CANADA

DEPARTMENT OF MINES

AND

TECHNICAL SURVEYS

GEOLOGICAL SURVEY OF CANADA

WATER SUPPLY PAPER No. 135

PRELIMINARY REPORT

GROUND-WATER RESOURCES OF THE RURAL MUNICIPALITY OF SHERWOOD NO. 159 SASKATCHEWAN

By

B. R. MacKay, H. H. Beach and E. L. Ruggles

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INTRODUCTION

Lack of rainfall during the years 1930 to 1934 over a large part of the Prairie Provinces brought about an acute shortage both in the larger supplies of surface water used for irrigation and the smaller supplies of ground water required for domestic purposes and for stock. In an effort to relieve the serious situation the Geological Survey began an extensive study of the problem from the standpoint of domestic uses and stock raising. During the field season of 1935 an area of 80,000 square miles, comprising all that part of Saskatchewan south of the north boundary of township 32, was systematically examined, records of approximately 60,000 wells were obtained, and 720 samples of water were collected for analyses. The facts obtained have been classified and the information pertaining to any well is readily accessible. The examination of so large an area and the interpretation of the data collected were possible because the bedrock geology and the Pleistocene deposits had been studied previously by McLearn, Warren, Rose, Stansfield, Wickenden, Russell, and others of the Geological Survey. The Department of Natural Resources of Saskatchewan and local well drillers assisted considerably in supplying several hundred well records. The base maps used were supplied by the Topographical Surveys Branch of the Department of the Interior.

Publication of Results

The essential information pertaining to the ground water conditions is being published in reports, one being issued for each municipality. Copies of these reports are being sent to the secretary treasurers of the municipalities and to certain Provincial and Federal Departments, where they can be consulted by residents of the municipalities or by other persons, or they may be obtained by writing direct to the Director, Bureau of Economic Geology, Department of Mines, Ottawa. Should anyone require more detailed information than that contained in the reports such additional information as the Geological Survey possesses can be obtained on application to the director. In making such request the applicant should indicate the exact location of the area by giving the quarter section, township, range, and meridian concerning which further information is desired.

The reports are written principally for farm residents, municipal bodies, and well drillers who are either planning to sink new wells or to deepen existing wells. Technical terms used in the reports are defined in the glossary,

How to Use the Report

Anyone desiring information about ground water in any particular locality should read first the part dealing with the municipality as a whole in order to understand more fully the part of the report that deals with the place in which he is interested. At the same time he should study the two figures accompanying the report. Figure 1 shows the surface and bedrock geology as related to the ground water supply, and Figure 2 shows the relief and the location and type of water wells. Relief is shown by lines of equal elevation called "contours". The elevation above sea-level is given on some or all of the contour lines on the figure.

If one intends to sink a well and wishes to find the approximate depth to a water-bearing horizon, he must learn: (1) the elevation of the site, and (2) the probable elevation of the water-bearing bed. The elevation of the well site is obtained by marking its position on the map, Figure 2, and estimating its elevation with respect to the two contour lines between which it lies and whose elevations are given on the figure. Where contour lines are not shown on the figure, the elevations of adjacent wells as indicated in the Table of Well Records accompanying each report can be used. The approximate elevation of the water-bearing horizon at the well-site can be obtained from the Table of Well Records by noting the elevation of the water-bearing horizon in surrounding wells and by estimating from these known elevations its elevation at the well-site.[1] If the water-bearing horizon is in bedrock the depth to water can be estimated fairly accurately in this way. If the water-bearing horizon is in unconsolidated deposits such as gravel, sand, clay, or glacial debris, however, the estimated elevation is less reliable, because the water-bearing horizon may be inclined, or may be in lenses or in sand beds which may lie at various horizons and may be of small lateral extent. In calculating the depth to water, care should be taken that the water-bearing horizons selected from the Table of Well Records be all in the same geological horizon either in the glacial drift or in the bedrock. From the data in the Table

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[1] If the well-site is near the edge of the municipality, the map and report dealing with the adjoining municipality should be consulted in order to obtain the needed information about nearby wells.

of Well Records it is also possible to form some idea of the quality and quantity of the water likely to be found in the proposed well.

GLOSSARY OF TERMS USED

Alkaline. The term "alkaline" has been applied rather loosely to some ground-waters. In the Prairie Provinces, a water is usually described as "alkaline" when it contains a large amount of salts, chiefly sodium sulphate and magnesium sulphate in solution. Water that tastes strongly of common salt is described as "salty". Many "alkaline" waters may be used for stock. Most of the so-called "alkaline" waters are more correctly termed "sulphate waters".

Alluvium. Deposits of earth, clay, silt, sand, gravel, and other material on the flood-plains of modern streams and in lake beds.

Aquifer or Water-bearing Horizon. A water-bearing bed, lens, or pocket in unconsolidated deposits or in bedrock.

Buried pre-Glacial Stream Channels. A channel carved into the bedrock by a stream before the advance of the continental ice-sheet, and subsequently either partly or wholly filled in by sands, gravels, and boulder clay deposited by the ice-sheet or later agencies.

Bedrock. Bedrock, as here used, refers to partly or wholly consolidated deposits of gravel, sand, silt, clay, and marl that are older than the glacial drift.

Coal Seam. The same as a coal bed. A deposit of carbonaceous material formed from the remains of plants by partial decomposition and burial.

Contour. A line on a map joining points that have the same elevation above sea-level.

Continental Ice-sheet. The great ice-sheet that covered most of the surface of Canada many thousands of years ago.

Escarpment. A cliff or a relatively steep slope separating level or gently sloping areas.

Flood-plain. A flat part in a river valley ordinarily above water but covered by water when the river is in flood.

Glacial Drift. The loose, unconsolidated surface deposits of sand, gravel, and clay, or a mixture of these, that were deposited by the continental ice-sheet. Clay containing boulders forms part of the drift and is referred to as glacial till or boulder clay. The glacial drift occurs in several forms:

(1) Ground Moraine. A boulder clay or till plain (includes areas where the glacial drift is very thin and the surface uneven).

(2) Terminal Moraine or Moraine. A hilly tract of country formed by glacial drift that was laid down at the margin of the continental ice-sheet during its retreat. The surface is characterized by irregular hills and undrained basins.

(3) Glacial Outwash. Sand and gravel plains or deltas formed by streams that issued from the continental ice-sheet.

(4) Glacial Lake Deposits. Sand and clay plains formed in glacial lakes during the retreat of the ice-sheet.

Ground Water. Sub-surface water, or water that occurs below the surface of the land.

Hydrostatic Pressure. The pressure that causes water in a well to rise above the point at which it is struck.

Impervious or Impermeable. Beds, such as fine clays or shale, are considered to be impervious or impermeable when they do not permit of the perceptible passage or movement of the ground water.

Pervious or Permeable. Beds are pervious when they permit of the perceptible passage or movement of ground water, as for example porous sands, gravel, and sandstone.

Pre-Glacial Land Surface. The surface of the land before it was covered by the continental ice-sheet.

Recent Deposits. Deposits that have been laid down by the agencies of water and wind since the disappearance of the continental ice-sheet.

Unconsolidated Deposits. The mantle or covering of alluvium and glacial drift consisting of loose sand, gravel, clay, and boulders that overlie the bedrock.

Water Table. The upper limit of the part of the ground wholly saturated with water. This may be very near the surface or many feet below it.

Wells. Holes sunk into the earth so as to reach a supply of water. When no water is obtained they are referred to as dry holes. Wells in which water is encountered are of three classes.

(1) Wells in which the water is under sufficient pressure to flow above the surface of the ground. These are called Flowing Artesian Wells.

(2) Wells in which the water is under pressure but does not rise to the surface. These wells are called Non-Flowing Artesian Wells.

(3) Wells in which the water does not rise above the water table. These wells are called Non-Artesian Wells.

NAMES AND DESCRIPTIONS OF GEOLOGICAL FORMATIONS, REFERRED TO IN THESE REPORTS

Wood Mountain Formation. The name given to a series of gravel and sand beds which have a maximum thickness of 50 feet, and which occur as isolated patches on the higher parts of Wood Mountain. This is the youngest bedrock formation and, where present, overlies the Ravenscrag formation.

Cypress Hills Formation. The name given to a series of conglomerates and sand beds which occur in the southwest corner of Saskatchewan, and rests upon the Ravenscrag or older formations. The formation is 30 to 125 feet thick.

Ravenscrag Formation. The name given to a thick series of light-coloured sandstones and shales containing one or more thick lignite coal seams. This formation is 500 to 1,000 feet thick, and covers a large part of southern Saskatchewan. The principal coal deposits of the province occur in this formation.

Whitemud Formation. The name given to a series of white, grey, and buff coloured clays and sands. The formation is 10 to 75 feet thick. At its base this formation grades in places into coarse, limy sand beds having a maximum thickness of 40 feet.

Eastend Formation. The name given to a series of fine-grained sands and silts. It has been recognized at various localities over the southern part of the province, from the Alberta boundary east to the escarpment of Missouri coteau. The thickness of the formation seldom exceeds 40 feet.

Bearpaw Formation. The Bearpaw consists mostly of incoherent dark grey to dark brownish grey, partly bentonitic shales, weathering light grey, or, in places where much iron is present, buff. Beds of sand occur in places in the lower part of the formation. It forms the uppermost bedrock formation over much of western and southwestern Saskatchewan and has a maximum thickness of 700 feet or somewhat more.

Belly River Formation. The Belly River consists mostly of non-marine sand, shale, and coal, and underlies the Bearpaw in the western part of the area. It passes eastward and northeastward into marine shale. The principal area of transition is in the western half of the area where the Belly River is mostly thinner than it is to the west and includes marine zones. In the southwestern corner of the area it has a thickness of several hundred feet.

Marine Shale Series. This series of beds consists of dark grey to dark brownish grey, plastic shales, and underlies the central and northeastern parts of Saskatchewan. It includes beds equivalent to the Bearpaw, Belly River, and older formations that underlie the western part of the area.

WATER-BEARING HORIZONS OF THE MUNICIPALITY

Sherwood municipality, No. 159, covers an area of 324 square miles in the central part of southern Saskatchewan. It consists of nine townships, described as tps. 16, 17, and 18, ranges 19, 20, and 21, W. 2nd mer.. The city of Regina is situated about 3 miles east of the centre of the municipality. The main line of the Canadian Pacific railway crosses township 17, and passes through Regina. West of the city on the main line is the siding Pinkie and the hamlet of Grand Coulée. Two branch lines of this railway terminate at Regina. The Imperial section crosses townships 18, ranges 20 and 19, in a southeasterly direction, and on it are located the hamlet of Brora and the siding Albatross. The Arcola branch runs southeasterly from Regina through township 17, range 19. Five branch lines of the Canadian National railways radiate from Regina. The Brandon and Regina branch passes through township 17, range 19. The Qu'Appelle division runs northeasterly through township 18, range 19, and serves the hamlet of Victoria Plains. On the Saskatoon and Duck Lake branch, which runs southeasterly through township 18, range 20, are situated the hamlet of Condie and the siding Ardmore. The Stony Beach line runs directly west from the city through township 17, ranges 20 and 21. The Boundary line, or old Grand Trunk Pacific railway runs in a southerly direction from Regina, and on it is located the hamlet of Rowatt.

The greater part of the municipality is an almost level plain. The surface is more rolling in the northeastern and northwestern townships than in the remainder of the municipality. The municipality is drained by three creeks. Cottonwood creek flows through the western sections of township 17, range 21. It is a small stream and flows only in wet seasons. Wascana creek enters the area in the extreme northeastern corner of township 16, range 19, follows a northwesterly course across the plain, passes through Regina, and leaves the municipality at the northern border of township 18, range 21. Throughout most of its course the valley of the creek is shallow, but increases in width and depth towards the northwest. A dam constructed across the creek in Regina forms Wascana lake. The flow of the creek is not large and ceases in the summer. Boggy creek passes through townships 18, ranges 19 and 20, in a northwesterly direction, roughly paralleling Wascana creek. Its valley is also shallow in the eastern township, but increases in size towards the west. The creek is fed by springs and except in very dry seasons flows continuously.

With the exception of a small area in the western part of the municipality, and a larger area in the southeast, sufficient quantities of water for local farm requirements are readily obtained from wells. Dugouts have been excavated on a number of farms and collect and store spring run-off for stock watering. The creeks are also utilized for watering stock. As this investigation was chiefly concerned with the possibilities of finding water for farm and rural use rather than the solution of the water problems peculiar to the larger centres of population, no detailed study was made of the water requirements and potential sources for the supply of the city of Regina. Considerable detailed work has been already done on this specific problem, and interested persons are referred to the work done by H.E. Simpson in collaboration with W.A. Johnston of the Geological Survey during the summer of 1929. The results of this investigation are embodied in a report appearing in the Summary Report of the Geological Survey, 1929, Part B, pages 65-111. This report also appears in pamphlet form in "Reports on the Regina Water Supply", printed by order of the Regina City Council, together with reports by N.S. Hill, jun., of New York city, and R.O. Wynne Roberts of Toronto.

The sediments encountered in sinking wells in this municipality fall into two groups, namely, the unconsolidated deposits and the bedrock.

Water-Bearing Horizons in the Unconsolidated Depositis

The unconsolidated deposits include the thin layers of flood-plain deposits that floor the valleys of the creeks, and the glacial drift that mantles the bedrock throughout the remainder of the area.

The flood-plain deposits are very thin and composed largely of fine-grained silts. Small supplies of hard, but not highly mineralized water have been obtained by digging shallow wells near the streams. However, water in shallow wells in valleys and especially near cities is particularly liable to surface pollution by sewage or other decaying organic matter, and should be examined regularly for bacteria by the Provincial Analyst if it is to be used for domestic purposes.

On Figure 1 of the geological map accompanying this report, four types of glacial deposits are indicated as occurring at the surface in various parts of the municipality. The different characteristics of these types are due to their various modes of deposition. A great ice-sheet moved in a southwesterly direction over western Canada many thousand years ago, and upon melting it gradually retreated to the northeast. During the advance and the retreat of the ice a deposit of unsorted clay, silts, sand, gravel, and boulders, collectively termed glacial till or boulder clay, was deposited by the ice over the greater part of the surface of the bedrock. Studies indicate that ice-sheets advanced and retreated at least twice over much of the south-central part of Saskatchewan.

During its retreat the ice front is thought to have paused for considerable periods of time on the uplands to the northeast of this municipality, and here a much greater thickness of boulder clay and rock debris was deposited in irregular fashion. Such deposits are called moraine in distinguishing their irregularly rolling hillocky topography from that of the more level till plains. Water issuing from the ice front on the highlands carried with it silts, sands, and even gravels, which were deposited as glacial outwash deposits over the lower land. The gravel and sand were not laid down as a continuous sheet over the lowlands, but rather as patches and narrow, elongated belts radiating from points along the ice front. Such deposits of gravel and sand are of common occurrence in the northern part of the municipality. They are found in many places buried under boulder clay of later advances of the ice. They are porous and in many places are found to be water-bearing. These sands and silts may be entirely absent at places along the southern part of the western border. During the retreat of the last ice-sheet the northeastward drainage channels were blocked by the ice and a large lake was formed extending over much of the lowland area from Weyburn northwest to South Saskatchewan river. Into this lake were washed silts and muds that on settling tended to accumulate more or less uniformly as a thick bed on the bottom of the lake. With the final disappearance of the lake these sediments remained as lake clay.

Glacial lake clay forms the surface deposit over the greater part of this municipality. The lake clay is fine textured and grey, but weathers a characteristic chocolate-brown and is locally referred to as "gumbo". At Regina this deposit is about 40 feet thick. In the southern part of the municipality it probably attains a thickness of from 50 to 60 feet, but in the north it decreases and is absent in parts of the northeastern and north-western townships. Owing to its compact nature the lake clay absorbs but little surface water and is not productive to wells sunk into it. Little loss of water by seepage is experienced from dugouts excavated in the lake clay.

Glacial outwash gravels and sands occur in a small area adjacent to Boggy creek in the southeastern part of township 18, range 19, and in a narrow belt along the southern side of the low ridge extending from the west-central part of township 18, range 20, into the eastern part of township 18, range 21. The Boggy Creek area is the western limit of glacial outwash deposits occurring at the surface in a belt extending southeasterly along the foot of the slope to the morainic highland to the east. The porous materials readily absorb surface water which is either stored in the lower parts of the porous beds or percolates slowly through the underlying clay. The extensive deposits at Boggy creek and to the east provide a large catchment area for water. Springs occurring along the banks of Boggy creek have their source in the beds of glacial outwash gravels. A large number of wells that derive the greater part of their water from lower lying beds have been drilled in this area, and will be discussed later in the report. No wells are apparently deriving water directly from the glacial outwash gravels in the western area. The deposits there are probably too thin to store any great quantity of water, but they absorb water at the surface, which percolates into the surrounding deposits where it is retained.

Moraine covers the low, narrow ridge extending from the west-central part of township 18, range 20, into the eastern part of township 18, range 21. The moraine is more porous than the surrounding lake clay owing to the presence of sand and gravel in it, and it absorbs surface water fairly readily. A 45-foot well on sec. 24, tp. 18, range 21, taps a gravel pocket that may be in the morainic deposits or may be in the boulder clay. Water should be obtainable from wells sunk to depths not exceeding 50 feet in the narrow moraine-covered area.

The main sources of water in the municipality are the sands and gravels interspersed in the boulder clay underlying the lake clay. The boulder clay is exposed at the surface in the northeastern part of township 10, range 19, and along part of Wascana Creek valley in township 18, range 21. Water conditions in the boulder clay are similar both where it is exposed at the surface and where it is covered by glacial lake clay. As in the lake clay area, wells encountering only boulder clay do not obtain water, but when sand or gravel beds are penetrated water is usually found. In the southeastern and western parts of the municipality the sands and gravels occur only very sparingly and numerous dry holes have been sunk. The lines marked "A" on Figure 1 of the accompanying map outline the area in which water can readily be obtained from sands and gravels in the boulder clay underlying the lake clay. The sands and gravels occur as isolated pockets in the boulder clay, or as more or less continuous beds laid down between successive till sheets. In the northeastern part of the municipality coarse gravels and sand form the aquifers, but towards the southwest the material becomes finer, gravels are rarely found, and fine sands form the water-bearing beds. A slight general slope downward to the southwest is also noted in the water-bearing horizons. This is to be expected as the material was washed from the highlands to the northeast. The records of wells indicate a considerable range in the depths at which the sand and gravels lie. In township 18, range 19, a few wells are less than 30 feet deep, but in the same township other wells have tapped aquifers in the glacial drift at depths of 100 to 178 feet. A similar absence of uniformity as to depth is exhibited in other townships where wells range from 50 feet or less to 250 feet deep. The greater number of the wells are within the depth range of 70 to 150 feet. Ample water for local requirements is obtainable from nearly every well in the area. Owing to lateral variations in the water-bearing beds they are less productive in a few localities, and isolated wells have only small yields of water. Wells on the greater number of farms supply water for domestic requirements and for 20 or more head of stock, and at some wells over 100 head of stock can be watered. Mineral salts in solution are found in fairly high concentrations and the water is very hard, but only from a few isolated wells is the water reported to be unfit for drinking.

The water from many of the wells is termed "alkaline" and would undoubtedly have laxative effects on persons not accustomed to the use of highly mineralized waters. The glacial drift is unusually productive in this area, and the amount of water derived from it could be increased considerably if additional wells were sunk.

Three small areas in range 19, in which flowing artesian wells occur, are shown on the accompanying maps. The aquifers in these areas are sands and gravels washed down from the higher land in the northeast and subsequently covered by boulder clay and glacial lake clay. The beds are continuous from the eastern catchment area, and the water flowing through them to points of lower elevation develops sufficient hydrostatic pressure to rise in the well above the ground level. The area embracing parts of townships 16 and 17, range 19, is the least productive of the three artesian basins and has not been fully developed. However, more water than required for local domestic and stock requirements is available.

Mallory springs, on sec. 26, tp. 17, range 19, are located in the upper part of a ravine. Tests made by the city of Regina in this locality showed the presence of water under sufficient pressure to flow at the surface and indicated that 750,000 gallons a day were available for use as part of the city supply. Nine wells were sunk averaging 130 feet in depth, and water is pumped to the city from four of the wells. The source of water in the wells is similar to that found at Boggy creek and at other places in the area. It occurs in sands and gravels overlain and underlain by boulder clay.

The artesian area in township 18, range 19, has also been developed by the city of Regina and produces the greater part of the city supply. Springs occur on the slopes of the valley of Boggy creek. Gravels and sands overlain and underlain by boulder clay form the aquifers in this field, as in the two other areas. The catchment area is greater than that feeding either of the two previously described artesian areas and the yield of water is correspondingly greater. Over 150 wells have been drilled by the city and range in depth from 60 to 180 feet. Two main water-producing horizons have been tapped, one at about 50 feet, and the other at about 160 feet, below the surface. About 3,250,000 gallons a day are derived from the wells in this area.

Water-Bearing Horizons in the Bedrock

The Marine Shale series forms the bedrock underlying the entire municipality and consists largely of dark grey, almost impervious shales. The variation in the thickness of the covering of glacial deposits has not been definitely determined at all points. In the vicinity of the artesian basin in township 18, range 19, it appears to be a little greater than 160 feet, but throughout the greater extent of the municipality it is probably at least 200 feet. The shales resemble the compact clay of the lower part of the glacial drift and are not easily distinguished from it in drilling. They may be identified, however, by their soapy feel when wet, by the small, roughly cubical fragments into which they crumble when dry, by the absence in them of gravel and boulders, and by the buff to yellow colours they assume when weathered. Water is not obtained from the shales, as evidenced by deep, dry holes drilled at points scattered over the area. Beds of sand occur in the shales usually at depths of several hundred feet, and at shallow depths at places in the northwestern part of the municipality. A 247-foot well on sec. 32, tp. 17, range 21, and a 240-foot well on sec. 4, tp. 18, range 21, may be drawing water from a sand aquifer in the upper part of the bedrock. From the logs of the wells it is impossible to determine whether these beds occur near the base of the glacial drift or in the upper part of the Marine Shale series. The deepest hole reported in the municipality is a 750-foot dry hole drilled at Regina. Deeper wells drilled at Estlin, Wilcox, and Moose Jaw penetrated water-bearing sands in the bedrock, but the water obtained is useless for domestic purposes or for stock owing to the high concentration of dissolved mineral salts. No doubt water could be obtained by drilling similar deep wells in this municipality, but it probably would be unfit for use. Drilling beyond the base of the glacial drift is, therefore, not advisablo.

GROUND WATER CONDITIONS BY TOWNSHIPS

Township 16, Range 19

The surface of the township is an almost level plain. Several low ridges trending in a southeasterly direction occur in the northeastern part of the township. Water is readily obtained by sinking wells in the north-central part of the township, but in other sections the greater number of the wells are unproductive.

Glacial lake clay mantles the entire township to depths that have not been definitely determined, but which probably do not exceed 40 to 50 feet. The clay being fine grained and only slightly pervious absorbs little water from the surface and hence is not a source of ground water. Only very small quantities of water seep through the lake clay into the underlying glacial till. Sands and gravels occur in the boulder clay as isolated pockets, and these have been found to contain small quantities of water at some localities. Three wells about 75 feet deep, in section 2, tap a water-bearing sand bed in the boulder clay, and yield fairly large quantities of water, but the water is too highly mineralized to be used. On sections 9, 10, 19, and 30, wells 42 to 66 feet deep have encountered what appear to be isolated sand and gravel pockets. The yield of water from these wells is not large, but from some of the wells is ample for 20 head of stock. The water from the well on section 19 is not drinkable owing to excessive mineralization. Throughout the southern half, the east-central, and the northwestern parts of the township, the greater number of wells sunk have failed to obtain water. In some of the wells dry sands and gravels were penetrated.

More extensive deposits of sand and gravel occur in the north-central and northeastern parts of the township, where they were laid down during the glacial period by waters flowing from the moraine-covered area lying to the northeast of Regina. On sections 21, 22, 27, 28, and 33 to 36, these deposits have been found beneath the lake clay at depths of 25 to 67 feet below the ground surface. The water is under hydrostatic pressure which in four of the wells reported is sufficient to raise it above the ground level, resulting in flowing wells. The area in which the flowing wells occur has been outlined on the accompanying maps. The flowing well on the NE.¼, section 33, is abandoned, but each of the flowing wells on sections 21, 34, and 36, yield ample water for more than 100 head of stock. Production from the wells in the part of the artesian area in which the water does not rise to the ground surface is less, but is sufficient for local domestic and stock requirements.

The glacial drift is underlain throughout the municipality by the Marine Shale series at depths of 170 feet or greater. The compact shales forming the greater part of the series are non-water-bearing. At depths of 500 feet or more water is found in sand beds in the bedrock in some areas and probably could be located in this township. However, water from this source generally contains a high concentration of mineral salts in solution and particularly sodium chloride (common salt), which makes the water unusable.

Future drilling or boring for water should be confined to the upper part of the glacial drift and depths should not exceed 75 feet. In the north-central and northeastern sections water should be obtained with little difficulty, but throughout the remainder of the township there is no surety of encountering aquifers. Owing to the impervious nature of the surface clay, water for stock use may be satisfactorily collected and stored in dugouts.

Township 16, Range 20

The township lies in the flat-lying Regina plain. Low ridges rise to heights of 10 to 15 feet above the surrounding plain at intervals over the area. Ample water for local requirements is obtained from wells in all parts of the township except the eastern sections. Dugouts have been excavated on a few farms and store surface water for stock.

No water can be obtained from the compact glacial lake clay that covers the area to depths of 40 to 50 feet. The water-bearing sand and gravel beds that have been encountered in the township are interbedded with the boulder clay that underlies the lake clay. The sands and gravels are found at two or more horizons, which do not appear to be continuous over the whole area, but are sufficiently distributed that water may be obtained from at least one horizon at almost any point. In the eastern sections, however, the porous beds are either very thin or their occurrence is much more limited, and a number of dry holes have been sunk. The approximate eastern boundary of the area in which water is readily obtained is designated by the "A" line on Figure 1 of the accompanying map. In this eastern area isolated aquifers no doubt occur, as illustrated by a producing well on the SW.$\frac{1}{4}$, section 14, but they will probably be located only by extensive prospecting. In some localities aquifers may be entirely absent.

In the productive area covering the greater part of the township the wells range in depths from 45 to 183 feet. The greater number of the wells have depths within a range of 70 to 100 feet. Several of the wells sunk twenty or more years ago have fallen into disuse. Of the wells in use only one, located on the SW.$\frac{1}{4}$, section 21, is reported to produce insufficient water for local requirements. The dissolved mineral salt content of the water is high and the water would have a slightly laxative effect on persons unaccustomed to its use. Residents in the area find the water satisfactory for domestic purposes and for stock. Additional water supplies could readily be obtained by sinking more wells. A few dry holes, 50 to 70 feet deep, have been reported from the area in which producing wells occur. Water would probably have been obtained in these holes had they been continued deeper. Further prospecting in the eastern sections may extend the area in which water-bearing horizons are known to be present.

A 200-foot dry hole on section 1 probably penetrated the Marine shales underlying the glacial drift throughout the township. A 300-foot producing well on section 32, which was filled in some years ago, probably also penetrated the bedrock. The logs of these holes are not available, so that the depth to bedrock in the area could not be definitely determined. The covering of unconsolidated deposits in the southern part of the township is probably nearly 200 feet, but the thickness may decrease somewhat towards the north. Water is not obtainable from the upper levels of the bedrock and the water obtained at greater depths is too highly mineralized to be of use. All future drilling should, therefore, be confined to the glacial drift.

Township 16, Range 21

Several shallow coulées, in the northwestern part of the township, leading towards the valley of Cottonwood creek in the township immediately to the west, cause irregularities in an otherwise almost level plain extending over the township. Water supplies are obtained from shallow wells dug in the coulées. In the west-central part of the township wells have failed to encounter water-bearing horizons, but throughout the remaining sections ample water is derived from wells. A few dugouts have been excavated to conserve surface water for stock. In the western sections these dugouts form the main source of supply.

Recent alluvial deposits are believed to occur in the coulee bottoms on sections 30 and 31. Water-bearing gravel beds have been encountered in wells at depths of 4 and 6 feet, and yield ample water for local requirements. From the 8-foot well on the NW.$\frac{1}{4}$, section 30, the water is too "alkaline" to be used for drinking, but is usable for stock. Additional water could probably be obtained without difficulty by digging shallow wells in the coulées. The sands and gravels that occur in these depressions do not appear to extend beneath the surrounding plains.

The remainder of the area is covered by a layer of glacial lake clay 30 to 50 feet thick. The impervious nature of the clay renders it unproductive of water. Beds of sand and occasionally gravel, occurring in the boulder clay that underlies the lake clay are the source of water in the wells of the township. Depths from the ground surface to the aquifers vary, indicating non-continuous beds, but throughout the area lying to the east and south of the line "A" on the map accompaning the report, Figure 1, water has been obtained. Aquifers are generally tapped at depths ranging from 60 to 140 feet, but in three wells depths from 162 to 180 feet were reached before finding water. With the exception of three or four wells sufficient water for local domestic and stock requirements is obtained from individual wells. Some wells yield enough water for about 20 head of stock, whereas enough water is available in others for 60 head or more. Dissolved mineral salts in fairly high concentration are present in all the water and render it very hard with a slightly bitter taste. Although the water may have a slightly laxative effect on persons unaccustomed to its use it is considered satisfactory by residents in the area. The available supply of water could be increased by sinking additional wells. The depth required cannot be accurately predicted, but rarely will the depth to the aquifer exceed 120 feet.

In the western part of the township the water-bearing sand beds are less extensive and are absent in some places. A 210-foot dry hole on the NE.¼, section 20, failed to strike an aquifer. Dry holes 70 to 125 feet deep are reported on sections 17, 18, 19, and 20. It is possible that had these holes been extended deeper they might have encountered water-producing sands or gravels. If deeper drilling is conducted on these sections the area in which water is known to occur may be extended. However, the aquifers are known to disappear towards the west, and there can be no surety of obtaining water even by deeper drilling on the western sections of this township.

The 210-foot dry hole on section 20 may have penetrated the Marine Shale series that underlies the glacial drift throughout the township, but accurate records of the drilling are not available so that the nature of the deposits encountered in the lower part of the hole is not known. The covering of glacial drift over the shales probably is close to 200 feet thick. Water is not obtainable from the upper impervious layers of shale, but is probably present at depths of several hundred feet. This water found at depths is, however, usually unfit for use owing to excessive mineralization. Search for water in the township should be confined to the glacial drift.

Township 17, Range 19

Wascana creek flows with a meandering course in a northwesterly direction through this township from section 1 to section 18. Two small tributaries join the creek in sections 2 and 9. The creek is dammed on the western border of section 18 and forms Wascana lake. The surface of the area is only slightly rolling, but becomes more irregular in the northeastern sections. The surface elevation rises about 80 feet from the southwest corner to the northeast corner. Part of the city of Regina is located in the northwestern part of the township. Water has not been found in wells on some farms in the southern sections, but throughout the remainder of the township satisfactory supplies are readily obtained from wells. Part of the Regina city supply is derived from wells in the northeastern part of the township.

The surface deposits over the township consist of glacial lake clay that extends to depths of about 20 to 40 feet. The thickness is less in the northeast than in other sections. Water is not obtained from the lake clay owing to its compact, impervious nature. Beds of sand and gravel occurring at varying depths in the underlying boulder clay are the source of water in the township. In the northern half of the area these beds are sufficiently numerous and extensive to be encountered in wells at almost any location. The beds become thinner towards the south and in many places are entirely absent, with the result that very little water is obtained in some wells, and others that penetrate only the non-water-bearing boulder clay are dry. In a small area embracing parts of sections 1, 2, and 3, the sands and gravels are again present and provide water. The source of the water is in the higher land towards the northeast, and owing to the fall in elevation hydrostatic pressure is developed, which causes the water to rise above the aquifer in the wells. Wells have been sunk on sections 2 and 3 from which the water flowed, whereas in other wells the water does not reach the ground surface. The flowing wells sunk by the city of Regina on the NW.$\frac{1}{4}$, section 2, are not being used except to feed Wascana creek, although considerable quantities of water are available. Springs occur on the banks of Wascana creek where the water-bearing gravels approach the surface. Ample water for local requirements is readily obtained from wells in this southeastern area.

The line "A" shown on the map, Figure 1, is the approximate southern boundary in this township of the area in which extensive water-bearing beds occur. A few dry holes have been sunk indicating lateral variations in the water-bearing properties of the beds, but in general water is readily found. Individual aquifers do not extend through large areas, but are sufficiently dispersed at several horizons that they may be expected at depths ranging from about 20 feet to 200 feet. At scattered points water-bearing gravels occur 40 to 50 feet below the surface, but more extensive deposits of this nature are encountered at depths of 90 feet or more. The lower horizons appear to be more productive than those nearer the surface. Sufficient water for domestic and stock use is obtained from farm wells, and in the city of Regina several wells yield large supplies of water for industrial purposes. Water from two wells 88 and 192 feet deep in the city is pumped into the city mains when required.

Another small area in which water occurs under artesian conditions embraces parts of sections 23, 24, 25, and 26, and is known as the Mallory Springs area. From here a part of the Regina water supply is derived. Sands and gravels that were washed down from the higher land to the northeast during the glacial period form the aquifers in this region. The source of part of the water is also in the northeastern area. Several thin beds of porous material are encountered in sinking wells on these sections and all are water-bearing, but the greatest flows are experienced from aquifers at depths greater than 100 feet. Nine wells, the average depth of which is 130 feet, have been sunk in the area by the city of Regina. The deepest well is 232 feet and the base is in the glacial drift. Water flowed from some of the wells, but after pumping was started they ceased to flow. Springs in the area also disappeared.

The depth from the surface to the top of the bedrock cannot be definitely determined from the logs of the few wells that have penetrated the bedrock, but from these and the evidence of deep wells that are still in the glacial drift the depth appears to be over 200 feet. The holes penetrating the Marine Shale are located on sections 8, 16, 19, and 30, and range in depth from 300 to 750 feet. Water was obtained in the wells on sections 16 and 30, but probably originated in the lower part of the glacial drift. Further drilling into the bedrock is not advisable as water occurs only at great depths and it is unusable due to its high content of dissolved mineral salts.

Township 17, Range 20

The surface of the township is an almost level plain. Wascana creek winds northwesterly through the area from section 13, to section 31, and approximately one-half of the city of Regina is located in the northeastern part of this township. Water has been readily obtained by sinking wells in the township.

The compact lake clay that mantles the area is 40 to 50 feet thick and is unproductive of water. Aquifers in the wells are sands and gravels occurring in the boulder clay that underlies the lake clay. The sands and gravels are not found as continuous beds throughout the township, but are sufficiently well distributed so that one or more is encountered at almost every locality in the area at depths of 40 to 130 feet. The yield from individual wells is ample for both domestic and stock requirements. The water, however, is highly mineralized and that from several wells has a decided laxative effect when used for drinking. For this reason some farmers haul drinking water from Regina. The water is generally usable for stock, but from two of the wells it is reported to be too highly mineralized to be used even for this purpose. A few dry holes have been sunk, but it is probable that they were not deep enough to reach water-bearing horizons. Lateral variations in the underlying deposits result in non-water-bearing conditions at isolated points such as the SW.$\frac{1}{4}$, section 5, the SE.$\frac{1}{4}$, section 22, the NE.$\frac{1}{4}$, section 24, and the SW.$\frac{1}{4}$, section 31, where dry holes have been sunk 100 to 300 feet deep. The unproductive areas are very limited in their extent.

No reports have been received of wells dug near the channel of Wascana creek. Sands and gravels may occur in the silts adjacent to the creek, but do not form extensive deposits. Water could probably be obtained in shallow wells dug close to the creek, but owing to pollution of the stream by the effluent from the incinerator located beside the creek just outside Regina the water would not be usable.

The unconsolidated deposits form a covering over the bedrock approximately 200 feet thick. The upper part of the Marine Shale series is composed of non-water-bearing, compact shales. At depths of 500 or 600 feet or more below the ground surface water-bearing sand beds are present, but these yield unusable water. The 300-foot dry hole drilled on the NE.¼, section 24, by the Saskatchewan Co-operative Creamery Company, is the only reported attempt to locate water in the shales in this township. Drilling should be discontinued as soon as the bedrock is reached.

Township 17, Range 21

Wascana creek crosses the extreme northeastern corner of the township. Several shallow coulées lead towards the creek and give the area a rolling appearance. Cottonwood creek, another small seasonal stream, enters the township in section 6 and flows northward to section 19, where it re-enters the township to the west. The western sections are also rolling and are traversed by small coulées leading towards the valley of Cottonwood creek. The remainder of the township is an almost level plain. Throughout the western part of the township considerable difficulty has been experienced in obtaining water supplies, but in the remaining sections the greater number of the wells sunk are productive. Water from the hamlet of Grand Coulée is hauled by the railway from Regina and Moose Jaw. Glacial lake clay mantles the township to depths of 30 to 50 feet except in the valleys. Water is not obtainable from the compact clay. Shallow wells dug near the creeks in the valley bottoms yield small supplies of water. One well near Wascana creek, on section 36, supplies good water for household use. On sections 18 and 19, near Cottonwood creek, several dry holes were dug, but small seepages of water were obtained in other wells. Sand or gravel aquifers appear to be absent in the creek valleys, so that only seepage water from the creek is obtainable in the valleys.

The boulder clay that occurs beneath the lake clay is also unproductive of water, but aquifers of sand and gravel occur embedded in it. The water-bearing beds have been encountered in most of the wells at depths of 50 to 120 feet, but occasionally as close to the surface as 30 feet or at depths as great as 150 feet. There is little uniformity in the depths at which water is found in any one part of the township. The sands and gravels were evidently laid down between successive till sheets and some of them extend over the greater part of the area. West of the line marked "A" on Figure 1 of the Geological map no aquifers have been encountered. Dry sands were reported in a 135-foot hole on section 17. Although some of the dry holes in the area may not be sufficiently deep to tap any possibly existing aquifer, holes were drilled 300 to 330 feet deep on section 5, 21, and 31, and indicate the absence of aquifers.

With few exceptions the wells in the eastern half of the township produce sufficient water for local domestic and stock requirements. The water is very hard and in some places contains considerable amounts of sulphate salts in solution. Only from a 192-foot well on the SE.$\frac{1}{4}$, section 16, is the water reported to be too highly mineralized for use. As the requirements for water in the township increase more water could be obtained by sinking additional wells in the eastern part of the township. In the western sections water may be derived from seepage wells dug close to the creek, but dugouts excavated in the impervious lake clay appear to be the most satisfactory source of supply.

A well 247 feet deep, on section 32, appears to be drawing water from a bed of sand in the upper part of the Marine Shale series. The water is of good quality, but the supply available is very small. In most localities water is not present in the upper part of the bedrock and holes sunk into it on sections 5, 21, 27, and 31 were dry. Only at depths of 500 feet or more do water-bearing sand beds occur, but the water contained is expected to be unsuitable for use due to the large concentration of mineral salts it contains.

Township 18, Range 19

The greater part of the township is occupied by a plain that rises gradually toward the northeast. The surface is more irregular in the northeastern sections and is marked by numerous small hills and hollows. Boggy creek enters the township in section 12, and flows through a shallow valley to the west side of section 19. A few dugouts have been excavated to conserve the spring run-off and the creek is used for watering stock, but in general wells yield ample water for both domestic and stock requirements.

On Figure 1 of the accompanying geological map three types of glacial deposits are indicated as covering various parts of the township. They are glacial lake clay, glacial outwash gravels, and glacial till or boulder clay. The lake clay is about 40 feet thick in the southwestern part of the township and becomes thinner towards the east and northeast where it finally disappears. Water is not obtainable from the lake clay and wells in the area in which it occurs must be sunk into the underlying glacial till. The boulder clay is non-water bearing, but sands and gravels occur in it as beds and pockets that are of varying thickness and individual lateral extent, and occur at varying depths. In many of the wells several such pockets are penetrated and although nearly all are water-bearing some are much more productive than others. The depths of wells range from 22 feet to 200 feet. In some places satisfactory supplies are obtained at depths less than 60 feet. Deeper drilling is necessary at other places owing to the absence of aquifers at shallow depths, but in many places wells are drilled below the first productive horizon in order to increase the yield. Farmers in the township have herds of from 5 to over 100 head of stock and these may be watered from the wells. Most of the water is very hard, but is usable for domestic purposes in most localities. The water from a few of the wells has a laxative effect when used for drinking owing to the presence of large concentrations of sulphate salts in solution. Ground water conditions in the northeastern part of the township, where the till is exposed at the surface, appear to be similar to those in the area covered by lake clay, except that the depths to the water-bearing beds are generally less in the till-covered area.

Glacial outwash gravels occur at the surface in a small area embracing parts of sections 1, 12, and 13, and are a part of a belt of outwash extending to the southeast for a distance of about 17 miles. Surface water is readily absorbed by these deposits and flows beneath the surface towards the northwest. Springs occur in the area in this township where the aquifers lie close to the surface. Owing to the slope of the beds hydrostatic pressure is created and when wells penetrate the aquifers the water rises nearly to the ground surface and in some places flows above the surface. Farmers in this area have abundant water supplies. The springs are a source of part of the water in Boggy creek. The city of Regina has drilled over 150 wells on sections 12 and 13, and from there derive the largest part of the city supply. The artesian water utilized by the city amounts to 2,500,000 gallons a day. Two horizons are water-producing, one at a depth of about 50 feet, the other at about 160 feet.

The Marine Shale series underlying the glacial drift throughout the area is unproductive of water in the one hole that has penetrated it. This hole is 730 feet deep and is located on section 31. As large supplies of water are readily obtained from the glacial drift deep drilling into the impervious shales is of no value.

Township 18, Range 20

The valley of Boggy creek crosses the township from section 24, to section 31, and is the only notable topographic feature on an otherwise level plain. The creek is used for watering stock. On section 28 a dam has been built across the creek by the Canadian National railways. Wells on nearly every farm in the township yield water in sufficient quantities for local domestic and stock requirements. A few dugouts have been excavated for the collection and storage of surface water to augment the available supply of water for the larger herds of stock.

With the exception of a small area in sections 17, 18, 19, and 20, glacial lake clay forms the surface deposit over the township. The clay appears to vary in thickness from about 25 to 60 feet, decreasing from south to north. No water is obtained from the lake clay. However, sand and gravel beds in the boulder clay that underlies the lake clay are found to be productive of water. These beds are not continuous over large areas at any one horizon, but are sufficiently well distributed at various depths to have been encountered in nearly every well. The producing wells in the township range from 30 to 225 feet in depth, but the greater number lie within a range from 80 to 150 feet. On section 20 several dry holes have been sunk, but were probably not sufficiently deep to reach an aquifer. Individual wells provide for domestic needs and the watering of 20 to 75 head of stock or more. The water is hard and quite highly charged with dissolved sulphate salts, but it has no harmful effects on persons accustomed to using it. Larger herds of stock could be watered if additional wells were sunk.

As shown on Figure 1 of the accompanying map, moraine occurs in a narrow belt occupying part of sections 19 and 20. No wells have been dug into these deposits, but owing to their porous nature and the presence of sand and gravel pockets water should be obtainable from wells less than 50 feet deep. Gravel beds occur at or near the ground surface in a small area immediately to the south of the moraine-covered area. These gravels were washed down from the moraine and form only thin beds. Little water is to be expected from the surface gravels, but water may be found in the underlying deposits. The porous nature of both the morainic deposits and the glacial outwash gravels makes them highly absorptive of water at the surface. This water readily percolates to the sand and gravel beds in the boulder clay. The quantity of ground water available in this locality is thus increased.

The Marine Shale series occurs directly beneath the glacial drift. None of the wells recorded has penetrated the bedrock, so that its depth below the surface has not definitely been determined. The unconsolidated deposits are probably over 200 feet thick throughout the area. As water is obtained with little difficulty in the glacial drift deeper drilling into the bedrock is unnecessary. Moreover, water will be found in the Marine Shale series only at depths greater than 500 to 600 feet and this water is unfit for use.

Township 18, Range 21

The surface of the greater part of the township is a slightly undulating plain. Wascana creek enters the township in section 2, and flows in a meandering course northwesterly to section 17, from whence it turns northward to leave the township in section 33. The region adjacent to the creek valley is more rolling than the surrounding area and is cut by a number of shallow coulées. The surface is also irregular in a belt extending northwesterly from sections 24 and 25, to section 28. Small hills in this area rise to heights of about 50 feet above the surrounding plain.

All farms in the township are not well supplied with water. Nearly every well sunk in the area to the east of Wascana creek yields ample water for local requirements. A few dry holes have also been sunk in this area. West of the creek ground water is more difficult to find and dry holes are more numerous.

Glacial lake clay covers the township except on the ridge in the northeastern part of the township, and in the northern part of the valley of Wascana creek. These areas are outlined on Figure 1 of the geological map. The lake clay does not form as thick a covering over this township as in the townships to the south. Adjacent to the areas where glacial till, outwash gravels, and moraine are exposed at the surface the lake clay is very thin, but increases 30 to 40 feet along the southern border of the township. In the northern half of the area the lake clay appears to be more sandy and thus less impervious than in other localities. Small seepages of water are absorbed from the surface, but sufficient water to yield supplies to wells is not stored in the lake clay. Sands and gravels occurring at varying depths in the boulder clay serve as aquifers. These do not form continuous beds through the area, but occur as irregular pockets at varying depths. They are sufficiently numerous, however, to be encountered at nearly any locality throughout the greater part of the township. In the northwestern sections the sands and gravels occur much more sparingly than in other localities. It is probable that very little boulder clay underlies the lake clay in the northwest quarter of the area, as the bedrock is exposed at the surface at several points along the creek valley and in the valley in section 19. One 105-foot well on section 31 is producing from a sand bed that may be at the base of the drift or in the upper part of the bedrock, but holes put down in sections 19, 21, and 28, were dry and may have penetrated the shales. It is probable that little water will be found below 100 feet in the extreme northwest corner or below 50 feet in closer proximity to the creek. Even within these depths the probability of finding adequate supplies of water cannot be considered as particularly promising. Nearly every producing well in the remainder of the township yields sufficient water for [redacted] domestic and stock requirements. The water is hard and contains dissolved mineral salts in fairly high concentrations, but is generally usuable in the household. One well 105 feet deep, on section 3, produces water that was too highly mineralized to be used.

Moraine occurs in parts of sections 24, 25, and 26. It is distinguishable from the surrounding deposits by the more irregular appearance of its topography, and by the more sandy nature of its soil. The 45-foot well on the NE.¼, section 24, tapped a water-bearing bed of sand near its base that occurs in these deposits. Water should be obtained fairly easily in this small area by sinking wells 40 to 50 feet deep.

Immediately adjoining the area covered by moraine, and on the southern side of the ridge, are deposits of glacial outwash gravels derived from the moraine. These deposits are thin and occur at or near the ground surface, and as a result store but little water. However, the greater part of the water falling on the surface is absorbed and percolates into the underlying deposits. A considerable part of the ground water in the locality probably enters the ground in the small areas covered by the moraine and associated outwash gravels.

Several shallow wells 4 to 18 feet deep in the valley of Wascana creek yield satisfactory water supplies. Sand and gravel beds and pockets in the boulder clay serve as aquifers in these wells. A part of the water is probably direct seepage from the creek. These wells yield enough water for 20 to 30 head of stock and the water is of suitable quality for drinking. A few small springs occur on the lower slopes of the valley, but their exact locations are not known.

The Marine Shale series occurs immediately beneath the glacial drift throughout the township. The depth from the surface at which it is found is not definitely known, but appears to be slightly greater than 200 feet at several points in southern plains, and correspondingly less toward the valley where it is exposed in numerous outcrops. Sand beds interbedded with the impervious shales are not common in this district, but wells on sections 3 and 4 appear to have penetrated water-bearing sand beds in the bedrock. In the 335-foot well drilled on section 3 the sand lies 325 feet below the ground surface. The water was under hydrostatic pressure and rose 125 feet in the well. As the depth to the aquifer in the 240-foot well on section 4 is not known, there is some doubt as to whether the water-producing horizon is in the bedrock or in the glacial drift. Aquifers are not to be expected in the Marine Shale series in the remaining part of the township, and drilling into the bedrock is not recommended, particularly as aquifers are mostly to be found at shallower depths in the overlying glacial drift, although some systematic prospecting may be necessary in some areas to locate them.

STATISTICAL SUMMARY OF WELL INFORMATION IN RURAL MUNICIPALITY OF SHERWOOD, NO. 159, SASKATCHEWAN

West of 2nd meridian — Township / Range	16 / 19	16 / 20	16 / 21	17 / 19	17 / 20	17 / 21	18 / 19	18 / 20	18 / 21	Total No. in municipality
Total No. of wells in Township	45	61	60	80	65	53	70	45	61	540
No. of wells in bedrock	3	2	0	3	2	4	1	0	2	17
No. of wells in glacial drift	42	57	58	77	63	49	69	45	59	519
No. of wells in alluvium	0	2	2	0	0	0	0	0	0	4
Permanency of Water Supply										
No. with permanent supply	27	46	43	60	48	31	68	41	50	414
No. with intermittent supply	0	0	2	2	0	8	1	0	2	15
No. dry holes	18	15	15	18	17	14	1	4	9	111
Types of Wells										
No. of flowing artesian wells	8	0	0	12	0	0	7	0	0	27
No. of non-flowing artesian wells	12	12	14	31	37	15	40	33	22	216
lo. of non-artesian wells	7	34	31	19	11	24	22	8	30	186
uality of Water										
Io. with hard water	27	46	45	60	48	38	67	39	47	417
'o. with soft water	0	0	0	2	0	1	2	2	5	12
o. with salty water	0	0	1	0	0	0	0	0	0	1
o. with "alkaline" water	16	12	19	7	25	8	25	11	8	131
epths of Wells										
o. from 0 to 50 feet deep	20	11	6	38	11	14	32	12	37	181
o. from 51 to 100 feet deep	18	40	32	19	31	18	19	12	9	198
o. from 101 to 150 feet deep	3	5	17	6	19	13	9	13	9	94
o. from 151 to 200 feet deep	4	4	3	9	3	4	9	5	3	44
o. from 201 to 500 feet deep	0	0	2	8	1	4	0	3	3	21
o. from 501 to 1,000 feet deep	0	1	0	0	0	0	1	0	0	2
o. over 1,000 feet deep	0	0	0	0	0	0	0	0	0	0
ow the Water is used										
o. usable for domestic purposes	19	40	39	54	38	37	62	41	47	377
o. not usable for domestic purposes	8	6	6	8	10	2	7	0	5	52
o. usable for stock	23	42	40	59	42	38	65	41	49	399
o. not usable for stock	4	4	5	3	6	1	4	0	3	30
ufficiency of Water Supply										
o. sufficient for domestic needs	26	44	36	56	45	37	63	41	47	395
o. insufficient for domestic needs	1	2	9	6	3	2	6	0	5	34
. sufficient for stock needs	26	41	31	53	40	23	58	39	40	351
. insufficient for stock needs	1	5	14	9	8	16	11	2	12	78

ANALYSES AND QUALITY OF WATER

General Statement

Samples of water from representative wells in surface deposits and bedrock were taken for analyses. Except as otherwise stated in the table of analyses the samples were analysed in the laboratory of the Borings Division of the Geological Survey by the usual standard methods. The quantities of the following constituents were determined; total dissolved mineral solids, calcium oxide, magnesium oxide, sodium oxide by difference, sulphate, chloride, and alkalinity. The alkalinity referred to here is the calcium carbonate equivalent of all acid used in neutralizing the carbonates of sodium, calcium, and magnesium. The results of the analyses are given in parts per million--that is, parts by weight of the constituents in 1,000,000 parts of water; for example, 1 ounce of material dissolved in 10 gallons of water is equal to 625 parts per million. The samples were not examined for bacteria, and thus a water that may be termed suitable for use on the basis of its mineral salt content might be condemned on account of its bacteria content. Waters that are high in bacteria content have usually been polluted by surface waters.

Total Dissolved Mineral Solids

The term "total dissolved mineral solids" as here used refers to the residue remaining when a sample of water is evaporated to dryness. It is generally considered that waters that have less than 1,000 parts per million of dissolved solids are suitable for ordinary uses, but in the Prairie Provinces this figure is often exceeded. Nearly all waters that contain more than 1,000 parts per million of total solids have a taste due to the dissolved mineral matter. Residents accustomed to the waters may use those that have much more than 1,000 parts per million of dissolved solids without any marked inconvenience, although most persons not used to highly mineralized water would find such waters highly objectionable.

Mineral Substances Present

Calcium and Magnesium

The calcium (Ca) and magnesium (Mg) content of water is dissolved from rocks and soils, but mostly from limestone, dolomite, and gypsum. The calcium and magnesium salts impart hardness to water. The magnesium salts are laxative, especially magnesium sulphate (Epsom salts, $MgSO_4$), and they are more detrimental to health than the lime or calcium salts. The calcium salts have no laxative or other deleterious effects. The scale found on the inside of steam boilers and tea-kettles is formed from these mineral salts.

Sodium

The salts of sodium are next in importance to those of calcium and magnesium. Of these, sodium sulphate (Glauber's salt, Na_2SO_4) is usually in excess of sodium chloride (common salt, NaCl). These sodium salts are dissolved from rocks and soils. When there is a large amount of sodium sulphate present the water is laxative and unfit for domestic use. Sodium carbonate (Na_2CO_3) "black alkali", sodium sulphate "white alkali", and sodium chloride are injurious to vegetation.

Sulphates

Sulphates (SO_4) are one of the common constituents of natural water. The sulphate salts most commonly found are sodium sulphate, magnesium sulphate, and calcium sulphate ($CaSO_4$). When the water contains large quantities of the sulphate of sodium it is injurious to vegetation.

Chlorides

Chlorides are common constituents of all natural water and are dissolved in small quantities from rocks. They usually occur as sodium chloride and if the quantity of salt is much over 400 parts per million the water has a brackish taste.

Iron

Iron (Fe) is dissolved from many rocks and the surface deposits derived from them, and also from well casings, water pipes, and other fixtures. More than 0.1 part per million of iron in solution will settle as a red precipitate upon exposure to the air. A water that contains a considerable amount of iron will stain porcelain, enamelled ware, and clothing that is washed in it, and when used for drinking purposes has a tendency to cause constipation, but the iron can be almost completely removed by aeration and filtration of the water.

Hardness

Calcium and magnesium salts impart hardness to water. Hardness of water is commonly recognized by its soap-destroying powers as shown by the difficulty of obtaining lather with soap. The total hardness of a water is the hardness of the water in its original state. Total hardness is divided into "permanent hardness" and "temporary hardness". Permanent hardness is the hardness of the water remaining after the sample has been boiled and it represents the amount of mineral salts that cannot be removed by boiling. Temporary hardness is the differance between the total hardness and the permanent hardness and represents the amount of mineral salts that ban be removed by boiling. Temporary hardness is due mainly to the bicarbonates of calcium and magnesium and iron, and permanent hardness to the sulphates and chlorides of calcium and magnesium. The permanent hardness can be partly eliminated by adding simple chemical softeners such as ammonia or sodium carbonate, or many prepared softeners. Water that contains a large amount of sodium carbonate and small amounts of calcium and magnesium salts is soft, but if the calcium and magnesium salts are present in large amounts the water is hard. Water that has a total hardness of 300 parts per million or more is usually classed as excessively hard. Many of the Saskatchewan water samples have a total hardness greatly in excesss of 300 parts per million; when the total hardness exceeded 3,000 parts per million no exact hardness determination was made. Also no determination for temporary hardness was made on waters having a total hardness less than 50 parts per million. As the determinations of the soap hardness in some cases were made after the samples had been stored for some time, the temporary hardness of some of the waters as they come from the wells probably is higher than that given in the table of analyses.

Analyses of Water Samples from the Municipality of Sherwood, No. 159, Saskatchewan

LOCATION						Depth of Well, Ft.	Total dis'vd solids	HARDNESS			CONSTITUENTS AS ANALYSED						CONSTITUENTS AS CALCULATED IN ASSUMED COMBINATIONS									Source of Water
No.	Qtr.	Sec.	Tp.	Rge.	Mer.			Total	Perm.	Temp.	Cl.	Alkalinity	CaO	MgO	SO_4	Na_2O	Solids	$CaCO_3$	$CaSO_4$	$MgCO_3$	$MgSO_4$	Na_2CO_3	Na_2SO_4	NaCl	$CaCl_2$	
1	NE.	21	16	19	2	45	2,180	750	550	200	81	515	40	112	1095	880	2,236	72		234		175	1,621	134		x 1
2	NE.	33	16	19	2	49					80	480	182	122	952	594		325		130	178		1,199	132		x 1
3	S..	17	16	20	2	163	2,160	500	280	220	171	445	170	79	1022	774	2,205	304		119	66		1,434	282		x 1
4	NW.	23	16	20	2	70	3,390												(2)		(3)	(4)	(1)	(5)		x 1
5	NW.	3	16	21	2	109	1,500	800	700	100	48	535	60	369	619	109	1,340	107		300	540		154	79		x 1
6	W.½	6	16	21	2	100	3,080	1,900	1900		32	795	270	151	1468	935	2,953	482		203	75		2,080	53		x 1
7	NW.	10	16	21	2	80	1,740	900	650	250	39	495	200	151	816	413	1,692	358		115	286		869	64		x 1
8	SW.	14	16	21	2	212	1,520	850	750	100	40	510	170	158	623	322	1,423	304		173	222		658	66		x 1
9	NE.	26	16	21	2	120					137	643	144	68	540	602	1,654	258		142		229	799	226		x 1
10	NE.	36	16	21	2	84	1,600	900	850	50	44	485	200	173	689	347	1,509	358		107	264		709	73		x 1
11	SW.	14	17	19	2	40	1,100	750	550	200	21	380	70	94	472	335	1,078	125		196		23	699	35		x 1
12	Regina city tap water						9,645											91.5	402	2,665			105.5	13.5		x 1
13	NE.	28	17	20	2	60	1,180				13															x-1
14	SE.	4	17	21	2	100	1,910												(3)		(5)	(2)	(1)	(4)		x 1
15	SW.	11	17	21	2	140	1,480												(2)		(3)	(4)	(1)	(5)		x 1
16	SE.	15	17	21	2	121	1,370											(3)	(1)		(2)		(4)		(5)	x 1
17	SE.	30	17	21	2	67	990																			x 1
18	SE.	5	18	19	2	123	1,290																			x 1
19	SW.	5	18	19	2	105	1,230											61	481	348			201	20		x 1
20	NE.	22	18	19	2	52	1,900	1,250	1,100	150	39	355	180	209	1037	402	1,841	322		27	564		844	64		x 1
21	SW.	8	16	21	2	51	3,080											(4)	(1)		(2)		(3)		(5)	x 1
22	NE.	24	18	21	2	45	2,020												(2)		(3)	(4)	(1)	(5)		x 1
23	NE.	25	18	21	2	30	2,497											(4)	(1)		(2)		(3)		(5)	x 1
24	NE.	31	18	21	2	105	2,570												(4)			(3)	(1)	(2)		x 1

Water samples indicated thus, x 1, are from glacial drift or other unconsolidated deposits.
Analyses are reported in parts per million; where numbers (1), (2), (3), (4), and (5) are used instead of parts per million, they represent the relative amounts in which the five main constituents are present in the water.
Hardness is the soap hardness expressed as calcium carbonate ($CaCO_3$).

Analyses Nos. 4, 14, 15, 16, 17, 18, 21, 22, 23, and 24, by Provincial Analyst, Regina; Analysis No. 12, by Milton Hersey Company, Winnipeg; analysis No. 13, by Central Experimental Farm; analysis No. 19, by Bird-Archer Company, Montreal.
For interpretation of this table read the section on Analyses and Quality of Water.

Water From the Unconsolidated Deposits

The glacial deposits vary considerably in composition from place to place, many within short distances. Waters from the deposits show corresponding variations in their content of dissolved mineral salts. The lake clay, and to a greater extent the underlying boulder clay, are the main sources of the mineral salts that are present in the waters from the region. Water percolating through the clay dissolves quantities of mineral salts in amounts depending on the length of time that it is in contact with the clay, and this in turn depends upon the porosity of the clay and the depth of percolation. Water collecting in porous sand or gravel beds at shallow depths usually has a low mineral content. The sands and gravels in this municipality lie at considerable depths in most places. The greater part of the water found in these aquifers does not percolate directly downward through the clay, but has passed through porous beds from a catchment area to the northeast of the municipality. The water is highly mineralized, however, owing to its contact with the clay above and below the aquifers and to the additions of small seepages of very highly mineralized water from the overlying clay. The mineral salts most commonly found in the drift waters are, in the decreasing order of their relative abundance, sodium sulphate (Na_2SO_4), magnesium sulphate ($MgSO_4$), calcium sulphate ($CaSO_4$), calcium carbonate ($CaCO_3$), and varying amounts of magnesium carbonate ($MgCO_3$), sodium carbonate (Na_2CO_3), and sodium chloride (NaCl). The calcium and magnesium salts contribute to the hardness of the water. Sodium sulphate and magnesium sulphate have laxative effects, and the concentration of these salts in solution generally determines the suitability of the water for domestic purposes or for stock.

All the analyses given on the accompanying table are of water from aquifers in the glacial drift at various depths and they illustrate well the variations in both the amounts of mineral salts dissolved and in the relative proportions in which the various salts occur. The total dissolved solids content of these samples ranges from 964 to 3,880 parts per million. The sulphates are predominant in each sample analysed, and sodium sulphate is present in the largest amounts except in analyses Nos. 5, 12, 16, 19, 21, and 23. Magnesium sulphate is the predominant salts in No. 5 and is sufficiently concentrated to have a laxative effect on persons unaccustomed to drinking water of this character. In the other samples listed calcium sulphate is present in the greatest amounts, and although it has no harmful effect on humans it creates hardness of the water. None of the waters analysed is reported to be undrinkable as residents in the area are accustomed to using highly mineralized water. The waters represented by analyses Nos. 1, 2, 3, 4, 6, and 24 might prove objectionable because of the high content of sodium sulphate, but residents who have become accustomed to the use of these waters have noted no permanent ill effects. Nos. 1, 9, and 14 will probably have a slightly flat taste due to their content of sodium carbonate (black alkali), and due to the injurious effect of this salt upon vegetation the water may prove unsatisfactory for irrigation. Sodium chloride although present to a small extent in nearly all of the waters is not sufficiently concentrated to give an appreciably salty taste to the water.

Water from the Bedrock

The deep wells on sec. 32, tp. 17, range 21, and on sec. 4, tp. 18, range 21, are the only wells in the municipality that may be drawing water from tbe Marine Shale series. Samples were not taken from these wells, but the water is reported to be similar to water derived from the glacial drift. Water found in the upper part of the Marine Shale series in other localities has a high content of dissolved sulphates and sodium chloride, which according to the concentration of these salts, may or may not affect the usefulness of the water. Water obtained from the lower horizons of the Marine Shale series is highly charged with common salt and is unfit for use.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
1	SE.	2	16	19	2	Bored	75	1,900	- 55	1,845	75	1,825	Glacial silt	Hard, "alkaline"	42	N	Too "alkaline" for use; 2 similar wells.
2	SE.	9	"	"	"	Bored	50	1,900	- 40	1,860	40	1,860	Glacial gravel	Hard, "alkaline"			Sufficient supply.
3	NW.	10	"	"	"	Bored	45	1,890	- 37	1,853	37	1,853	Glacial drift	Hard, "alkaline"	46	D, S	Insufficient supply.
4	SW.	10	"	"	"	Bored	125	1,900									Dry hole in glacial drift.
5	NE.	11	"	"	"		200	1,900									Dry hole in Marine Shale.
6	SW.	14	"	"	"	Bored	70	1,900									Dry hole in glacial drift.
7	NW.	15	"	"	"		75	1,900									Dry hole in glacial drift; two other dry holes 170 and 173 feet in Marine Shale.
8	NW.	18	"	"	"	Bored	130	1,880									4 dry holes in glacial drift.
9	SE.	19	"	"	"	Bored	60	1,890	- 40	1,850	40	1,850	Glacial drift	Hard, "alkaline"	40	S	Sufficient supply; very laxative.
10	NE.	21	"	"	"	Dug	38	1,890	+ 2	1,892	45	1,845	Glacial gravel and sand	Hard, iron, "alkaline"	39	D, S	Sufficient supply; #. 1 gallon a minute; 3 other wells similar.
11	SE.	22	"	"	"	Bored	70	1,900	- 50	1,850	50	1,850	Glacial gravel	Hard, "alkaline"	42	D, S	Steady supply.
12	NW.	22	"	"	"	Bored	55	1,900	- 43	1,857	55	1,845	Glacial drift	Hard	40	D, S	Sufficient supply.
13	NW.	24	"	"	"	Bored	50	1,905									Dry hole in glacial drift,
14	SE.	25	"	"	"	Drilled	80	1,900									Two dry holes in glacial drift.
15	NW.	26	"	"	"	Bored	50	1,890	- 6	1,884	50	1,840	Glacial drift	Hard, iron	42		Sufficient supply; another 12-foot well.
16	SW.	27	"	"	"	Bored	40	1,890	- 10	1,880	40	1,850	Glacial drift	Hard, "alkaline"		D, S	Sufficient supply.
17	SW.	28	"	"	"	Bored	35	1,895	- 5	1,890	35	1,860	Glacial drift	Hard, "alkaline"	40	D, S	Sufficient supply; laxative; another well used to flow.
18	NW.	30	"	"	"	Bored	42	1,900	- 27	1,873	27	1,873	Glacial sand	Hard, iron	40	S	Sufficient supply; 4 barrels an hour.
19	SW.	31	"	"	"		155	1,910									Several dry holes; one 60-foot dry hole in glacial drift.
20	NW.	32	"	"	"		100										Dry hole in glacial drift.
21	NE.	33	"	"	"	Bored	49	1,880	+ 8	1,888	49	1,831	Glacial drift	Hard, "alkaline"			Sufficient supply; #.
22	NE.	33	"	"	"	Bored	67	1,890	- 8	1,882	67	1,823	Glacial drift	Hard	39	D, S	Sufficient supply.
23	SE.	34	"	"	"			1,885					Glacial drift	Hard, "alkaline"		D, S	Sufficient supply.
24	SW.	34	"	"	"	Dug & Bored	51	1,885	- 16	1,869	51	1,834	Glacial drift	Hard, iron, "alkaline"	40	D, S	Sufficient supply.
25	NW.	34	"	"	"	Bored	49	1,895	+ 1	1,896	49	1,846	Glacial sand	Hard, "alkaline"	40	D, S	Overly sufficient supply; a 52-foot well not used.
26	NE.	34	"	"	"	Bored	30	1,890	- 18	1,872	30	1,860	Glacial drift	Hard, "alkaline"	42	D, S	Sufficient supply; laxative.
27	NE.	36	"	"	"	Bored	25	1,880	+ 3	1,883	25	1,855	Glacial drift	Hard, soda		D, S	Sufficient supply.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN.

WELL No.	LOCATION					TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE		PRINCIPAL WATER-BEARING BED			CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
	¼	Sec.	Tp.	Rge.	Mer.				Above (+) Below (−) Surface	Elev.	Depth	Elev.	Geological Horizon				
28	NE.	36	16	19	2	Bored	95	1,900									Dry hole in glacial drift; an artesian well not being used although good water.
1	SE.	1	16	20	2		70-80	1,890									Dry hole in glacial drift.
2	SW.	1	"	"	"	Drilled?	200	1,890									Dry hole in Marine Shale.
3	SW.	2	"	"	"	Bored	75	1,895	− 66	1,829	66	1,829	Glacial quicksand	Hard	40	D, S	Sufficient supply for 70 head stock.
4	SW.	2	"	"	"	Dug	75	1,895	− 73	1,822	73	1,822	Glacial quicksand	Hard	40	D, S	Sufficient supply for 70 head stock.
5	SW.	3	"	"	"	Bored	70	1,900	− 68	1,832	68	1,832	Glacial sand and gravel	Hard, "alkaline"	40	D, S	Sufficient supply.
6	NE.	3	"	"	"	Bored	75	1,900					Glacial gravel	Hard		D, S	Sufficient supply for 40 head stock.
7	SE.	4	"	"	"	Dug	90	1,900	− 82	1,818	82	1,818	Glacial drift	Hard, iron, "alkaline"	42	D, S	Sufficient supply for 25 head stock.
8	SW.	4	"	"	"	Bored	90	1,905			90	1,815	Glacial gravel	Hard	42		Sufficient for 12 head stock.
9	SW.	6	"	"	"		97	1,900	− 82	1,918	82	1,918	Glacial drift	Hard		D, S	Sufficient supply.
10	SE.	8	"	"	"	Drilled	90	1,900			90	1,810	Glacial sand	Hard, "alkaline"		D, S	Abundant supply.
11	NW.	9	"	"	"	Bored	141	1,900	− 70	1,830	140	1,700	Glacial gravel	Hard, iron, sulphur	40	D, S	Laxative; sufficient supply.
12	NE.	10	"	"	"		165	1,890									Dry hole; several other similar dry holes.
13	NW.	11	"	"	"		90	1,890									Dry hole in glacial drift.
14	SW.	14	"	"	"	Bored	62	1,880	− 62	1,818	62	1,818	Glacial sand	Hard, "alkaline"	45	D, S	Just sufficient; ill effect if used too much.
15	SW.	15	"	"	"		100	1,890									Dry hole in glacial drift.
16	NE.	16	"	"	"	Bored	95	1,897					Glacial drift	Hard, iron	42	S	Sufficient supply.
17	SW.	17	"	"	"	Drilled	183	1,900	− 70	1,830	183	1,717	Glacial gravel and sand	Hard	42	D, S	Abundant supply; 52 head stock; #.
18	SW.	17	"	"	"		130	1,900					Glacial drift				Sufficient supply.
19	SE.	17	"	"	"	Bored	60	1,900					Recent alluvium, fine sand	Hard		D, S	Sufficient supply.
20	SE.	18	"	"	"	Bored	84	1,900	− 68	1,832	80	1,820	Recent alluvium quicksand	Hard, iron		D,S	Sufficient supply.
21	SW.	18	"	"	"	Bored	72	1,900	− 66	1,834	66	1,834	Glacial sand and gravel	Hard	42	D, S	Sufficient supply.
22	NW.	20	"	"	"		90	1,900					Glacial drift	Hard, "alkaline"	42		Sufficient supply.
23	NE.	20	"	"	"		78	1,895	− 72	1,823	72	1,823	Glacial drift	Hard, "alkaline"		D, S	Sufficient supply; a similar well and dry hole 50 feet deep.
24	SE.	21	"	"	"	Drilled	80	1,890					Glacial drift	Hard, iron, "alkaline"	40	D, S	Sufficient supply.
25	SW.	21	"	"	"		100	1,895					Glacial sand	Hard, "alkaline"			Insufficient supply.
26	NE.	22	"	"	"	Bored	100	1,895					Glacial drift	Hard	40	D, S	Sufficient supply; a 1000-foot dry hole in Marine Shale; other dry holes.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
27	SE.	22	16	20	2	Bored	70	1,895	- 48	1,747	48	1,747	Glacial drift	Hard		D, S	Sufficient supply.
28	SW.	22	"	"	"	Bored	150	1,890	- 70	1,820	150	1,740	Glacial drift	Hard, iron	40	D, S	Sufficient supply.
29	NW.	23	"	"	"		70	1,880	- 50	1,830	70	1,810	Glacial drift	Hard	40		Sufficient supply; #. Another well not used; several 70-foot dry holes.
30	NW.	23	"	"	"	Drilled	85	1,890			85	1,805	Glacial drift	Hard, iron	40	D, S	Sufficient supply; 20 head stock; another well
31	NW.	24	"	"	"	Drilled	75	1,900									Dry hole in glacial drift.
32	SE.	28	"	"	"	Bored	60	1,892					Glacial drift	Hard, "alkaline"	42	D,S	Sufficient supply for 7 head stock.
33	NE.	28	"	"	"	Bored	85	1,890					Glacial drift	Hard, iron		D, S	Sufficient supply.
34	SE.	29	"	"	"	Bored	45	1,882					Glacial drift	Hard	42	D, S	Abundant supply for 25 head stock.
35	SE.	29	"	"	"	Bored	60	1,890	- 51	1,839	60	1,830	Glacial gravel	Hard		N	Sufficient supply.
36	SE.	30	"	"	"	Bored	65	1,895	- 65	1,830	65	1,830	Glacial drift	Hard		D, S	Sufficient supply; laxative.
37	SE.	30	"	"	"	Dug	45	1,895					Glacial gravel	Hard		N	Sufficient supply.
38	NE.	30	"	"	"	Dug	50	1,885					Glacial gravel	Hard, "alkaline"			Sufficient supply for 14 head stock.
39	SW.	30	"	"	"	Bored	70	1,900				-	Glacial quicksand	Hard		N	Sufficient supply.
40	NW.	30	"	"	"	Bored	47	1,894	- 52	1,842	52	1,842	Glacial sand	Hard	42	D, S	Sufficient supply; a 40-foot well.
41	SW.	31	"	"	"	Bored	50	1,887					Glacial gravel	Hard	42	D, S	Sufficient supply; 25 head stock.
42	NE.	32	"	"	"	Bored	35	1,890									Dry hole in glacial drift; a 140-foot well filled in.
43	NW.	32	"	"	"	Drilled	60	1,890	- 33	1,857	60	1,830	Glacial gravel	Hard	40	D, S	Sufficient supply.
44	NE.	33	"	"	"		70	1,885					Glacial drift	Hard, iron, "alkaline"		D, S	Insufficient supply; another 80-foot well.
45	SW.	33	"	"	"		70	1,890					Glacial drift	Hard, "alkaline"		D, S	Sufficient supply.
46	NE.	34	"	"	"	Bored	70	1,887					Glacial drift	Hard	40	D, S	Sufficient supply.
47	NW.	35	"	"	"	Bored	74	1,890					Glacial drift	Hard	46	D, S	Sufficient supply.
1	SE.	1	16	21	2	Bored	90	1,905	- 88	1,817	88	1,817	Glacial drift	Hard, iron, "alkaline"	44	D, S	Sufficient supply.
2	SE.	2	"	"	"	Bored	76	1,900	- 65	1,835	76	1,824	Glacial drift	Hard, iron, "alkaline"	48	D, S	Strong supply.
3	NE.	2	"	"	"	Drilled	120	1,910	-110	1,800	110	1,800	Glacial drift	Hard, iron	43	D, S	Sufficient supply.
4	NW.	3	"	"	"	Drilled	109	1,900	- 79	1,821	109	1,791	Glacial gravel	Hard, iron	42	D, S	Sufficient supply; #. 30 head stock watered; a 72-foot well, fair supply.
5	NE.	3	"	"	"	Drilled	180	1,900	- 60	1,940	180	1,720	Glacial quicksand	Hard, "alkaline"	44	D, S	Supply good; another well on section 3, 180 feet of water in sand.
6	NW.	3	"	"	"		83	1,900	- 75	1,825	75	1,825	Glacial quicksand	Hard, "alkaline"			No information.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION					TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE		PRINCIPAL WATER-BEARING BED			CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
	¼	Sec.	Tp.	Rge.	Mer.				Above (+) Below (−) Surface	Elev.	Depth	Elev.	Geological Horizon				
7		3	16	21	2	Drilled	196	1,900	- 75	1,825	196	1,704	Glacial sand	Hard			Sufficient supply.
8	SE.	4	"	"	"		121	1,900	- 81	1,919	81	1,919	Glacial sand	Hard, iron			Strong supply.
9	SE.	4	"	"	"	Bored	110	1,915	- 70	1,845	110	1,805	Glacial drift	Hard, iron		D, S, I	Sufficient supply.
10	NE.	4	"	"	"	Dug	70	1,915	- 66	1,849	66	1,849	Glacial sand	Hard, iron, "alkaline"		N	Sufficient supply; caved in.
11	NW.	5	"	"	"	Drilled	120	1,910	- 80	1,830	80	1,830	Glacial drift	Hard, iron, "alkaline"		D, S, I	Sufficient supply; another well filled in.
12	W.½	6	"	"	"	Bored	100	1,905	- 96	1,809	96	1,809	Glacial gravel	Hard, iron, salty, soda		D, S, I	Sufficient supply; #; supplies 30 head stock.
13	NW.	10	"	"	"	Drilled	80	1,915	- 63	1,852	80	1,835	Glacial sand	Hard	42	D, S, I	Sufficient supply; #. 20 head stock.
14	NE.	11	"	"	"		100	1,900					Glacial drift	Hard, "alkaline"			Sufficient supply.
15	NW.	12	"	"	"	Bored	104	1,915	- 60	1,855	104	1,811	Glacial drift	Hard, iron, "alkaline"	42	D, S	Sufficient supply.
16	SW.	14	"	"	"	Drilled	212	1,915	-152	1,763	152	1,763	Glacial sand	Hard, iron	42	D, S	Strong supply; #. 23 tanks a day.
17	NW.	15	"	"	"	Drilled	113	1,915	- 96	1,819	96	1,819	Glacial drift	Hard, iron	42	D, S	Sufficient supply; a 75-foot well insufficient
18	SE.	16	"	"	"	Bored	80	1,915	- 70	1,845	70	1,845	Glacial gravel	Hard, iron, "alkaline"	40	D, S	Insufficient supply; several dry holes.
19	SE.	16	"	"	"		85	1,915					Glacial sand gravel	Hard, iron, "alkaline"		D, S	Insufficient supply.
20	NE.	16	"	"	"	Bored	70	1,910	- 67	1,843	67	1,843	Glacial sand	Hard, iron	43	D	Sufficient supply.
21	NW.	17	"	"	"		110	1,905									Dry hole in glacial drift; 2 other dry holes.
22	SW.	18	"	"	"		70	1,905									Dry hole in glacial drift.
23	SW.	18	"	"	"		149	1,905					Glacial sand and gravel	Hard			No information.
24	NE.	19	"	"	"		125	1,900									Dry hole in glacial drift.
25	NW.	20	"	"	"		80	1,900									2 dry holes in glacial drift.
26	NE.	20	"	"	"	Bored	210	1,900									Dry hole in glacial drift.
27	SE.	21	"	"	"	Bored	86	1,905	- 72	1,833	72	1,833	Glacial sand	Hard	40	D, S	Insufficient supply.
28	NE.	22	"	"	"	Dug	65	1,905	- 62	1,843	62	1,843	Glacial sand	Hard, iron	41	D, S, I	Sufficient supply.
29	NE.	23	"	"	"		70	1,905					Glacial drift	Hard, iron, yellow		N	Intermittent supply.
30	SE.	24	"	"	"	Bored	66	1,900	- 62	1,838	62	1,838	Glacial sand and gravel	Hard, iron, "alkaline"	43	D, S	Sufficient supply.
31	NW.	24	"	"	"	Dug	?	1,900					Glacial drift	Hard, iron, yellow		N	Intermittent supply.
32	NE.	24	"	"	"	Bored	100	1,900	- 20	1,880	100	1,800	Glacial drift	Hard, iron, "alkaline"	43	D, S	300 barrels a day.
33	SE.	25	"	"	"	Dug	62	1,900	- 46	1,854	62	1,838	Glacial sand	Hard, iron, "alkaline"	44	D, S	Sufficient supply for 18 head stock.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	HEIGHT TO WHICH WATER WILL RISE Elev.	PRINCIPAL WATER-BEARING BED Depth	PRINCIPAL WATER-BEARING BED Elev.	PRINCIPAL WATER-BEARING BED Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
34	SW.	26	16	21	2		138	1,900	- 88	1,812	88	1,812	Glacial coarse sand	Hard, iron			No remarks.
35	NE.	26	"	"	"	Bored & Drilled	120	1,900	- 40	1,860	120	1,780	Glacial drift	Hard, iron, "alkaline"	42	D, S	Sufficient supply; #.
36	NW.	28	"	"	"	Bored	75	1,900					Glacial drift	Hard, "alkaline"		D, S	No remarks.
37	NE.	29	"	"	"	Drilled	120	1,900	- 84	1,816	120	1,780	Glacial drift	Hard, iron	44	D, S	Sufficient supply.
38	SE.	30	"	"	"		25	1,900					Glacial drift	Hard			Insufficient supply.
39	NW.	30	"	"	"	Dug	32	1,870	- 30	1,840	30	1,840	Glacial gravel	Hard, "alkaline"	41	D, S	Sufficient supply,
40	NW.	30	"	"	"	Dug	8	1,900	- 4	1,896	4	1,896	Recent alluvium gravel	Hard		S	Sufficient supply; laxative.
41	SW.	31	"	"	"	Dug	12	1,850	- 6	1,844	6	1,844	Recent alluvium	Hard	42	D, S	Sufficient supply; another good well,
42	NE.	33	"	"	"	Drilled	180	1,890	-100	1,790	180	1,710	Glacial sand	Hard, iron, "alkaline"	45	D, S	Sufficient supply; several dry holes.
43	NE.	34	"	"	"	Bored	75	1,890	- 42	1,848	42	1,848	Glacial drift	Hard, iron, "alkaline"		D, S	Sufficient for house only.
44	NE.	36	"	"	"	Bored	84	1,890	- 38	1,852	84	1,806	Glacial sand	Hard, "alkaline"	40	D, S	Supply good; #.
45	NE.	36	"	"	"	Bored	84	1,890	- 38	1,852	84	1,806	Glacial sand	Hard, "alkaline"	40	D, S	Good supply; #.
1	SE.	1	17	19	2	Bored	75	1,900	- 45	1,855	75	1,825	Glacial drift	Hard, iron, "alkaline"		N	Insufficient supply; also a spring, soft water.
2	NW.	2	"	"	"			1,900					Glacial drift	Hard	46	D, S	Five wells with abundant supply, all flowing spring.
3	SW.	2	"	"	"	Bored	56	1,898	- 3	1,895	56	1,842	Glacial gravel	Hard, iron		D, S	Sufficient for 75 head stock.
4	SW.	3	"	"	"	Drilled		1,895	+ 2	1,897			Glacial drift	Hard, iron	48	D	Sufficient supply.
5	NW.	4	"	"	"		40	1,890					Glacial drift	Hard, "alkaline"		N	Intermittent supply.
6	NW.	6	"	"	"		200	1,880									Several dry holes from 40 to 200 feet deep.
7		8	"	"	"		300	1,890									Dry holes; 250, 120, 35 and 40 feet deep; an intermittent well 196 feet in glacial drift
8	SW.	9	"	"	"			1,890									Two dry holes.
9	SE.	10	"	"	"	Bored	45	1,900									Dry holes in glacial drift.
10	NE.	12	"	"	"	Dug	40	1,900	- 6	1,894			Glacial drift	Hard, "alkaline"		D, S, I	Sufficient for 12 head stock; other wells.
11	SW.	13	"	"	"	Dug	41	1,897	- 12	1,885	41	1,856	Glacial drift	Hard, "alkaline"		D, S	Sufficient supply for 58 head stock; laxative; another well.
12	SW.	14	"	"	"	Bored	40	1,902	- 10	1,892	40	1,862	Glacial sand	Hard		D, S	Sufficient supply; 30 head stock; #.
13	NW.	15	"	"	"	Drilled	220	1,900	- 80	1,820			Glacial sand	Soft			Insufficient supply; 2 dry holes 110 feet deep.
14	NW.	16	"	"	"	Drilled	594	1,895									Dry hole in Marine Shale.
15	NE.	19	"	"	"	Drilled	205	1,895	- 60	1,835	205	1,630	Glacial gravel and sand	Hard		M	140 gallons a minute.
16		19	"	"	"		142	1,890									Dry hole in glacial drift.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
17		19	17	19	2		750	1,890									Dry hole in Marine Shale.
18		19	"	"	"		35	1,890					Glacial drift	Hard		M	No information; several other wells in the city of Regina are used for commercial water supply.
19	NW.	21	"	"	"	Dug	54	1,896	- 49	1,847	49	1,847	Glacial gravel and sand	Hard		D, S, M	Sufficient supply; several other wells in Glenarm Park.
20	NW.	21	"	"	"	Bored	52	1,900					Glacial gravel and sand	Hard, iron		D, S, I, M	Sufficient supply.
21	NE.	23	"	"	"		125	1,900					Glacial sand and gravel	Hard			Probably good supply.
22	NW.	23	"	"	"		45	1,900	- 16	1,884	45	1,855	Glacial drift	Hard			No information.
23	NE.	23	"	"	"		187	1,900					Glacial gravel	Hard			No information.
24	SW.	24	"	"	"	Bored	40	1,920	- 35	1,885	40	1,880	Glacial drift	Hard		S	Sufficient for 28 head stock.
25	NE.	24	"	"	"	Bored	45	1,938	- 31	1,907	45	1,893	Glacial gravel	Hard, "alkaline"		D, S	Sufficient for 29 head stock; laxative.
26	SW.	25	"	"	"	Drilled	139	1,940			139	1,801	Glacial sand and gravel	Hard			Flows.
27	NW.	25	"	"	"	Dug	18	1,935	- 8	1,927	14	1,921	Glacial sand	Hard		D, S	Sufficient supply.
28	NE.	26	"	"	"		126	1,900					Glacial sand and gravel	Hard			300,000 gallons; auxiliary supply for Regina.
29	SE.	26	"	"	"		160	1,900					Glacial sand	Hard			Good supply.
30	NE.	26	"	"	"		190	1,900					Glacial gravel	Hard			Good supply.
31	SW.	26	"	"	"		166	1,900					Glacial sand	Hard			Good supply.
32	SE.	26	"	"	"		232	1,900					Glacial sand	Hard			Flows.
33	SE.	27	"	"	"	Drilled	165	1,905	- 20	1,885	165	1,740	Glacial gravel	Hard		D, S	Sufficient supply; several shallow wells, "alkaline" water, filled in.
34	NE.	27	"	"	"	Bored	44	1,932	- 32	1,900	42	1,890	Glacial sand	Hard, iron		D, S	Sufficient supply.
35	SE.	30	"	"	"		242	1,875	- 70	1,805			Glacial sand	Hard		M	40 gallons a minute; also another well used by Regina Brewing Company.
36	SE.	30	"	"	"		209	1,875	- 40	1,835			Glacial sand and gravel	Hard		M	Good supply.
37	SE.	30	"	"	"		192	1,875	- 40	1,835			Glacial sand and gravel	Hard		M	Good supply; also an 88-foot well used as auxiliary city supply; a dry hole 305 feet.
38	SW.	30	"	"	"	Drilled	210	1,875	- 50	1,825			Glacial sand	Hard		M	Good supply.
39	SW.	31	"	"	"		132	1,900	- 34	1,866			Glacial sand and gravel	Hard			Supplies 247 barrels a day.
40	SW.	32	"	"	"		247	1,900			120	1,780	Glacial sand and gravel	Hard		M	With 4 other wells 98 and 90 feet deep, the supply obtained amounts to 500,000 gallons a d
41	NW.	33	"	"	"	Bored	45	1,935	- 41	1,894	45	1,890	Glacial drift	Hard		N	Well caved in.
42	NE.	33	"	"	"		124	1,910	- 77	1,833	77	1,833	Glacial gravel	Hard			Intermittent supply.
43	SE.	34	"	"	"	Bored	35	1,932	- 34	1,898	34	1,898	Glacial drift	Hard		D	Sufficient for school.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO.159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
44	NW.	35	17	19	2	Bored	45	1,950	- 40	1,910	45	1,905	Glacial gravel	Hard, iron		D, S	Sufficient supply for 12 head stock.
45	SE.	35	"	"	"	Dug	30	1,950	- 25	1,925	25	1,925	Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient supply for 25 head stock; a similar well for stock.
46	SW.	36	"	"	"	Dug	24	1,968	- 22	1,946	24	1,944	Glacial sand and gravel	Hard, "alkaline"		D, S	Insufficient for 15 head stock.
1	E.½	1	17	20	2		200	1,893									Dry hole in glacial drift.
2	NE.	1	"	"	"		130	1,890									Four dry holes in glacial drift from 80 to 130 feet deep.
3	SE.	2	"	"	"	Bored	60	1,890	- 59	1,831	59	1,831	Glacial drift	Hard, "alkaline"		N	Insufficient supply; laxative.
4	SW.	3	"	"	"	Bored	106	1,895	- 60	1,835	106	1,789	Glacial drift	Hard, "alkaline"		D, S, I	Sufficient supply for 65 head stock; laxative.
5	SW.	3	"	"	"	Bored	60	1,895	- 50	1,845	50	1,845	Glacial drift	Hard			Insufficient supply.
6	NE.	4	"	"	"	Bored	47	1,895	- 43	1,852	43	1,852	Glacial sand	Hard, iron, #alkaline"		D, S	Sufficient supply; 20-foot well.
7	SW.	4	"	"	"		50	1,890					Glacial sand	Hard			Sufficient supply.
8	SW.	4	"	"	"	Bored	60	1,895	- 20	1,865			Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient for 30 head stock.
9	SE.	5	"	"	"	Drilled	80	1,895			80	1,815	Glacial drift	Hard, iron, "alkaline"		D, S	Sufficient for 20 head stock.
10		5	"	"	"		178	1,895									Dry hole in Marine Shale.
11	SE.	6	"	"	"	Bored	70	1,882	- 50	1,832	70	1,812	Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient supply for 25 head stock.
12	NE.	7	"	"	"	Bored	40	1,885	- 32	1,853	38	1,847	Glacial sand	Hard, iron, "alkaline"		D, S, I	Sufficient supply; an 80-foot well, insufficient supply.
13	NE.	7	"	"	"	Bored	80	1,885	- 47	1,838	47	1,838	Glacial sand	Hard, "alkaline"		N	Insufficient supply.
14	NE.	8	"	"	"		128	1,893	- 60	1,833	128	1,765	Glacial sand and gravel	Hard, "alkaline"	50	S	Sufficient supply; 5 gallons a minute.
15	NE.	9	"	"	"	Bored	140	1,895	- 70	1,825			Glacial sand	Hard, iron, cloudy		D, S, I	Sufficient for 50 head stock; 2 other wells not used.
16	NW.	10	"	"	"	Bored	?	1,895					Glacial drift	Hard, "alkaline"		N	Deserted farm.
17	SW.	10	"	"	"	Drilled	80	1,882	- 58	1,824	80	1,802	Glacial sand	Hard, "alkaline"		D, S, I	Sufficient for 70 head stock; laxative.
18	SE.	14	"	"	"	Bored	65	1,895	- 53	1,842	65	1,830	Glacial drift	Hard, "alkaline"		N	City water used.
19	NE.	16	"	"	"	Bored	76	1,895	- 56	1,839			Glacial sand	Hard, iron		D, S	Sufficient for 12 head stock.
20	SW.	16	"	"	"	Bored	95	1,895	- 80	1,815			Glacial sand	Hard, "alkaline"		D, S	Sufficient for 54 head stock.
21	SE.	17	"	"	"	Bored	60	1,893	- 40	1,853	58	1,835	Glacial sand	Hard, iron, cloudy		D, S	Sufficient for 25 head stock.
22	SE.	18	"	"	"	Drilled	100	1,885					Glacial drift	Hard, iron, "alkaline"		D, S	Sufficient for 15 head stock.
23	SW.	18	"	"	"	Bored	40	1,880	- 30	1,850	30	1,850	Glacial drift	Hard, "alkaline"		D, S, I	Sufficient supply; laxative.
24	NW.	18	"	"	"	Drilled	108	1,880	- 60	1,820	108	1,772	Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient for 10 head stock; laxative.
25	NE.	20	"	"	"		36	1,895									Dry hole in glacial drift.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION					TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE		PRINCIPAL WATER-BEARING BED			CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
	¼	Sec.	Tp.	Rge.	Mer.				Above (+) Below (−) Surface	Elev.	Depth	Elev.	Geological Horizon				
26	NE.	20	17	20	2		70	1,895									Dry hole in glacial drift.
27	NE.	20	"	"	"		53	1,885									Dry hole in glacial drift.
28	NE.	20	"	"	"	Bored	100	1,890	- 70	1,820			Glacial sand	Hard, cloudy, "alkaline"		S	Sufficient for 15 head stock; laxative.
29	SW.	20	"	"	"	Bored	85	1,888	- 30	1,858	85	1,803	Glacial sand	Hard, "alkaline"		N	Sufficient for 100 head stock.
30	SE.	21	"	"	"	Bored		1,893					Glacial drift	Hard, iron		D, S	Sufficient for 10 head stock.
31	SE.	22	"	"	"	Bored	90	1,885	- 70	1,815	90	1,795	Glacial sand	Hard		D, S, I	Sufficient for 15 head stock; also a 300-foot dry hole on NE.¼, section 24, in Marine Shale.
32	SE.	22	"	"	"	Bored	83	1,885	- 53	1,832	83	1,802	Glacial sand	Hard, "alkaline"		D, S, I	Sufficient for 25 head stock; laxative; 4 dry holes from 120 to 135 feet.
33	SW.	27	"	"	"	Drilled	123	1,880	- 48	1,832	123	1,757	Glacial sand	Hard, iron	40	D, S, I	Sufficient for 100 head stock; another 130-foot sub-artesian well.
34	NW.	27	"	"	"	Bored	40	1,885									Dry holes in glacial drift.
35	NE.	28	"	"	"		60	1,880	- 30	1,850			Glacial drift	Hard			No information; #.
36	NE.	28	"	"	"	Drilled	90	1,885	- 66	1,819	90	1,795	Glacial quicksand	Hard, "alkaline"		D	Sufficient supply.
37	SE.	28	"	"	"	Drilled	165	1,900	- 50	1,850	165	1,735	Glacial sand	Hard, "alkaline"		D, S	Sufficient supply; a similar well 130 feet deep.
38	NE.	29	"	"	"		92	1,885	- 42	1,843			Glacial sand				Good supply.
39	NE.	30	"	"	"	Drilled	110	1,885	- 50	1,835	110	1,775	Glacial sand	Hard, iron		D, S	Sufficient supply.
40	SE.	30	"	"	"	Drilled	108	1,885	- 48	1,837	108	1,777	Glacial sand	Hard, iron		D, S, I	Sufficient supply for 40 head stock.
41	SE.	31	"	"	"	Bored	52	1,882	- 47	1,835	52	1,830	Glacial sand	Hard		D, S	Sufficient supply for 15 head stock.
42	SW.	31	"	"	"		100	1,885									Dry hole in glacial drift.
43	SE.	32	"	"	"		111	1,888	- 60	1,828			Glacial gravel				Sufficient supply.
44	NE.	32	"	"	"	Bored	100	1,890	- 65	1,825	100	1,790	Glacial sand	Hard, "alkaline"		D, S	Sufficient supply.
45	NW.	32	"	"	"	Bored	67	1,890	- 49	1,841	67	1,823	Glacial sand	Hard, "alkaline"	41	D, S	Sufficient supply.
46	SE.	33	"	"	"	Drilled	85	1,890	- 70	1,820	85	1,805	Glacial sand	Hard, iron, yellow sediment		D, S, I	Sufficient for 25 head stock.
47	SE.	34	"	"	"	Bored	65	1,895	- 53	1,842	65	1,830	Glacial sand	Hard, iron, yellow sediment		D, S	Sufficient for 30 head stock.
48	SW.	35	"	"	"	Drilled	120	1,895	-100	1,795			Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient for 55 head stock.
49	SW.	35	"	"	"	Drilled	102	1,895	- 72	1,823	102	1,793	Glacial gravel	Hard, iron, "alkaline", yellow		D, S, I	Sufficient for 60 head stock.
50	SE.	36	"	"	"		136	1,895					Glacial drift	Hard			No information.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	HEIGHT TO WHICH WATER WILL RISE Elev.	PRINCIPAL WATER-BEARING BED Depth	PRINCIPAL WATER-BEARING BED Elev.	PRINCIPAL WATER-BEARING BED Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
1	SE.	1	17	21	2	Bored	124	1,880	- 64	1,816	124	1,756	Glacial drift	Hard, iron	40	D, S	Sufficient supply.
2	SW.	2	"	"	"	Drilled	136	1,880	- 42	1,838	136	1,744	Glacial gravel and quicksand	Hard, iron, "alkaline"	40	D, S	Sufficient supply.
3	NW.	2	"	"	"	Bored	120	1,870	- 80	1,790	120	1,750	Glacial drift	Hard, cloudy	40	D, S	Sufficient supply.
4	SE.	3	"	"	"	Bored	45	1,880	- 41	1,839	41	1,839	Glacial gravel	Hard, iron	40	D, S	Sufficient supply.
5	SE.	4	"	"	"	Bored	100	1,880					Glacial drift	Hard		D, S	Intermittent supply; #; 2 dry holes also.
6	SW.	5	"	"	"	Drilled	300	1,860									Dry hole in Marine Shale.
7	SW.	6	"	"	"	Dug	20	1,850	- 12	1,838	12	1,838	Glacial drift	Hard, "alkaline"	40	D, S	Insufficient supply.
8	NW.	10	"	"	"	Bored & Drilled	100	1,870	- 90	1,780	80	1,770	Glacial sand and gravel	Hard, iron, "alkaline"	40	D, S	Insufficient for 12 horses.
9	SE.	10	"	"	"			1,870					Glacial drift	Hard			Intermittent; very small supply.
10	SW.	11	"	"	"	Bored	50	1,870	- 40	1,830	40	1,830	Glacial drift	Hard, iron	40	D, S	Sufficient supply; also 140-foot well with 25 feet of water; #.
11	SE.	12	"	"	"	Bored	100	1,870	- 80	1,790	100	1,770	Glacial drift	Hard, iron	40	D, S	Sufficient supply.
12	SW.	14	"	"	"	Bored	45	1,870	- 30	1,840	30	1,840	Glacial gravel	Hard, iron, "alkaline"	40	D, S	Sufficient supply; another well on NE. ¼.
13	NW.	14	"	"	"	Dug	50	1,870									Dry hole in glacial drift.
14	SE.	15	"	"	"	Bored	121	1,870	- 70	1,800	121	1,749	Glacial gravel	Hard, iron	40	D, S	Sufficient supply; #.
15	SW.	15	"	"	"	Dug	77	1,860					Glacial drift	Hard		N	Insufficient; filled in.
16	SW.	15	"	"	"	Bored	130	1,860	-130	1,730	130	1,730	Glacial drift	Hard	40	D	Insufficient; seepage.
17	SE.	16	"	"	"	Bored	192	1,870	-105	1,755	115	1,745	Glacial sand	Hard, "alkaline"		N	Small supply.
18	NE.	16	"	"	"	Dug	120	1,860	- 70	1,790	70	1,790	Glacial drift	Soft, "alkaline"	40	D, S	Insufficient; supply 2 barrels a day.
19	SE.	17	"	"	"	Drilled	100	1,860									Dry hole in glacial drift.
20	SW.	17	"	"	"	Bofed	125	1,855									Dry holes in glacial drift.
21	SE.	18	"	"	"	Dug	16	1,840	- 13	1,827	13	1,827	Glacial drift	Hard, "alkaline"	46	D, S	Insufficient supply.
22	NW.	19	"	"	"	Bored	120	1,850									Several dry holes in glacial drift.
23	NE.	20	"	"	"	Drilled	165	1,860					Glacial drift	Hard		D	Sufficient for house use.
24	SE.	21	"	"	"	Drilled	220	1,850									Dry hole in Marine Shale; other dry holes 100-150 feet in glacial drift. Another 300-foot dry hole in Marine Shale.
25	SE.	22	"	"	"	Bored	70	1,860	- 40	1,820	40	1,820	Glacial sand	Hard, iron	40	D, S	Sufficient supply.
26	SW.	23	"	"	"	Bored	65	1,860	- 60	1,800	60	1,800	Glacial gravel	Hard, iron		D, S	Sufficient supply.
27	SE.	24	"	"	"	Drilled	100	1,875	- 35	1,840	100	1,775	Glacial sand	Hard, iron, cloudy	40	D, S	Sufficient supply.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	HEIGHT TO WHICH WATER WILL RISE Elev.	PRINCIPAL WATER-BEARING BED Depth	PRINCIPAL WATER-BEARING BED Elev.	PRINCIPAL WATER-BEARING BED Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
28	SW.	24	17	21	2		70	1,860	- 40	1,820	70	1,790	Glacial drift	Hard, iron	40	D, S	Sufficient supply.
29	SE.	25	"	"	"		55	1,870					Glacial drift	Hard, iron	40	D, S	Sufficient supply.
30	NE.	25	"	"	"	Bored	70	1,870	- 50	1,820	70	1,800	Glacial drift	Hard, iron, cloudy	40	D, S	Sufficient supply.
31	SE.	26	"	"	"	Bored	44	1,865	- 40	1,825	40	1,825	Glacial quick-sand	Hard, iron	40	D, S	Sufficient supply.
32	SE.	27	"	"	"	Bored	70	1,860	- 55	1,805	55	1,805	Glacial sand	Hard, cloudy	50	D	Intermittent; also a dry hole.
33	NE.	27	"	"	"	Bored	38	1,860	- 30	1,830	38	1,822	Glacial sand	Hard, iron	40	D, S	Sufficient supply; 160 barrels a day.
34	SE.	28	"	"	"	Bored	110	1,860	- 50	1,810	100	1,760	Glacial sand and gravel	Hard, iron	40	D, S	Sufficient supply.
35	NW.	29	"	"	"	Bored	185	1,860	-170	1,690	170	1,690	Glacial gravel	Hard, iron	40	D	Insufficient supply.
36	S.½	31	"	"	"	Drilled	330	1,870									Dry hole in Marine Shale.
37	SE.	32	"	"	"	Drilled	247	1,870	-150	1,720	247	1,623	Marine Shale	Hard, sweet	40	D, S	Intermittent; insufficient supply.
38	NE.	32	"	"	"	Drilled	150	1,865					Glacial drift	Hard			Intermittent supply.
39	NE.	33	"	"	"	Drilled	150	1,875	-100	1,775	150	1,725	Glacial sand	Hard, iron	40	D, S	Sufficient supply.
40	SW.	35	"	"	"	Bored	90	1,860	- 60	1,800	80	1,780	Glacial sand and gravel	Hard, cloudy, sulphur	40	D, S	Large supply.
41	NW.	35	"	"	"	Bored	64	1,850	- 58	1,792	58	1,792	Glacial drift	Hard, "alkaline"	40	D	Intermittent supply; 100-foot well with seepage at 62 feet deep.
42	SE.	36	"	"	"	Drilled	87	1,870	- 41	1,829	85	1,785	Glacial sand	Hard, iron	40	D, S	Sufficient supply; #.
43	NW.	36	"	"	"			1,850					Glacial drift	Hard	40	D	Intermittent supply.
1	NE.	2	18	19	2	Dug	42	1,950	- 40	1,910	40	1,910	Glacial gravel	Soft		D, S	Sufficient supply.
2	SW.	2	"	"	"	Dug	40	1,970	- 38	1,932	38	1,932	Glacial sand	Hard		D, S	Sufficient for 10 head stock.
3	SW.	3	"	"	"	Drilled	165	1,950	-103	1,847	165	1,785	Glacial sand	Hard, iron		D, S	Sufficient supply for 100 head stock.
4	SE.	4	"	"	"	Dug	40	1,940	- 35	1,905	35	1,905	Glacial sand	Hard, iron		D, S	Sufficient for 12 head stock; another similar well not used.
5	SE.	5	"	"	"	Drilled	123	1,895					Glacial gravel	Hard, "alkaline"	41	D	Sufficient supply; #.
6	NW.	5	"	"	"	Drilled		1,900					Glacial drift	Hard		D, S	Sufficient for 125 head stock.
7		5	"	"	"		90	1,900					Glacial drift	Hard			No information.
8	SW.	5	"	"	"	Drilled	165	1,900	-100	1,800	165	1,735	Glacial sand	Hard, "alkaline"		D	Sufficient; 1,500 gallons a day; #.
9	SW.	6	"	"	"	Drilled	125	1,900	- 65	1,835	125	1,775	Glacial sand	Hard, iron, "alkaline", yellow		D, S	Sufficient for 40 head stock; another 120-foot well similar.
10	NW.	6	"	"	"	Drilled	100	1,905					Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient supply; also a well 157 feet deep; no information.
11	NE.	7	"	"	"	Bored	65	1,905	- 60	1,845	60	1,845	Glacial sand	Hard, "alkaline"		D, S	Sufficient for 30 head stock; laxative.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
12	NW.	7	18	19	2	Drilled	165	1,905			165	1,740	Glacial drift	Hard, "alkaline"		N	Insufficient; laxative.
13	SW.	7	"	"	"	Drilled	132	1,910	- 72	1,838	132	1,778	Glacial sand	Hard, iron		D, S	Sufficient for 25 head stock.
14	SW.	8	"	"	"	Drilled	178	1,905			178	1,727	Glacial sand	Hard, iron		D, S	Sufficient supply.
15	SW.	9	"	"	"	Drilled	120	1,925					Glacial drift	Hard		D, S	Sufficient for 30 head stock.
16	SE.	10	"	"	"	Dug	30	1,910	- 26	1,884	26	1,884	Glacial sand	Hard, clear		D, S, I	Sufficient for 25 head stock; several similar wells dug here.
17	NE.	11	"	"	"	Bored	44	1,940	- 30	1,910	44	1,896	Glacial gravel	Hard, iron		D, S	Sufficient for 30 head stock; spring also used
18	NW.	12	"	"	"	Drilled	164						Glacial drift	Hard		M	120,000 gallons a day; also a 57-foot well yields 60,000 gallons a day; 78-foot well 140,000 gallons a day and 167-foot well choked.
19	SW.	13	"	"	"	Drilled	77						Glacial drift	Hard		M	Flows 25,000 gallons a day; 140-foot well abandoned; over 150 wells drilled on NW.$\frac{1}{4}$, section 12, and SW.$\frac{1}{4}$, section 13; individual wells yield from 60,000 to 250,000 gallons a a day.
20	NE.	14	"	"	"	Bored	30	1,965					Glacial drift	Hard, "alkaline"		D, S	Sufficient for 16 head stock.
21	SE.	14	"	"	"	Spring		1,960	+ 4	1,964			Glacial drift	Hard		D, S	Sufficient supply.
22	SW.	14	"	"	"	Dug	19	1,950	- 15	1,935	15	1,935	Glacial gravel	Hard, iron, "alkaline"		D, S	Sufficient for 25 head stock; laxative.
23	NW.	14	"	"	"	Spring							Glacial drift	Hard			Sufficient supply.
24	NW.	15	"	"	"	Dug	34	1,900	- 5	1,895	34	1,866	Glacial gravel	Hard, "alkaline"		D, S	Sufficient for 40 head stock; a 180-foot well, small supply; a similar well also; and a spring
25	SE.	15	"	"	"	Drilled	96	1,930	- 40	1,890	96	1,834	Glacial sand	Hard		D, S	Sufficient for 40 head stock; also a spring used.
26	NE.	16	"	"	"	Bored	60	1,905	- 54	1,851	60	1,845	Glacial gravel	Hard, iron		D, S	Sufficient for 10 head stock.
27	SW.	18	"	"	"	Bored	64	1,905	- 62	1,843	62	1,843	Glacial gravel	Hard, iron		D, S	Sufficient for 30 head stock; also 108-foot well, good supply; another well caved in.
28	SE.	19	"	"	"	Bored	35	1,920	- 31	1,889	31	1,889	Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; laxative.
29	SW.	20	"	"	"	Dug	35	1,890	- 25	1,865	35	1,855	Glacial drift	Hard, cloudy, "alkaline"		S	Sufficient for 25 head stock; too "alkaline" for humans.
30	NE.	22	"	"	"	Drilled	52	1,975	- 20	1,955	52	1,923	Glacial gravel	Hard, "alkaline"		N	Sufficient supply; #.
31	SW.	22	"	"	"	Bored	58	1,920	- 33	1,887	58	1,862	Glacial sand	Hard		D, S	Sufficient for 50 head stock.
32	SE.	23	"	"	"	Bored	63	1,975	- 20	1,855	63	1,912	Glacial gravel	Hard, "alkaline"		D, S	Insufficient supply; another 40-foot well in house.
33	SE.	24	"	"	"	Drilled	114	2,000	- 49	1,951	114	1,886	Glacial gravel	Hard		D, S	Sufficient for 50 head stock.
34	SE.	25	"	"	"	Drilled	100	2,030	- 30	2,000	100	1,930	Glacial gravel	Hard		D, S, I	Sufficient supply.
35	NW.	26	"	"	"	Bored	30	2,010	- 20	1,990	30	1,980	Glacial sand	Hard		D, S	Supply insufficient for 25 head stock.
36	NW.	27	"	"	"	Dug	32	1,990	- 12	1,978	32	1,958	Glacial drift	Hard, "alkaline"		S	Sufficient for stock; laxative.

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WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	HEIGHT TO WHICH WATER WILL RISE Elev.	PRINCIPAL WATER-BEARING BED Depth	PRINCIPAL WATER-BEARING BED Elev.	PRINCIPAL WATER-BEARING BED Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
37	SE.	28	18	19	2	Bored	28	1,980	- 24	1,956	28	1,952	Glacial drift	Hard, "alkaline"		D, S	Sufficient for 12 head stock; laxative.
38	NW.	28	"	"	"	Dug	22	1,968	- 10	1,958	22	1,946	Glacial sand	Hard, "alkaline"		D, S, I	Sufficient for 40 head stock.
39	NW.	29	"	"	"	Bored	35	1,945	- 8	1,937	45	1,900	Glacial drift	Hard, iron, "alkaline"		D, S	Sufficient for 100 head stock.
40	SW.	29	"	"	"	Bored	85	1,950	- 32	1,918	85	1,865	Glacial drift	Hard, "alkaline"		D, S	Insufficient supply.
41	NE.	30	"	"	"	Dug	50	1,925	- 36	1,889	36	1,889	Glacial drift	Hard, iron, "alkaline"		D, S	Sufficient for 25 head stock; laxative.
42	SW.	31	"	"	"	Drilled	730	1,942									Dry hole in Marine Shale.
43	NW.	31	"	"	"	Dug	20	1,943	- 15	1,928	20	1,923	Glacial sand	Hard		D, S	Sufficient supply.
44	NE.	32	"	"	"	Bored	90	1,985			90	1,895	Glacial drift	Hard, yellow, "alkaline"		D, S	Sufficient supply; also 150-- and 125-foot wells-"alkaline" water.
45	NE.	32	"	"	"	Dug	18	1,970	- 13	1,957	13	1,957	Glacial sand	Hard		S	Sufficient for 100 head stock.
46	SW.	32	"	"	"	Dug	20	1,945	- 10	1,935	20	1,925	Glacial drift	Hard, "alkaline"		N	Sufficient for 100 head stock.
47	NE.	33	"	"	"	Bored	28	2,000	- 4	1,996	28	1,972	Glacial gravel	Hard, iron, "alkaline"		D, S	Sufficient for 30 head stock.
48	NE.	34	"	"	"	Dug	29	2,020	- 28	1,992	28	1,992	Glacial gravel	Hard		D, S	Sufficient for 5 head stock.
49	NW.	34	"	"	"	Bored	46	2,020	- 30	1,990	46	1,974	Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient for 30 head stock;laxative.
50	SW.	35	"	"	"	Dug	35	2,025	- 31	1,994	31	1,994	Glacial sand	Hard, "alkaline"		D, S	Sufficient supply; laxative.
51	NE.	35	"	"	"	Bored	70	2,050	- 50	2,000	70	1,980	Glacial sand	Hard, "alkaline"		D, S	Sufficient supply; two other similar well 80 feet deep.
52	NE.	36	"	"	"	Dug	56	2,070	- 39	2,031	56	2,014	Glacial gravel	Soft		D, S	Sufficient for 35 head stock.
1	NE.	1	18	20	2	Drilled	108	1,900	- 58	1,842	106	1,794	Glacial gravel	Hard, iron, "alkaline"		D, S	Sufficient for 80 head stock.
2	SE.	2	"	"	"	Drilled	160	1,900	-120	1,780	160	1,740	Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient supply.
3	NW.	2	"	"	"	Drilled	130	1,900	- 55	1,845	130	1,770	Glacial sand	Hard, iron		D, S	Sufficient supply.
4	SE.	3	"	"	"	Drilled	135	1,895	- 35	1,860	135	1,760	Glacial drift	Hard, "alkaline"		D, S, I	Sufficient for 100 head stock.
5	SW.	4	"	"	"	Dug	80	1,892	- 65	1,827	80	1,812	Glacial drift	Hard		D, S	Sufficient for 16 head stock; another well similar caved in.
6	SE.	4	"	"	"	Bored	80	1,892	- 65	1,827	80	1,812	Glacial sand	Hard, "alkaline"		D, S	Sufficient for 35 head stock.
7	SE.	5	"	"	"	Drilled	128	1,890	- 25	1,865	128	1,762	Glacial gravel	Hard, iron		D, S	Sufficient supply; a 60-foot well,small supply.
8	SW.	7	"	"	"	Bored	40	1,888	- 37	1,851	37	1,851	Glacial sand	Hard, yellow	41	D, S	Sufficient for 10 head stock.
9	SE.	7	"	"	"	Drilled	100	1,898	- 60	1,838	100	1,798	Glacial sand	Hard, iron		D, S	Sufficient for 35 head stock.
10	NE.	8	"	"	"	Bored	70	1,891	- 50	1,841	70	1,821	Glacial sand	Hard		D, S	Sufficient for 70 head stock.
11	NE.	9	"	"	"	Drilled	140	1,900	- 50	1,850	140	1,760	Glacial drift	Hard, iron, yellow		D, S	Sufficient for 50 head stock.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	HEIGHT TO WHICH WATER WILL RISE Elev.	PRINCIPAL WATER-BEARING BED Depth	PRINCIPAL WATER-BEARING BED Elev.	PRINCIPAL WATER-BEARING BED Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
12	NW.	9	18	20	2	Bored	50	1,890	- 30	1,860			Glacial drift	Hard, iron		D, S	Sufficient for 20 head stock.
13	SW.	10	"	"	"	Bored	140	1,895	- 40	1,855			Glacial drift	Hard, iron, red sediment		D, S, I	Sufficient for 250 head stock.
14	NW.	11	"	"	"	Drilled	175	1,920					Glacial drift	Hard, iron		D, S	Sufficient supply.
15	E.½	11	"	"	"	Drilled	148	1,900	-100	1,800	138	1,762	Glacial sand	Soft		D, S	Sufficient for 20 head stock.
16	SE.	12	"	"	"	Drilled	160	1,905	-100	1,805			Glacial sand	Hard, iron		D, S, I	Sufficient for 75 head stock.
17	SE.	13	"	"	"	Drilled	172	1,900	- 82	1,818	172	1,728	Glacial sand	Hard, iron, "alkaline"		D, S	Sufficient for 50 head stock.
18	NW.	13	"	"	"	Bored	80	1,885	- 72	1,813	80	1,805	Glacial drift	Hard, iron, "alkaline"		S	Sufficient for 20 head stock.
19	NE.	13	"	"	"	Drilled	203	1,910	-113	1,797	203	1,707	Glacial sand	Hard, iron, red sediment		D, S, I	Sufficient supply.
20	SE.	14	"	"	"	Drilled	202	1,930	-112	1,818	202	1,728	Glacial sand	Hard		D, S	Sufficient supply.
21	SE.	15	"	"	"	Drilled	140	1,902	-110	1,792			Glacial drift	Hard		D, S	Sufficient for 50 head stock; also a 225-foot well on this section.
22	NE.	16	"	"	"	Drilled	120	1,905	-112	1,793	120	1,785	Glacial sand	Hard		D, S, I	Sufficient for 15 head stock.
23	NE.	16	"	"	"	Drilled	147	1,900	-135	1,765			Glacial sand	Soft, iron		D, S	Sufficient for 20 head stock.
24	SE.	19	"	"	"	Drilled	105	1,925	- 85	1,840			Glacial sand	Hard		S	Sufficient for 75 head stock.
25	SE.	20	"	"	"		46	1,900									Dry hole in glacial drift.
26	SE.	20	"	"	"		85	1,900									Dry hole in glacial drift; two other holes 79 and 96 feet deep.
27	NW.	22	"	"	"	Drilled	151	1,905	- 70	1,835	151	1,754	Glacial gravel	Hard, iron, red sediment		D, S	Sufficient for 75 head stock.
28	NE.	22	"	"	"	Bored	120	1,900	- 60	1,840	117	1,783	Glacial sand	Hard, "alkaline"		D, S	Insufficient supply.
29	NW.	23	"	"	"	Drilled	120	1,900	- 60	1,840	120	1,780	Glacial sand	Hard, iron, "alkaline", yellow		D, S	Sufficient supply; laxative.
30	NE.	24	"	"	"								Glacial drift	Hard, "alkaline"		D, S	Sufficient for 50 head stock.
31	SE.	27	"	"	"	Bored	75	1,890	- 40	1,850	75	1,815	Glacial gravel	Hard, iron, red sediment		D, S	Sufficient for 125 head stock.
32	NW.	28	"	"	"	Dug	47	1,880	- 44	1,836	44	1,836	Glacial drift	Hard, "alkaline"		D, S	Sufficient for 40 head stock.
33	NE.	28	"	"	"	Dug	48	1,900	- 22	1,878	48	1,852	Glacial gravel	Hard		D, S	Sufficient for 50 head stock.
34	SW.	29	"	"	"	Bored	50	1,875	- 48	1,827	48	1,827	Glacial sand	Hard		D, S, I	Sufficient for 40 head stock.
35	SW.	30	"	"	"	Dug	35	1,875	- 33	1,842	33	1,842	Glacial sand	Hard		D, S	Sufficient for 75 head stock.
36	NW.	30	"	"	"	Dug	35	1,851	- 32	1,819	32	1,819	Glacial gravel	Hard, "alkaline"		D, S, I	Sufficient for 75 head stock.
37	NE.	30	"	"	"	Dug	30	1,875	- 28	1,847	28	1,847	Glacial sand	Hard	41	I	Sufficient supply.
38	NW.	31	"	"	"	Bored		1,850					Glacial drift	Hard		D	Information unavailable.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHWAN.

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
39	SW.	31	18	20	2	Bored	30	1,875	- 27	1,848	27	1,848	Glacial gravel	Hard, iron		D, S	Sufficient for 8 head stock.
40	NW.	32	"	"	"	Dug	80	1,850	- 40	1,810	80	1,770	Glacial drift	Hard		D, S	Sufficient for 30 head stock
1	SW.	1	18	21	2	Dug	40	1,865	- 36	1,829	36	1,829	Glacial drift	Hard, iron	40	D, S	Sufficient supply.
2	NW.	1	"	"	"	Bored	60	1,875	- 35	1,840	35	1,840	Glacial sand and gravel	Hard, iron, "alkaline"		D, S	Sufficient supply.
3	NW.	2	"	"	"	Bored	70	1,850	- 20	1,830			Glacial drift	Hard, "alkaline"	40	D	Sufficient supply.
4	SW.	2	"	"	"	Bored	65	1,860	- 55	1,805	55	1,805	Glacial gravel and sand	Hard, iron	40	D, S	Sufficient supply; another well 3 feet deep.
5	NE.	2	"	"	"	Drilled	105	1,855	- 50	1,805	105	1,750	Glacial drift	Hard, "alkaline"	40	N	Insufficient supply; another 17-foot well.
6	NE.	3	"	"	"	Bored	125	1,860	-100	1,760	125	1,735	Glacial gravel and sand	Hard		D, S	Sufficient for 40 head stock.
7	NE.	4	"	"	"	Drilled	240	1,860	-200	1,660	240	1,620	Marine Shale	Hard, iron, cloudy	40	D, S	Probably sufficient; another well caused this to go bad for a time.
8	SE.	5	"	"	"	Drilled	140	1,875	-110	1,765	140	1,735	Glacial sand	Hard, iron	40	D, S	Sufficient supply.
9	SE.	6	"	"	"	Drilled	158	1,870	- 78	1,792	157	1,713	Glacial sand	Hard, iron	40	D, S	Sufficient supply; several similar wells.
10	SW.	6	"	"	"	Bored	100	1,860	- 50	1,810	100	1,760	Glacial quick-sand	Hard, iron	40	D, S	Sufficient supply.
11	SW.	8	"	"	"	Dug	51	1,870	- 40	1,830	40	1,830	Glacial sand and gravel	Hard, iron	40	D, S	Intermittent supply; #. Also a 40-foot well.
12	NW.	9	"	"	"	Dug	13	1,850	- 5	1,845	13	1,837	Glacial gravel	Hard	40	D, S	Sufficient supply.
13	SE.	9	"	"	"	Dug	16	1,855	- 11	1,844	11	1,844	Glacial sand and gravel	Hard	40	D, S	Sufficient for 31 head stock; several other shallow wells.
14	SE.	10	"	"	"	Bored	108	1,840	- 70	1,770	100	1,740	Glacial sand	Hard, iron		D, S	Sufficient supply.
15	NE.	10	"	"	"	Dug	20	1,850	- 11	1,839	11	1,839	Glacial sand	Soft, clear		D, S	Insufficient supply; two similar wells.
16	SW.	11	"	"	"	Bored	34	1,845			28	1,817	Glacial gravel	Hard, bitter		N	Never used; filled in.
17	NE.	12	"	"	"	Dug	52	1,890	- 37	1,853			Glacial drift	Hard, sweet	40	D, S	Insufficient supply.
18	NW.	13	"	"	"	Bored	120	1,940	- 70	1,870	120	1,820	Glacial drift	Hard	40	D, S	Sufficient supply.
19	NW.	14	"	"	"	Drilled	208	1,915	- 70	1,845	208	1,707	Glacial drift	Hard, iron	40	D, S	Sufficient for 35 head stock.
20	SE.	16	"	"	"	Bored	112	1,860	-110	1,750	110	1,750	Glacial drift	Hard	45	S	Insufficient supply.
21	SE.	17	"	"	"	Bored	16	1,830	- 12	1,828	12	1,828	Glacial sand	Hard	41	D, S	Sufficient for 30 head stock.
22	SE.	18	"	"	"	Dug	28	1,845	- 17	1,828	28	1,817	Glacial sand	Hard	40	D, S	Sufficient for 9 barrels a day; dry holes.
23	NE.	18	"	"	"		30						Glacial sand	Hard, "alkaline"		N	Too "alkaline" for use.
24	SE.	19	"	"	"	Dug	60										Dry hole in glacial drift (?).
25	SW.	20	"	"	"	Dug	30	1,900	- 20	1,880			Glacial drift	Hard, "alkaline"	42	S	Sufficient for 50 head stock.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of SHERWOOD, NO. 159, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
26	NE.	20	18	21	2	Dug	18	1,900					Glacial drift	Hard, "alkaline"		S	Sufficient supply.
27	SE.	21	"	"	"	Drilled	400	1,780									Dry hole in Marine Shale; spring also used.
28	SE.	22	"	"	"	Dug	72	1,900	- 67	1,833	67	1,833	Glacial sand	Soft	40	D, S	Sufficient supply.
29	SW.	22	"	"	"	Bored	45	1,900	- 43	1,857	43	1,857	Glacial sand	Hard	40	D, S	Sufficient supply; also dry holes.
30	SW.	23	"	"	"	Dug	80	1,920	- 56	1,864	79	1,841	Glacial drift	Hard, "alkaline"	40	D, S	Sufficient supply.
31	NE.	24	"	"	"	Bored	45	1,885	- 41	1,844	41	1,844	Glacial sand	Hard, iron	39	D, S	Supplies 40 to 50 barrels a day; #.
32	SE.	24	"	"	"	Drilled	174	1,930	-157	1,773	176	1,754	Glacial sand and gravel	Soft	43	D, S, I	Sufficient supply.
33	NE.	25	"	"	"	Bored	30	1,848	- 15	1,833	30	1,818	Glacial sand	Hard	40	D, S	Sufficient supply; #.
34	SE.	26	"	"	"	Bored	140	1,860	- 85	1,775	85	1,775	Glacial gravel	Hard, iron	40	D, S	Sufficient supply; several shallow dry holes.
35	SW.	27	"	"	"	Dug	50	1,850					Glacial drift	Hard		N	No further information.
36	NW.	28	"	"	"	Dug	14	1,780	- 12	1,768	12	1,768	Glacial gravel	Hard	40	D, S	Sufficient supply; dry holes 40 and 60 feet deep.
37	NE.	30	"	"	"	Dug	19	1,845	- 16	1,829	16	1,829	Glacial sandy clay	Hard, clear	40	D	Sufficient for household use.
38	NE.	31	"	"	"	Auger	105	1,855	- 97	1,758	100	1,755	Glacial sand	Hard, cloudy	40	D, S	Sufficient supply; #.
39	NW.	33	"	"	"	Dug	18	1,725	- 13	1,712	13	1,712	Glacial gravel	Hard, iron		D, S	Sufficient supply usually.
40	SE.	34	"	"	"	Bored	50	1,885	- 24	1,861	50	1,835	Glacial sand	Hard	40	D, S	Sufficient supply; springs also.
41	SE.	35	"	"	"	Dug	36	1,850	- 20	1,830	36	1,814	Glacial drift	Hard	48	D, S	Sufficient supply.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.