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BUREAU OF ECONOMIC GEOLOGY

GEOLOGICAL SURVEY

PRELIMINARY REPORT

# GROUND-WATER RESOURCES OF THE RURAL MUNICIPALITY OF CRAIK No. 222 SASKATCHEWAN

BY

B. R. MacKay, H. N. Hainstock & J. A. Chalmers

Water Supply Paper No. 167

OTTAWA

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Map of the municipality.

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# GROUND WATER RESOURCES OF THE RURAL MUNICIPALITY OF CRAIK, NO. 222 SASKATCHEWAN

## 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 fine the approximate depth to a water-bearing horizon, be 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 rest 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

The rural municipality of Craik, No. 222, is an area of approximately 340 square miles, in the central part of southern Saskatchewan. It is bounded on the west by the third meridian, and on the south by Qu'Appelle river. The centre of the municipality is located 12 miles west and 38 miles north of the city of Moose Jaw. The municipality consists of six full townships described as tps. 22, 23, and 24, ranges 27 and 28; parts of tp. 20, range 27, and of township 21, ranges 27 and 28; two fractional tps. 23 and 24, range 29; and parts of fractional tps. 21 and 22, range 29, all W. 2nd mer. The area is drained by Qu'Appelle river, Arm river, and Squaw creek. Qu'Appelle river flows in an easterly direction, and forms the southern boundary of the municipality; Arm river flows in a southeasterly direction across the northeastern part; and Squaw creek flows in a southerly direction crossing the western border at about the middle of township 23, range 29. The Saskatoon-Regina branch of the Canadian National railways runs southeasterly through the municipality on the southwest side of Arm river, and on it are located the town of Craik, and the village of Aylesbury.

The municipality is mantled by glacial drift that nowhere is thought to exceed a thickness of 400 feet. The flood-plain of Qu'Appelle river is covered by Recent deposits of alluvium. A strip of country, 2 to 6 miles wide, running from the southeastern to the northwestern corner of the municipality, is mantled by moraine. Glacial till covers the remainder of the area, but in a large area in the northeastern corner, and in an area to the north of Qu'Appelle river, deposits of glacial lake clays and glacial lake sands overlie the glacial till or boulder clay. These glacial lake deposits do not exceed 40 feet in thickness. The deposits grade from clay, through sandy clay into sand, and in some areas the sand has been considerably re-worked by wind action.

Water-bearing Horizons in the Unconsolidated Deposits

No continuous water-bearing horizons have been located in the drift in this municipality. Two wells obtain a fairly large supply of usable water from the Recent alluvium that floors Qu'Appelle River valley. There should be no difficulty in deriving at least small supplies of water from these deposits. The glacial lake clays do not contain water, but in those areas water can be obtained from the underlying boulder clay or glacial till. Moderate supplies of usable water are obtained in a few localities from the glacial lake sands. Throughout the moraine and till-covered areas water is derived from pockets of sand and gravel at three general horizons. The uppermost horizon is encountered at or near the contact of the weathered or yellow clay, and underlying blue clay. The water obtained is generally hard, but that from some seepage wells is moderately soft, and is usable for both domestic purposes and stock. In some of the wells the aquifer is located in the upper part of the blue clay, and the water is often under slight hydrostatic pressure. The supply obtained from these sub-artesian wells varies greatly, depending upon the size and porosity of the pocket encountered, and upon the amount of annual precipitation. Some of the wells yield large supplies and are capable of supplying several farms, whereas others yield an intermittent supply, the wells going dry in drought periods.

Wells sunk to depths of 40 to 100 feet have located water in scattered pockets of sand and gravel. The water is in many places under considerable hydrostatic pressure, but the supply obtained varies greatly. Much of the water from these deeper wells is so highly mineralized that it cannot be used for domestic purposes, although it is usually suitable for stock.

A number of wells located in the central and northwestern part of the municipality appear to be obtaining water at lower

elevations than the previous group. They also tap pockets of sand and gravel. Some of these wells yield water that is salty, and it is possible that the aquifers are near the contact of the glacial drift and the Bearpaw formation. For example, two wells in sec. 13, tp. 22, range 28, obtain hard, salty water at depths of 104 and 134 feet, and a 244-foot well in the NE.$\frac{1}{4}$, sec. 24, tp. 24, range 29, obtains hard water from an aquifer that is undoubtedly near the contact.

Water-bearing Horizons in the Bedrock

Water from the bedrock is obtained chiefly in the northeastern corner of the municipality. The aquifers occur at elevations between 1,544 and 1,310 feet above sea-level. It appears that there at least two water-bearing horizons are present; the uppermost horizon yields hard, salty water, and the lower horizon yields a soft, salty water that has a soda taste. The supply derived from the bedrock wells is usually abundant, but one well situated in the NE$\frac{1}{4}$, sec. 22, tp. 22, range 28, is plugged with sand, and is not used. The water is suitable for stock but is not particularly suitable for domestic purposes, although that from approximately one-third of the wells is used for household requirements, as water of better quality is not available.

## GROUND WATER CONDITIONS BY TOWNSHIPS

### Township 20, Range 27

Only parts of sections 25, 35, and 36 are included in this municipality. The area is mainly covered by Recent stream deposits, but small areas in the N.$\frac{1}{2}$, section 36, are mantled by glacial till and moraine.

No wells have been sunk in this area, but it is probable that water could be obtained at shallow depths in the Recent deposits. The glacial till and moraine deposits may contain scattered pockets of sand and gravel from which small supplies of usable water are usually obtained.

### Township 21, Range 27

Deposits of Recent alluvium mantle the flood-plain of Qu'Appelle river. The northeastern part of the township is covered by moraine, and the remainder of the area is mantled by boulder clay or till. In a large area in the northwestern corner, glacial lake sands overlie the boulder clay. They seldom exceed a thickness of 25 feet. The elevation rises from less than 1,700 feet at the river, to 2,000 feet above sea-level in sections 23 and 26.

Water supplies are obtained from springs, dugouts, sloughs, and wells. One well located in the NE.$\frac{1}{4}$, section 32, is the only well recorded that is obtaining water from the glacial lake sands. The water is hard, usable for domestic purposes and stock, and the supply is sufficient for local requirements. The other wells in the township obtain water from scattered pockets of sand and gravel at depths ranging from 10 to 65 feet. The aquifers do not appear to be continuous over large areas, as the wells differ greatly in yield, depth, nature of the aquifer, and quality of water obtained. In some instances the aquifer is formed by a bed of sand or gravel in the blue clay, and the water from wells that tap it is often under sufficient hydrostatic pressure to cause it to rise to a point

25 or 30 feet below the surface. The water from some of the wells is so highly mineralized that water from sloughs is used in preference. Most of the wells yield a sufficient but not an abundant supply of water. Where his well supply is inadequate the farmer is forced to water his stock from sloughs or dugouts, or to haul water from wells yielding abundant supplies. Prospecting by means of a small test auger is recommended to locate pockets of water-bearing sand or gravel before a well is dug. No wells have been sunk in the Recent stream deposits along the flood-plain of Qu'Appelle river, but it is quite probable that adequate supplies can be obtained from them at shallow depth. Dugouts are recommended as a means of retaining surface water for stock purposes.

Township 21, Range 28

Only the northeastern half of this township is included in the municipality of Craik. The valley flat is mantled with Recent stream deposits and the remainder of the township is underlain by glacial till. Throughout the greater part of the area, however, the glacial till is overlain by glacial lake sands to a maximum depth of 20 to 25 feet.

Water supplies are being obtained from sloughs, dugouts, and wells. A well located in the NE.$\frac{1}{4}$, section 35, obtains moderately soft water from the lake sands at a depth of 20 feet. The supply, however, is not sufficient for local needs. The other wells have passed through the lake sands and obtain small supplies of water from lenses or pockets of sand and gravel that occur in the underlying boulder clay. Five wells located in the NE.$\frac{1}{4}$, section 34, the SW.$\frac{1}{4}$, section 35, and the NE.$\frac{1}{4}$, section 36, obtain moderate supplies of water at depths of 55 to 75 feet. The water is under hydrostatic pressure, but it is highly charged with mineral salts, and that from one well only is being used for domestic purposes. Water for household use is obtained

from shallow seepage wells dug beside sloughs and dugouts. The other wells in the township yield insufficient supplies of hard, usable water. These wells are used mainly for household purposes, and the stock are watered at sloughs.

It seems essential in this area that the farmer have two wells; one shallow seepage well for domestic use, and a deeper well to provide a permanent supply for stock. Wells sunk to a depth of 60 to 70 feet would probably yield a sufficient supply of water for 25 or 30 head of stock. Small supplies might also be obtained from wells sunk into the Recent stream deposits.

Township 21, Range 29

Only parts of sections 25, 35, and 36 are included in this municipality. The valley flat is covered with Recent stream deposits, and the remainder of the area is mantled by glacial till or boulder clay.

No wells have been sunk in this area, but it is probable that adequate supplies of water could be obtained in the glacial till at depths of 75 feet or less. Moderate supplies should also be available within 20 feet of the surface in the Recent stream deposits.

Township 22, Range 27

The greater part of this township is mantled by moraine, and the ground surface is characterized by knolls, and numerous undrained depressions. A small area in the northeastern corner and a strip along the western side and southwestern corner are covered by glacial till. In parts of sections 4, 5, and 6 glacial lake sands overlie the boulder clay. The elevation decreases from 2,000 feet above sea-level in sections 9 and 17, to less than 1,800 feet at Arm river in the northeastern corner.

Wells form the chief source of water supply in this township. Most of them have been dug through 2 to 3 feet of topsoil,

20 to 30 feet of yellow clay, and encounter a bed of sand or gravel at or near the contact of the yellow and blue clays. In some areas the wells have been dug a few feet into the blue clay before reaching an aquifer, and in these cases, the water is often under slight hydrostatic pressure. The water is hard, and is suitable for domestic uses and for stock. The quantity of water obtained from these wells varies greatly. Some of the wells yield only an intermittent supply, and in dry seasons the farmers are forced to haul water. Other wells yield permanent supplies of water sufficient for 50 to 100 head of stock. The aquifers appear to be formed by pockets as holes have been sunk quite close to producing wells without obtaining any water. A water-bearing pocket should be located by means of a small test auger prior to the more costly operation of digging a well. The deepest well in this township is 64 feet, and it is possible that fairly abundant supplies of highly mineralized water can be obtained from pockets of water-bearing sand and gravel in the lower part of the drift.

Township 22, Range 28

The entire township is underlain by glacial till, but in the southern half of the township the glacial till is overlain by glacial lake sands and sandy clay to a maximum depth of 35 feet. The upper part of this till is composed of weathered, yellow clay. Blue clay is thought to extend from the base of the yellow clay to near the bedrock, and it appears to be underlain by a black clay in which a coarse gravel or stony aquifer is common. Pockets of sand and gravel occur throughout the till. Two wells situated in the SE.$\frac{1}{4}$, section 15, and the NE.$\frac{1}{4}$, section 18 bored to a depth of 34 feet, derive a sufficient supply of hard water from the glacial lake sands. The water from them is not under hydrostatic pressure. It is suitable for all farm purposes.

Wells from 15 to 70 feet deep have passed through the glacial lake sands and derive a supply of hard water from pockets of sand and gravel that occur at or near the contact of the yellow and blue clay, or from the upper part of the blue clay. The water in the aquifers in the upper part of the blue clay, is commonly under pressure. The supply of water from these wells varies greatly, some wells yielding abundant supplies, whereas others become dry during drought periods. Much of the water is "alkaline", and that from some of the wells cannot be used for domestic purposes, but is being used for stock.

A number of wells varying from 56 to 134 feet deep obtain water from pockets of gravel and sand in an underlying black clay. The water is usually highly mineralized, and that from some wells cannot be used for domestic purposes, but it can always be used for stock. The quantity of water varies from an insufficient to an abundant supply. Two wells of this group, 104 and 134 feet deep, situated in the SE.$\frac{1}{4}$, and the SW.$\frac{1}{4}$. section 13, yield hard, salty water. The aquifer is probably located near the contact of the black clay and the Bearpaw formation.

One well located in the NE.$\frac{1}{4}$, section 22, is drilled to a depth of 680 feet, but it is plugged with sand and is not being used. The lower part of this well must have been drilled in the Bearpaw formation, but the contact of the drift and bedrock could not be determined.

It cannot be stated at what depth a satisfactory supply of water may be encountered in this township. Good supplies are being obtained from wells 20 to 135 feet deep, and the shallower wells yield water of better quality. It appears advisable, therefore, to prospect the upper portion of the glacial till by means of a small test auger until a satisfactory aquifer is encountered. Dugouts, for the collection and storage of surface water for stock use, could be advantageously employed in the northern half of the township.

Township 22, Range 29

Approximately 30 square miles of this fractional township lies within the municipality of Craik. The flood-plain of Qu'Appelle river covers the southwestern border and is mantled by Recent stream deposits. Glacial till or boulder clay appears at the surface in parts of sections 1 and 2, and part of section 36. Elsewhere in the township, however, the boulder clay is overlain by glacial lake deposits. In the southwestern part of the area these deposits are composed of lake clays, but towards the northeast they grade into sandy clay and sand.

This township is sparsely settled, and the water supply is derived from wells 8 to 48 feet deep that are sunk into the Recent stream deposits, the glacial lake sands, and into the underlying boulder clay. Two wells located in the NE.$\frac{1}{4}$, section 9, obtain water from what is thought to be the base of the Recent stream deposits. These wells passed through sandy clay to a depth of 10 feet and penetrated 60 feet of gravel, from which an abundant supply of water is obtained. The wells are approximately 50 yards apart, but both encounter similar types of material. The water is of good quality and is usable for domestic purposes as well as for stock. It is probable that similar wells can be dug elsewhere in the Recent deposits.

Three wells located in the NW.$\frac{1}{4}$, section 12, the NE.$\frac{1}{4}$, section 32, and the NE.$\frac{1}{4}$, section 33, obtain water from the glacial lake sands at depths of 14, 17, and 18 feet, respectively. Two of these wells yield hard water, whereas the third yields water that is moderately soft. The supply is sufficient for local needs. Water may be located in the lake sands in other parts of the area. The remainder of the wells obtain water from sand and gravel pockets in the glacial till. Three of these wells are not used as the farms are vacated, but the others yield an adequate supply for local needs. The water is hard, and is suitable for household use and for stock.

Township 23, Range 27

Much of the southwestern part of this township is mantled by moraine, and the remainder of the area is covered by boulder clay or glacial till. In a wedge-shaped area extending from the southeastern to the northwestern corner, the boulder clay is overlain by glacial lake clays, and in parts of sections 26, 34, and 35, it is overlain by glacial lake sands. Arm river flows in a southeasterly direction through the central part of the township. The northern part of Alexandra lake occurs in sections 3 and 4. The elevation rises from less than 1,800 feet above sea-level at the river to over 2,000 feet in the southwestern corner, and to approximately 1,900 feet in the northeastern corner of the township.

The glacial lake clays are quite thin and do not contain water. Wells sunk to depths of 16 to 50 feet encounter water in pockets of sand and gravel that occur in the underlying boulder clay. The water-bearing deposits do not form a continuous horizon as dry holes have been sunk quite close to producing wells. The water is usually hard and "alkaline", but it is being used for domestic purposes and for stock. The supply obtained is meagre, and none of the shallow wells yields sufficient water for farm requirements. In order to obtain a sufficient supply several wells have been dug, and the supply from them is often supplemented by the use of dugouts, or by hauling from wells yielding a large supply.

Wells sunk to a depth of 70 to 140 feet yield a more abundant supply. The aquifer is sand and appears to be fairly continuous, although dry holes sunk to a maximum depth of 90 feet in the NW.$\frac{1}{4}$, section 12, failed to encounter this horizon. Two wells in the SE.$\frac{1}{4}$, section 7, and the NE.$\frac{1}{4}$, section 9, are the only wells of this group that do not yield a sufficient supply. The water

is hard and that from some of the wells is slightly "alkaline", but it is being used for domestic purposes and for stock. The water is under hydrostatic pressure and rises to points 15 to 100 feet below the surface.

Wells drilled to depths of 300 feet to 470 feet obtain an abundant supply of water from the Bearpaw formation. The water is soft, salty, tastes of soda, and is not being used for domestic purposes. Shallow seepage wells have been sunk in depressions, and beside sloughs, and these provide water for domestic needs. The water in the deep wells is under considerable hydrostatic pressure, and rises to points 50 to 150 feet below the surface.

Shallow wells seem to be the best method of obtaining water for domestic needs in this area, but, if finances permit, drilled wells to a depth of 300 to 500 feet in bedrock should encounter an abundance of water, throughout the township, that will be suitable for stock use.

Township 23, Range 28

The surface of this township is very uneven as the greater part is covered by moraine. A strip, 1½ miles wide, along the southern border, and a small area in the northeastern corner, are mantled with glacial till or boulder clay.

There do not appear to be any continuous water-bearing horizons in the upper 30 feet, or weathered zone, of the glacial drift. Wells sunk from 10 to 33 feet into the drift encounter pockets of sand and gravel from which varying quantities of water are obtained. Approximately one-half of these wells yield a sufficient supply to meet local requirements, and where the supply is insufficient, two or more wells or dugouts are used, or water is hauled. The water is hard and usable for domestic purposes and for stock.

Seven wells obtain water from scattered pockets of sand and gravel at depths of 45 to 120 feet. The water is hard, and that from the three wells in sections 8, 35, and 36, is so highly mineralized

that it is not usable for domestic purposes. The supply from these three wells is abundant, whereas that from the other four wells is small, but the water is of better quality. It is possible that the two wells in the NW. $\frac{1}{4}$, section 35, and the SE. $\frac{1}{4}$, section 36, tap a common aquifer, as they are the same depth, and the supply and quality of the water are similar.

Before shallow wells are dug, the upper part of the drift should be prospected with a small auger in order to locate the scattered pockets of water-bearing sand or gravel. Drilling to depth, especially in the northeastern corner of the township, would probably locate water in the bedrock at a depth of 400 to 500 feet.

Township 23, Range 29

This fractional township consists of approximately 24 square miles. The northern part is very rough, and with the exception of a strip of glacial till along Squaw creek is mantled by moraine. The southern part of the township and the area along Squaw creek are covered by boulder clay or glacial till. In parts of sections 1, 2, 3, 4, and 9 the boulder clay is overlain by glacial lake sands. The elevation decreases from 2,100 feet in the northeastern corner to less than 1,950 feet above sea-level in the southwestern corner. The water supply in this township is derived from Squaw creek, springs, and from wells sunk into the glacial drift. A flowing spring in the NE. $\frac{1}{4}$, section 15, is reported as yielding a fairly abundant supply of usable water.

Two wells, located in the SW. $\frac{1}{4}$, section 4, derive a sufficient supply of water for local needs from the lake sands at depths of 10 feet. The water is hard and usable for all farm needs. The lake sands will no doubt yield supplies of water in other parts of the township.

Wells sunk to depths of 15 to 60 feet in the glacial till and moraine obtain water from scattered pockets of sand and gravel. The

water is usually hard, and with the exception of that from two wells located in the NE. $\frac{1}{4}$, section 2, and the NE. $\frac{1}{4}$, section 35, 40 and 60 feet deep, respectively, it is usable for domestic purposes. The water from the former is too "alkaline" for domestic purposes, and that from the latter is reported as being salty and containing iron. With the exception of the two wells mentioned above, and an intermittent well in the SE. $\frac{1}{4}$, section 36, the remaining wells yield sufficient water for local requirements.

No wells have been sunk to a greater depth than 60 feet, but it is possible that fairly abundant supplies of highly mineralized water will be derived from the lower part of the drift. Water-bearing horizons may also exist in the underlying bedrock at depths of 500 to 600 feet.

Township 24, Range 27

The entire township is mantled by boulder clay or glacial till. Glacial lake sands overlie the till in the central part of the township, and glacial lake clays overlie the till in the western and southwestern part. These glacial lake deposits do not exceed 15 to 25 feet in thickness.

The supply of water in this township is obtained from wells sunk into the boulder clay, and into the Bearpaw formation. No water is being derived from the lake clays or lake sands, but it is possible that small supplies of usable water may be obtained from the deposits of glacial lake sands.

A number of wells derive a moderate supply of water from scattered pockets of sand and gravel in the boulder clay at depths of 17 to 35 feet. The water varies from moderately soft to hard, and the supply from most of the wells is sufficient for domestic needs and for 15 to 30 head of stock. A large supply is not to be expected from the upper part of the drift.

Wells sunk to depths of 45 to 100 feet encounter a fairly continuous water-bearing horizon at an elevation of 1,770 to 1,830 feet above sea-level. The aquifer is usually sand, and the water is under considerable hydrostatic pressure. Much of the water is "alkaline", and in many cases cannot be used for domestic purposes. Most of these wells yield sufficient water for local needs.

Six wells, situated in the SW. $\frac{1}{4}$, section 3, the NW. $\frac{1}{4}$, section 10, the NW. $\frac{1}{4}$, section 28, the NW. $\frac{1}{4}$, section 32, the NE. $\frac{1}{4}$, section 34, and the NW. $\frac{1}{4}$, section 36, obtain water from a sand bed located in the Bearpaw formation, which is encountered at depths ranging from 484 to 545 feet, or at elevations of 1,360 to 1,413 feet above sea-level. The water is soft, salty, and tastes of soda. The water from the two wells located in sections 10 and 34 is suitable for domestic use, but that from the remainder of the wells of this group is suitable only for stock. The yield from these wells is ample for farm requirements. Farmers, owning these deep wells, use shallow seepage wells for domestic needs.

Should finances permit, the drilling of wells to the Bearpaw formation is advisable. Water should be obtained at a depth of approximately 500 feet or at an elevation of 1,400 feet above sea-level. The water from the bedrock will be satisfactory for stock, but will probably be unsuitable for drinking. If shallow wells are contemplated it is advisable to locate the pockets of water-bearing sand by a small test auger prior to digging the wells.

Township 24, Range 28

The southwestern part of this township is covered by moraine. This is the highest part of the township, and the ground surface is very uneven. Towards the northeast the surface elevation gradually decreases, and the topography becomes gently rolling. The northeastern part of the township is covered by glacial till, but with the exception of an area approximately one mile in width paralleling

the railway a half mile to the west the boulder clay is concealed by 20 to 40 feet of glacial lake clays.

A few wells obtain water in the glacial drift at depths of 20 to 40 feet. Two wells situated in the NW. $\frac{1}{4}$, section 8, and the SW. $\frac{1}{4}$, section 20, derive water from pockets of sand at depths of 26 and 20 feet, respectively. The water from the well in section 8 is soft, whereas that from section 20 is hard. Both wells are being used for domestic purposes and for stock. The water is under hydrostatic pressure, and the yield is sufficient for local needs. The remainder of the shallow wells are mainly seepage wells, and in dry years yield only a very small supply of water. At such times the farmers are forced to haul water for drinking purposes, and, if sloughs are dry, for stock also.

Wells ranging in depth from 50 to 180 feet obtain water from deeper sand and gravel deposits in the glacial drift from aquifers ranging from 1,780 to 1,883 feet in elevation. It is doubtful if the deposits are continuous over large areas. The water in many of the wells is under considerable hydrostatic pressure. It is hard and in many cases so strongly "alkaline" that it cannot be used for domestic purposes. In such cases dugouts have been excavated, and wells sunk beside them yield a domestic supply. The supply from the 50- to 180-foot wells, with the exception of one well in the NW. $\frac{1}{4}$, section 4, which yields a very small supply, is fairly abundant.

Wells drilled to depths ranging from 530 to 640 feet obtain soft, salty water from the Bearpaw formation at an elevation of approximately 1,365 feet above sea-level. The water from two wells located in sections 9 and 36 tastes of soda. The water from these bedrock wells is not suitable for domestic use, but it is usable for stock. The supply obtained is more than adequate for local needs. It is probable that this aquifer could be located throughout the township at an approximate elevation of 1,365 feet above sea-level, but water for domestic purposes would have to be obtained from some other source.

Township 24, Range 29

This fractional township is mainly covered by moraine, but the northern mile and a strip along Squaw creek are mantled by boulder clay or glacial till. The ground surface is quite rough and the maximum elevation in the municipality, in excess of 2,100 feet, is attained in the western part of this township.

The water supply is derived from wells sunk in the glacial drift. Wells dug to depths of 20 to 35 feet obtain water from scattered pockets of sand and gravel that occur in the weathered portion of the drift. The water, with the exception of that from two wells on section 25, is hard, and it is under little or no hydrostatic pressure. It is used both for domestic needs and for stock. Some of the wells yield 25 barrels of water a day, whereas others become completely dry in winters and drought periods.

A few wells obtain water at depths of 65 to 80 feet. The water is derived from pockets of sand that do not appear to be continuous. The supply varies, and some of the wells do not yield a sufficient supply for local needs, and water for stock needs must be hauled. Only two of these wells, located in section 33, are used for domestic purposes.

One located in the NE. $\frac{1}{4}$, section 24, obtains water at a depth of 224 feet. The nature of the aquifer is not known, but it is in all probability located in the glacial drift. The water is hard and "alkaline", and is not usable for domestic purposes, but is used for stock. The supply is abundant, and it is reported that the well will yield at least 40 barrels of water a day. A well located in the NE. $\frac{1}{4}$, section 12, was drilled to a depth of 241 feet, but failed to obtain any water.

A drilled well in the SE. $\frac{1}{4}$, section 16, was sunk to a depth of 600 feet, and it derives a fairly abundant supply of hard, "alkaline" water from an aquifer in the Bearpaw formation. The supply is sufficient for local needs, and the water is being used for domestic purposes and

for stock. It has a slight laxative effect on persons unaccustomed to its use.

Drilling to depth is not recommended in this township. Before digging shallow wells it is advisable to locate the pockets of water-bearing sand or gravel with a small test auger.

STATISTICAL SUMMARY OF WELL INFORMATION IN RURAL MUNICIPALITY OF CRAIK, NO. 222, SASKATCHEWAN.

| West of 2nd meridian — Township / Range | 20 / 27 | 21 / 27 | 21 / 28 | 21 / 29 | 22 / 27 | 22 / 28 | 22 / 29 | 23 / 27 | 23 / 28 | 23 / 29 | 24 / 27 | 24 / 28 | 24 / 29 | Total No. in municipality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total No. of Wells in Township | 0 | 34 | 15 | 0 | 22 | 35 | 16 | 44 | 40 | 21 | 48 | 35 | 21 | 331 |
| No. of wells in bedrock | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 0 | 6 | 4 | 1 | 19 |
| No. of wells in glacial drift | 0 | 34 | 15 | 0 | 22 | 34 | 14 | 37 | 40 | 21 | 42 | 31 | 20 | 310 |
| No. of wells in alluvium | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Permanency of Water Supply | | | | | | | | | | | | | | |
| No. with permanent supply | 0 | 26 | 11 | 0 | 19 | 30 | 14 | 38 | 27 | 20 | 42 | 32 | 17 | 276 |
| No. with intermittent supply | 0 | 0 | 2 | 0 | 2 | 5 | 0 | 1 | 4 | 1 | 2 | 0 | 1 | 18 |
| No. dry holes | 0 | 8 | 2 | 0 | 1 | 0 | 2 | 5 | 9 | 0 | 4 | 3 | 3 | 37 |
| Types of Wells | | | | | | | | | | | | | | |
| No. of flowing artesian wells | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. of non-flowing artesian wells | 0 | 6 | 6 | 0 | 9 | 12 | 1 | 20 | 5 | 3 | 19 | 16 | 3 | 100 |
| No. of non-artesian wells | 0 | 20 | 7 | 0 | 12 | 23 | 13 | 19 | 26 | 18 | 25 | 16 | 15 | 194 |
| Quality of Water | | | | | | | | | | | | | | |
| No. with hard water | 0 | 23 | 12 | 0 | 20 | 32 | 13 | 35 | 28 | 19 | 35 | 31 | 17 | 265 |
| No. with soft water | 0 | 3 | 1 | 0 | 1 | 3 | 1 | 4 | 3 | 2 | 9 | 1 | 1 | 29 |
| No. with salty water | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 3 | 3 | 0 | 11 |
| No. with "alkaline" water | 0 | 10 | 4 | 0 | 7 | 15 | 4 | 10 | 3 | 2 | 11 | 11 | 7 | 84 |
| Depths of Wells | | | | | | | | | | | | | | |
| No. from 0 to 50 feet deep | 0 | 31 | 9 | 0 | 19 | 14 | 16 | 18 | 30 | 19 | 28 | 17 | 11 | 212 |
| No. from 51 to 100 feet deep | 0 | 3 | 6 | 0 | 3 | 18 | 0 | 18 | 7 | 2 | 13 | 8 | 7 | 85 |
| No. from 101 to 150 feet deep | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 3 | 0 | 1 | 4 | 0 | 11 |
| No. from 151 to 200 feet deep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| No. from 201 to 500 feet deep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 2 | 11 |
| No. from 501 to 1,000 feet deep | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 4 | 1 | 10 |
| No. over 1,000 feet deep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| How the Water is Used | | | | | | | | | | | | | | |
| No. usable for domestic purposes | 0 | 26 | 11 | 0 | 19 | 26 | 14 | 30 | 28 | 17 | 32 | 21 | 12 | 236 |
| No. not usable for domestic purposes | 0 | 0 | 2 | 0 | 2 | 9 | 0 | 9 | 3 | 4 | 12 | 11 | 6 | 58 |
| No. usable for stock | 0 | 26 | 13 | 0 | 21 | 35 | 14 | 39 | 31 | 21 | 43 | 32 | 17 | 292 |
| No. not usable for stock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Sufficiency of Water Supply | | | | | | | | | | | | | | |
| No. sufficient for domestic needs | 0 | 26 | 11 | 0 | 19 | 29 | 14 | 38 | 27 | 20 | 41 | 32 | 17 | 274 |
| No. insufficient for domestic needs | 0 | 0 | 2 | 0 | 2 | 6 | 0 | 1 | 4 | 1 | 3 | 0 | 1 | 20 |
| No. sufficient for stock needs | 0 | 15 | 3 | 0 | 14 | 18 | 14 | 20 | 10 | 15 | 29 | 21 | 10 | 169 |
| No. insufficient for stock needs | 0 | 11 | 10 | 0 | 7 | 17 | 0 | 19 | 21 | 6 | 15 | 11 | 8 | 125 |

# 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 difference between the total hardness and the permanent hardness and represents the amount of mineral salts that can be removed by boiling. Temporary hardness is due mainly to the bicarbonates of calcium and magnesium and iron, and permanent harness 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 excess 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 Craik, No. 222, 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 | Alka-linity | 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 | NW. | 10 | 24 | 27 | 2 | 484 | 2,140 | 850 | 650 | 200 | 20 | 450 | 240 | 137 | 1,164 | 568 | 2,129 | 430 | | 17 | 384 | | 1,265 | 33 | | * 2 |
| 2 | NW. | 14 | 24 | 28 | 2 | 30 | 1,160 | | | | | | | | | | | (3) | (1) | | (2) | | (4) | | (5) | * 1 |

Water samples indicated thus, * 1, are from glacial drift.
Water samples indicated thus, * 2, are from bedrock, Bearpaw formation.
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 ($CaCO_3$).
Analysis No. 2 by Provincial Analyst, Regina.
For interpretation of this table read the section on Analyses and Quality of Water.

## Water from the Unconsolidated Deposits

Only one sample of water from the glacial drift was analysed, and the following information is based largely on information gathered in the field.

Water obtained from the upper part of the drift in this municipality is rarely so highly mineralized that it is harmful for human consumption. The analysis given on the accompanying table is that of water obtained from a 30-foot well. The total dissolved solid content is not excessively high, and the water should be satisfactory for all farm needs.

The water from wells sunk into the blue clay is frequently mineralized to a much greater extent. It is described as having a laxative effect, and the water probably contains a high concentration of the sulphates of magnesium and sodium. Iron is present in the water from some of the deeper wells, and it gives the water a disagreable taste if present in large quantities. Much of the iron can be removed by aerating and filtering the water.

## Water from the Bedrock

Water from wells tapping water-bearing horizons in the bedrock in this municipality contains a large amount of mineral salts in solution. The one sample analysed has a total dissolved solid content of 2,140 parts per million. It contains 1,265 parts per million of sodium sulphate, and it is probable that it would be quite laxative if used by persons unaccustomed to it. In this sample very little sodium chloride, (common salt) is present, but in the water from many of the wells tapping the Bearpaw formation, it is present in sufficient quantities to render the water unsuitable for drinking, although it may be satisfactory for stock. The waters from several of the bedrock wells are reported as containing soda. This is caused by the presence of sodium carbonate. Waters containing a considerable amount of this mineral salt cannot be used for irrigation.

# WELL RECORDS—Rural Municipality of CRAIK NO. 222 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 | 21 | 27 | 2 | Dug | 20 | 1,750 | - 8 | 1,742 | | | Glacial sand | Hard, clear, "alkaline" | | D, S | Small supply in drought years. |
| 2 | NW. | 8 | " | " | " | Dug | 18 | 1,800 | - 6 | 1,794 | 18 | 1,782 | Glacial drift | Hard, clear, "alkaline" | 42 | D, S | Oversufficient for local needs; also a spring nearby. |
| 3 | SE. | 10 | " | " | " | Dug | 20 | 1,875 | - 16 | 1,859 | 16 | 1,859 | Glacial gravel | Hard, clear | 42 | D, S | Sufficient for 15 head stock. |
| 4 | SW. | 10 | " | " | " | Dug | 30 | 1,800 | - 20 | 1,780 | 30 | 1,770 | Glacial gravel | Hard, clear | 44 | D, S | Sufficient for 33 head stock. |
| 5 | SE. | 12 | " | " | " | Dug | 40 | 1,900 | - 38 | 1,862 | 38 | 1,862 | Glacial sand | Hard, clear | | D, S | Insufficient for local needs; uses a dugout. |
| 6 | SW. | 14 | " | " | " | Bored | 50 | 1,950 | - 38 | 1,912 | 50 | 1,900 | Glacial sand | Hard, clear, "alkaline" iron | 45 | D, S | Sufficient for local needs. |
| 7 | NW. | 14 | " | " | " | Dug | 21 | 1,950 | - 18 | 1,932 | 18 | 1,932 | Glacial sand | Soft, clear | 43 | D, S | Sufficient for local needs; also two other wells, one shallow and one 53 feet deep. |
| 8 | NE. | 14 | " | " | " | Dug | 12 | 1,950 | - 8 | 1,942 | 8 | 1,942 | Glacial sand | Hard, clear, "alkaline" | 44 | D, S | Insufficient for local needs; also has a similar well. |
| 9 | SE. | 16 | " | " | " | Bored | 45 | 1,950 | - 20 | 1,930 | | | Glacial drift | Hard, "alkaline" | | D, S | Insufficient supply in winter; also a dry hole. |
| 10 | SW. | 16 | " | " | " | Bored | 50 | 1,950 | - 30 | 1,920 | 50 | 1,900 | Glacial drift | Hard, clear, iron | | D, S | Yields about 3 tanks a day. |
| 11 | SE. | 22 | " | " | " | Dug | 14 | 1,950 | - 12 | 1,938 | 12 | 1,938 | Glacial sand | Hard, clear | 43 | N | Small supply, usable water. |
| 12 | NE. | 22 | " | " | " | Bored | 26 | 1,950 | - 10 | 1,940 | 10 | 1,940 | Glacial sand | Hard, clear, "alkaline" | | D, S | Sufficient for local needs; also a 16-foot well with similar water. |
| 13 | SW. | 23 | " | " | " | Bored | 27 | 1,950 | - 12 | 1,938 | 12 | 1,938 | Glacial sandy clay | Hard, clear | | D, S | |
| 14 | NW. | 24 | " | " | " | Dug | 11 | 1,940 | - 6 | 1,934 | 6 | 1,934 | Glacial gravel | Soft, clear | 42 | D | Oversufficient for domestic needs; stock watered at lake. |
| 15 | NE. | 31 | " | " | " | Bored | 65 | 1,950 | - 35 | 1,915 | 65 | 1,885 | Glacial drift | Hard, yellow "alkaline" iron | | D, S | Oversufficient for local needs. |
| 16 | SE. | 32 | " | " | " | Bored | 60 | 1,940 | - 20 | 1,920 | 60 | 1,880 | Glacial sandy clay | Hard, clear, "alkaline" | 42 | D, S | Sufficient for local needs; also 7 dry holes averaging about 20 feet deep. |
| 17 | NE. | 32 | " | " | " | Dug | 16 | 1,950 | - 13 | 1,937 | 13 | 1,937 | Glacial sand | Hard, clear | | D, S | Sufficient for 50 head stock. |
| 18 | NW. | 34 | " | " | " | Dug | 18 | 1,960 | - 15 | 1,945 | 15 | 1,945 | Glacial sand | Soft, clear | 42 | D, S | Sufficient for local needs. |
| 19 | S½. | 34 | " | " | " | Dug | 25 | 1,960 | - 13 | 1,947 | | | Glacial drift | Hard, clear | | D, S | Sufficient for local needs. |
| 20 | NW. | 36 | " | " | " | Bored | 30 | 1,910 | - 24 | 1,886 | 24 | 1,886 | Glacial clay | Hard, clear, "alkaline" | | D, S | Insufficient for local needs; lake used for stock also. |
| 21 | NE. | 36 | " | " | " | Bored | 30 | 1,910 | - 26 | 1,884 | 26 | 1,884 | Glacial clay | Hard, clear, "alkaline" | | D, S | Insufficient for local needs. |
| 1 | SE. | 21 | 21 | 28 | 2 | Dug | 6 | 1,850 | - 3 | 1,847 | | | Glacial clay | Hard, clear | | D, S | Intermittent supply. |
| 2 | SE. | 24 | " | " | " | Dug | 20 | 1,950 | - 8 | 1,942 | | | Glacial gravel | Hard | | D, S | |
| 3 | NE. | 26 | " | " | " | Bored | 60 | 1,940 | - 30 | 1,910 | 60 | 1,880 | Glacial drift | Hard, clear | | D, S | Sufficient for local needs. |
| 4 | SE. | 28 | " | " | " | Bored | 55 | 1,900 | - 45 | 1,855 | | | Glacial drift | Hard, iron, yellow | | D, S | Insufficient for local needs. |
| 5 | NE. | 32 | " | " | " | Bored | 27 | 1,900 | - 24 | 1,876 | | | Glacial clay | Hard, clear | | D | Intermittent supply; many 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 CRAIK NO.222, 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | SE. | 34 | 21 | 28 | 2 | Bored | 72 | 1,925 | - 12 | 1,913 | 72 | 1,853 | Glacial drift | Hard, clear, "alkaline" | | S | Sufficient for local needs. |
| 7 | SE. | 34 | " | " | " | Dug | 36 | 1,925 | - 10 | 1,915 | 36 | 1,889 | Glacial drift | Hard, clear, "alkaline" | | D, S | Yields only 2 barrels a day. |
| 8 | SW. | 34 | " | " | " | Dug | 73 | 1,925 | - 36 | 1,889 | 73 | 1,852 | Glacial gravelly clay | Hard, clear, "alkaline" iron | | D, S | Sufficient for 15 head stock. |
| 9 | SW. | 35 | " | " | " | Bored | 55 | 1,925 | - 35 | 1,890 | 55 | 1,870 | Glacial sand | | | N | Small yield, stock are watered at slough. |
| 10 | SW. | 35 | " | " | " | Bored | 50 | 1,925 | - 38 | 1,887 | 38 | 1,887 | Glacial drift | Hard, clear | 42 | D | Sufficient for domestic needs. |
| 11 | NE. | 35 | " | " | " | Dug | 20 | 1,945 | - 18 | 1,927 | 18 | 1,927 | Glacial sand | Soft, clear | | D, S | Will yield only ½ barrel a day. |
| 12 | NE. | 36 | " | " | " | Bored | 62 | 1,940 | - 22 | 1,918 | 62 | 1,878 | Glacial drift | Hard, clear, "alkaline" | 44 | S | Insufficient for local needs; also an 18-foot seepage well. |
| 1 | NW. | 6 | 22 | 27 | 2 | Bored | 64 | 1,960 | - 44 | 1,916 | 64 | 1,896 | Glacial drift | Hard, clear, iron | | D, S | Insufficient for local needs; also a similar well. |
| 2 | SE. | 10 | " | " | " | Dug | 37 | 1,950 | - 25 | 1,925 | 37 | 1,913 | Glacial clay | Hard, clear, "alkaline" iron | 41 | D, S | Sufficient for local needs; also a 25-foot well. |
| 3 | SW. | 10 | " | " | " | Bored | 40 | 1,950 | - 32 | 1,918 | 40 | 1,910 | Glacial sand | Hard, clear | 40 | D, S | Sufficient for local needs; also a spring. |
| 4 | NW. | 15 | " | " | " | Dug | 25 | 1,940 | - 21 | 1,919 | | | Glacial clay | Hard, clear, "alkaline" | | D, S | Intermittent supply. |
| 5 | NW. | 16 | " | " | " | Bored | 20 | 1,940 | - 6 | 1,934 | 20 | 1,920 | Glacial sand | Hard, clear, "alkaline" | | D, S | Sufficient for local needs. |
| 6 | SW. | 16 | " | " | " | Dug | 18 | 1,950 | - 15 | 1,935 | 15 | 1,935 | Glacial drift | Hard | | D, S | Sufficient for local needs. |
| 7 | SW. | 18 | " | " | " | Bored | 60 | 1,975 | - 40 | 1,935 | 60 | 1,915 | Glacial sand | Hard, clear, "alkaline" | | S | Sufficient for local needs. |
| 8 | NE. | 18 | " | " | " | Bored | 16 | 1,960 | - 8 | 1,952 | 8 | 1,952 | Glacial sand | Soft, clear | | D, S | Sufficient for local needs. |
| 9 | SE. | 22 | " | " | " | Dug | 35 | 1,925 | - 32 | 1,893 | 32 | 1,893 | Glacial gravel | Hard, clear, "alkaline", iron | | D, S | Sufficient for 20 head stock. |
| 10 | NE. | 24 | " | " | " | Dug | 30 | 1,850 | - 18 | 1,832 | 30 | 1,820 | Glacial sand | Hard, clear, "alkaline" | | D, S | Sufficient for 15 head stock. |
| 11 | SW. | 27 | " | " | " | Bored | 38 | 1,900 | - 28 | 1,872 | | | Glacial drift | Hard, clear | 40 | D, S | |
| 12 | NW. | 28 | " | " | " | Dug | 15 | 1,925 | - 14 | 1,911 | 14 | 1,911 | Glacial drift | Hard, clear | | D | Insufficient for domestic needs; stock watered from municipal well. |
| 13 | SE. | 30 | " | " | " | Bored | 30 | 1,950 | - 10 | 1,940 | 30 | 1,920 | Glacial sand | Hard, clear | | D, S | Sufficient for 50 head stock; also spring on this quarter. |
| 14 | SE. | 32 | " | " | " | Dug | 8 | 1,900 | - 2 | 1,898 | 7 | 1,893 | Glacial sand | Hard, clear | | D, S, M | Will supply 10 tanks a day. |
| 15 | SW. | 34 | " | " | " | Bored | 43 | 1,925 | - 37 | 1,888 | 37 | 1,888 | Glacial sand | Hard, clear | | S | Has a 23-foot well, good quality water, also a 43-foot dry hole. |
| 16 | NW. | 34 | " | " | " | Dug | 47 | 1,900 | - 30 | 1,870 | 47 | 1,853 | Glacial drift | Hard, clear, iron | | D, S | Oversufficient for local needs. |
| 1 | SE. | 1 | 22 | 28 | 2 | Bored | 60 | 1,950 | - 30 | 1,920 | | | Glacial drift | Hard, yellow "alkaline" iron | | S | Intermittent supply. |
| 2 | SE. | 2 | " | " | " | Bored | 67 | 1,950 | - 33 | 1,917 | 67 | 1,883 | Glacial coarse gravel | Hard, clear, "alkaline" | | D, S | Sufficient for local needs. |

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 CRAIK NO. 222, 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | SW. | 4 | 22 | 28 | 2 | Bored | 75 | 1,930 | - 50 | 1,880 | | | Glacial coarse gravel | Hard, clear | | D, S | Intermittent supply. |
| 4 | NE. | 4 | " | " | " | Bored | 56 | 1,930 | - 30 | 1,900 | | | Glacial coarse gravel | Hard, clear, "alkaline" | | D, S | Intermittent supply. |
| 5 | NE. | 9 | " | " | " | Bored | 80 | 1,940 | - 52 | 1,888 | 72 | 1,868 | Glacial gravel | Hard, yellow "alkaline" iron | | S | Sufficient for local needs; also a 30-foot seepage well for house. |
| 6 | SE. | 10 | " | " | " | Bored | 56 | 1,950 | - 16 | 1,934 | | | Glacial coarse gravel | Soft, clear | | N | Dry in dry years; farm deserted. |
| 7 | NE. | 10 | " | " | " | Bored | 87 | 1,960 | - 57 | 1,903 | 87 | 1,883 | Glacial gravel | Hard, yellow "alkaline, iron | | S | Sufficient for local needs; hauls water for house. |
| 8 | SW. | 12 | " | " | " | Bored | 56 | 1,970 | - 41 | 1,929 | 56 | 1,914 | Glacial coarse gravel | Hard, clear, "alkaline" iron | | S | Sufficient for local needs; a seepage well is used for house. |
| 9 | NW. | 12 | " | " | " | Bored | 80 | 1,970 | - 64 | 1,906 | 64 | 1,906 | Glacial sand | Hard, cloudy, "alkaline" | | S | Insufficient for local needs. |
| 10 | NE. | 12 | " | " | " | Bored | 24 | 1,975 | - 16 | 1,959 | 24 | 1,951 | Glacial sand | Hard, clear, iron | | D | Yields 2 barrels a day; also a 20-foot well, similar. |
| 11 | SE. | 13 | " | " | " | Bored | 104 | 1,975 | - 59 | 1,916 | 96 | 1,879 | Glacial gravel | Hard, cloudy, salty, iron | | S | Sufficient for local needs. |
| 12 | SW. | 13 | " | " | " | Bored | 134 | 1,975 | - 74 | 1,901 | 134 | 1,841 | Glacial gravel | Hard, yellow "alkaline" salty | | S | |
| 13 | SE. | 15 | " | " | " | Bored | 34 | 1,960 | - 30 | 1,930 | 30 | 1,930 | Glacial sand | Hard, clear | | D, S | Yields 2 barrels a day. |
| 14 | SE. | 16 | " | " | " | Bored | 56 | 1,950 | - 36 | 1,914 | | | Glacial gravel | Hard, clear, "alkaline" | | S | Intermittent supply; drinking water hauled. |
| 15 | SW. | 16 | " | " | " | Bored | 56 | 1,940 | - 40 | 1,900 | 48 | 1,892 | Glacial gragel | Hard, clear, "alkaline" | | S | Yields 8 barrels a day; a 25-foot seepage well is used for house. |
| 16 | NE. | 18 | " | " | " | Bored | 34 | 1,940 | - 22 | 1,918 | 22 | 1,918 | Glacial sand | Hard, clear | | D, S | Oversufficient for local needs. |
| 17 | NW. | 20 | " | " | " | Dug | 24 | 1,960 | - 20 | 1,940 | 20 | 1,940 | Glacial gravel | Hard, clear | | D, S | Oversufficient for local needs. |
| 18 | NW. | 21 | " | " | " | Bored | 34 | 1,965 | - 20 | 1,945 | 20 | 1,945 | Glacial gravelly sand | Hard, cloudy, iron | | D, S | Sufficient for local needs. |
| 19 | NE. | 21 | " | " | " | Bored | 34 | 1,960 | - 22 | 1,938 | 22 | 1,938 | Glacial gravel | Hard, clear | | D, S | Sufficient for local needs; also a 56-foot well yields 5 barrels a day. |
| 20 | NE. | 22 | " | " | " | Drilled | 680 | 1,990 | | | | | Bearpaw sand | | | N | Plugged with sand, also a 96-foot well for house, a dugout for stock. |
| 21 | NW. | 23 | " | " | " | Bored | 68 | 1,980 | - 55 | 1,925 | 55 | 1,925 | Glacial gravel | Hard, cloudy, "alkaline" iron | | D, S | Yields only 4 barrels a day; hauls water. |
| 22 | NE. | 23 | " | " | " | Bored | 60 | 1,985 | - 30 | 1,955 | 60 | 1,925 | Glacial gravel and stones | Hard, clear, "alkaline" | | D, S | Oversufficient for local needs. |
| 23 | SW. | 24 | " | " | " | Bored | 58 | 1,985 | - 33 | 1,952 | 58 | 1,927 | Glacial gravel and stones | Hard, cloudy, "alkaline" iron | | D, S | Oversufficient for local needs; also an 87-foot dry hole. |
| 24 | SW. | 25 | " | " | " | Bored | 58 | 1,985 | - 35 | 1,950 | 35 | 1,950 | Glacial gravelly clay | Hard, cloudy iron | | D, S | Yields 8 barrels a day. |
| 25 | SW. | 27 | " | " | " | Bored | 80 | 2,005 | - 45 | 1,960 | 80 | 1,925 | Glacial sand | Hard, cloudy, iron | | D, S | Oversufficient for local needs. |
| 26 | NE. | 28 | " | " | " | Bored | 96 | 2,010 | - 70 | 1,940 | 82 | 1,928 | Glacial gravel and stones | Hard, cloudy, "alkaline" iron | | S | Insufficient for local needs; also an 18-foot well used for drinking. |

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 CRAIK NO.222, 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. | 29 | 22 | 28 | 2 | Dug | 24 | 1,970 | - 20 | 1,950 | 20 | 1,950 | Glacial gravel | Hard, clear | | D, S | Oversufficient for local needs. |
| 28 | NE. | 30 | " | " | " | Dug | 14 | 1,965 | - 11 | 1,954 | 11 | 1,954 | Glacial sand | Hard, clear | | D, S | Sufficient for local needs. |
| 29 | NE. | 35 | " | " | " | Bored | 28 | 2,030 | - 18 | 2,012 | 18 | 2,012 | Glacial sandy clay | Soft, clear | | D, S | Uses only 3 barrels a day. |
| 1 | NE. | 9 | 22 | 29 | 2 | Dug | 16 | 1,735 | - 10 | 1,725 | 10 | 1,725 | Recent gravel | Hard, clear | 44 | D, S | Yields 20 barrels a day; also a 16-foot well similar. |
| 2 | SE. | 12 | " | " | " | Bored | 48 | 1,920 | - 27 | 1,893 | 48 | 1,872 | Glacial gravel and stones | Hard, clear, "alkaline" | | D, S | Yields 6 barrels a day. |
| 3 | NW. | 12 | " | " | " | Dug | 14 | 1,920 | - 12 | 1,908 | 12 | 1,908 | Glacial sand | Hard, clear, "alkaline" iron | | D, S | Yields 12 barrels a day |
| 4 | SE. | 15 | " | " | " | Dug | 30 | 1,900 | - 25 | 1,875 | 25 | 1,875 | Glacial drift | Hard, clear | 40 | D, S | Yields 5 barrels a day. |
| 5 | NE. | 20 | " | " | " | Dug | 8 | 1,875 | - 4 | 1,871 | 4 | 1,871 | Glacial gravel | Hard, clear, iron | 48 | D, S | Sufficient for local needs; several shallow dry holes. |
| 6 | NW. | 25 | " | " | " | Bored | 38 | 1,945 | - 20 | 1,925 | 20 | 1,925 | Glacial gravelly clay | Hard, clear, "alkaline" | | D, S | Yields 5 barrels a day. |
| 7 | NE. | 32 | " | " | " | Dug | 17 | 1,950 | - 14 | 1,936 | 14 | 1,936 | Glacial sand | Hard, clear | 42 | D, S | Sufficient for local needs; other similar wells nearby. |
| 8 | NE. | 33 | " | " | " | Dug | 18 | 1,950 | - 16 | 1,934 | 16 | 1,934 | Glacial sand | Soft, clear | | D, S | Yields 8 barrels a day; also a similar 28-foot well. |
| 9 | NE. | 36 | " | " | " | Bored | 38 | 1,970 | - 28 | 1,942 | 28 | 1,942 | Glacial sand | Hard, clear, "alkaline" | | D, S | Sufficient for local needs. |
| 1 | SE. | 1 | 23 | 27 | 2 | Drilled | 306 | 1,850 | - 65 | 1,785 | 306 | 1,544 | Bearpaw | Soft, clear, soda | 45 | D, S | Oversufficient for local needs. |
| 2 | SW. | 2 | " | " | " | Bored | 70 | 1,900 | - 50 | 1,850 | 70 | 1,830 | Glacial drift | Hard, clear, "alkaline" | | D, S | Sufficient for 20 head stock. |
| 3 | SE. | 6 | " | " | " | Bored | 20 | 2,020 | - 10 | 2,010 | 19 | 2,001 | Glacial sand | Hard, clear | 41 | S | A 16-foot well got a small supply. |
| 4 | SE. | 7 | " | " | " | Bored | 66 | 2,000 | - 55 | 1,945 | 55 | 1,945 | Glacial sand | Hard, clear, soda | | N | Dugout used for stock and water hauled for drinking. |
| 5 | NE. | 8 | " | " | " | Dug | 18 | 1,975 | - 8 | 1,967 | 8 | 1,967 | Glacial sand | Hard, clear | | D | Sufficient for domestic needs; also two wells 92 and 32 feet deep, small supply, several dry holes. |
| 6 | NE. | 9 | " | " | " | Bored | 90 | 1,880 | - 60 | 1,820 | 90 | 1,790 | Glacial sandy | Hard, clear, "alkaline" | | S | Sufficient for 4 head stock; also a 12-foot seepage well for house. |
| 7 | SE. | 10 | " | " | " | Drilled | 430 | 1,905 | -180 | 1,725 | 480 | 1,425 | Bearpaw | Soft, clear, soda | | D, S | Sufficient for local needs. |
| 8 | SW. | 10 | " | " | " | Bored | 22 | 1,900 | - 10 | 1,890 | 10 | 1,890 | Glacial gravel | Hard, clear | | D, S | Sufficient for local needs; also a 22-foot seepage well. |
| 9 | NW. | 12 | " | " | " | Bored | 90 | 1,900 | | | | | | | | | Dry hole, base in glacial drift; also several other dry holes. |
| 10 | NW. | 13 | " | " | " | Bored | 68 | 1,900 | - 45 | 1,955 | 68 | 1,832 | Glacial sand | Hard, clear, "alkaline" iron | 43 | D, S | Sufficient for local needs. |
| 11 | SE. | 14 | " | " | " | Bored | 75 | 1,900 | - 15 | 1,885 | 75 | 1,825 | Glacial drift | Hard, "alkaline" | | S | Sufficient for 50 head stock; also a 55-foot well for house. |
| 12 | SW. | 14 | " | " | " | Bored | 460 | 1,900 | -140 | 1,760 | 460 | 1,440 | Bearpaw | Soft, clear | 42 | S | Sufficient for 25 head stock; also an 80-foot well used for drinking. |
| 13 | NE. | 15 | " | " | " | Bored | 65 | 1,900 | - 58 | 1,842 | 65 | 1,835 | Glacial gravel | Hard, clear, "alkaline" iron | 42 | D, S | Sufficient for 20 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 CRAIK NO. 222, 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | SE. | 16 | 23 | 27 | 2 | Bored | 50 | 1,950 | - 15 | 1,935 | 50 | 1,900 | Glacial drift | Hard, clear, "alkaline" | | D | |
| 15 | NW. | 16 | " | " | " | Bored | 30 | 1,930 | - 22 | 1,908 | 22 | 1,908 | Glacial sand | Hard, clear | | S | A 24-foot well got water at 12 feet. |
| 16 | NE. | 16 | " | " | " | Dug | 16 | 1,950 | - 13 | 1,937 | 13 | 1,937 | Glacial clay | Hard, clear, "alkaline" | | D | Very poor supply. |
| 17 | SE. | 20 | " | " | " | Drilled | 470 | 1,940 | -180 | 1,760 | | | Bearpaw sand | Soft, clear, salty | | S | Yields 5 barrels a day; also a 40-foot well used for drinking. |
| 18 | SW. | 23 | " | " | " | Bored | 69 | 1,910 | | | | | Glacial clay | Hard, clear, "alkaline" iron | | D, S | Insufficient for 6 head stock. |
| 19 | NW. | 23 | " | " | " | Bored | 60 | 1,900 | - 40 | 1,860 | 60 | 1,840 | Glacial sand | Hard, clear, "alkaline" iron | 45 | D, S | Sufficient for local needs. |
| 20 | SW. | 24 | " | " | " | Drilled | 140 | 1,925 | -100 | 1,825 | 140 | 1,785 | Glacial sand | Hard, clear, iron | | D, S | Sufficient for local needs. |
| 21 | SW. | 25 | " | " | " | Bored | 68 | 1,900 | - 58 | 1,842 | 68 | 1,832 | Glacial sand | Hard, clear, "alkaline" iron | 42 | D, S | Sufficient for local needs; also a shallow well for drinking. |
| 22 | NW. | 26 | " | " | " | Drilled | 388 | 1,900 | -140 | 1,760 | 388 | 1,512 | Bearpaw | Hard, clear, soda | | D, S | Oversufficient for local needs. |
| 23 | SE. | 29 | " | " | " | Drilled | 300 | 1,950 | -180 | 1,770 | 300 | 1,650 | Bearpaw ? | Hard, clear, iron | 45 | S | Sufficient for local needs; also a 20-foot seepage well for house. |
| 24 | SE. | 31 | " | " | " | Bored | 42 | 1,900 | - 22 | 1,878 | 42 | 1,858 | Glacial gravel | Hard, clear, sulphur, salty | 43 | S | Sufficient for 20 head stock; also a 21-foot well for domestic use. |
| 25 | NW. | 35 | " | " | " | Drilled | 411 | 1,900 | -140 | 1,760 | 411 | 1,489 | Bearpaw | Hard, clear soda, iron | 45 | S | Large supply; seepage well for house. |
| 26 | NW. | 36 | " | " | " | Bored | 66 | 1,925 | - 46 | 1,879 | 60 | 1,865 | Glacial sand | Hard, clear | | D, S | Sufficient for local needs; also a 65-foot seepage well. |
| 1 | NE. | 2 | 23 | 28 | 2 | Dug | 14 | 2,050 | - 4 | 2,046 | 4 | 2,046 | Glacial gravel | Soft, clear | | D, S | Intermittent supply; also several dry holes. |
| 2 | NW. | 3 | " | " | " | Dug | 22 | 1,940 | - 19 | 1,921 | 19 | 1,921 | Glacial sand | Hard, clear | | D, S | Sufficient for local needs. |
| 3 | NE. | 4 | " | " | " | Dug | 20 | 1,990 | - 8 | 1,982 | | | Glacial gravel | Hard, clear | 46 | D, S | Intermittent supply; also a 50-foot dry hole nearby. |
| 4 | NE. | 7 | " | " | " | Dug | 22 | 1,980 | - 18 | 1,962 | 18 | 1,962 | Glacial sand | Hard, clear | | D | Sufficient for domestic needs only, also a seepage well for stock. |
| 5 | SE. | 8 | " | " | " | Bored | 90 | 2,020 | - 60 | 1,960 | 90 | 1,930 | Glacial drift | Hard, clear, iron | | S | Sufficient for local needs; drinking water is hauled. |
| 6 | NE. | 9 | " | " | " | Dug | 60 | 2,040 | | | | | Glacial drift | Hard, clear | | D, S | |
| 7 | SE. | 13 | " | " | " | Bored | 24 | 2,020 | - 16 | 2,004 | | | Glacial sand | Hard, clear | | D | Insufficient for local needs. |
| 8 | NW. | 13 | " | " | " | Dug | 32 | 2,030 | - 22 | 2,008 | | | Glacial sand | Hard, clear | | D, S | Sufficient for local needs; largely seepage from nearby dugout. |
| 9 | SW. | 14 | " | " | " | Dug | 21 | 2,040 | - 11 | 2,029 | 21 | 2,019 | Glacial gravel and stones | Hard, clear | 46 | D, S | Sufficient for local needs. |
| 10 | NW. | 15 | " | " | " | Dug | 12 | 2,050 | - 2 | 2,048 | | | Glacial sandy clay | Hard, clear | | D, S | Intermittent supply. |
| 11 | NE. | 16 | " | " | " | Dug | 10 | 2,050 | - 3 | 2,047 | 3 | 2,047 | Glacial sand | Hard, clear | | D, S | Sufficient for local needs. |
| 12 | SW. | 17 | " | " | " | Dug | 17 | 2,050 | - 13 | 2,037 | 13 | 2,037 | Glacial sand | Soft, clear | | D, S | Sufficient for local needs. |

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 CRAIK NO.222, 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | SE. | 17 | 23 | 28 | 2 | Bored | | | | | | | | | | | Dry hole base in glacial drift. |
| 14 | NE. | 21 | " | " | " | Dug | 14 | 2,050 | - 10 | 2,040 | | | Glacial gravel and sand | Hard,clear | | S | Intermittent supply; also two wells 22 and 27 feet deep, small supply. |
| 15 | SE. | 22 | " | " | " | Bored | 33 | 2,050 | - 5 | 2,045 | 19 | 2,031 | Glacial gravel | Hard,clear | | D, S | Sufficient for local needs; also a 62-foot well with small supply. |
| 16 | NW. | 24 | " | " | " | Bored | 87 | 2,000 | - 80 | 1,920 | 80 | 1,920 | Glacial gravel and sand | Hard,clear | | D | Sufficient only for domestic needs; many dry holes about 40 feet deep. |
| 17 | SW. | 26 | " | " | " | Bored | 45 | 2,035 | - 36 | 1,999 | 36 | 1,999 | Glacial drift | Hard,iron | | D, S | Insufficient for 15 head stock; also a similar 35-foot well. |
| 18 | NE. | 27 | " | " | " | Bored | 72 | 2,030 | - 62 | 1,968 | 62 | 1,968 | Glacial gravel | Hard,clear | | D, S | Insufficient for local needs; also a seepage well and three 70-foot dry holes. |
| 19 | NW. | 32 | " | " | " | Dug | 15 | 2,040 | - 12 | 2,028 | 12 | 2,028 | Glacial gravel | Hard,clear | | D, S | Sufficient for local needs. |
| 20 | SW. | 33 | " | " | " | Dug | 33 | 2,050 | - 30 | 2,020 | 30 | 2,020 | Glacial gravel and sand | Soft,clear | | D | Insufficient for local needs; also a 150-foot well with poor supply. |
| 21 | NW. | 35 | " | " | " | Bored | 120 | 2,000 | -112 | 1,888 | 120 | 1,880 | Glacial sand | Hard,clear, "alkaline" | | S | Sufficient for local; also two wells, 15 and 40 feet deep, small supply. |
| 22 | SE. | 36 | " | " | " | Bored | 110 | 1,960 | -100 | 1,860 | 110 | 1,870 | Glacial sand | Hard,clear, "alkaline" | | S | Oversufficient for local needs; also a 20-foot well for domestic use. |
| 1 | NE. | 2 | 23 | 29 | 2 | Dug | 40 | 1,975 | - 35 | 1,940 | 35 | 1,940 | Glacial sand | Hard,clear, "alkaline" | 41 | S | Insufficient for local needs; also a seepage well near a pond |
| 2 | NW. | 2 | " | " | " | Bored | 34 | 2,040 | - 4 | 2,036 | 13 | 2,027 | Glacial gravel | Soft | | | Oversufficient for local needs. |
| 3 | SW. | 4 | " | " | " | Dug | 10 | 1,925 | - 8 | 1,917 | 8 | 1,917 | Glacial sand | Hard,clear | | S | Sufficient for local stock needs; also a shallowwell for domestic use. |
| 4 | NW. | 11 | " | " | " | Bored | 29 | 1,975 | - 4 | 1,971 | 8 | 1,967 | Glacial gravel | Hard,clear | 45 | D, S | Sufficient for local needs. |
| 5 | NE. | 11 | " | " | " | Dug | 12 | 1,975 | - 9 | 1,966 | 9 | 1,966 | Glacial gravel | Soft,clear | 46 | D, S | Sufficient for local needs. |
| 6 | SW. | 12 | " | " | " | Bored | 56 | 1,980 | - 25 | 1,955 | 25 | 1,955 | Glacial sand | Hard,clear | 44 | D, S | Yields 2 tanks a day. |
| 7 | SW. | 12 | " | " | " | Dug | 17 | 1,975 | - 15 | 1,960 | 15 | 1,960 | Glacial gravel | Hard,clear | | D, S | Sufficient for local needs. |
| 8 | SE. | 13 | " | " | " | Bored | 21 | 1,985 | - 6 | 1,979 | 6 | 1,979 | Glacial sand | Hard,clear | | D, S | Sufficient for local needs. |
| 9 | NE. | 15 | " | " | " | Spring | | 1,950 | | | | | Glacial drift | | | | Good supply. |
| 10 | NW. | 24 | " | " | " | Dug | 15 | 2,060 | - 13 | 2,047 | 13 | 2,047 | Glacial sand | Hard,clear | | D, S | Sufficient for local needs; also a 40-foot well, small supply. |
| 11 | SE. | 25 | " | " | " | Dug | 25 | 2,025 | - 23 | 2,002 | 23 | 2,002 | Glacial sand | Hard,clear | | D, S | Yields 2 barrels a day; slough also used for stock. |
| 12 | SW. | 26 | " | " | " | Bored | 30 | 2,000 | - 24 | 1,976 | 24 | 1,976 | Glacial gravel | Hard,clear | | D, S | Sufficient for local needs. |
| 13 | NE. | 26 | " | " | " | Dug | 15 | 2,050 | - 10 | 2,040 | 10 | 2,040 | Glacial gravel | Hard,clear | | D, S | Yields 1 tank a day. |
| 14 | SE. | 28 | " | " | " | Bored | 21 | 1,975 | - 12 | 1,963 | 12 | 1,963 | Glacial gravel | Hard,clear | 44 | D, S | Yields 100 barrels a day. |
| 15 | SW. | 28 | " | " | " | Dug | 20 | 1,975 | - 10 | 1,965 | 20 | 1,955 | Glacial sand | Hard,clear | | D, S | Yields 10 barrels a day. |
| 16 | NE. | 35 | " | " | " | Bored | 60 | 2,100 | - 40 | 2,060 | | | Glacial drift | Clear,iron salty | | S | Insufficient for local needs. |
| 17 | SE. | 35 | " | " | " | Dug | 10 | 2,075 | - 7 | 2,068 | 7 | 2,068 | Glacial sand | Hard,clear | | D, S | Sufficient for local needs. |

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 CRAIK NO. 222, 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | SE. | 36 | 23 | 29 | 2 | Bored | 30 | 2,090 | - 15 | 2,075 | | | Glacial sand | Hard, clear | 42 | D, S | Intermittent supply; seepage from pond. |
| 1 | NE. | 1 | 24 | 27 | 2 | Bored | 50 | 1,875 | - 35 | 1,840 | | | Glacial drift | Hard, clear, "alkaline" | | D, S | Intermittent supply; largely seepage from a slough. |
| 2 | SW. | 2 | " | " | " | Bored | 80 | 1,880 | - 40 | 1,840 | 72 | 1,808 | Glacial sand | Hard, cloudy, "alkaline" | | D, S | Yields 50 barrels a day. |
| 3 | NW. | 2 | " | " | " | Bored | 76 | 1,890 | - 20 | 1,870 | 76 | 1,814 | Glacial drift | Hard, clear, iron | | D, S | Sufficient for 20 head stock. |
| 4 | SW. | 3 | " | " | " | Drilled | 540 | 1,900 | -150 | 1,750 | 540 | 1,360 | Bearpaw sand | Soft, clear, soda, salty | | S | Oversufficient for local needs; also a 35-foot well used for house. |
| 5 | NW. | 3 | " | " | " | Bored | 100 | 1,900 | | | | | Glacial drift | Hard, clear | | D, S | Sufficient for 12 head stock. |
| 6 | NW. | 4 | " | " | " | Bored | 70 | 1,850 | - 20 | 1,830 | 40 | 1,810 | Glacial sand | Hard, clear, "alkaline" iron | | S | Yields 6 barrels a day; also a 20-foot well with good supply of good water. |
| 7 | SW. | 6 | " | " | " | Dug | 17 | 1,890 | - 7 | 1,883 | 15 | 1,875 | Glacial sand | Soft, clear | | D, S | Yields 5 barrels a day. |
| 8 | SW. | 7 | " | " | " | Bored | 30 | 1,875 | | | | | Glacial drift | Hard, clear, "alkaline" | 43 | S | Large seepage from dam; sufficient supply when dam is full. |
| 9 | NW. | 7 | " | " | " | Bored | 50 | 1,875 | - 41 | 1,834 | 50 | 1,825 | Glacial sand | Hard, clear | | D | Sufficient for local needs. |
| 10 | SE. | 7 | " | " | " | Dug | 34 | 1,870 | - 29 | 1,841 | 34 | 1,836 | Glacial gravel | Hard, clear, "alkaline" | | S | Yields 5 barrels a day; water is hauled for domestic use. |
| 11 | SW. | 9 | " | " | " | Dug | 85 | 1,870 | - 53 | 1,817 | 85 | 1,785 | Glacial sand | Hard, clear, "alkaline" | | S | Oversufficient for 40 head stock; a 16-foot well is used for house. |
| 12 | NW. | 10 | " | " | " | Drilled | 484 | 1,900 | -115 | 1,785 | | | Bearpaw | Hard, clear | 44 | D, S | Oversufficient for 40 head stock; also a 14-foot seepage well for domestic use. # |
| 13 | NW. | 12 | " | " | " | Bored | 65 | 1,885 | - 20 | 1,865 | 65 | 1,820 | Glacial sand | Hard, clear, "alkaline" iron | | D, S | Sufficient for 18 head stock. |
| 14 | NE. | 12 | " | " | " | Bored | 84 | 1,875 | - 40 | 1,835 | 84 | 1,791 | Glacial gravel | Hard, clear, "alkaline" | | D | Yields 5 barrels a day. |
| 15 | NE. | 18 | " | " | " | Dug | 16 | 1,860 | - 10 | 1,850 | 10 | 1,850 | Glacial drift | Hard, clear | | D, S | Yields 12 barrels a day. |
| 16 | SE. | 19 | " | " | " | Dug | 15 | 1,860 | - 9 | 1,851 | 9 | 1,851 | Glacial sand | Soft, clear | | D, S | Oversufficient for local needs. |
| 17 | SW. | 19 | " | " | " | Bored | 90 | 1,860 | - 77 | 1,783 | 90 | 1,770 | Glacial sand | Hard, cloudy | | S | Barely sufficient for 25 head stock. |
| 18 | SE. | 21 | " | " | " | Bored | 75 | 1,920 | | | | | | | | | Dry hole base in glacial drift; also three shallow seepage wells. |
| 19 | SW. | 24 | " | " | " | Bored | 20 | 1,875 | - 8 | 1,867 | 8 | 1,867 | Glacial sand | Soft, clear | | D, S | Sufficient for 35 head stock; also a similar 14-foot well and several dry holes to 80 feet in depth. |
| 20 | NW. | 27 | " | " | " | Dug | 32 | 1,900 | - 20 | 1,880 | 20 | 1,880 | Glacial sand | Hard, clear | | S | Sufficient for local needs; also a 35-foot well for domestic use. |
| 21 | SE. | 28 | " | " | " | Bored | 32 | 1,900 | - 12 | 1,888 | | | Glacial sand | Hard, clear | | D | Sufficient for domestic needs. |
| 22 | NE. | 28 | " | " | " | Bored | 32 | 1,900 | - 6 | 1,894 | | | Glacial drift | Soft, clear | | D, S | Sufficient for 7 head stock; also 65-foot well large supply not usable, seepage wells and 108 foot dry hole. |
| 23 | NW. | 28 | " | " | " | Drilled | 516 | 1,925 | -100 | 1,825 | 516 | 1,409 | Bearpaw | Soft, clear, soda, salty | | S | Shallow well for domestic use. |

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 CRAIK NO. 222, 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | SW. | 31 | 24 | 27 | 2 | Dug | 18 | 1,900 | | | | | Glacial sand | Hard, clear, "alkaline" | | D, S | Sufficient for 35 head stock; also an 8-foot well with similar water. |
| 25 | NW. | 32 | " | " | " | Drilled | 490 | 1,903 | -100 | 1,803 | 490 | 1,413 | Bearpaw | Soft, cloudy, salty | | S | Yields 13 barrels a day; water is hauled for drinking. |
| 26 | NE. | 34 | " | " | " | Drilled | 545 | 1,912 | - 80 | 1,832 | 545 | 1,367 | Bearpaw | Soft, clear, soda | | D, S | Yields 10 barrels a day. |
| 27 | SW. | 35 | " | " | " | Bored | 70 | 1,900 | - 9 | 1,891 | | | Glacial drift | Hard, clear, "alkaline" | | S | Good supply. |
| 28 | SW. | 35 | " | " | " | Bored | 45 | 1,900 | - 4 | 1,896 | 45 | 1,855 | Glacial sand | Hard, clear | | D, S | Sufficient for local needs; also a well in pasture with good supply. |
| 29 | NW. | 36 | " | " | " | Drilled | 515 | 1,897 | - 80 | 1,817 | 515 | 1,382 | Bearpaw | Soft, clear, soda | | S | Also a 16-foot well, small supply used for house. |
| 1 | NW. | 1 | 24 | 28 | 2 | Bored | 62 | 1,940 | - 22 | 1,918 | 22 | 1,918 | Glacial sand | Hard, clear, | | D, S | Yields 15 barrels a day, also a 20-foot well with small supply. |
| 2 | NE. | 3 | " | " | " | Drilled | 145 | 1,975 | -100 | 1,875 | 145 | 1,830 | Glacial sand | Hard, clear, iron | | S | Oversufficient for local needs; also a seepage well for domestic use. |
| 3 | NW. | 3 | " | " | " | Bored | 40 | 2,000 | - 20 | 1,980 | 40 | 1,960 | Glacial drift | Hard, clear | | D, S | Oversufficient for local needs. |
| 4 | NE. | 4 | " | " | " | Bored | 127 | 2,005 | -122 | 1,883 | 122 | 1,883 | Glacial sand | Hard, clear, "alkaline" iron | | D, S | Yields 12 barrels a day. |
| 5 | NW. | 4 | " | " | " | Drilled | 180 | 2,030 | -166 | 1,864 | 166 | 1,864 | Glacial drift | Hard, clear, "alkaline" | | D | Yields 5 barrels a day; uses sloughs and hauls water for drinking. |
| 6 | NE. | 7 | " | " | " | Bored | 30 | 2,045 | - 28 | 2,017 | 28 | 2,017 | Glacial drift | Hard, clear "alkaline" | | D, S | Insufficient for local needs; water is hauled. |
| 7 | NW. | 8 | " | " | " | Bored | 26 | 2,030 | - 12 | 2,018 | 26 | 2,004 | Glacial sand | Soft, clear | | D, S | Oversufficient for local needs. |
| 8 | NW. | 9 | " | " | " | Drilled | 640 | 2,000 | -240 | 1,760 | 640 | 1,360 | Bearpaw | Hard, clear, soda | | S | Sufficient for local needs; several 25-foot dry holes. |
| 9 | SW. | 13 | " | " | " | Dug | 30 | 1,870 | - 25 | 1,845 | 25 | 1,845 | Glacial drift | Hard, clear "alkaline" | | D, S | Sufficient for local needs. |
| 10 | NW. | 14 | " | " | " | Dug | 30 | 1,915 | - 24 | 1,891 | 24 | 1,891 | Glacial drift | Hard, clear, "alkaline" | | D, S | Used by town of Craik. # |
| 11 | NE. | 15 | " | " | " | Bored | 65 | 1,925 | - 60 | 1,865 | 60 | 1,865 | Glacial gravel | Hard, clear | | D, S | Yields 5 barrels a day. |
| 12 | SW. | 17 | " | " | " | Drilled | 165 | 2,030 | -130 | 1,900 | 165 | 1,865 | Glacial sand | Hard, clear, "alkaline" iron | 44 | D, S | Yields 6 barrels a day. |
| 13 | SW. | 20 | " | " | " | Bored | 72 | 2,010 | - 47 | 1,963 | 72 | 1,938 | Glacial sand | Hard, clear, "alkaline" | | D, S | Oversufficient for local needs. |
| 14 | SE. | 20 | " | " | " | Bored | 123 | 1,985 | -100 | 1,885 | 123 | 1,862 | Glacial drift | Hard, clear, "alkaline" iron | | D, S | Oversufficient for local needs. |
| 15 | SW. | 22 | " | " | " | Bored | 52 | 1,930 | - 44 | 1,886 | 52 | 1,878 | Glacial drift | Hard, clear | | D, S | Sufficient for local needs. |
| 16 | NW. | 25 | " | " | " | Bored | 100 | 1,880 | - 85 | 1,795 | 100 | 1,780 | Glacial sand | Hard, clear, "alkaline" | | S. | Would yield 10 barrels a day, but is now caving in. |
| 17 | SE. | 27 | " | " | " | Bored | 55 | 1,890 | - 35 | 1,855 | 55 | 1,835 | Glacial gravel | Hard, clear, "alkaline" | | S | Yields 2 barrels a day; also a 15-foot well with a small supply. |
| 18 | SE. | 28 | " | " | " | Bored | 63 | 1,935 | - 30 | 1,905 | 63 | 1,872 | Glacial clay and stones | Hard, clear, "alkaline" | | S | Yields 1 tank a day; also a 20-foot well yields sufficient for house. |
| 19 | NE. | 30 | " | " | " | Drilled | 141 | 1,980 | - 30 | 1,950 | 141 | 1,839 | Glacial gravel | Hard, clear, soda | | S | Yields 5 barrels a day; also a 25-foot well used for domestic purposes. |

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 CRAIK NO. 222, 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | SW. | 30 | 24 | 28 | 2 | Bored | 60 | 2,025 | | | | | Glacial sand | Hard, clear | | D, S | Insufficient for local needs. |
| 21 | SW. | 34 | " | " | " | Drilled | 552 | 1,910 | -332 | 1,578 | 552 | 1,358 | Bearpaw sand | Hard, clear, salty | | S | Yields 10 barrels a day. |
| 22 | NE. | 34 | " | " | " | Dug | 50 | 1,875 | - 36 | 1,839 | 50 | 1,825 | Glacial drift | Hard, clear, "alkaline" | | S | Yields 5 barrels a day; also a shallow well for domestic use. |
| 23 | SW. | 36 | " | " | " | Drilled | 535 | 1,900 | - 60 | 1,840 | 535 | 1,365 | Bearpaw | Hard, salty, clear, soda | | S | Yields 5 barrels a day; also a 20-foot seepage well for domestic use. |
| 24 | NW. | 36 | " | " | " | Drilled | 530 | 1,900 | -100 | 1,800 | 530 | 1,370 | Bearpaw shale | Hard, clear, salty | | S | Oversufficient for local needs; a 20-foot seepage well for house. |
| 1 | SE. | 1 | 24 | 29 | 2 | Dug | 35 | 2,100 | - 30 | 2,070 | 30 | 2,070 | Glacial drift | Hard, clear, "alkaline" | | D, S | Sufficient for local needs. |
| 2 | SE. | 10 | " | " | " | Bored | 75 | 2,100 | | | | | Glacial sand | Hard, clear, "alkaline" | | N | Poor supply, other drilled dry holes, water hauled for house. |
| 3 | SW. | 10 | " | " | " | Dug | 20 | 2,050 | - 10 | 2,040 | 19 | 2,031 | Glacial sand | Hard, clear | | D, S | Yields 5 barrels a day; also a similar well. |
| 4 | SW. | 11 | " | " | " | Bored | 30 | 2,100 | | | | | Glacial gravel | Hard, clear | | D, S | Insufficient for local needs. |
| 5 | NE. | 12 | " | " | " | Drilled | 241 | 2,060 | | | | | | | | | Dry hole base in glacial drift. |
| 6 | SW. | 14 | " | " | " | Bored | 65 | 2,075 | - 61 | 2,014 | 61 | 2,014 | Glacial drift | Hard, clear, soda | 43 | S | Yields 8 barrels a day. |
| 7 | W½. | 15 | " | " | " | Dug | 14 | 2,090 | - 9 | 2,081 | | | Glacial drift | Hard, clear | | D, S | Sufficient supply in normal years. |
| 8 | SE. | 16 | " | " | " | Drilled | 600 | 2,100 | -227 | 1,873 | 600 | 1,500 | Bearpaw | Hard, clear, "alkaline" | | D, S | Yields 6 barrels a day. |
| 9 | NE. | 24 | " | " | " | Drilled | 244 | 2,050 | | | | | Glacial drift | Hard, clear, "alkaline" | | S | Oversufficient for local needs; also an 18-foot seepage well for house. |
| 10 | NW. | 25 | " | " | " | Dug | 14 | 2,040 | - 7 | 2,033 | 7 | 2,033 | Glacial sand | Soft, clear | | D, S | Yields 15 barrels a day; also a similar well. |
| 11 | SE. | 33 | " | " | " | Bored | 73 | 2,075 | - 59 | 2,016 | 59 | 2,016 | Glacial sand | Hard, clear | | D, S | Sufficient for 30 head stock. |
| 12 | SW. | 33 | " | " | " | Bored | 80 | 2,085 | - 70 | 2,015 | 70 | 2,015 | Glacial sand and gravel | Hard, clear | | D, S | Yields 50 barrels a day; dry holes at same depth nearby. |
| 13 | SW. | 34 | " | " | " | Bored | 72 | 2,075 | - 60 | 2,015 | 60 | 2,015 | Glacial sand | Hard, clear, "alkaline" | | N | Very poor supply. |
| 14 | SW. | 34 | " | " | " | Dug | 28 | 2,075 | - 13 | 2,062 | 20 | 2,055 | Glacial sand | Hard, clear, "alkaline" | | S | Insufficient for local needs; also a 62-foot well, small supply and a dry hole. |
| 15 | SW. | 36 | " | " | " | Dug | 30 | 2,040 | - 24 | 2,016 | | | Glacial clay | Hard, clear, "alkaline" | | N | Intermittent 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.