., R. 87 W. cont.													
2cd1		Dr					CY,W	S						
2cd2		Du		12	W		CY,H		Tcu	0.7		11.54	9-15-47	
3dd	Mrs. Anna Blaedon	Dr	400				CY,W	S						P
12ab		Du	11	12	C		P,H	N	Tcu	.7		7.91	9-16-47	
12ba	Guy Terhoust	Dr	240	3,2	P		CY,W	S						P
12cc		Dr		3	P		CY,W	N						
	T. 159 N., R. 87 W.													
1ba	Joseph Engeberg	Dr	400	3	P		CY,W	D,S				50+		U
1cd1	Tom Jenson	Dr	250	3,2	P		CY,W	S						P
1cd2	do.	Du	30	36	C		CY,G	D						
1dc1	C. Sorenson	Du	24	36	W		CY,H,G	D,O	Tco	.9		12.45	9-26-45	
1dc2	do.	Dr	380	3,2	P		CY,W	S						P
2bc	A. Wendberg	Dr		3	P		CY,W	S						P
2dd		Dr		3	P		CY,W	N						
3bb	B. C. James	Dr	292	3,2	P		CY,W	S				30	8-25-47	P
3cd		Dr		4	P		CY,W	S						P
4dc1		Dr		3	P		CY,W	N						

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 87 W. cont.													
4dc2		Du	16.0	36	P				Tca	1.4		7.02	8-26-47	
5aa	Bill Louis	Dr	307	3,2	P		CY,W	S						P
5bb		Dr		3	P		CY,W	N						
5dd	Mr. Adamson	Dr	325	3,2	P		CY,W	D,S						P
6ab		Dr		3	P		CY	N						
7aa	J. W. Feldman	B	35	18			CY,H	D,S,O	Tco	.9		13.90	9-25-45	
9bb		Dr		3	P		CY,W	N	Tca	2.0		60.30	9-25-45	
10ad		Du		48	W		H	S	Tco	.5		6.50	9-25-45	
10dd	John A. Eggaburg	Dr		3	P		CY,W	S						P
11aa		Dr		3	P		CY,W	S						
11cc1		Dr		3	P		CY,W	S						P
11cc2		Du		48	C		CY,H	D						
12cb		Dr		3	P		CY,W							
12dd	C. W. Barkley	Dr	220	3,2	P		CY,W	S						P
13ad		Dr		3	P		W	N						
14ad		Dr		3	P		CY,W	N						
14cc		Du	25	48	W		CY,H	D,S,O	Tco	2.0		13.55	9-26-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 87 W. cont.													
17dc		Dr	350	3	P		CY,W	D,S	L			60	9-26-45	U
18dc	Clarence Erickson	Dr		3	P		CY,W	D,S						P
19ab	Emil Benson	Dr		3	P		CY,W	S						P
20dd		Dr					CY,W	S						P
21ab	Otto Muddy	Dr		4	P		CY,W	S						
22ad		Dr		3	P		CY,W	S						
23cc		B	23	3	P		N	N	Tco	0.1		12.25	9-25-45	
24cc		Dr		3	P		CY,W	N						
24dd		Dr	260	3,2	P	L	CY,W		Tca	1.9		72.85	8-26-47	
25dd		Dr		3	P		CY,W	S						P
26aa		Dr		3	P		CY,W	N						
26cd		Dr					CY,W	S						P
27cc		Dr	250	3,2	P		CY,W	S						P
28dd		Du	10	40	W		CY,W	D	Tco	1.1		6.66	9-16-47	
29ba		Dr		3	P		CY,W	N						P
29cd	Edna Ward	Dr		3	P		CY,W	S						P
33cb		Dr		3	P		CY,W	N						

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 159 N., R. 87 W. cont.													
34cc	John E. Nelson	B	12.1	12	W		P,H	D,O	Tco	2.5		12.00	9-25-45	
34dd		Dr	250	3	P	S	CY,W	D,S	L			100	9-25-45	
35bc1		Dr		3	P		CY,W	N						
35bc2		B		24	W				Tco	1.8		12.37	9-15-47	
35dd	Nels Olsen	Dr	250	3,2	P		CY,W	S						P
36bc	Johnson	Dr		3	P		CY,W	S						P
36cb1	Heye Hellmers	Dr	300	3,2	P		CY,W	S				40	8-26-47	P
36cb2	do.	Du	21	24	C		P,H	D	Tco	2.0		9.97	8-26-47	
	T. 159 N., R. 88 W.													
1bb	Phil Munch	B	35	40	W		CY,W	D,S	Tcu	1.0		12.58	8-25-47	
24aa	Oscar Orrberg	Dr		3	P		CY,W							P
	T. 160 N., R. 87 W.													
1ad	Art Arneson	Dr					CY,W	S						
3cc	Neal Pope	Dr					CY,W	S						P
3dc1	John Keith	Du	10	8	P		P,H	D	Tca	.7		6.63	8-20-47	
3dc2	do.	Dr	300	3,2	P		CY,W	S	Hc	.4		41+	8-20-47	P
4cd	E. J. Prehn	Du	14.8	48	W		CY,W	D,S,O	Tco	1.3		11.90	9-26-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 87 W. cont.													
7bb	Arthur Nelson	Du	18	30	C		CY,H	D,O	Tco	2.0		13.55	9-26-45	
8ab		Dr	350	3	P		CY,W	N				60	9-26-45	
8dd		Dr		3	P			N	Tca	.9		25.35	8-20-47	
9cc	Mrs. Moses	Dr					CY,W	S						P
9dc		Dr	425	3	P		CY,W	N						
10ad		Du	22	24	P		CY,H	D						
10dc		Dr		2	P		CY,W	N						
11aa		Dr	350	3,2	P		CY,W	S						P
11bc	Ed Jensen	Dr	320	3,2	P		CY,W	S						P
11dd	Zeltinger	Dr	410	3	P		CY,W	S						P
13ab	John Bower	Dr		3	P		CY,W	S						
13cd	Roy Cole	Du	30	36			CY,H	D,O	Tco	.5		8.70	9-25-45	
14aa		Dr		3	P		CY,W	S						P
14bb		Dr		3	P		CY,W	N						
15bb1		Dr					CY,W	S						
15bb2	Earl Oddir	B	32	24	W		CY,H	D.	Tca	1.6		22.05	8-20-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 87 W. cont.													
15cc		Dr	85	3	P	L	CY,H	D,S				50	9-25-45	
17bb		Dr	250				CY,W	D,S				50	9-25-45	
19ab	Levi Schammel	Du	30	30	W		CY,H	N,O	Tco	1.3		11.15	9-25-45	
20cc	Lee Smith	Dr		3	P		CY,E	S						P
20dc		Dr					CY,G	D,S						P
21cc1	Mrs. Baker	Dr	125	3,2	P		CY,W	S						P
21cc2	do.	Du	15.0	6	P			N	Tca	.1		8.01	8-21-47	
22ab	Mrs. Frank	Dr		3,2	P		CY,W	S						P
22bb	Julius Carstens	Dr	380	4,2	P		CY,W	S						P
22dc		Dr		3	P		CY,W	N						P
23cc		Dr		3	P				Tca			41.28	8-21-47	
23dd	F. Buckles	Dr					CY,W	S						P
24bc1	Zeltinger	Dr		3	P		CY,W	S						P
24bc2	do.	Du	25.0	36	P			D,S	Tca	.8		7.60	8-21-47	
25bc	Rasmussen	Dr	180	3,2	P		CY,E	D,S						P
25cd	Ed Murray	Dr		3	P		CY,W	S						P
26ad		Dr					CY,W	S						P

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 87 W. cont.													
26dc		Dr					CY,W	S						
27cc		Dr		3	P		W	N	Tca	1.2		47.02	8-25-47	
28bb		Dr		3	P		CY,W	N						
29ab		Du	23.0	40	W		CY,H	N	Bp	.4		4.59	8-21-47	
30ab		Dr		3	P		CY,W	S						P
30bb	William Wheeler	B	20	24	W			N	Tca	.7		5.24	8-21-47	
30da		Dr		3	P		CY,W	N						
30dc		Dr		3	P		CY,W	S						
31ab		Du		24	W		CY,H	N	Tco	.5		5.24	8-25-47	
33ab		Dr		3	P	L	CY,W	N	Tca	.8		44.37	8-25-47	
33bb	Mrs. Claude James	Dr		3	P		CY,W	S						P
33cd	Claude	Dr	325	3,2	P		CY,W	D,S						P
34bc1		Dr	400	3,2	P		CY,W	S						P
34bc2		Du	25	40	W		CY,H	D	Bp	.8		9.58	8-25-47	
35ad	Anton Engeberg	Dr	235				CY,W	S						P
35da	August Engeberg	Du	18				CY,H	D				14	9-25-45	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 88 W.													
4dc	Levi Emmel	B		18	W		CY,H	N,O	Tco	1.5		10.63	9-26-45	
5bb	Issac Malean	Dr		3	P		CY,W	S						P
7dd		Du		48			CY,H	S,O	Tco	1.0		12.59	9-20-45	
8ab	Chris J. Johnson	B	15.0	24	W				Tcu	1.9		12.64	5-16-47	
9bd	Otto Neubauer	Du	15.0	48	C		CY,H	D,S		1.0		5.90	5-16-47	
10bc	George J. Moller	Dr	240	5	P		Cy,W,G	D,S				90	5-16-47	
10dc1	Alex Norie	Du	40	48	C		CY,H	N	Bp	.4		12.34	5-16-47	
10dc2	do.	Dr	185	3	P		CY,W	D,S						
12bc		Dr	361	3	P		CY,W	S						P
12cc1	Carl Steiner	Dr	400	3	P		CY,W	S				180		P
12cc2	do.	B	13.0	24	W				Tca	1.5		9.83	8-20-47	
13aa	Mrs. Katie Schubert	Dr	414	3,2	P		CY,W	S						P
13bb	Leonard Kuglin	B		30	C		CY,H	D,O	Tcu	1.3		13.80	9-25-45	
13cc		Dr		3	P		CY,W							
14aa1		Dr					CY,W	S						
14aa2		Du		24	W		P,H	D	Tco	1.2		5.59	8-20-47	
14aa3		Du		48	C		CY,H	S	Tca	.3		2.93	8-20-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 88 W. cont.													
14aa4		Du					CY,H	N						
14cd		Dr					CY,W	S						
14dc	John Wirtz	Du	16	36			CY,H	D,O	Tco	0.8		13.00	9-25-45	
15bb1	Frans Gissel	Dr	15	5	P		CY,H							
15bb2	do.	Du	35	48	W			N	Tco	.8		11.96	5-16-47	U
15bb3	do.	Dr	368	5	P		CY,G	S						
15dc		Dr	150	3	P		CY,W	D,S	L			50	9-25-45	U
16cb	Wineberger	Du	12	24	C		CY,H	D	Tca	1.9		7.50	8-22-47	
16dc	Harold Gissel	Du		40	C		CY,H	D	Tco	.5		6.21	8-22-47	
17dc	C. O'Fallon	B		24	W				Tca	.8		11.29	8-22-47	
21ab	Harold Gissler	Dr	505	3,2	P		CY,W	S						P
21cc		Du	160	24	W									
22aa	Clarence Gissel	Dr		3	P		CY,W	S						P
22bc	Andrew Eby	B	22	24	W		CY,G	S	Bp	1.7		11.01	8-22-47	
22cc	Louie Gissel	Du		36	C		CY,G	D,S						
23cd	Bessie Bohn	Dr		3	P		CY,G	D,S						P
24dc		Dr		3	P		CY,W	N						

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 160 N., R. 88 W. cont.													
25ab		Dr					CY,W	N						
25ba1	Guy Johnson	Dr		3	P		CY,W	S						P
25ba2	do.	Du	32	40	W		CY,H	D	Tco	1.4		9.71	8-22-47	
25ba3	do.	Dr		40	W		CY,H	S	Bp	1.3		8.68	8-22-47	
25cc	Irenous Johnson	B		18	W		CY,H	D,O	Tco	2.3		16.15	9-25-45	
26ab	L. B. Parkinson	Dr	12	40	W		CY,G	S	Tco	1.1		4.37	8-22-47	
27aa	Clyde Bohn	Du	20	40	W		CY,H	S	Tco	1.2		8.95	8-22-47	
27cc1	Oran Ankenbour	Du	30	60	W		CY,W	S	Bp	1.3		8.68	8-22-47	
27cc2	do.	Du		24	W		CY,H	D	Tca	.5		5.47	8-22-47	
28da1	Mrs. Anne Walker	Dr	306	3	P		CY,G	S						P
28da2	do.	B	13.0	24	W		CY,H	N	Tca	1.2		5.49	8-22-47	
28da3	do.	Du		48	W		CY,H	S	Tco	1.4		5.30	8-22-47	
	T. 160 N., R. 89 W.													
10cc	U. S. Geol. Survey	Dr	400.0	4		X			L			1.00	8-13-47	
	T. 161 N., R. 88 W.													
1bd	Chris Kristenson	Du	1.82	24	P	G		N	Tca	-6.00		1.42	10-4-46	
1dd1	Clarence Nelson	Du	12	18	P		CY,H	D	L			9	5-21-47	

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 88 W. cont.													
1dd2	Clarence Nelson	Du	12	40	W		CY,W	S	Bp	1.8		5.83	5-21-47	
2ad		Du	23.70	36	W			N	Tca	2.4		22.10	10-4-46	
2bc1		Dr	310	3	P		CY,W	S	L			75	10-3-46	P
2bc2	Jens K. Kristensen	Du	12	36	W		CY,H	D						
2dc		Du	20.25	36	W				Tca	1.8		17.75	10-4-46	
3aa		Dr		4	P		CY,W		Hc	.8		75.10	10-3-46	P
3bb		Dr	400	6,4			CY,W	S	L			50	9-20-45	P
4bb1	Peter Fahje	Du	23.70	36	W		CY,H	S	Bp	1.1		12.10	10-2-46	
4bb2	do.	Du	23.90	24	W		CY,H	S	Tca	.8		15.54	10-2-46	
4cd	Lawrence Larson	Dr	300	3,2	P		CY,W	S	L			110	10-2-46	P
5bb		Dr		4	P		CY,W	N	Tca	1.1		88.59	10-2-46	
6aa1	Floyd Bryan	Dr	285	2½	P	S	CY,W	S	L			100	9-18-45	P
6aa2	do.	B	30	18			CY,H	D	Tco	1.2		9.70	9-18-45	
6bb			12.00	48	W		H	S	Tca	3.2		8.23	10-2-46	
8bc		Dr		3	P		CY,W	D,S						P
9cd	Ernest Madson	Du	15.00	24	W			N						
10aa		Du	17.00	36	W			N						

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 88 W. cont.													
10bc		Dr	300	4			CY,W	S	L			50		P
11ab		Dr		5	P		CY,H	N				80	10-4-46	P
11bb		Dr	300	3	P		CY,W	N	L			85	10-3-46	P,U
11cc	Midway Stock Farm	Dr		3	P		CY,W	S	Bp	3.0		81.12	10-3-46	P
13dc	G. K. Jensen	Dr	718	3,2	P	L	CY,W	D,S				60	9-23-45	P
14cc		Dr		3	P		CY,H	N						P
17ca1	Martin Peterson	Dr	296	3	P		CY,W	S	L			135.00	10-2-46	P
17ca2	do.	Du	11.20	42	C		CY,H	D	Tca	.0		9.80	10-2-46	
17cc	do.	Dr	275	3,2	P		CY,W	N	L			145.00	10-2-46	
18bd1		Dr		4	P		CY,W	N	Tca	2.0		111.05	10-2-46	
18bd2		Du	21.50	6	P		H	N	Tco	1.7		11.44	10-2-46	
19db		Dr		4	P		CY,W	N						
20ba1	Arthur H. Hanson	Dr		4	P		CY,W	S	L			125	10-1-46	P
20ba2	do.	B	24.4	6	P		CY,H	D	Tca	.8		15.00	10-2-46	
21dd		Du		36	W		CY,H	S,O	Tco	3.2		9.15	9-23-45	
22dc	John Mortensen	Dr	304	4	P		CY,W	D,S	L			80	10-3-46	P
23aa	W. S. Jensen	Dr	300	3,2	P		CY,W	D,S	L			60	10-3-46	P

Ward County cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	T. 161 N., R. 88 W. cont.													
23da		Du	7.55	36	W			N	Tca	2.0		7.05	10-3-46	
24aa		Du	13.0	36	W			N	Tca	2.1		2.85	5-21-47	
25bc	J. C. Nelson	Dr	350	3	P		CY,W	D,S	L			80	10-4-47	P,U
26bb	Andrew Mortenson	Du	11.90	42	W		CY,W	D,S	Tca	3.0		8.33	10-3-47	
26bc	do.	Du	15.50	48	W		CY,H	S	Tco	3.0		9.22	10-3-46	
26cc	W. Mortenson	B	20	16	P		CY,H	D,O	Tco	1.3		12.10	9-20-45	
26dc		Dr	350	3	P	L	CY,W	S	L			20	9-20-45	P
28aa		B		18			CY,H	D,O	Tco	2.4		8.85	9-20-45	
29dd	C. R. Johnson	Du	19.0	48	W		CY,C	D,S,O	Tcu	1.3		14.22	9-20-45	
31bc1		Dr		4	P		CY		Tca	2.1		147.75	10-2-46	
31bc2		Du	31.95	30	P				Tca	1.8		12.80	10-2-46	
34cc	Efraim Pedersen	B	25	20	W		CY,H	D,O	Tcu	2.1		16.40	9-20-45	
34da		Du	14.90	24	W		H	N	Tca	.4		12.98	10-3-46	
35ab		Du	18.80	36	W			N	Tco	1.7		12.04	10-3-46	
36aa	Hans G. Hanson	Dr		4	P		CY,W							P